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Abstract/Résumé analytique

The Polish-Czechoslovak Confederation Project in British Policy, 1939-1943: A Federalist Alternative to Postwar Settlement in East Central Europe?

Victoria Vasilenko

This article examines the Polish-Czechoslovak confederation project of 1939-1943, which was seen by its proponents in wartime London as the core of a potential Central European Federation. The author devotes special attention to British policy, as it helps not only to understand how the project fitted into British and Allied post-war planning, but also to reveal the various alternatives that were being considered for postwar settlement in East Central Europe. The main reason for the confederation project's failure was the well-known Soviet veto. However, there were other factors that made the USSR's policy so decisive.

Keywords: Polish-Czechoslovak confederation project; Second World War; twentieth-century British diplomatic history; Soviet Union; USSR; Eastern Europe; Central Europe; Poland, Czechoslovakia; Polish government-in-exile; Czechoslovak government-in-exile; federalism; postwar Europe

Dans cet article, nous examinons le projet de confédération polonaise-tchécoslovaque de 1939-1943, qui était considéré par ses partisans à Londres, durant la guerre, comme pouvant être au cœur d'une Fédération possible des pays du centre de l'Europe. L'auteur prête beaucoup d'attention aux politiques britanniques, ce qui, non seulement nous aide à comprendre comment ce projet s'intégrait dans la planification de l'après-guerre des Britanniques et des Alliés, mais nous révèle également les différentes solutions qui étaient prises en considération pour arriver à un accord au sujet de l'Europe centrale de l'Est. Nous soutenons que la raison fondamentale de l'échec du projet de confédération était bien connue de tous, et que c'était le véto soviétique. Toutefois, il y avait d'autres facteurs qui ont rendu cette politique soviétique si décisive.

Mots-clés : Projet de confédération polono-tchécoslovaque ; Seconde Guerre mondiale ; histoire diplomatique de la Grande-Bretagne au vingtième siècle ; Union Soviétique ; URSS ; Europe de l'est ; Europe centrale ; Pologne ; Tchécoslovaquie ; gouvernement polonais en exil ; gouvernement tchécoslovaque en exil ; fédéralisme ; Europe de l'après-guerre

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THE POLISH-CZECHOSLOVAK CONFEDERATION PROJECT IN BRITISH POLICY, 1939-1943: A FEDERALIST ALTERNATIVE TO POSTWAR SETTLEMENT IN EAST CENTRAL EUROPE?[1]

The idea of organizing east central and south-eastern Europe according to federalist principles was fairly widespread among western and southern Slavs living in multinational imperial polities. However, few attempted to put federalism into practice after the failure of the Habsburg, Hohenzollern, Romanov, and Ottoman empires as a result of the First World War.[2] As it turned out, the nation-states that were created in the region after the war often found it difficult to establish good relations with one another, and especially with their neighbours. In the case of Poland and Czechoslovakia, relations between the two countries soured soon after the end of WWI due to conflict over Teschen Silesia, even though the idea of a closer association between them had circulated among politicians of both states.[3] Relations reached their nadir in the 1938 Munich crisis, when Poland used the occasion to take over the Czechoslovak portion of the disputed territory.[4] When only a year later the exiled political representatives of the two

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[2] Czechoslovakia and Yugoslavia, in contrast to Austria, developed variants of centralism rather than federations. See Vojtech Mastny, "The Historical Experience of Federalism in East Central Europe," *Intermarium*, 2 (1998), p. 9, available at http://ece.columbia.edu/files/ece/images/mastny-2.pdf (accessed 1 July 2014).

[3] See, for example, Krzysztof Grygajtis, *Polskie idee federacyjne i ich realizacja w XIX i XX w.* [*Polish Federalist Ideas and their Realization in the Nineteenth and Twentieth Centuries*] (Częstochowa, 2001). It is worth noting that this idea was rather marginal for the ruling circles of both states and especially for the Poles. At that time, Poland stressed the necessity of a federation that included itself, Lithuania, Ukraine, and Byelorussia, as a way to reconstruct the former First Republic, which had been partitioned in the late eighteenth century.

[4] Later, they also took some territory in northern Slovakia.

states began developing a confederation project, their actions represented a truly radical turn.[5]

For their British hosts, the Polish-Czechoslovak venture should have been just one of many ambitious schemes put forward by the numerous exiles of the eight governments based in London, most of which had — in the conviction of many British officials — plenty of time to devote to postwar problems.[6] A closer look at this confederation project, however, reveals the importance that British authorities, especially in the Foreign Office, attached to it. British foreign policy experts and politicians discussed it as early as 1939, promoted it in inter-allied diplomacy until 1943 (and sporadically even after this date), and openly considered it viable until late 1943 — more than a year after it ceased to be developed, and past the point where its failure should have been obvious. This article seeks to account for this sustained interest. Moreover, by juxtaposing this earlier confederation project with the plan that was ultimately implemented for postwar east central Europe, it places the latter arrangement into relief and deepens our understanding of the context in which it emerged. An examination of the confederation project also sheds light on how Britain's actions helped shape the tactics its Soviet ally began to use in pursuing its own aims in Eastern Europe.

This article concentrates on the years from 1939, when the project first appeared in Britain's exchanges with Polish exile authorities and the Czechoslovak National Committee headed by Edvard Beneš, to 1943 when the project disappeared from the Big Three agenda. It places this discussion within the broader framework of the policies of the other major allied powers, namely the Soviet Union and the United States. The Soviet Union's attitude to the project and the British-Soviet negotiations are of special interest, as they allow us to understand more clearly the place of the federalist solution for east central Europe among Great Britain's priorities in 1941-43 — in other words, in the context of what British historian Keith Sainsbury has described as the Foreign Office's "package for Eastern Europe."[7] This article's chief objective is to examine the meaning of the confederation project for British policy primarily in light of her relations with the USSR and therefore to reveal to what extent it could be viewed as a possible alternative to the postwar settlement in east central Europe.

Numerous scholars — whether British, Polish, Czech, Slovak, German, or American — have researched different aspects of this topic, with many Polish or

[5] The Polish authorities termed the project "federation," while the Czechoslovak politicians dubbed it "confederation *sui generis*" or "confederation." The British and Soviet officials used both terms, but preferred "confederation." According to the Agreement of 23 January 1942, the Poles and Czechoslovaks were to form a confederation. Therefore, I employ the latter term in discussing their bilateral exchanges. However, when "federation" was the only or most frequent term in the negotiations of the great powers, I use "federation" or "(con)federation."

[6] I employ the term "Czechoslovak," which reflects Edvard Beneš's concept of one Czechoslovak people, as this terminology was for obvious reasons used in all the exchanges involving the Czechoslovak National Committee and later the government-in-exile.

[7] Keith Sainsbury, *Churchill and Roosevelt at War: the War They Waged and the Peace They Hoped to Make* (New York, 1994), p. 96.

Czechoslovak exiles or their descendants among those from the U.S. and the U.K. Russian historians have only recently joined the discussion of the role of the governments-in-exile in shaping the policy of the great powers. Soviet ideological restrictions made this kind of research difficult, and until recently many of the pertinent Soviet documents remained inaccessible. Of the post-Soviet Russian scholarship dealing with the confederation project, the most important is Valentina Mar'ina's two-volume work on the Czecho-Slovak question in the Soviet Union's wartime policy.[8] In developing an interpretation of British policy toward the Polish-Czechoslovak confederation project, the present article draws heavily on this scholarship, as well as on relevant and available published and unpublished sources.

* * *

The idea of a confederation consisting of Poland and Czechoslovakia emerged soon after the beginning of the Second World War. General Wladyslaw Sikorski, an opposition leader who became the Prime Minister of the Polish government-in-exile, was one of its major proponents. He wanted to create an organization of states in east central Europe — later likely to include southeastern Europe — in order to achieve two goals: to serve as a counterweight to Germany and the USSR, and to secure a dominant regional position for Poland. Sikorski considered this organization highly important as the only way to solve the security dilemma posed by Poland's vulnerable location between the two great powers. As he saw it, the Polish-Czechoslovak confederation would form the core of a broader organization of states in central and eastern Europe, or, as it was often termed, the Central European Federation. The Polish government thought it necessary to obtain some German territory after the war (at least Danzig, East Prussia, and Oppeln Silesia), which was also significant for the confederation project, because it meant a bigger industrial potential for Poland and a longer Polish-Czechoslovak border. As Peter Frederiksen notes, Sikorski believed that this arrangement would encourage both countries to cooperate closely.[9] At the same time, having a convenient outlet to the Baltic sea — as well as a larger territory and population — would secure Poland the dominant position in the confederation.

Achieving a rapprochement between Poland and Czechoslovakia was no easy task, however. A history of conflict between the two countries during the interwar period had led to mutual distrust, which in turn was complicated by their unequal status in exile.[10] But with the help of the French ambassador

[8] V.V. Mar'ina, *Sovetskii Soyuz i chekho-slovatskii vopros vo vremya Vtoroi Mirovoi voiny. 1939-1945 gg. [The USSR and the Czecho-Slovak Problem during the Second World War. 1939-1945]*, 2 vols. (Moscow, 2007; 2009).

[9] Peter Frederiksen, "General Sikorskis strategi for en polsk-tjekkoslovakisk foderation 1939-43 [General Sikorski's Strategy for a Polish-Czechoslovak Federation 1939-43]," *Historisk Tidsskrift*, 16, 3 (1994) 1, available at: https://tidsskrift.dk/index.php/historisktidsskrift/article/viewFile/34293/66314 (accessed 1 July 2014).

[10] The Polish government-in-exile was recognized by the allies, but the Czechoslovak National Committee led by Edvard Beneš, found it difficult to get recognition as a government-in-exile and was rivaled *inter alia* by Milan Hodža's Slovak (then Czecho-Slovak) National Council.

Léon Noël, the Polish premier initiated direct contact with Edvard Beneš as early as October 1939, and in the next month both politicians for the first time mentioned the possibility of bilateral cooperation on a new basis.[11]

Many scholars have noted that Beneš and his supporters did not attach as much importance to the idea of a postwar association as their Polish counterparts did. Nonetheless, as the Czech historian Vit Smetana has demonstrated, an important reason for Beneš support for the idea early in the war was that it facilitated recognition of the Czechoslovak National Committee as the sole representative of the occupied country and subsequently as an (initially provisional) government-in-exile.[12] In the long run, the confederation project was considered by the Czechoslovak leader in the context of his own principal aims: to obtain the Allies' invalidation of the Munich Agreement, to restore Czechoslovakia to her pre-Munich frontiers, and to secure the Allies' approval for the radical settlement of the minorities question in the postwar state.[13] The first contacts between the Poles and Czechoslovaks also revealed underlying tensions over the issue of Teschen Silesia as well as a divergence in the two countries' attitudes toward the USSR. Relations with Hungary were another source of some tension.[14] In addition, the Polish government's contacts with other politicians from the former Czechoslovakia, and in particular with former premier Milan Hodža, did little to enhance trust between the negotiating parties.[15]

Official bilateral negotiations began in autumn 1940, after the formation of the Czechoslovak provisional government. Soon after, on 11 November, Polish and Czechoslovak representatives signed a declaration about their intention to create a "closer ... association" after the war.[16] In late November the confederation project received public support from Great Britain,[17] which became the only sponsor of antifascist governments-in-exile of the occupied European countries after the fall of France in June 1940.

[11] Eugeniusz Duraczyński, "Vladislav Sikorski i Edvard Benesh: k chemu stremilis, chego dostigli [Władysław Sikorski and Edvard Beneš: What Strived for, What Achieved]," in *Slavianskie narody: obschnost istorii i kultury* [*Slavic Peoples: Affinity of History and Culture*] (Moscow, 2000), pp. 353-54.

[12] See, for example: Ivan Šťovíček, Jaroslav Valenta (eds.), *Czechoslovak-Polish Negotiations of the Establishment of Confederation and Alliance, 1939-1944* (Prague, 1995), pp. 36-39, 44.

[13] Vit Smetana, *In the Shadow of Munich. British Policy towards Czechoslovakia from the Endorsement to the Renunciation of the Munich Agreement, 1938-1942* (Prague, 2008), chapters 4-5; idem, "Konfederacja czechosłowacko-polska a polityka mocarstw [Czechoslovak-Polish Confederation and [the Great] Powers' Policy]" in *Między przymusową przyjaźnią a prawdziwą solidarnością* [*Between Compelled Friendship and Real Solidarity*], część I (Warsaw, 2007), p. 122.

[14] Hungary, which was an ally of Germany during the war, was one of the few states in the region with whom Poland managed to develop non-problematic relations. In contrast, Czechoslovakia, which had a fairly long border with Hungary, had well-grounded concerns about Hungarian revanchism (Hungary had also taken advantage of the Munich crisis having received some territory in southern Slovakia and parts of Sub-Carpathian Ukraine under the First Vienna Award by Germany and Italy).

[15] Šťovíček and Valenta (eds.), *Czechoslovak-Polish Negotiations*, pp. 40-42, 49-50.

[16] Piotr Wandycz, *Czechoslovak-Polish Confederation and the Great Powers 1940-1943*, (Bloomington, 1956), p. 128.

[17] Wacław Jędrzejewicz (ed.), *Poland in the British Parliament*, Volume 1: March 1939-August 1941 (London, 1946), p. 448-49.

In the late 1930s, there was a strong feeling in British ruling circles that the post-WWI settlement in central and eastern Europe — especially regarding the territory of the former Habsburg Empire, termed indifferently "the Succession States" — would be amended in one way or another.[18] Therefore, it is not particularly surprising that the British government demonstrated an interest in federalist projects in central Europe as early as October 1939, during Polish foreign minister August Zaleski's first visit to London. At this meeting, British politicians talked about a Central European Federation that would include Poland, Czechoslovakia, and Hungary.[19] This initiative and subsequent steps — as, for example, Churchill's pronouncement in Parliament in November 1940 welcoming Poland and Czechoslovakia's joint declaration[20] — encouraged the Poles to believe that Britain supported the idea of their confederation with the Czechoslovaks.

In fact, the British attitude to this confederation project was more complex and reserved. On the whole, the notion of a federalist solution for the region, either under the Habsburgs again or self-managed by the nation-states, was seen in British public discourse as an effective way to bring about stability and security in the area. Many British politicians and officials found it sensible. However, a number of factors led the British government to take a cautious approach toward Polish and Czechoslovak plans for a confederation. In the first years of the war, the Cabinet, largely due to Churchill's insistence, focused on generalities in postwar planning so as to avoid internal strife.[21] In addition, the Foreign Office (FO) wondered whether Polish-Czechoslovak relations had improved sufficiently since the interwar years, and expressed reservations about Polish claims to considerable portions of Germany's territory.[22] There was also a certain irritation in the FO with Sikorski's attempt to assume the role of the émigré governments' leader,[23] and uncertainty among British officials about

[18] See, for example, Smetana, *In the Shadow of Munich*, p. 245; Clement Attlee, *As It Happened* (London, 1954), p. 102.

[19] Eugeniusz Duraczyński, "Władysław Sikorski and Edvard Beneš," p. 354.

[20] Jędrzejewicz (ed.), *Poland in the British Parliament*, Volume I, p. 449.

[21] Christopher Hill, *Cabinet Decisions on Foreign Policy: The British Experience October 1938-June 1941* (Cambridge, 2002), pp. 188-220.

[22] See, for example, minutes of a conversation between Churchill and Raczynski on 8 October 1941 in Marek Kazimierz Kamiński and Jacek Tebinka (oprac.), *Na najwyższym szczeblu. Spotkania premierów Rzeczypospolitej Polskiej i Wielkiej Brytanii podczas II wojny światowej* [*At the Highest Level. Meetings of the Premiers of the Polish Republic and Great Britain during the Second World War*] (Warsaw, 1999), pp. 33-34. In its propaganda, the Polish government-in-exile often presented these territories, historically Polish, as being disadvantaged within Germany, which maintained them as a "bastion of German feudalism." Archiwum Akt Nowych [Central Archives of Modern Records in Warsaw, hereafter cited as AAN]. Ambasada Rzeczypospolitej w Londynie, 1919-45 [Embassy of the Polish Republic in London, 1919-45]. Sygnatura 1608. Notatka dla Pana Ministra Lalickiego. 19 grudnia 1941 [Note for Minister Lalicki. 19 December 1941].

[23] Sikorski convened meetings promoting the idea of a federalist solution for the whole of postwar Europe. See Anita Prażmowska, *Britain and Poland, 1939-1943. The Betrayed Ally* (Cambridge, 1995), p. 125; Thomas Lane, "Present at the Creation: East Europeans and the European movement" in *On-line materials of the Fifth Pan-European International Relations Conference, 9-11 September 2004, The Hague*, available at: www.sgir.org

the extent to which these governments enjoyed the support of their citizens on the continent. The FO welcomed and encouraged Poles and Czechoslovaks, in Thomas Lane's words, to create a "working association" that served their interests along with those of Great Britain, but paid little attention to how such an arrangement was framed.[24]

Meanwhile, the FO developed its own ideas about how central and south-eastern Europe should be organized. That process accelerated after the appointment of Anthony Eden as Foreign Secretary in late December 1940. Eden favoured closer cooperation between the FO and the Oxford-based Foreign Research and Press Service (FRPS), whose leader Arnold Toynbee, as well as associates such as Robert Seton-Watson, had been reputed to favour a union or federation in the region.[25] The FRPS served as a conduit through which expert advice from the Royal Institute of International Affairs (Chatham House) reached the FO; it made sense as a FO partner given the skeptical attitude the agency maintained vis-à-vis the Labour-dominated Cabinet War Aims (then Reconstruction) Committee.[26] It would be misguided to overestimate the influence of FRPS ideas over the FO, as Robert Keyserlingk has done in his important writings on this subject. At the same time, the kinds of questions the FO posed to FRPS experts are relevant to this study, as are the reactions to FRPS papers as expressed in minutes. Equally significant is that the FRPS tended to conduct research along the lines favoured by the FO.[27]

One of the first FO tasks for FRPS dealt with Austria: the FRPS was asked to determine whether the Danube region should return to its prewar status or whether the small units that constituted it would stand a better chance of survival if they aligned themselves within some type of Eastern European bloc.[28] The report was presented in October 1941. FRPS favoured a multinational Danubian state after the war. At that time, for obvious reasons, there was no mention of eventual Soviet pressure or objection. The possibility of a federalist solution for the region was studied in greater detail later in 1942 and then in earnest in 1943, when the actual postwar planning began. It was of particular interest prior to the October 1943 conference of the Big Three's foreign ministers in Moscow.

Internal planning for a postwar settlement is one thing. It is quite another thing when a vision for the future appears in international negotiations as a real

[24] Thomas Lane, "Integrating East Central Europe: Polish-Czechoslovak Plans and the Opposition of the Great Powers" *Central and Eastern European Review*, 1 (2007), p. 23, available at: http://spaces.brad.ac.uk:8080/download/attachments/716/Lane0407.pdf?version=1&modificationDate=1178284164000 (accessed 7 July 2014).

[25] The arrangement between the Chatham House and the Foreign Office concerning FRPS was formally confirmed in August 1939.

[26] Robert Keyserlingk, *Austria in WWII. An Anglo-American Dilemma*, (Montreal, 1988), p. 97; Hill, *Cabinet Decisions on Foreign Policy*, p. 221.

[27] For example, one researcher who argued that independent Austria would have good economic prospects after the war, ceased working for the FRPS after the FO protested her stance (Keyserlingk, *Austria in WWII*, p. 98).

[28] Keyserlingk, *Austria in WWII*, p. 98.

possibility. In this connection it is worth noting that federalist ideas for central and south-eastern Europe, and the Polish-Czechoslovak confederation in particular, were mentioned in the first British-Soviet talks over a treaty of alliance in late 1941. The meaning of the federalist solution within British policy can thus be better understood by looking at how it evolved first during the British-Soviet negotiations of this treaty and then later in the three-power format.

In December 1941, when the British delegation headed by the Foreign Secretary Anthony Eden came to Moscow for the treaty of alliance negotiations, there was an initial exchange of views concerning postwar Europe. The Soviet side presented a fairly detailed program against the backdrop of the Battle of Moscow, in which the German army came very close to taking the Soviet capital. Members of the British delegation stressed that they had not yet developed their ideas concerning postwar settlement. In this context, it is telling that Eden broached the possibility of creating federations in central and south-eastern Europe and specifically mentioned the Polish-Czechoslovak confederation project in his first conversation with the Soviet leader Joseph Stalin.[29] In this exchange, the Kremlin offered no objections.[30]

In the course of further negotiations, Great Britain continually promoted the notion of federations in the region, though at times there was too much at stake. The Soviet leadership, for its part, insisted on British recognition of Soviet borders as they stood prior to the German invasion of 22 June 1941. The question of the Soviet-Polish border was agreed to be an exception that would be settled in bilateral negotiations. These talks revealed potentially dangerous rifts within British domestic politics, within the U.K. leadership, and between the Allies. Eden returned from Moscow determined to meet at least the Soviet "minimum" demands, primarily regarding the Baltic states. The Foreign Secretary's interpretation of Soviet intentions at that time is well represented in his talk with the editor of the *Manchester Guardian*, where he stressed his conviction that Soviet policy could not be reduced to a simple expression of communist ideology and in fact resembled that of the Peter the Great. For this reason, he suggested, it was possible and necessary to come to terms with the USSR in Europe. At the same time, as Geoffrey Warner has shown, it was important for Eden to secure commitments from the Soviet leader Josef Stalin as soon as possible, since "a Russian victory would put temptation in Stalin's way."[31] Eden managed to persuade Churchill — who was at first fiercely opposed[32] — and the War Cabinet — to meet the Soviets' "minimum" demands. However, this matter clearly contributed to an "unharmonious relationship between [the Conservative] Party [to which both Churchill and Eden belonged] and the

[29] O.A. Rzheshevski, *Stalin i Cherchill. Vstrechi. Besedy. Diskussii: Dokumenty, kommentarii, 1941–1945* [*Stalin and Churchill. Meetings. Conversations. Discussions: Documents, Materials, 1941-1945*] (Moscow, 2004), p. 42.

[30] Ibid., chapter 1.

[31] Geoffrey Warner, "From Ally to Enemy: Britain's Relations with the Soviet Union, 1941-1948" in *Diplomacy and World Power: Studies in British Foreign Policy, 1890-1950* (Cambridge, 1996), p. 225.

[32] Winston S. Churchill, *The Second World War*, Vol. IV (Boston, 1950), p. 695.

Government," as John Ramsden put it. A number of Tory MPs considered recognizing Soviet claims to the Baltic states as tantamount to "Munich again, but worse." The Foreign Secretary, who stressed his anti-Munich party identity, was very sensitive to this kind of criticism.[33] It was also evident that if the British government were to agree to the Soviets' territorial claims (in light of their previous statements to the contrary in public and private), there would be unrest in the large exile community, especially among the Poles, who insisted on Lithuania's inclusion in the Central European Federation. To crown it all, the United States firmly protested the idea of commitments on territorial matters.[34]

The Soviet reaction to Britain's hesitation to meet Soviet territorial demands was two-fold. First, a federation clause was removed from the Soviet draft of the treaty, although head of the USSR's delegation, Soviet People's Commissar for Foreign Affairs, Viacheslav Molotov, who came to London for final negotiations, agreed to consider revisions.[35] Second, there appeared a new condition about Soviet mutual assistance treaties with Finland and Romania. As was well-known, the Baltic states had concluded similar treaties before their incorporation into the Soviet Union. As a result of the new conditions, in the course of the final negotiations, the British presented a new draft underlining a commitment to fight the Axis powers and providing for at least twenty-years of cooperation in the postwar world. This draft, however, did not mention particular territorial matters, including federations.[36] When Molotov quickly accepted the revised draft, the British were a bit surprised but quite happy to sign the treaty of alliance on 26 May 1942. These talks clearly demonstrated Britain's priorities and, at the same time, the difficult process of clarifying them to British ruling circles. At the time, the situation for the British military was reaching a critical point and wartime cooperation became especially important; therefore, a federalist solution for central and south-eastern Europe had to be removed — albeit for a short time — from the British-Soviet agenda.

In conjunction with the conclusion of the Anglo-Soviet treaty, there appeared another aspect of British policy that was closely connected to the idea of a federalist solution for the region. On 9 June 1942 Eden, in his talk with Molotov on the latter's return to London from Washington, stressed that it was undesirable to conclude bilateral treaties with small countries or their governments regarding a postwar settlement, adding that he hoped to avoid having any one great power exercise dominance over any one region after the war. As Victor Rothwell has indicated, the British hoped that this so-called "self-denying ordinance" would make it easier for the governments-in-exile themselves to develop plans for federations.[37] The Soviet reply, which took some time, was positive in

[33] John Ramsden, *The Age of Churchill and Eden*, (New York, 1995), pp. 27-28.

[34] See, for example, O.A. Rzheshevski, *Stalin and Churchill*, chapter 2.

[35] Ibid., pp. 112-13. The federation clause was removed from the Soviet draft in April 1942.

[36] Ibid., pp. 150-52. It was during this stage of negotiations that Molotov received the much cited cable from Stalin about the new British draft, stating that it was not bad, "as we shall have our hands free," and that the "question ... about security guarantees on our borders ... shall be decided by force" (ibid., p. 157).

[37] Victor Rothwell, *Anthony Eden: A Political Biography, 1931-1957* (Manchester and New York, 1992), p. 67.

principle and in favour of opening the discussion. However, as scholars such as Valentina Mar'ina have pointed out, Britain failed to take advantage of this opportunity, as would be proven relevant in 1943.[38]

Meanwhile, up to that time, the Polish and Czechoslovak governments-in-exile had achieved some progress in developing the confederation project, but soon faced insurmountable difficulties. They managed to create bilateral organs — a Coordination Committee and some auxiliary committees — to work on the project. They also developed and presented their concepts of the (con)federation until the end of 1941.[39] However, their concepts differed significantly. The Poles emphasized the necessity of a tight political-military union, while the Czechoslovaks wanted first to develop the economy. This difference reflected their respective interests and priorities. With its relatively large territory and population and its vulnerable location between Germany and the USSR, Poland assumed that a political-military union would best serve their need for security. Czechoslovakia had a stronger economy, so it insisted on a customs union. It agreed that foreign policy and military matters should be coordinated, but only on the condition of Poland's democratization. The two countries even gave the project different labels: the Poles called it a federation while the Czechoslovaks named it a confederation.[40] The question of Teschen Silesia became acute, and there were serious tensions concerning the proper attitude to adopt toward the USSR. Beneš was certain that the Soviet Union would dominate in the region after the war and thus thought Soviet approval of the confederation was necessary. Sikorski thought that the USSR would be, if not defeated, very weakened after the war. Therefore, he believed that the support of the Anglo-Saxon powers was crucial. After Sikorski's sudden death in an air accident in early July 1943, the new Polish Premier Stanislaw Mikolajczyk confirmed his government's commitment to the confederation project.

Soviet policy toward the federalist solution in the region changed after 1941. Stalin's initial non-objection "against creating in Europe one or more state federations" to Eden in December of that year evolved into a reserved and then

[38] Mari'ina, *The USSR and the Czecho-Slovak Problem*, p. 19. The Soviets' positive reply followed on 4 July and asked for detailed suggestions. The FO did not provide the Soviet Ambassador to the U.K., Ivan Maisky, with such suggestions, probably assuming that the Soviets' affirmative answer was sufficient. It seems that there was a misunderstanding between the two sides, and that the matter was mishandled by the British staff. The documents on the "ordinance" went to the wrong FO department, and were discovered only in summer 1943 when the matter became acute. They did not include any mention of a need for details to be presented to the Soviets. See The National Archives (TNA), Kew, FO 371/36955, Warner's minute, 9 July 1943. At the same time Eden believed that an "Anglo-Soviet self-denying ordinance" was in fact in force. According to him, Maisky, in a talk they held on 14 July 1942, had referred to it as being in force. See TNA, FO 371/36955, C 4400/2462/G, Eden to Clark Kerr, 11 July 1943.

[39] On 23 January 1942, they also issued a more definitive document about their intention to form a confederation after the war, and confirmed this in another declaration on 10 June 1942.

[40] Ireneusz T. Kolendo, "Działalność mieszanego Komitetu Koordinacyjnego polsko-czechosłowackiego w Londynie (1941-1942) [Activities of the Mixed Polish-Czechoslovak Coordination Committee in London (1941-1942)]," *Dzieje Najnowsze*, No. 1-2 (1983), pp. 207-13. There was an explanation that the term "confederation" had different meanings in the Polish and Czech languages.

negative attitude toward the confederation project, which was expressed through Soviet diplomats, primarily the ambassador to the allied governments-in-exile, Alexandr Bogomolov and the ambassador to the United Kingdom Ivan Maisky.[41] At the same time Soviet representatives and statesmen refrained from issuing official statements against the project, hoping instead to remain vague about their real attitude toward the Western powers while privately trying to persuade the governments-in-exile to stop the project themselves. In keeping with this tactic, Maisky represented the Soviet view of the project in milder terms than Bogomolov did.[42] This approach was characteristic of the Kremlin's policy from early 1942 until mid-October 1943. As Leonid Gibiansky notes, it was among the first instances of the Soviet Union using such diplomatic tactics as it pursued its aims in eastern Europe.[43]

The USSR's policy toward the federalist solution was likely to be based on analyses supplied by Nikolay V. Novikov, head of the IVth European Division of the People's Commissariat for Foreign Affairs (NKID). In late January 1942, he stressed that such a solution was not in the Soviets' interests because it represented an Anglo-Polish and Czechoslovak attempt to create a buffer zone between the Soviet Union and "external Europe."[44] His remarks and other materials implied, however, that it was undesirable to articulate the Soviet objections unequivocally, even to the Czechoslovaks. The documents of the NKID analyzed by Valentina Mar'ina, Leonid Gibianski, and Vit Smetana do not confirm Thomas Lane's suggestion that Soviet consent to the confederation might have been secured had Sikorski been willing to recognize the USSR's definition of its border with Poland.[45] They make it clear that the Soviets considered all (con)federations in the region contrary to their interests, and that they distrusted not only the Poles, but also the Czechoslovaks, despite Beneš's efforts.[46] "Prevention of any regional combinations in eastern Europe capable of resisting Soviet wishes," Vojtech Mastny keenly notes, was one of the few definite minimum aims in the USSR's vague postwar designs.[47]

The Soviet approach achieved the desired effect with the Czechoslovaks. In his conversations with Beneš in London, Molotov expressed dismay about what

[41] Rzheshevski, *Stalin and Churchill*, p. 40.

[42] See, for example, differences between the Soviet attitude as expressed by Bogomolov to Beneš and as expressed by Maisky to Eden: TNA, FO 954/4a, Eden to Nichols, 29 January 1943. Of course, the governments-in-exile also sometimes approached Maisky and therefore received a slightly different version of the Soviet attitude, but Maisky was not their primary contact.

[43] L.Ya. Gibianski, "Problemy Vostochnoi Evropy i nachalo formirovania Sovetskogo bloka [Problems of Eastern Europe and the Start of the Soviet Bloc Formation]" in *Kholodnaya voina. 1945-1963. Istoricheskaya retrospektiva* [*Cold War. 1945-1963. Historical Retrospective*] (Moscow, 2003), p. 108.

[44] Mar'ina, *The USSR and the Czecho-Slovak Problem*, II, p. 108.

[45] Lane, "Integrating East Central Europe," p. 12. Though in his conclusion he himself expresses doubt.

[46] Mar'ina, *The USSR and the Czecho-Slovak Problem*, II, p. 108; Gibianski L.Ya. "Problems of Eastern Europe," pp. 108-10; Smetana, "Czechoslovak-Polish Confederation," pp. 125, 129-30.

[47] Vojtech Mastny, "Soviet Plans for Postwar Europe" in Antonio Varsori and Elena Calandri (eds.), *The Failure of Peace in Europe, 1943-48* (New York, 2002), p. 61.

he saw as a tendency to use the Polish-Czechoslovak confederation against the USSR. Bogomolov subsequently voiced intensified concerns about the protest of the "Soviet circles" when he nearly announced the Kremlin's attitude officially in mid-July.[48] For his part, Novikov held a discouraging conversation with Zdenek Fierlinger, the ambassador of the Czechoslovak government-in-exile to the Soviet Union.[49] Against this backdrop, the Czechoslovaks had to revise their postwar planning. Beneš was irritated that the Soviets did not announce their attitude publicly for him to present to the British. Obviously, he did not want to be held responsible for the project's failure.[50] Work by both governments-in-exile on the confederation project had been practically halted by late summer 1942, and in November the Czechoslovaks started to promote the Czechoslovak-Polish treaty of alliance instead. But this was also considered by the USSR as a possible first step toward a confederation. Not surprisingly, this development received British support and Soviet protest.

Despite the so-called Soviet veto and the end of Polish-Czechoslovak institutional cooperation on the confederation project, the Poles continued to pursue the idea of confederation. Up until autumn 1943, they declared on numerous occasions their desire to renew negotiations with the Czechoslovak government.[51] They also continued to develop the idea in their postwar planning.[52] Through this process, however, the Poles grew increasingly irritated by the attitude of Czechoslovak authorities, and especially of Beneš, toward the USSR. The Czechoslovak President's attitude toward the Soviet Union was difficult to pin down. On the one hand, Beneš realistically assessed the consequences of the growth of Soviet power for the region, while not expecting much from the Western powers. It was the Soviet factor that urged him to find ways of cooperating with the Polish government-in-exile. He considered the confederation project a failure and subsequently promoted the idea of an alliance treaty between Poland and Czechoslovakia. On the other hand, his next idea of making this alliance tripartite, Czechoslovak-Polish-Soviet, was far from realistic. Beneš somehow outdid himself in his sophisticated efforts to find a balance between the British, Soviets, and Poles (Americans could also be added to this list). As a result, he was not held in high regard by these powers or by Polish officials. As Vit Smetana has emphasized, his early concessions to the USSR did not bear sound results, but rather reduced the room for manoeuvre.[53] Thus the Czechoslovak attitude did

[48] Rzheshvski, *Stalin and Churchill*, pp. 323-25; Mar'ina, *The USSR and the Czecho-Slovak Problem*, II, p. 124.

[49] Mar'ina, *The USSR and the Czecho-Slovak Problem*, II, p. 126.

[50] Mar'ina, *The USSR and the Czecho-Slovak Problem*, II, pp. 123-24; Smetana, "Czechoslovak-Polish Confederation," p. 127.

[51] Wandycz, *Czechoslovak-Polish Confederation*, p. 96.

[52] AAN, Ambasada RP w Londynie, Sygnatura 1608, Documentation of Plans and Preparations for the Reorganization of Europe, March 1943.

[53] Smetana, "Czechoslovak-Polish Confederation," p. 129. One of the important motifs of Beneš's Soviet policy can be found in Beneš's advice to the Poles: it was better to offer a concession to the Soviet Union than wait for it to take action on its own (Lane, "Integrating East Central Europe," pp. 12-13). Still, it is difficult not to agree with Vit Smetana that concessions on issues that were not even tabled by the Soviets could not bring good results.

not open positive prospects for the confederation project, and the Poles — in their insistence on it — had to rely on British and also American policy.

The United States government repeatedly expressed its unwillingness to discuss territorial matters. At the same time, the State Department did explore the possibility of a federalist solution for the region in question.[54] In separate meetings with Beneš and Sikorski, Roosevelt managed to persuade them of his full support for their causes. However, in 1943 the focus shifted. The American authorities began to oppose any regionalism as detrimental to planning for a world organization; federalist ideas were rejected. Ironically, the British started to approach the Americans on this kind of a solution for Europe just at the time of the latter's abandoning any federalist concepts.[55]

In the course of 1943, the tide of war turned toward the Allies — in large part due to Soviet success in the Battle of Kursk — and the war's conclusion seemed closer, with the Soviet Union likely to be among the victorious powers. Not surprisingly, the British agencies under FO guidance realized that the time was ripe for approaching the question of "the probable long-term impact of Russian [post-war] policy on British strategic interests," although there was an absence "of any real evidence" as to what this policy would be.[56] This uncertainty about Soviet policy raised the most immediate concern about central Europe, which the Red Army was soon to enter. The USSR had unresolved matters of civil administration with all of these countries, and territorial disputes with some of them, with the Polish-Soviet border issue being the most pressing. In other words, among the most important questions for the Moscow conference that October were the Kremlin's intentions in central and south-eastern Europe and the proper response to a potential Soviet presence there. Under these circumstances, the FO had prepared a whole "package," including the federalist solution as an inherent part. It was both a variant of an advisable settlement in the region for Britain and a test of Soviet designs.[57] This is why the Polish-Czechoslovak confederation project was still considered relevant. In order for the FO programme, or its particular elements, to be implemented, Eden deemed it essential to set up machinery for the inter-allied trilateral political consultations.[58]

Meanwhile, Britain had become publicly more associated with support of a federalist organization, this time even encompassing the whole of Europe. In a BBC broadcast on 21 March 1943, for example, Churchill for the first time

[54] See Józef Laptos and Mariusz Misztal, *American Debates on Central European Union, 1942-1944: Documents of the American Department of State* (Brussels, 2002).

[55] Klaus Larres, *Churchill's Cold War: The Politics of Personal Diplomacy* (New Haven and London, 2002), pp. 82-85.

[56] This was the task of a new body: the Post-Hostilities Planning Sub-Committee. Julian Lewis, *Changing Direction: British Military Planning for Post-War Strategic Defence, 1942-1947*, 2nd ed. (London, 2003), p. 59.

[57] See, for example, TNA, FO 371/ 36992, N 6007/499/G38, Warner's minute, 24 September 1943.

[58] See, for example, TNA, FO 371/ 37028, N 5083/66/G, Eden to Clark Kerr, 2 September 1943.

publicly promoted his idea of regional Councils, including a Council of Europe.[59] Moreover, the following month Churchill expressed to Beneš his conviction that the USSR would emerge from the war in a strong position and therefore that "it would have been a mistake to have a number of low-power, unorganized states and statelets to the west of her."[60] However, Churchill's pronounced support of a federalist solution for Europe in 1943 did not do much to solidify its foundation in the British government's postwar planning or in inter-allied negotiations.[61]

In 1943 Churchill abandoned his earlier neglect of postwar planning, which, as Christopher Hill and Klaus Larres have pointed out, had hindered FO efforts to engage in it and caused delays in the development of a well-thought-out framework.[62] The Prime Minister now emphasized regionalism in planning for a world organization and the particular need for a "Council of Europe," which, incidentally, Washington opposed. At the same time he stressed Anglo-American "special relations." For its part, the FO, developed plans for a world organization as part of a "Four-Power Plan" that was more closely aligned with U.S. thinking. On the other hand, the FO viewed the question of the USSR's role in Europe as primarily a British-Soviet matter that could be addressed without waiting for the Americans.[63] Here, the FO thought, the possibility of confederations in the regions of central and south-eastern Europe might deserve further consideration. The Foreign Secretary and FO officials believed that Churchill had neglected the possibility of postwar Anglo-American-Soviet cooperation, the mechanism for which Eden wanted to create.[64] As FO diplomat Geoffrey Wilson wrote to the British ambassador to the USSR, Sir Archibald Clark Kerr, in early August 1943, Churchill "does not care two hoots about the Russians," and that this was likely "to land us in one hell of a mess."[65]

Whereas discussions in the FO in 1942 had focused primarily on designing a federalist solution for the region, by 1943 they mostly revolved around the question of how to deal with the Soviet Union's reserved attitude toward confederations and the prospect of an independent Soviet policy in the region. In

[59] Larres, *Churchill's Cold War*, pp. 81-82. Britain had previously expressed support for the Polish-Czechoslovak and Greek-Yugoslav confederations in 1940-42.

[60] Mar'ina, *The USSR and the Czecho-Slovak Problem*, II, pp. 134-35. Churchill's words are taken from Jan Němeček (ed.), *Československo-sovětské vztahy v diplomatických jednáních 1939-1945. Dokumenty* [*Czechoslovak-Soviet Relations in Diplomatic Negotiations 1939-1945. Documents*], part 1, (Prague, 1998), pp. 453-456, quoted in Mar'ina, *The USSR and the Czecho-Slovak Problem*, II, p. 135.

[61] For a detailed account of Churchill's federalist ideas during WWII see: Larres, *Churchill's Cold War*, pp. 54-99.

[62] Hill, *Cabinet Decisions on Foreign Policy*, p. 247; Larres, *Churchill's Cold War*, p. 60.

[63] For example, Robert H. Bruce Lockhart, the former British representative to the Czechoslovak provisional government, argued in August 1943 that "a settlement in Eastern Europe is essentially an Anglo-Russian problem, we should not necessarily wait on the Americans" while stressing that "time is assuredly not on our side." TNA, FO 371/36992, N 4531/499/G38, Lockhart to [Deputy Under Secretary of State Sir Orme] Sargent, "Russia and the Allied Governments," 9 August 1943.

[64] Larres, *Churchill's Cold War*, p. 84.

[65] Graham Ross (ed.), *Foreign Office and the Kremlin: British Documents on Anglo-Soviet Relations, 1941-1945* (Cambridge, 1984), p. 134. Geoffrey Wilson worked in the FO Northern Department and took part in the Moscow conference in October 1943.

early February 1943, an FRPS paper titled "Confederations in Eastern Europe" offered one possible answer through a reply to an FO enquiry concerning these matters.[66] The experts argued that the Soviet Union might consider the possibility of Anglo-Saxon domination in the region as a more immediate threat than that of Germany — a correct assessment. Their suggestion was to address Soviet fears in two ways. First, they recommended that Poland be removed from the proposed "Central Confederation" and that planning begin for two confederations instead. This measure, they thought, would offer better prospects for the USSR's influence in the region. Second, and more importantly, to lessen Soviet suspicions of the Western powers, they recommended that the Anglo-Saxon powers make a firm demonstration that they did not intend to subvert the Soviet regime. This second measure was considered vital to preventing the USSR from pursuing an independent policy in central and south-eastern Europe through the creation of satellite states. At the same time the viability of such a policy was seen as improbable.[67] The report concluded that although a federalist solution was clearly in the Soviets' best interests, it would be difficult, but not impossible, to persuade them of this fact.

This assessment was generally in line with FO thinking, albeit with some objections over details (for example, the FO's protest over the exclusion of Poland), and the sense among FO officials that the chances of the USSR pursuing an independent policy were not so slim. Voices of dissent came from the diplomats who worked directly with the Czechoslovak and Polish governments-in-exile — in particular from Robert H. Bruce Lockhart, the former British representative to the Czechoslovak provisional government, and Owen O'Malley, the British ambassador to the Polish government. Bruce Lockhart called the FRPS paper unscientific and politically biased.[68] In late April, O'Malley produced a long paper that was intended to "throw some doubt on hopes of fruitful cooperation with Russia after the war." He questioned the ability of confederations to serve as a counterweight to Germany, noting that the countries in the region would prefer friendship with a defeated Germany to "subordination to Russia." Confederations, according to him, were "illusory schemes," that would be possible only if the states forming them were in one way or another affiliated with the Soviet Union. With this in mind, he stressed that it was in Britain's best interests to have independent states in the region.[69]

[66] TNA, FO 371/35261, U 559/58/72, Confederations in Eastern Europe, 2 February 1943. The inquiry was on possible interests of the USSR in the region, how they can be affected by confederations and how to meet the Soviet interests. Published, without the research question and minutes, in Andras D. Ban, *Pax Britannica: Wartime Foreign Office Documents Regarding Plans for a Postbellum East Central Europe* (New York, 1997), pp. 209-19.

[67] According to the paper, this improbability was due to the USSR's temporary material weakness, its need for internal reconstruction, its preoccupation with eastern borders, the "temper of its own people," objections from the peoples of the region, and the possible involvement of Germany.

[68] TNA, FO 371/35261, U 2079/58/72, Lockhart to Law, 1 April 1943. Frank Roberts, acting head of the Central Department, gave a sarcastic reply, noting that FRPS made it possible "not to look at Central European affairs purely through the eyes of our present Allies in London." TNA, FO 371/35261, U 2079/58/72, Roberts's minute, 1 May 1943.

[69] TNA, FO 371/35261, U 2011/58/72, O'Malley to Eden, 30 April 1943. An abridged version is published in Ross (ed.), *Foreign Office and the Kremlin*, pp. 127-30.

O'Malley's paper provoked divergent opinions on future Soviet policy in the region. While there was no prevailing view, the common assumption was, in Christopher Warner's words: "the chances that the Russians will not want to absorb the states of Eastern Europe are quite good, always provided that we and the Americans handle the Russians right, as I believe we are doing."[70] In short, the majority of the Foreign Office staff considered a federalist solution for the region both potentially effective and feasible. A paper drafted by the Northern Department, which documented "the main references by Soviet officials to federations in Eastern Europe" as of August 1943, settled on the well-known formula that left the door for federations open: "The Soviet Government has never committed itself to opposing federations or confederations *in principle*. The furthest it has gone to say [is] that it objects to any combination which is, or may be, directed against itself."[71] Eden's attempt to clarify the USSR's position that year had not been successful.[72] Thus, the Soviet tactics were effective, but the FO's wishful thinking, which allowed it to continue entertaining the possibility of a federalist solution, added much to their success. It appeared that the British would accept only an official "no" from the Soviet government as a negative reply and did not seriously consider the possibility that a "no" from the "Soviet circles," conveyed by Bogomolov to the governments-in-exile (of which the FO was well informed), would actually mean it.

At the same time the Soviet policy of creating "committees" — reflected also in the Polish example of the formation of the Union of Polish Patriots in Moscow in spring 1943 and then the Kosciuszko Infantry Division — received further study. While many argued that an independent Soviet policy in central and south-eastern Europe might well lead to opposition from the countries of the region and competition even from a weakened Germany, some felt that Soviet influence in the region might result not only from its military power, but also from "the left-wing and progressive elements in Central and Eastern Europe, [who], whether Communist or not, in looking round for a powerful protector will hit on the Soviet Union."[73] Bruce Lockhart, then head of the Political Warfare Executive, in a paper prepared at the request of Deputy Under-Secretary of State Sir Orme Sargent, argued that creating these national forces in Moscow (the Union of Polish Patriots, the Free Germany Committee) was likely to be "the pin-prick ... to stir us to action." Moreover, in the absence of British action, those forces could "easily be turned into permanent assets." He therefore thought it necessary to negotiate a settlement with the USSR as soon as possible, despite American hesitation, with all "unpleasant problems" on the agenda.

[70] TNA, FO 371/35261, U 2011/58/72, Warner's minute. 24 May 1943. Warner was head of the FO's Northern Department.

[71] TNA, FO 371/36992, N 4906/499/G55, Soviet attitude to federations in Eastern Europe, 10 August 1943. Emphasis in the original.

[72] Ross, (ed.), *Foreign Office and the Kremlin*, pp. 122-23, 125.

[73] TNA, FO 371/35261, U 559/58/72, Wilson's minute, 7 February 1943. He added that this situation might be similar to that of Great Britain in the nineteenth century, "when we gained a lot of influence by being nice to the progressive elements in Europe." He had primarily in mind Czechoslovakia and the Balkan Slavs.

Otherwise the Soviets might revert to "the free hand."[74] Eden's assessment of the situation was likely to be in line with Bruce Lockhart's.[75] The puzzling summer recall to Moscow of the experienced Soviet ambassadors to Great Britain and the United States, Ivan Maisky and Maksim Litvinov, and their replacement by secondary diplomats, was also considered as a possible sign that the Soviets were considering an independent policy.[76]

Another worrying development, which deprived the Polish-Czechoslovak confederation project of any prospects, was the pursuit of the Czechoslovak-Soviet negotiations about a treaty of alliance and postwar cooperation. Initially the Czechoslovak idea implied a tripartite treaty, open also to Poland, an idea welcomed by the British as an exception to the "self-denying ordinance." The Soviet government expressed its doubts about such a possibility, which was predictable, particularly after the breakup of Soviet-Polish relations over the Katyn massacre. In summer 1943 there was even a question of Beneš perhaps signing a bilateral treaty in July during his visit to Moscow.[77] When the British received this information, their main concern was that the Soviets were unwilling to implement the "self-denying ordinance" of 1942. Czechoslovak-Soviet treaty negotiations revealed that the Soviets had developed a different interpretation of the Anglo-Soviet talks in 1942 and did not consider the "ordinance" to be valid — something Beneš made public when faced with British opposition to the treaty.[78] Eden decided to rescue the "ordinance," an important element of the FO's Soviet policy, by raising it formally in Moscow.

The Foreign Secretary, facing a harsh Soviet stance on the London Poles, was determined to pursue a federalist solution for the region under a new guise: a Danubian federation based in Austria, an idea that Churchill cherished. Though there had been different schemes for a Danubian confederation discussed in the FO, Eden's conception of it was based, as Rolf Steininger has pointed out, on Geoffrey W. Harrison's memorandum "The Future of Austria" of 4 April 1943. Harrison favoured the inclusion of Austria in a central or southeastern European confederation, though he warned against elevated expectations. Austria's participation in a confederation, he argued, was possible only after the recreation of a stable Austrian state and the consent of potential partners in the region. Both conditions were difficult, but not impossible, to fulfill. Harrison talked in particular about Poland, Czechoslovakia, and Hungary as Austria's eventual partners in the confederation, noting that while it might have contradicted Polish plans, it was welcomed by the Czechoslovaks. The Hungarian reaction was for obvious reasons unknown. Harrison also stressed a potentially decisive factor: Austrian public opinion seemed "aimless" and thus might well

[74] TNA, FO 371/36992, N 4531/499/G38, Lockhart to Sargent, "Russia and the Allied Governments," 9 August 1943.

[75] TNA, FO 371/36992, N 5060/499/G38, copy of memorandum handed to Mr. Hull by the Secretary of State at Quebec.

[76] Ross, (ed.), *Foreign Office and the Kremlin*, pp. 130-33.

[77] Elisabeth Barker, *Churchill and Eden at War* (New York, 1978), p. 265.

[78] Ibid, p. 266.

be receptive to "reassurance regarding the aims of the Allies for the future of the country." Such reassurance, moreover, might have the added benefit of embarrassing Germany by provoking "resistance and sabotage" among the Austrians opposed to Nazi rule. Eden found this "a very good paper." It was then discussed by the War Cabinet and partly adopted as British policy.[79] On the eve of the Moscow conference, the War Cabinet called for the "restoration of a free and independent Austria, possibly connected with some central European confederation."[80] This matter was presented in the inter-allied exchanges before and during the foreign ministers' conference as germane to the German question (as it had been in War Cabinet discussions) and distinct from the issue of confederations in central and south-eastern Europe. Still, it is clear that the possibility of a confederation remained part of the overall "package" for the region.

The British programme, or the "package for Eastern Europe,"[81] was presented at the American, British, and Soviet foreign ministers' conference held in Moscow on 17-30 October 1943. It was animated by the FO's desire to reach a settlement with the USSR over central and south-eastern Europe as soon as possible, even if this meant that Soviet assent to the British programme for the region would depend upon timely — if unofficial — British (and probably U.S.) acceptance of the USSR's main territorial claims.[82] The package set forth the following principles: a) joint responsibility for Europe as against separate areas of responsibility; b) refusal to conclude agreements on a postwar settlement with minor allies in the course of the war; c) confederations in central and south-eastern Europe to withstand Germany; and d) the adoption of a common policy of the major allies toward the liberated allied territories.[83]

It was a rather contradictory mix, and it is difficult not to agree with Warren Kimball that the "ordinance" implying joint responsibility did not pair well with the clause on the British-sponsored confederations.[84] Yet in the FO's view, such a solution would provide the conditions for stable development of the region after the war, on new principles that rejected spheres of influence. The British stressed that their plan was not anti-Soviet, and that it was in fact a part of their planning for a world organization — something that the Americans

[79] Rolf Steininger, *Austria, Germany and the Cold War: From the Anschluss to the State Treaty 1938-1955* (New York, 2008), pp. 26-36.

[80] TNA, PREM 3/172/2, W.H. (43) 135th Conclusions, Minute 3, Confidential Annex, 5 October 1943.

[81] Sainsbury, *Churchill and Roosevelt at War*, p. 96.

[82] TNA, FO 371/36992, N 5060/499/G38, N 6004/499/G38.

[83] See, in the British final draft of the agenda, respectively, Nos. 3, 5, 12, 14 (added later); in the conference agenda of seventeen questions, see Nos. 17, 8, 12, 14. In the USSR's conference materials, see *Sovetskii Soyiz na mezhdunarodnykh konferentsiyakh perioda Velikoi Otechestvennoi voiny 1941-1945* [*The Soviet Union in International Conferences of the Great Patriotic War Period 1941-1945*], tom I: *Moskovskaya konferentsiya ministrov inostrannykh del SSSR, SSHA i Velikobritanii* [*Moscow Conference of the Ministers of International Affairs of the USSR, the USA and Great Britain*], 19-30 October 1943 (Moscow, 1984), pp. 43-44, 58.

[84] Warren F. Kimball, *The Juggler: Franklin Roosevelt as Wartime Statesman* (Princeton, 1991), p. 94.

had also advocated and placed at the top of their agenda. FO officials were also very anxious not to mention that the confederations in the region could be directed against the USSR, even warning about American schemes in this regard.[85] Still, the essence of their discussions at times clearly revealed that such schemes could not but have this dimension. In the end, the British failed to persuade the Soviets. The Kremlin persisted in interpreting confederations as anti-Soviet, seeing them as an attempt to counter Soviet influence in the rest of Europe and part of an effort to prevent Soviet expansion westward in the event of Germany's defeat.[86]

As it was evident that Britain's programme indirectly limited the USSR's influence in the region, the British expected Soviet opposition to it, but hoped to have some American support. The U.S. Secretary of State Cordell Hull, who was simultaneously pursuing his "one world" approach, found the "package" unworkable and reminiscent of the "spheres of influence." He stated bluntly, "I don't want to deal with these piddling little things."[87] In one meeting, he even confessed that he had not taken the trouble to familiarize himself with the substance of one of the British proposals, clearly highlighting U.S. indifference. Only the British minutes recorded Eden's sarcastic remark on it.[88] Overall, American participation did not help, but rather worsened the situation. The Soviet side varied in its response to the specific particular points in the programme; although it opposed confederations, it agreed to discuss common policy toward the liberated territories within the context of a European Advisory Commission (EAC). On the whole, though, the British programme failed. In Moscow, the Kremlin found the time appropriate to make an official statement against confederations along already well-known lines. This was the final Soviet "no."

For Eden, the significance of the confederation clause was indicated in one of his early drafts of the British agenda where it figured among the "less urgent matters" which "require consideration."[89] The priority he assigned to it made sense, as the confederation question was one of many issues in the FO vision of postwar settlement and a matter of long-term planning that could be raised later, in contrast to military matters and especially "political issues which may arise as the war progresses."[90]

Thus, during the conference, Eden was willing to sacrifice the confederation clause and the "self-denying ordinance" in favour of creating a three-power consultations mechanism. As had been agreed, the EAC was to be established

[85] Ross, (ed.), *The Foreign Office and the Kremlin*, p. 114.

[86] Gibiansky, "Problems of Eastern Europe," p. 109.

[87] William Averell Harriman and Elie Abel, *Special Envoy to Churchill and Stalin, 1941-1946* (New York, 1975), p. 236.

[88] TNA, FO 371/37031, N 6921/3666/G38, p. 43 of the conference proceedings. Keith Sainsbury, *The Turning Point. Roosevelt, Stalin, Churchill, and Chiang-Kai-Shek, 1943: The Moscow, Cairo, and Teheran Conferences* (Oxford, 1985), p. 84.

[89] TNA, PREM 3/172/1, Eden to Churchill, Concrete No. 887, September 1943. The specific date is not given, but the arrangement of the documents in the folder suggests the likelihood of 1 September.

[90] TNA, PREM 3/172/1, Eden to Churchill, Concrete No. 725, 3 September 1943.

in London. It initially appeared to be a real achievement for the British foreign secretary, a long-desired instrument for tripartite consultations in which Great Britain would have a say, though its real mandate and significance ultimately differed from what Eden anticipated. Yet, one can say that a small part of the FO federalist visions survived discussions with the Allies. In fact, the Moscow Declaration on Austria vaguely implied the possibility of a post-war association in the region.[91] Though soon, given the military developments and the dynamics of inter-allied interaction, this particular provision was hardly of any use.

To conclude, it would be an exaggeration to attribute a vigorously pro-federalist attitude to Great Britain, even though it is clear that British officials shared the view that a federalist solution for central and south-eastern Europe might present a workable settlement. Because of the specific war conditions, with numerous governments-in-exile on British soil, it is likely that Eden and Churchill developed, in Victor Rothwell's words, "an exaggerated idea of the British influence in east and central Europe." The Polish-Czechoslovak confederation project, together with its Greek-Yugoslav counterpart, was one of those "nuclei" to be fostered as a sign of these nations' true commitment to developing their relations on a new basis. The Foreign Office came closest to making the Polish-Czechoslovak confederation a basis for the postwar inter-allied planning for east central Europe in May 1942. However, even if the Anglo-Soviet treaty had included the revised federation clause, the Soviets would have had so many reservations about it that they would have easily made its realization impossible.

Throughout this history, the British widely assumed that the project would not survive without Britain's support, a pivotal view that downgraded the real record of Polish-Czechoslovak cooperation and limited the FO's thinking when in 1943 it began to consider the federalist solution as one of the elements of the British programme aimed at preventing the USSR from unilateral action in the region. At the same time this assumption extended the life of the Polish-Czechoslovak confederation project as a British-sponsored variant of the post-war settlement in east central Europe, a vision that finally disappeared when a Czechoslovak-Soviet treaty was signed in December 1943.

British thinking was to a considerable degree determined by a misinterpretation of Soviet policy. British officials and policymakers wanted definitive answers that the Kremlin would not or could not provide, whether because of tactical considerations, or because its mostly reactive policy shifted as circumstances changed, or because that policy was simply inconsistent, with Stalin even toying for some time with the idea of a Communist-led confederation of the Balkan states. Still, in a broad sense the Soviets clearly aimed to control east central Europe and especially Poland and the British failed to discern the

[91] It maintained *inter alia* that the Allies "wish to see re-established a free and independent Austria, and thereby to open the way for the Austrian people themselves, as well as those neighbouring states which will be faced with similar problems, to find that political and economic security which is the only basis for lasting peace." See, for example, TNA, FO 371/37031, N 6921/3666/G38.

level of the Soviet Union's commitment to this goal. The Soviet tactic of avoiding public statements about the Polish-Czechoslovak confederation project contributed something to British misinterpretations, as did — at times — wishful thinking on the part of the FO. The FO also overestimated the novelty of its "package," and the extent to which some elements would appeal to the Americans. As a result, after the Moscow conference, Britain would have to formulate another approach to the new role of the USSR in Europe.

It is worth noting that an important element of the FO approach in Moscow was its insistence on the creation of an inter-allied consultation mechanism. This not only laid the basis for the EAC but also animated British proposals the next year to set up the European Economic Committee and the related European Coal Organization as part of the process of postwar reconstruction. For these, the United Kingdom managed to mobilize American support and some Soviet interest. After the war Poland and, to a lesser degree, Czechoslovakia, took part in the second organization's activities, despite the objections of the Soviet Union.[92] Thus, British endeavours to foster "proto-integration inter-state structures"[93] did bring some projects to fruition and definitely require further attention.

[92] See details on Anglo-American-Soviet negotiations regarding the establishment of EEC and ECO in *Foreign Relations of the United States. Diplomatic Papers*, 1944, vol. 2 (Washington, 1967), pp. 614-38; Nathaniel Samuels, "The European Coal Organization," *Foreign Affairs*, 26 (July 1948), p. 731.

[93] M.A. Lipkin, "SSSR i pervye obshcheevropeiskie organizatsii: byl li shans u edinoi Evropy? (1945-1947 gg.)," [The USSR and the First European Organizations: Did United Europe Have a Chance? (1945-1947)] *Novyi istoricheskii vestnik/The New Historical Bulletin*, no. 2 (2011), available at: http://www.nivestnik.ru/2011_2/index.shtml (accessed 9 July 2014).

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Henri Matisse, "Notes of a Painter" (1908)

A painter who addresses the public not just in order to present his works, but to reveal some of his ideas on the art of painting, exposes himself to several dangers.

In the first place, knowing that many people like to think of painting as an appendage of literature and therefore want it to express not general ideas suited to pictorial means, but specifically literary ideas, I fear that one will look with astonishment upon the painter who ventures to invade the domain of the literary man. As a matter of fact, I am fully aware that a painter"s best spokesman is his work.

However, such painters as Signac, Desvallieres, Denis, Blanche, Guerin and Bernard have written on such matters and been well received by various periodicals. Personally, I shall simply try to state my feelings and aspirations as a painter without worrying about the writing.

But now I foresee the danger of appearing to contradict myself. I feel very strongly the tie between my earlier and my recent works, but I do not think exactly the way I thought yesterday. Or rather, my basic idea has not changed, but my thought has evolved, and my modes of expression have followed my thoughts. I do not repudiate any of my paintings but there is not one of them that I would not redo differently, if I had it to redo. My destination is always the same but I work out a different route to get there.

Finally, if I mention the name of this or that artist it will be to point out how our manners differ, and it may seem that I am belittling his work. Thus I risk being accused of injustice towards painters whose aims and results I best understand, or whose accomplishments I most appreciate, whereas I will have used them as examples, not to establish my superiority over them, but to show more clearly, through what they have done, what I am attempting to do. What I am after, above all, is expression. Sometimes it has been conceded that I have a certain technical ability but that all the same my ambition is limited, and does not go beyond the purely visual satisfaction such as can be obtained from looking at a picture. But the thought of a painter must not be considered as separate from his pictorial means, for the thought is worth no more than its expression by the means, which must be more complete (and by complete I do not mean complicated) the deeper is his thought. I am unable to distinguish between the feeling I have about life and my way of translating it.

Expression, for me, does not reside in passions glowing in a human face or manifested by violent movement. The entire arrangement of my picture is expressive: the place occupied by the figures, the empty spaces around them, the proportions, everything has its share. Composition is the art of arranging in a decorative manner the diverse elements at the painter's command to express his feelings. In a picture every part will be visible and will play its appointed role, whether it be principal or secondary. Everything that is not useful in the picture is, it follows, harmful. A work of art must be harmonious in its entirety: any superfluous detail would replace some other essential detail in the mind of the spectator.

Composition, the aim of which should be expression, is modified according to the surface to be covered. If I take a sheet of paper of a given size, my drawing will have a necessary relationship to its format. I would not repeat this drawing on another sheet of different proportions, for example, rectangular instead of square. Nor should I be satisfied with a mere enlargement, had I to transfer the drawing to a sheet the same shape, but ten times larger. A drawing must have an expansive force which gives life to the things around it. An artist who wants to transpose a composition from one canvas to another larger one must conceive it anew in

order to preserve its expression; he must alter its character and not just square it up onto the larger canvas.

Both harmonies and dissonances of color can produce agreeable effects. Often when I start to work I record fresh and superficial sensations during the first session. A few nears ago I was sometimes satisfied with the result. But today if I were satisfied with this, now that I think I can see further, my picture would have a vagueness in it: I should have recorded the fugitive sensations of a moment which could not completely define my feelings and which I should barely recognize the next day.

I want to reach that state of condensation of sensations which makes a painting. I might be satisfied with a work done at one sitting, but I would soon tire of it, therefore, I prefer to rework it so that later I may recognize it as representative of my state of mind. There was a time when I never left my paintings hanging on the wall because they reminded me of moments of over-excitement and I did not like to see them again when I was calm. Nowadays I try to put serenity into my pictures and rework them as long as I have not succeeded.

Suppose I want to paint a woman's body: first of all I imbue it with grace and charm, but I know that I must give something more. I will condense the meaning of this body by seeking its essential lines. The charm will be less apparent at first glance, but it must eventually emerge from the new image which will have a broader meaning, one more fully human. The charm will be less striking since it will not be the sole quality of the painting, but it will not exist less for its being contained within the general conception of the figure.

Charm, lightness, freshness—such fleeting sensations. I have a canvas on which the colors are still fresh and I begin to work on it again. The tone will no doubt become duller. I will replace my original tone with one of greater density, an improvement, but less seductive to the eve.

The Impressionist painters, especially Monet and Sisley, had delicate sensations, quite close to each other: as a result their canvases all look alike. The word "impressionism" perfectly characterizes their style, for they register fleeting impressions. It is not an appropriate designation for certain more recent painters who avoid the first impression, and consider it almost dishonest. A rapid rendering of a landscape represents only one moment of its existence *[durée]*. I prefer, by insisting upon its essential character, to risk losing charm in order to obtain greater stability.

Underlying this succession of moments which constitutes the superficial existence of beings and things, and which is continually modifying and transforming them, one can search for a truer, more essential character, which the artist will seize so that he may give to reality a more lasting interpretation. When we go into the seventeenth- and eighteenth-century sculpture rooms in the Louvre and look, for example, at a Puget, we can see that the expression is forced and exaggerated to the point of being disquieting. It is quite a different matter if we go to the Luxembourg; the attitude in which the sculptors catch their models is always the one in which the development of the members and tensions of the muscles will be shown to greatest advantage. And yet movement thus understood corresponds to nothing in nature: when we capture it by surprise in a snapshot, the resulting image reminds us of nothing that we have seen. Movement seized while it is going on is meaningful to us only if we do not isolate the present sensation either from that which precedes it or that which follows it.

There are two ways of expressing things; one is to show them crudely, the other is to evoke them through art. By removing oneself from the literal representation of movement one

attains greater beauty and grandeur. Look at an Egyptian statue: it looks rigid to us, yet we sense in it the image of a body capable of movement and which, despite its rigidity, is animated. The Greeks too are calm: a man hurling a discus will be caught at the moment in which he gathers his strength, or at least, if he is shown in the most strained and precarious position implied by his action, the sculptor will have epitomized and condensed it so that equilibrium is re-established, thereby suggesting the idea of duration. Movement is in itself unstable and is not suited to something durable like a statue, unless the artist is aware of the entire action of which he represents only a moment.

I must precisely define the character of the object or of the body that I wish to paint. To do so, I study my method very closely: If I put a black dot on a sheet of white paper, the dot will be visible no matter how far away I hold it: it is a clear notation. But beside this dot I place another one, and then a third, and already there is confusion. In order for the first dot to maintain its value I must enlarge it as I put other marks on the paper.

If upon a white canvas I set down some sensations of blue, of green, of red, each new stroke diminishes the importance of the preceding ones. Suppose I have to paint an interior: I have before me a cupboard; it gives me a sensation of vivid red, and I put down a red which satisfies me. A relation is established between this red and the white of the canvas. Let me put a green near the red, and make the floor yellow; and again there will be relationships between the green or yellow and the white of the canvas which will satisfy me. But these different tones mutually weaken one another. It is necessary that the various marks I use be balanced so that they do not destroy each other. To do this I must organize my ideas; the relationships between the tones must be such that it will sustain and not destroy them. A new combination of colors will succeed the first and render the totality of my representation. I am forced to transpose until finally my picture may seem completely changed when, after successive modifications, the red has succeeded the green as the dominant color. I cannot copy nature in a servile way; I am forced to interpret nature and submit it to the spirit of the picture. From the relationship I have found in all the tones there must result a living harmony of colors, a harmony analogous to that of a musical composition.

For me all is in the conception. I must therefore have a clear vision of the whole from the beginning. I could mention a great sculptor who gives us some admirable pieces: but for him a composition is merely a grouping of fragments, which results in a confusion of expression. Look instead at one of Cézanne's pictures: all is so well arranged that no matter at what distance you stand or how many figures are represented you will always be able to distinguish each figure clearly and to know which limb belongs to which body. If there is order and clarity in the picture, it means that from the outset this same order and clarity existed in the mind of the painter, or that the painter was conscious of their necessity. Limbs may cross and intertwine, but in the eyes of the spectator they will nevertheless remain attached to and help to articulate the right body: all confusion has disappeared. The chief function of color should be to serve expression as well as possible. I put down my tones without a preconceived plan. If at first, and perhaps without my having been conscious of it, one tone has particularly seduced or caught me, more often than not once the picture is finished I will notice that I have respected this tone while I progressively altered and transformed all the others. The expressive aspect of colors imposes itself on me in a purely instinctive way. To paint an autumn landscape I will not try to remember what colors suit this season, I will be inspired only by the sensation that the season arouses in me: the icy purity of the sour blue sky will express the season just as well as the nuances of foliage. My sensation itself may vary, the autumn may be soft and warm like a continuation of summer, or quite cool

with a cold sky and lemon-yellow trees that give a chilly impression and already announce winter.

My choice of colors does not rest on any scientific theory; it is based on observation, on sensitivity, on felt experiences. Inspired by certain pages of Delacroix, an artist like Signac is preoccupied with complementary colors, and the theoretical knowledge of them will lead him to use a certain tone in a certain place. But I simply try to put down colors which render my sensation. There is an impelling proportion of tones that may lead me to change the shape of a figure or to transform my composition. Until I have achieved this proportion in all the parts of the composition I strive towards it and keep on working. Then a moment comes when all the parts have found their definite relationships, and from then on it would be impossible for me to add a stroke to my picture without having to repaint it entirely.

In reality, I think that the very theory of complementary colors is not absolute. In studying the paintings of artists whose knowledge of colors depends upon instinct and feeling, and on a constant analogy with their sensations, one could define certain laws of color and so broaden the limits of color theory as it is now defined.

What interests me most is neither still life nor landscape, but the human figure. It is that which best permits me to express my almost religious awe towards life. I do not insist upon all the details of the face, on setting them down one-by-one with anatomical exactitude. If I have an Italian model who at first appearance suggests nothing but a purely animal existence, I nevertheless discover his essential qualities, I penetrate amid the lines of the face those which suggest the deep gravity which persists in every human being. A work of art must carry within itself its complete significance and impose that upon the beholder even before he recognizes the subject matter. When I see the Giotto frescoes at Padua I do not trouble myself to recognize which scene of the life of Christ I have before me, but I immediately understand the sentiment which emerges from it, for it is in the lines, the composition, the color. The title will only serve to confirm my impression.

What I dream of is an art of balance, of purity- and serenity, devoid of troubling or depressing subject-matter, an art which could be for every mental worker, for the businessman as well as the man of letters, for example, a soothing, calming influence on the mind, something like a good armchair which provides relaxation from physical fatigue.

Often a discussion arises as to the value of different processes, and their relationship to different temperaments. A distinction is made between painters who work directly from nature and those who work purely from imagination. Personally, I think neither of these methods must be preferred to the exclusion of the other. Both may be used in turn by the same individual, either because he needs contact with objects in order to receive sensations that will excite his creative faculty, or his sensations are already organized. In either case he will be able to arrive at that totality which constitutes a picture. In any event I think that one can judge the vitality and power of an artist who, after having received impressions directly from the spectacle of nature, is able to organize his sensations to continue his work in the same frame of mind on different days, and to develop these sensations; this power proves he is sufficiently master of himself to subject himself to discipline.

The simplest means are those which best enable an artist to express himself. If he fears the banal he cannot avoid it by appearing strange, or going in for bizarre drawing and eccentric color. His means of expression must derive almost of necessity from his temperament. He must have the humility of mind to believe that he has painted only what he has seen. I like Chardin's

way of expressing it: "I apply color until there is a resemblance." Or Cézanne's: "I want to secure a likeness," or Rodin's: "Copy nature!" Leonardo said: "He who can copy can create." Those who work in a preconceived style, deliberately turning their backs on nature, miss the truth. An artist must recognize, when he is reasoning, that his picture is an artifice; but when he is painting, he should feel that he has copied nature. And even when he departs from nature, he must do it with the conviction that it is only to interpret her more fully.

Some may say that other views on painting were expected from a painter, and that I have only come out with platitudes. To this I shall reply that there are no new truths. The role of the artist, like that of the scholar, consists of seizing current truths often repeated to him, but which will take on new meaning for him and which he will make his own when he has grasped their deepest significance. If aviators had to explain to us the research which led to their leaving earth and rising in the air, they would merely confirm very elementary principles of physics neglected by less successful inventors.

An artist always profits from information about himself, and I am glad to have learned what is my weak point. M. Péladan in the *Revue Hébdomadaire* reproaches a certain number of painters, amongst whom I think I should place myself, for calling themselves "Fauves," and yet dressing like everyone else, so that they are no more noticeable than the floor-walkers in a department store. Does genius count for so little? If it were only a question of myself that would set M. Péladan's mind at ease, tomorrow I would call myself Sar and dress like a necromancer.

In the same article this excellent writer claims that I do not paint honestly, and I would be justifiably angry if he had not qualified his statement by saying, "I mean honestly with respect to the ideal and the rules." The trouble is that he does not mention where these rules are. I am willing to have them exist, but were it possible to learn them what sublime artists we would have!

Rules have no existence outside of individuals: otherwise a good professor would be as great a genius as Racine. Any one of us is capable of repeating fine maxims, but few can also penetrate their meaning. I am ready to admit that from a study of the works of Raphael or Titian a more complete set of rules can be drawn than from the works of Manet or Renoir, but the rules followed by Manet and Renoir were those which suited their temperaments and I prefer the most minor of their paintings to all the work of those who are content to imitate the *Venus of Urbino* or the *Madonna of the Goldfinch.* These latter are of no value to anyone, for whether we want to or not, we belong to our time and we share in its opinions, its feelings, even its delusions. All artists bear the imprint of their time, but the great artists are those in whom this is most profoundly marked. Our epoch for instance is better represented by Courbet than by Flandrin, by Rodin better than by Frémiet. Whether we like it or not, however insistently we call ourselves exiles, between our period and ourselves an indissoluble bond is established, and M. Péladan himself cannot escape it. The aestheticians of the future may perhaps use his books as evidence if they get it in their heads to prove that no one of our time understood anything about the art of Leonardo da Vinci.

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Research Article

Zalman Balanov and Yakov Krasnov

Complex structures in algebra, topology and differential equations

Abstract: In this paper, we present our recent results on the so-called complex structures in algebras in the context relevant to the following four problems which, at first glance, have nothing in common: (i) solubility of polynomial equations in non-associative algebras, (ii) topological/geometric properties of quadratic maps, (iii) existence of bounded solutions to quadratic differential systems, and (iv) ellipticity of the Dirac equation. The unsolved problems related to (i)–(iv) are formulated as well.

Keywords: Real quadratic polynomial map, non-associative algebras, isotopy, complex structures

MSC 2010: Primary 46J10, 47H60, 13P25; secondary 57R25, 58C05

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Dedicated to Samuel L. Krushkal on the occasion of his 75th birthday

1 Introduction

By a real n-dimensional (in general, non-associative) algebra $\boldsymbol{A}$ we mean a pair $\boldsymbol{A} = (\mathbb{R}^n, *)$, where the map $* : \mathbb{R}^n \times \mathbb{R}^n \to \mathbb{R}^n$ is a multiplication. Clearly, given the algebra $\boldsymbol{A}$, one can canonically define a quadratic homogeneous map $Q : \mathbb{R}^n \to \mathbb{R}^n$ (i.e. the components of Q are (real) quadratic forms) via $Q(x) := *(x, x)$ (or using more conventional notations, $Q(x) = x * x = x^2$). Conversely, any quadratic homogeneous map $Q : \mathbb{R}^n \to \mathbb{R}^n$ gives rise to a bilinear commutative multiplication $\boldsymbol{A} = (\mathbb{R}^n, \circ)$ via

$$x \circ y := \frac{1}{2}[Q(x + y) - Q(x) - Q(y)]. \tag{1.1}$$

Definition 1.1. We say that a commutative algebra $\boldsymbol{A}$ contains a *complex structure* if there exist $x, v \in \boldsymbol{A}$, $v \neq 0$, such that $x^2 \circ v = -v$.

Clearly, complex structures generalize complex numbers. The *goal* of this paper is two-fold:

(a) to present our recent results obtained by the authors and their collaborators; clarifying the role of complex structures in studying:
   (i) solubility of polynomial equations in non-associative algebras,
   (ii) topological/geometric properties of quadratic maps,
   (iii) existence of bounded solutions to quadratic differential systems,
   (iv) ellipticity of the Dirac operator;

(b) to formulate several unsolved problems related to (i)–(iv).

2 Complex structures, isotopies and solubility of polynomial equations

2.1 Algebras and isotopies

All algebras considered below are supposed to be real finite-dimensional and commutative if otherwise is not stated explicitly. We start with the following standard definition.

Definition 2.1. Let $\boldsymbol{A} = (\mathbb{R}^n, \circ)$ be an algebra.

(i) $\boldsymbol{A}$ is called *regular* if there exists an element $v \in \boldsymbol{A}$ such that the linear operator defined by $x \to v \circ x$ is invertible. Otherwise, $\boldsymbol{A}$ is called *singular*.

(ii) An element $a \in \boldsymbol{A}$ is called an *annihilator* in $\boldsymbol{A}$ if $a \circ x = 0$ for all $x \in \boldsymbol{A}$.

(iii) $\boldsymbol{A}$ is called a *quasi-division* algebra if the equation $a \circ x = b$ is soluble for all $a \in \boldsymbol{A}$ that are not annihilators in $\boldsymbol{A}$.

(iv) A quasi-division algebra is called a *division* algebra if it does not admit non-zero annihilators.

(v) $\boldsymbol{A}$ is called *square root closed* if the equation $x^2 = c$ is solvable for any $c \in \boldsymbol{A}$.

(vi) $\boldsymbol{A}$ is called *unital* if there exists an element $e \in \boldsymbol{A}$ such that $e \circ a = a$ for every $a \in \boldsymbol{A}$.

(vii) $\boldsymbol{A}$ is called a rank three algebra if there are a linear form γ_1 and a quadratic form γ_2 on $\boldsymbol{A}$ such that $x^3 = \gamma_1(x)x^2 - \gamma_2(x)x$ for all $x \in \boldsymbol{A}$.

Recall the concept of the so-called *Albert isotopies* of algebras (see [2]):

Definition 2.2. Let H be a subgroup of $\mathrm{GL}(n, \mathbb{R})$. Two n-dimensional commutative algebras $\boldsymbol{A}_1 := (\mathbb{R}^n, \circ)$ and $\boldsymbol{A}_2 := (\mathbb{R}^n, *)$ are said to be *H-isotopic* if there exist $M \in H$ and $L \in \mathrm{GL}(n, \mathbb{R})$ such that

$$x \circ y = ML^{-1}(Lx * Ly), \quad x, y \in \mathbb{R}^n. \tag{2.1}$$

It is easy to see that if $\boldsymbol{A}$ is regular (resp. singular, quasi-division, division, square root closed), then so is the image of $\boldsymbol{A}$ under any isotopy. Also, any isotopy takes nilpotents (resp. annihilators) to nilpotents (resp. annihilators). This gives rise to the following question: to which extent are complex structures "sensitive" to isotopies?

2.2 Complex structures and isotopies

Let us first refine the notion of complex structure.

Definition 2.3. Let $\boldsymbol{A}$ be an algebra. We say that:

(i) $a \in \boldsymbol{A}$ is a *negative square idempotent* if

$$a^2a^2 = -a^2, \quad a^2 \neq 0, \tag{2.2}$$

(ii) $b \in \boldsymbol{A}$ is a *negative 3-idempotent* if

$$b^3 = -b, \quad b^2 \neq 0, \tag{2.3}$$

(iii) a two-dimensional subalgebra $B \subset \boldsymbol{A}$ is a *complete complex structure* if B admits both a negative square idempotent and a negative 3-idempotent (possibly, different),

(iv) $z \in \boldsymbol{A}$ is a *negative square nilpotent* if

$$z^2n = -n, \quad n^2 = 0, n \neq 0. \tag{2.4}$$

We will also need degenerate versions of the equations determining negative square idempotents and negative 3-idempotents, namely,

Definition 2.4. Let $\boldsymbol{A}$ be an algebra. We say that:

(i′) a non-zero element $a \in \boldsymbol{A}$ is a *square nilpotent* if

$$a^2a^2 = 0 \tag{2.5}$$

(cf. (2.2)),

(ii′) a non-zero element $b \in \boldsymbol{A}$ is called a *3-nilpotent* if

$$b^3 = 0, \quad b^2 \neq 0 \tag{2.6}$$

(cf. (2.3)).

(iii′) a two-dimensional subalgebra $B \subset \boldsymbol{A}$ is a *generalized complete complex structure* if either B admits a complete complex structure, or B contains both a negative 3-idempotent and a square nilpotent, or B contains both a negative square idempotent and a 3-nilpotent.

2.3 Two-dimensional results

In this subsection, we will present two-dimensional results that can be considered as prototypal examples for possible n-dimensional generalizations (cf. [23]).

Theorem 2.5 (see [4]). *The following statements hold.*

(I) *For any two-dimensional algebra A the following conditions are equivalent:*
  (i) *A is regular and admits a negative square idempotent.*
  (ii) *A is a division algebra.*
  (iii) *A is a square root closed algebra.*
  (iv) *A is $\mathrm{GL}(2,\mathbb{R})$-isotopic to $\mathbb{C}$.*

(II) *For any two-dimensional division algebra A the following conditions are equivalent:*
  (i) *A admits a complete complex structure.*
  (ii) *Any equation*
$$x^3 + p\cdot x^2 + q\cdot x = 0, \quad x \in A, \tag{2.7}$$
  is non-trivially soluble for all $p, q \in \mathbb{R}$ with $p^2 + q^2 \neq 0$.
  (iii) *A is $\mathrm{SL}(2,\mathbb{R})$-isotopic to $\mathbb{C}$.*

(III) *If A is a two-dimensional division algebra without negative 3-idempotent, then A is $\mathrm{SL}(2,\mathbb{R})$-isotopic to $\overline{\mathbb{C}} := (\mathbb{R}^n, \circ)$, where*
$$z_1 \circ z_2 := \overline{z}_1 \cdot \overline{z}_2$$
and "$\cdot$" stands for the usual complex multiplication.

Observe that in [4], the reader can find a detailed study of complex structures, squares roots and isotopies in algebras with zero divisors and/or 2-nilpotents. Here we will restrict ourselves with simple formulations that do not require any technical preparations.

Theorem 2.6 (see [4]). *The following statements hold.*

(I) *Let A be a regular two-dimensional algebra with 2-nilpotents.*
  (i) *Either A admits a square nilpotent or A admits a nilpotent ideal.*
  (ii) *If A admits a negative 3-idempotent, then A admits a square nilpotent.*
  (iii) *If A admits a negative square nilpotent, then A admits a nilpotent ideal.*
  (iv) *A is not square root closed.*

(II) *Let A be a regular two-dimensional algebra with zero divisor basis.*
  (i) *A is $\mathrm{SL}(2,\mathbb{R})$-isotopic to $\mathbb{R}\oplus\mathbb{R}$.*
  (ii) *A admits at most one complex (resp. degenerate complex) structure (negative 3-idempotent (resp. 3-nilpotent)).*
  (iii) *A is not square root closed.*

(III) *Assume A is a singular two-dimensional algebra.*
  (i) *A does not admit a negative 3-idempotent.*
  (ii) *If A admits a negative square idempotent together with a 3-nilpotent, then A is isomorphic to complex numbers equipped with the multiplication*
$$z_1 * z_2 := \mathrm{Re}(z_1 z_2),$$
  where "$\cdot$" stands for the usual complex multiplication.

2.4 Problems

Theorems 2.5–2.6 lead to the following problems. Let A be a (real) n-dimensional algebra and let H be a subgroup of $\mathrm{GL}(n,\mathbb{R})$.

Problem 2.7. Whether or not is A H-isotopic to an algebra with a complex structure/several complex structures?

Problem 2.8. Whether or not is A H-isotopic to an algebra with subalgebra isomorphic to $\mathbb{C}$?

Problem 2.9. What are the complex structures allowing one to determine the following classes of algebras:
(i) square root closed algebras?
(ii) algebras containing a subalgebra isomorphic to $\mathbb{C}$?
(iii) division algebras?

The following result may be considered as a starting point.

Theorem 2.10. *Let $A = (\mathbb{R}^n, \circ)$ be a finite-dimensional (in general, non-associative) algebra.*
(i) *If A is square root closed, then A is regular.*
(ii) *If A is regular, then A is $\mathrm{GL}(n, \mathbb{R})$-isotopic to a unital algebra.*
(iii) *If A is a unital division algebra with unit e and $\dim A > 1$, then A contains an imaginary unit i, i.e. $i^2 = -e$.*

Proof. (i) Assume A is singular. Since

$$x \circ y \equiv \frac{1}{2} J_Q(x) y, \tag{2.8}$$

where $J_Q(x)$ is the Jacobian matrix of the quadratic map $Q(x) = x \circ x$ at the point $x \in \mathbb{R}^n$, it follows that $\det(J_Q(x))$ must be equal to zero for all $x \in \mathbb{R}^n$. Therefore all points of $Q(x)$ are critical. Hence, by the classical Sard–Brown's theorem, the image of the set of critical points has Lebesgue measure 0 and Q cannot be surjective, i.e. A is not square root closed. The contradiction completes the proof.

(ii)–(iii) For the proof of these statements, we refer to [2]. □

3 Surjective quadratic maps

3.1 Statement of the problem and known results

Many problems in Algebra, Analysis, Topology and ODEs can be reduced to the following

Problem 3.1. Given a quadratic map $Q : \mathbb{R}^n \to \mathbb{R}^m$ (i.e. its coordinate functions are quadratic forms and $n \neq m$ in general), does there exist an effective way to determine if Q is *surjective*?

The theory of quadratic maps can be thought of as beginning with the work of Kronecker, who obtained a finite classification for pairs of symmetric matrices. However, as it follows from [13], for three or more symmetric matrices the classification problem has an uncountable number of equivalence classes. In particular, Problem 3.1 is quite involved for $m \geq 3$.

Several conditions providing that all components of Q in Problem 3.1 are positive can be found in [8]. In order to formulate some results from [8], we need the following

Definition 3.2. Let Q be as in Problem 3.1 and let $Q_j : \mathbb{R}^n \to \mathbb{R}$, $j = 1, \dots, m$, be its coordinate functions. The map Q is said to be *indefinite* if for any vector $(\alpha_1, \dots, \alpha_m) \in \mathbb{R}^m$, the quadratic form $B := \alpha_1 Q_1 + \dots + \alpha_m Q_m$ is indefinite and does not vanish identically.

Proposition 3.3. *Let Q (resp. B) be as in Problem 3.1 (resp. Definition 3.2). Then:*
(i) *B is not indefinite if and only if there exists a hyperplane $P \subset \mathbb{R}^m$ such that $\mathrm{Im}(Q)$ is a subset of exactly one of the subspaces bounded by P in $\mathbb{R}^m$.*
(ii) *If Q is surjective, then B is indefinite; the inverse statement is* not *true in general.*
(iii) *If $Q : \mathbb{R}^n \to \mathbb{R}^2$ is surjective, then $Q^{-1}\{0\} = \{0\}$.*

Also, we refer to [19] for other references.

It should be stressed that in contrast to the case $n \neq m$, the situation $n = m$ allows a transparent algebraic reformulation and (at least for $n = 2, 3$ and possibly 4) can be completely settled. To be more specific, the following result is an immediate corollary from Theorem 2.5, Part I (ii)–(iv), and Theorem 2.6, Parts I (iv) and II (iii).

Proposition 3.4. *Let $Q : \mathbb{R}^2 \to \mathbb{R}^2$ be a quadratic map. Then:*
(i) *Q is surjective if and only if the associated to Q* real *algebra $\boldsymbol{A}$ (see* (1.1)*) is isotopic to the algebra $\mathbb{C}$ of complex numbers.*
(ii) *$Q : \mathbb{R}^2 \to \mathbb{R}^2$ is surjective if and only if B is indefinite.*
(iii) *If Q is surjective, then the equation $Q(x) = v$ is solvable in quadratures for all $v \in \mathbb{R}^2$.*

In the next subsection, we will generalize Proposition 3.4 to the case $n = 3$. The following statement (which is a direct consequence of Theorem 2.10) is our starting point.

Theorem 3.5. *If $Q : \mathbb{R}^n \to \mathbb{R}^n$ is a surjective quadratic map, then the algebra $\boldsymbol{A}$ canonically associated to Q via* (1.1) *is isotopic to the algebra with real and imaginary units.*

Proof. If $Q : \mathbb{R}^n \to \mathbb{R}^n$ is a surjective quadratic map, then (see Theorem 2.10 (i)), the algebra $\boldsymbol{A}$ associated to Q (see (1.1)) is necessarily regular. Therefore (see Theorem 2.10 (ii)), there exists an algebra $\boldsymbol{A}'$ isotopic to $\boldsymbol{A}$ with the unit element $e \in \boldsymbol{A}'$, $e \circ x = x \circ e = x$. Since A' is real and square root closed, there exists an $i \in \boldsymbol{A}'$ such that $i \neq \lambda e$ and $i^2 = -e$. □

3.2 Three-dimensional results

We start with the following *necessary* conditions for the existence of square root closed unital algebra in $\mathbb{R}^3$:

Proposition 3.6. *Let $\tilde{\boldsymbol{A}} = (\mathbb{R}^3, \circ)$ be a square root closed unital algebra with unit e. Then, there exist $i, j \in \tilde{\boldsymbol{A}}$ such that:*
(a) *$i^2 = -e$ (i.e. i is an imaginary unit),*
(b) *$i \circ j = \lambda j$ for some real λ,*
(c) *e, i and j are linearly independent in $\tilde{\boldsymbol{A}}$.*
In addition,
(d) *there exist square roots from $\pm j$ in $\tilde{\boldsymbol{A}}$.*

Proof. Statement (a) follows from the square root closeness of $\tilde{\boldsymbol{A}}$ and its unitality.

To prove (b) and (c), denote by L_i the operator of left multiplication by i in $\mathbb{R}^3$: $L_i x := i \circ x$. Since $\dim \tilde{\boldsymbol{A}} = 3$, it follows from (a) that L_i admits exactly one real eigenvalue of geometric multiplicity one. Denote by j an eigenvector corresponding to j. Clearly, $j \notin \mathbb{R}[e, i]$ of L_i so that (b) and (c) are satisfied.

Statement (d) is similar to (a). □

Proposition 3.6 states that the (non-trivial) solubility of the equations

$$e \circ x = x \quad \text{for all } x, \quad i^2 = -e, \quad i \circ j = \lambda j, \quad k^2 = j, \quad l^2 = -j, \tag{3.1}$$

for some $e, i, j, k, l \in \tilde{\boldsymbol{A}}$ and some real λ, is necessary for $\tilde{A}$ to be square root closed. It turns out that

Proposition 3.7. *In order a (commutative) unital three-dimensional algebra $\tilde{\boldsymbol{A}}$ be square root closed, it is sufficient that equations* (3.1) *are (non-trivially) soluble in $\tilde{\boldsymbol{A}}$ in $\mathbb{R}^3$.*

Proof. Without lost of generality, one can assume that there exist real α, β, γ such that

$$j^2 = -(\alpha^2 - \beta^2)e - 2\alpha\beta i - \gamma j.$$

Then, the quadratic map $Q : \tilde{\boldsymbol{A}} \to \tilde{\boldsymbol{A}}$, $Q(u) = u \circ u = u^2$, can be explicitly written as follows:

$$Q(x, y, z) = (xe + yi + zj)^2 = \{x^2 - y^2 - (\alpha^2 - \beta^2)z^2, 2xy - 2\alpha\beta z^2, 2xz + 2\lambda yz - \gamma z^2\}. \tag{3.2}$$

Then, the condition for $\tilde{\boldsymbol{A}}$ to be square root closed can be written as follows:

$$x^2 - y^2 - (\alpha^2 - \beta^2)z^2 = a, \quad 2xy - 2\alpha\beta z^2 = b, \quad 2xz + 2\lambda yz - \gamma z^2 = c, \tag{3.3}$$

where a, b and c are arbitrary reals. By assumption, the last two equations in (3.2) are soluble. Combining this with (3.3) yields

$$x^2 - y^2 - (\alpha^2 - \beta^2)z^2 = 0, \quad 2xy - 2\alpha\beta z^2 = 0, \quad 2xz + 2\lambda yz - \gamma z^2 = \pm 1. \tag{3.4}$$

3.3 Problems

Let $Q : \mathbb{R}^n \to \mathbb{R}^n$ be a quadratic map.

Problem 3.9. Which topological properties of Q are preserved by isotopies of the corresponding algebras?

Problem 3.10. Find necessary and sufficient conditions providing the surjectivity of Q. For example, what is an analogue (if any) of Theorem 3.8 in dimension four?

Problem 3.11. If Q is surjective, design an algorithm to find a point $x = Q^{-1}(v)$.

Problem 3.12. Find conditions providing that B is indefinite (cf. Definition 3.2).

Theorem 3.13. *For $n = 3$, Problem 3.11 can be completely settled.*

Proof. Suppose $Q : \mathbb{R}^3 \to \mathbb{R}^3$ is surjective. Then (after a possible isotopy utilizing Kaplansky's trick), Proposition 3.6 allows us to rewrite Q in the form (3.2). In order to solve equations (3.3) for all a, b, c (as it follows from the proof of Proposition 3.7), it is enough to solve the equation $R(z) = 0$ (see (3.8) (resp. (3.10))). But this is a biquartic equation (resp. biquadratic), therefore, the required algorithm exists. □

4 Bounded solutions to Riccati equation in algebras and related topics

4.1 Subject

Let $L : \mathbb{R}^n \to \mathbb{R}^n$ be a linear operator. The following fact is the subject of any undergraduate ODE course:

Proposition 4.1. *A linear system*

$$\dot{x} = Lx, \quad x \in \mathbb{R}^n,$$

admits a (non-trivial) periodic solution if and only if the following non-hyperbolicity condition is satisfied:
(∗) *L admits a purely imaginary eigenvalue.*

Let $Q : \mathbb{R}^n \to \mathbb{R}^n$ be a quadratic (homogeneous) map and let $\boldsymbol{A} = (\mathbb{R}^n, \circ)$ be a (commutative) algebra equipped with multiplication (1.1). In this section, we will discuss the following two problems:

Problem 4.2. What is an analogue of condition (∗) providing that the Riccati equation

$$\dot{x} = Q(x) = x \circ x = x^2, \quad x \in \boldsymbol{A}, \tag{4.1}$$

admits a non-trivial solution *bounded* on the whole axis?

Problem 4.3. Let $h : \mathbb{R} \oplus \boldsymbol{A} \to \boldsymbol{A}$ be a continuous map p-periodic in the first argument. Under which conditions does there exist a p-periodic solution to the (non-autonomous) system

$$\dot{x} = x^3 + h(t, x) \quad ((t, x) \in \mathbb{R} \oplus \boldsymbol{A},\ x^3 := x \circ x \circ x)? \tag{4.2}$$

For the background related to the interplay between ODEs and non-associative algebras as well as for many interesting results on bounded and periodic solutions to the Riccati equations, we refer to [25] (see also [4, 6, 15, 20, 26]).

4.2 Riccati equation in rank three algebras

Let us start with two simple observations showing an interplay between dynamics of system (4.1) and solubility of equations in $\boldsymbol{A}$:
(i) Equilibria to (4.1) coincide with 2-nilpotents in $\boldsymbol{A}$ (i.e. solutions to the equation $x^2 = 0$ in $\boldsymbol{A}$).

Solving the first two equations in (3.4) gives $(x, y) = \pm(\alpha z, \beta z)$. Substituting the latter expression into the third equation in (3.4) leads to the following system of two equations in z:

$$z^2(\pm 2(\alpha + \lambda\beta) - \gamma) = \pm 1. \tag{3.5}$$

This system can be solved in reals only if the following relation between α, β and γ is satisfied:

$$4(\alpha + \lambda\beta)^2 > \gamma^2. \tag{3.6}$$

Thus, condition (3.6) determines a relation between α, β and γ that is sufficient for the solubility of the equations $k^2 = j$, $l^2 = -j$.

Consider now the general system (3.3) (i.e. a, b and c in (3.3) are arbitrary) and show that the *same* condition (3.6) guarantees the solubility of this system. In fact, define the following resultants:

$$\begin{aligned} R_{13} &:= \operatorname{Res}(x^2 - y^2 - (\alpha^2 - \beta^2)z^2 - a, 2xz + 2\lambda yz - \gamma z^2 - c, x), \\ R_{23} &:= \operatorname{Res}(2xy - 2\alpha\beta z^2 - b, 2xz + 2\lambda yz - \gamma z^2 - c, x), \\ R_{123} &:= \operatorname{Res}(R_{13}, R_{23}, y). \end{aligned}$$

The solubility of (3.3) is equivalent to the solubility of the equation

$$R_{123}(z) = 0 \tag{3.7}$$

(in z). By straightforward calculation, one obtains

$$\begin{aligned} R_{13} &= 4(\lambda^2 - 1)z^2y^2 - 4\lambda z(c + \gamma z^2)y + (\gamma^2 - 4\alpha^2 + 4\beta^2)z^4 + 2(\gamma c - 2a)z^2 + c^2, \\ R_{23} &= 4\lambda zy^2 - 2(\gamma z^2 + c)y + 4\alpha\beta z^3 + 2zb. \end{aligned}$$

The analysis of the solubility of equation (3.7) naturally splits into several cases.

Case I: the leading terms (in y) of polynomials R_{13} and R_{23} both do not vanish. Then

$$R_{123}(z) := 16z^2R(z), \quad R(z) = (a_4z^8 + a_3z^6 + a_2z^4 + a_1z^2 + a_0), \tag{3.8}$$

$$a_0 = -c^4 < 0, \quad a_4 = (4(\alpha + \lambda\beta)^2 - \gamma^2)(\gamma^2 + 4(\lambda\alpha - \beta)^2). \tag{3.9}$$

Clearly, if condition (3.6) is satisfied, then $a_4 \geq 0$.

Subcase I (a): $a_4 > 0$. Then, a_0 and a_4 (see (3.9)) have opposite signs and, by the Intermediate Value Theorem, equation (3.7) is soluble.

Subcase I (b): $a_4 = 0$. Then (see (3.9)), $\gamma = 0$ and $\beta = \lambda\alpha$. Hence

$$R_{123}(z) := 16z^2R(z), \quad R(z) = a_2z^4 + a_1z^2 + a_0, \tag{3.10}$$

where a_0 is still given by (3.9) and

$$a_2 = 4(4\lambda a + (\lambda^2 - 1)b)^2 + 4(\lambda^2 - 1)^2\alpha^2c^2.$$

It is easy to see that if (3.6) is satisfied, then a_0 and a_2 have opposite signs meaning that (3.7) is soluble.

Case II: the leading term of at least one of the polynomials R_{13} and R_{23} vanishes. Then,

$$R_{123}(z) = \begin{cases} -4R(z) & \text{if } \lambda = 0, \\ \pm 4zR(z) & \text{if } \lambda = \pm 1, \end{cases} \tag{3.11}$$

where $R(z) = (a_4z^8 + \cdots + a_0)$ and a_0, a_4 are given by (3.9). By the same argument, (3.7) is soluble. □

We conclude this subsection with

Theorem 3.8. *Any real three-dimensional algebra is square root closed if and only if its polarization is isotopic to an algebra, where equations* (3.1) *are soluble.*

(ii) Ray solutions to (4.1) coincide with straight lines through idempotents in $\boldsymbol{A}$ (i.e. non-zero solutions to the equation $x^2 = x$ in $\boldsymbol{A}$).
These observations give rise to the following paradigmatic

Question. Given an algebra $\boldsymbol{A}$, do there exist polynomial equations in $\boldsymbol{A}$ whose solubility is responsible for the existence of bounded/periodic solutions to equation (4.1)?

The following statement was established in [5] (see also [4, 6]).

Theorem 4.4. *Let $\boldsymbol{A}$ be a rank three algebra. Then, system* (4.1) *admits a solution bounded on the whole axis if and only if $\boldsymbol{A}$ admits a generalized complete complex structure.*

Idea of the proof. In the two-dimensional case, one should link the existence of bounded solutions to complex structures and either topological index (when $\boldsymbol{A}$ is free from 2-nilpotents) or to linear spectral theory (if $\boldsymbol{A}$ admits 2-nilpotents). The passage to the rank three algebras is based on the following observation: in rank three algebras, any one-generated subalgebra is of dimension one or two (equivalently, any trajectory to the Riccati equation in a rank three algebra is *planar*). □

4.3 Periodic solutions to asymptotically homogeneous systems

Theorem 4.5 (Muhamadiyev-type result). *Let $\boldsymbol{A}$ be a rank three algebra which is free from 2-nilpotents, 3-nilpotents and negative 3-idempotents. Then, for any h satisfying*

$$\lim_{\|x\|\to\infty} \sup_{t\in\mathbb{R}} \|x\|^{-3} h(t,x) = 0, \tag{4.3}$$

system (4.2) *has a p-periodic solution.*

Theorem 4.6 (Mawhin-type result). *Let $\boldsymbol{A}$ be a rank three algebra which is free from 2-nilpotents and 3-nilpotents. Then, there is an $\varepsilon_o > 0$ such that for any h with $\|h(\cdot, x)\|_\infty \le \varepsilon_o$, system* (4.2) *has a p-periodic solution.*

Idea of the proof. The conditions required from $\boldsymbol{A}$ in Theorem 4.5 provide:
(i) the topological index of $x \to x^3$ is well defined (and, therefore, different from zero),
(ii) there are no solutions to the autonomous system $\dot{x} = x^3$ bounded on the whole axis.
Combining now (i) and (ii) with conditions on the growth of h at infinity and using the known result of E. Muhamadiyev [22]. To prove Theorem 4.6, one should combine conditions required from $\boldsymbol{A}$ with the appropriate result from [21]. □

4.4 Bounded solutions to the complex Volterra equation

Consider the *complex* Volterra equation (cf. [12, 25])

$$\begin{cases} \dot{x}_1 = x_1 L_1(x_1, \dots, x_n), \\ \dot{x}_2 = x_2 L_2(x_1, \dots, x_n), \\ \quad\vdots \\ \dot{x}_n = x_n L_n(x_1, \dots, x_n), \end{cases} \tag{4.4}$$

i.e. $x_i \in \mathbb{C}$ and L_i is a $\mathbb{C}$-linear non-degenerate form. We have the following

Proposition 4.7. *Under the above assumptions, system* (4.4) *admits a bounded (homoclinic) solution.*

Proof. Let $Q : \mathbb{C}^n \to \mathbb{C}^n$ be the quadratic map related from the right-hand side of (4.4) and let $\boldsymbol{A}$ be the corresponding commutative algebra. By direct computation, $\boldsymbol{A}$ contains an idempotent e ($e^2 = e$). Take a subalgebra $\mathbb{C}[e]$ generated by e. Since e is the idempotent, $\mathbb{C}[e]$ is isomorphic to $\mathbb{C}$. By Theorem 4.4, there is a homoclinic solution to (4.4) restricted to $\mathbb{C}[e]$. Clearly, it is a solution to the initial system as well. □

4.5 Kinyon–Sagle example

Consider the system

$$\begin{cases} \dot{x}_0 = \lambda x_0^2 + \mu(x_1^2 + x_2^2), \\ \dot{x}_1 = -2cx_0x_2, \\ \dot{x}_2 = 2cx_0x_1. \end{cases} \tag{4.5}$$

There is a (non-trivial) bounded solution to (4.5) if and only if either of the following holds:
(i) $\lambda = \mu = 0$,
(ii) $\lambda\mu < 0$.
Let us analyze this fact via complex structures.

Denote by $\boldsymbol{A} := A(\lambda, \mu, c)$ the algebra associated to (4.5). In the case (i), the equation

$$x^3x = -x^2$$

has infinitely many solutions of the form $\frac{1}{c}e_0 + x_1e_1 + x_2e_2$ for any $x_1, x_2 \in \mathbb{R}$. Also, $x^2x^2 \equiv x^2x^3 \equiv x^3x^3 \equiv 0$ for all $x \in A(0, 0, c)$. In the case (ii), any element $x \in A$ satisfies

$$x^3x^2 \equiv 0$$

and the two algebraically independent equations

$$i^2i^2 = -i^2, \quad j^3j^3 = -j^2j^2$$

are soluble in $\boldsymbol{A}$ for $i = \frac{e_1}{\sqrt{-\lambda\mu}}$ and $j = \frac{e_2}{c}\sqrt{-\frac{\lambda}{\mu}}$.

4.6 Problems

The above observations related to the Kinyon–Sagle example indicate an explicit connection between the existence of bounded solutions to system (4.5) and complex structures in the algebra $A(\lambda, \mu, c)$. However, in general, a three-dimensional Riccati equation amounts to "rank four algebras", i.e. the algebras for which the higher degrees can be expressed via x, x^2, x^3 and the corresponding linear, quadratic and cubic forms. Therefore, to study bounded solutions to a Riccati equation occurring in a three-dimensional algebra $\boldsymbol{A}$, one should study the following

Problem 4.8. What are the $\boldsymbol{A}$-polynomial equations (with real coefficients) containing more than two monomials and naturally generalizing usual real equations having complex roots (possibly, with non-zero real parts) whose solubility provides the existence of bounded/periodic solutions to Riccati equation?

The following two classical equations can be a good starting point:
(i) the Kasner equations (see [14, 16])

$$\begin{cases} \dot{x} = yz - x^2, \\ \dot{y} = xz - y^2, \\ \dot{z} = xy - z^2, \end{cases} \tag{4.6}$$

describing the so-called Kasner metrics being the exact solution to the Einstein's general relativity theory equations in vacuum under special assumptions.
(ii) the Euler equations (see [3])

$$\begin{cases} \dot{\omega}_1 = ((I_3 - I_2)/I_1)\omega_2\omega_3, \\ \dot{\omega}_2 = ((I_1 - I_3)/I_2)\omega_1\omega_3, \\ \dot{\omega}_3 = ((I_2 - I_1)/I_3)\omega_1\omega_2, \end{cases} \tag{4.7}$$

describing the motion of a rotating rigid body with no external forces (here the (non-zero) principal moments of inertia I_j satisfy $I_1 \neq I_2 \neq I_3 \neq I_1$ and ω_j stands for the j-th component of the angular velocity along the principal axes).

As a matter of fact, the Euler and Kasner equations admit an explicit integration. Moreover, all non-trivial solutions to the Euler (resp. Kasner) equation are bounded (resp. unbounded), meaning that they should be considered as the first natural examples where Problem 4.8 should be studied.

5 Partial differential equations in algebra

5.1 Preliminaries

We use $\boldsymbol{x} = x_1 e_1 + \cdots + x_n e_n$ to denote a vector in $\mathbb{R}^n$ as well as an element $\boldsymbol{x} \in \boldsymbol{A}$, and ∂_i to denote $\partial/\partial x_i$ for $i \in \{1, \ldots, n\}$ (here $\boldsymbol{A}$ stands for an n-dimensional algebra).

Every $\boldsymbol{A}$-valued function $f(\boldsymbol{x})$ is supposed to be locally real analytic, i.e. it can be represented in the form

$$f(\boldsymbol{x}) := e_1 u_1(x_1, \ldots, x_n) + e_2 u_2(x_1, \ldots, x_n) + \cdots + e_n u_n(x_1, \ldots, x_n), \tag{5.1}$$

where $u_i(\boldsymbol{x})$ are also real analytic functions, $i = 1, 2, \ldots, n$.

To begin with, define the *Dirac operator* in $\boldsymbol{A}$ as follows:

$$D := e_1 \partial_1 + \cdots + e_n \partial_n. \tag{5.2}$$

Definition 5.1. A real analytic function $f(\boldsymbol{x})$ is called *$\boldsymbol{A}$-analytic* if $f(\boldsymbol{x})$ is a solution to the system of partial differential equations

$$D \circ f(\boldsymbol{x}) := \sum_{i,j=1}^{n} e_i \circ e_j \partial_i u_j(x_1, \ldots, x_n) = 0. \tag{5.3}$$

If $\boldsymbol{A}$ in Definition 5.1 is an algebra of complex numbers $\mathbb{C}$, then (5.3) coincide with the Cauchy–Riemann equations. This gives us a good reason to denote the space of $\boldsymbol{A}$-analytic functions as $\mathrm{Hol}(\boldsymbol{A})$ in a complete agreement with the definition of holomorphic functions in complex analysis (denoted by $\mathrm{Hol}(\mathbb{C})$).

By $\boldsymbol{A}$-analysis we mean the systematic study of $\mathrm{Hol}(\boldsymbol{A})$.

5.2 Algebraic approach to function theories

Let $\boldsymbol{A}$ be a real algebra (not necessarily commutative and/or associative). An analytic (holomorphic) function theory over such algebras has been developed by many authors (see [7, 10, 24]). Three distinct approaches in these investigations are used.

- The first one (Weierstrass approach) regards functions on $\boldsymbol{A}$ as power series expansions (convergent in some sense).
- The second one (Cauchy–Riemann approach) is focused on solutions to the Dirac equation in the algebra $\boldsymbol{A}$ (cf. [17, 18]).
- The third one is based on the function-theoretic properties known for complex analytic functions, such as Cauchy's theorem, residue theory, Cauchy integral formula, etc. (cf. [11, 17]).

All these methods look like generalizations of the *analytic function theory* of complex variables (cf. [24]). We use the term *$\boldsymbol{A}$-analysis* for these generalizations (cf. Clifford or quaternionic analysis [7] if an algebra $\boldsymbol{A}$ is embedded into a Clifford algebra).

Definition 5.2. Let $\boldsymbol{A}_1$ and $\boldsymbol{A}_2$ be two algebras. If there exist nonsingular linear operators P and Q such that for every $g(\boldsymbol{x}) \in \mathrm{Hol}(\boldsymbol{A}_2)$, the function $f(\boldsymbol{x}) = Pg(Q\boldsymbol{x})$ belongs to $\mathrm{Hol}(\boldsymbol{A}_1)$ and vice versa, we will say that two function theories are *equivalent* and write $\mathrm{Hol}(\boldsymbol{A}_1) \simeq \mathrm{Hol}(\boldsymbol{A}_2)$.

Theorem 5.3. *Two function theories are equivalent if and only if the corresponding algebras are isotopic.*

Claim. *Isotopy classification of algebras is a powerful tool for the classification of the corresponding partial differential operators.*

Theorem 5.4 (cf. [27]). *The Dirac operator D in the algebra $\boldsymbol{A}$ is under-determined if and only if $\boldsymbol{A}$ is singular, and it is over-determined if and only if $\boldsymbol{A}$ is regular and contains annihilators.*

5.3 Elliptic type partial differential equation

It turns out that

Proposition 5.5. *The well-determined Dirac operator D in the algebra $\boldsymbol{A}$ (necessarily regular (by Theorem 5.4)) is elliptic if and only if $\boldsymbol{A}$ is a division algebra.*

Proof. The matrix symbol of the well-determined elliptic partial differential operator $\sigma(D)(\xi)$ is invertible for all $\xi \neq 0$ (cf. [9, 10]). Conversely, it follows immediately from the definition of ellipticity that the symbol of the partial differential operator D is an invertible matrix for all $\xi \neq 0$. □

Denote by $\mathcal{A}$ the (maximal) ideal of the left annihilators in $\boldsymbol{A}$. Clearly, the multiplication in $\mathcal{A}$ is trivial.

Definition 5.6. An algebra $\boldsymbol{A}$ is a called a *quasi-division algebra* if and only if the factor algebra $\boldsymbol{A}/\mathcal{A}$ is a division algebra.

In turn, in the quasi-division algebra the equation $a \circ x = b$ is soluble for all a, b except those a which are the left annihilators of $\boldsymbol{A}$. We are now in a position to formulate the algebraic analogue of the ellipticity [1] for under-(over-)determined system:

Proposition 5.7. *The Dirac operator D defined by* (5.2) *is elliptic if and only if the algebra $\boldsymbol{A}$ corresponding to D (see* (1.1)*) is a quasi-division algebra.*

Proof. The proof immediately follows (cf. [9, 10]) from the definition of ellipticity [1] of the symbol of partial differential operator D. □

Actually, in Proposition 5.7 we obtained the algebraic description of the ellipticity in the sense of [1]. Namely, this description is related to the existence of generalized complex structures in division algebras. For example, in quaternions, there exists a three dimensional set of a complex structures. So in PDEs the following question is actual:

Problem 5.8. Which complex structures are responsible for the ellipticity of the Dirac operator?

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Brief Report

Benefits of Physical Exercise on the Aging Brain: The Role of the Prefrontal Cortex

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Motor planning in older adults likely relies on the overengagement of the prefrontal cortex (PFC) and is associated with slowness of movement and responses. Does a physically active lifestyle counteract the overrecruitment of the PFC during action preparation? This study used high-resolution electroencephalography to measure the effect of physical exercise on the executive functions of the PFC preceding a visuomotor discriminative task. A total of 130 participants aged 15–86 were divided into two groups based on physical exercise participation. The response times and accuracy and the premotor activity of the PFC were separately correlated with age for the two groups. The data were first fit with a linear function and then a higher order polynomial function. We observed that after 35–40 years of age, physically active individuals have faster response times than their less active peers and showed no signs of PFC hyperactivity during motor planning. The present findings show that physical exercise could speed up the response of older people and reveal that also in middle-aged people, moderate-to-high levels of physical exercise benefits the planning/execution of a response and the executive functions mediated by the PFC, counteracting the neural overactivity often observed in the elderly adults.

Key Words: Physical exercise—Middle aged—Prefrontal cortex—Movement-related cortical potential.

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THE literature on aging suggests that widespread morphological and physiological alterations occur in the brain, particularly in the prefrontal cortex (PFC). These alterations reflect an age-related decline in executive processes and sensorimotor functions (1). Recently, by measuring response-locked event-related potentials during visuomotor tasks, we observed an age-related overrecruitment of the PFC during the motor preparation stage (2). This increase in frontal lobe activation is a reliable finding in studies examining task-related brain activity (3). It has been proposed that PFC hyperactivity likely reflects increased reliance on cognitive control mechanisms, which, in turn, leads to both a slowing of information processing speed and a reduction of online cognitive resources available to process, store, and retrieve information (4). Two main hypotheses have been put forward to account for the neural overactivity often observed in the elderly adults: the compensation hypothesis, which suggests that the recruitment of additional brain areas or the overactivation of the involved regions compensates for various neural/behavioral deficits, and the dedifferentiation hypothesis, which posits that neural representations become less distinctive with age and that overactivation reflects the loss of neural specialization (5). The older brain acts differently from the brain of younger adults. Although their performance is comparable over a wide range of cognitive domains, a delay in motor response time (RT) represents one hallmark of the changes in sensorimotor functions. Aging-related structural and functional changes may be modified and mitigated by physical exercise programs, which are also associated with improvement of mental, social, and physical health (6). Although studies have shown that many aspects of age-related physical and cognitive decline are positively affected by physical exercise (7), few data indicate at which stage of brain processing the cognitive functions are altered by exercise (8).

An important goal is to evaluate the effects of physical activity on PFC processing, which contributes to motor planning and processing speed, but has been neglected in the electrophysiological literature. We hypothesized that physically active individuals would show reduced age-related prefrontal recruitment during motor planning and faster RTs than less active controls.

Using high-resolution EEG recording and movement-related cortical potentials (MRCPs) analysis, we examined the age-related PFC activity of 130 participants (15–86 years old) during a discriminative response task. To the best of

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our knowledge, this study represents the first investigation of the effects of physical exercise on executive functions mediated by the PFC across the adult life span.

Methods

Participants

A total of 130 participants volunteered; they were divided into physical exercise participants (PEP; n = 73; aged between 16 and 80; 36 women) and not-physical exercise participants (N-PEP; n = 57; aged between 17 and 86; 25 women) based on a self-report questionnaire about physical exercise participation administered at the beginning of each experimental session in accordance with International classification (9). The N-PEP group included participants not involved in any structured or planned physical exercise programs. The PEP group included those who reported involvement in regular physical exercise and sports at least 3 days/week, 1 hour/session (ie, swimming, martial arts, fencing, and low- and high-impact exercise). All of the participants were healthy and without histories of neurological, psychiatric, or chronic somatic diseases. They were not taking psychoactive or vasoactive medication and had normal or corrected-to-normal vision. All participants were right handed (Edinburgh handedness inventory) (10). General cognitive functions in older participants were assessed using the Mini-Mental State Examination (11) (averaged score was 29/30, range: 28–30). The older participants were recruited through the *Vitattiva Association* in Rome, the middle-aged participants were recruited among friends of the authors, and the younger participants were recruited from the local student population. The two groups were matched for education levels (years of study: 15.2, SE = 1.3, for the N-PEP group; 15.0, SE = 1.4, for the PEP group). The participants' written consent was obtained (from parents for minors) according to the Declaration of Helsinki after approval by the ethical committee of the IRCCS Santa Lucia Foundation.

Materials and Tasks

Each participant was tested individually in a sound-attenuated dimly lit room after a 64-channel EEG cap was mounted on his/her scalp. Visual stimuli (ie, four-squared figures made by vertical and horizontal bars) were randomly displayed for 260 ms with equal probability (p = .25); the stimulus-onset asynchrony varied from 1 to 2 s to prevent time prediction effects on RT (for more details on the paradigm (2). The participants performed a discriminative response task, also known as Go/No-go task, which is widely used to assess sustained attention, response control, and executive/inhibitory functions (12). The participants had to press a button as fast as possible with the right hand when the target (Go stimuli; p = .5) appeared on the screen and withhold a response when the non target (No-go stimuli; p = .5) appeared (see Supplementary Figure 1 for more details).

Statistical Analysis

RTs, omissions, and false alarms, as well as the onset latency, peak amplitude, and latency of premotor activity at the AFz electrode site (placed over the medial PFC), were separately correlated with age for the N-PEP and PEP groups. The data were first fit with linear functions and then with higher order polynomial functions. The function with the highest correlation value (Pearson's adjusted R^2 coefficient) was accepted. The statistical significance of each fitting was tested by ANOVA. A sample-by-sample t test (two tailed) was performed between fit functions for each sample (100 per function) using bootstrap statistics. Age was treated as a continuous variable. The overall alpha level was fixed at .05 after the Geisser-Greenhouse correction.

Results

Behaviorally, the RTs increased with age following a second-order polynomial function (linear and higher order functions yielded lower correlations). The function was RT = 399 − 0.068 × Age + 0.025 × Age^2 (adjusted R^2 = .910, $F_{2,54}$ = 365.1, p < .0001) for the N-PEP group and RT = 391 − 0.267 × Age + 0.022 × Age^2 (adjusted R^2 = .911, $F_{2,70}$ = 286.5, p < .0001) for the PEP group. The sample-by-sample t-test performed between the fit functions of the two groups showed significant differences from 36.7 years (p < 0.029) up to the end of the comparable fit functions (Figure 1A). No correlations between age and response accuracy (adjusted R^2 < .128) were found (Figure 1B). In line with previous investigations, we confirmed on a large sample that although response speed decreases with age, response accuracy does not change across life span.

The electrophysiological recordings were time locked to response onset. PFC activity was analyzed in the premotor preparation phase (Supplementary Materials) on the medial prefrontal electrode (AFz), and the peak latency was used as a dependent variable (hereafter called PFC_PL). The PCF_PL was earlier with increasing age following a second-order polynomial function. The function was PFC_PL = 373 − 0.431 × Age + 0.099 × Age^2 (adjusted R^2 = .930, $F_{2,54}$ = 373.1, p < .0001) for the N-PEP and PFC_PL = 394 − 1.839 × Age + 0.082 × Age^2 (adjusted R^2 = .860, $F_{2,70}$ = 222.9, p < .0001) for the PEP. The sample-by-sample t test performed between the fit functions of the two groups showed significant differences from the age of 38.0 years (p = .024) up to the end of the comparable fit functions (Figure 2A). Although the onset latency and peak amplitude of PFC activity were significantly correlated with age and physical exercise, the determination coefficients were lower. Thus, we do not provide additional information. Furthermore, the correlations between PFC_PLs and RTs were also significant (p < .0001) in both the N-PEP

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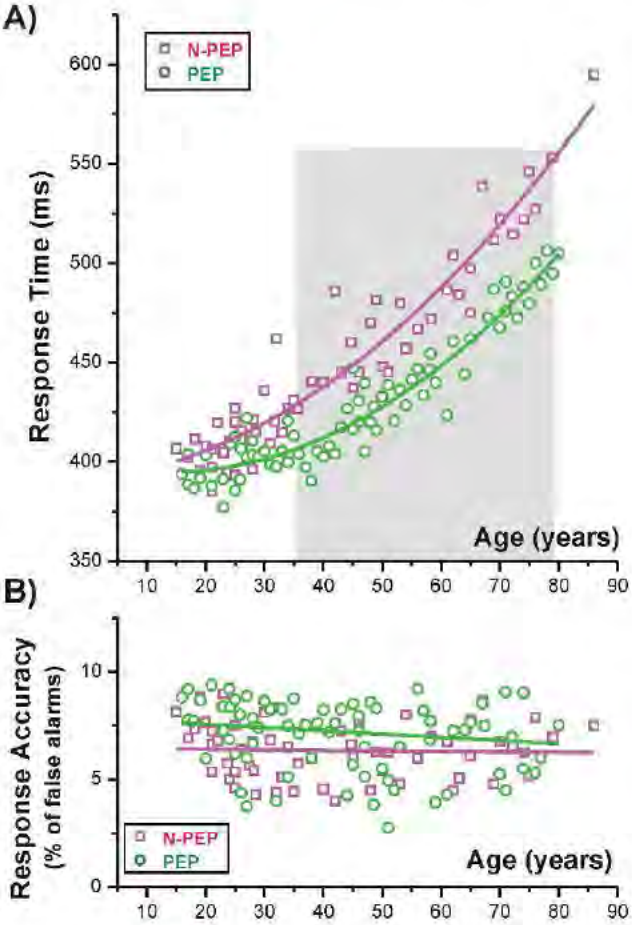

Figure 1. (A) Motor response time increases as a function of age. Significant differences between groups are shown by the gray area behind the plots. (B) Lack of correlation between response accuracy (expressed as percentage of the false alarms) and age.

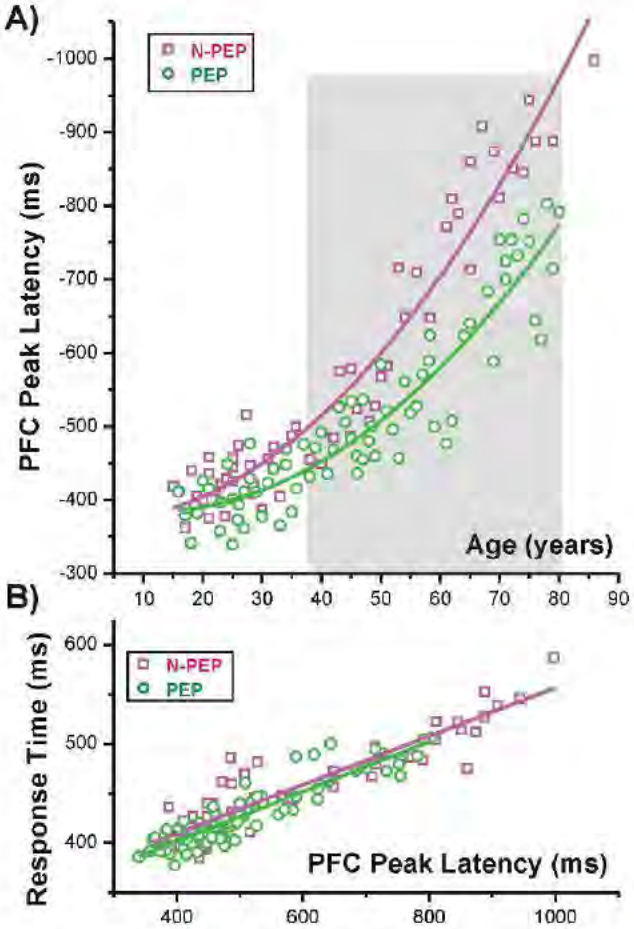

Figure 2. (A) Correlation between age and premotor activity in the prefrontal cortex (PFC). Significant differences between groups are shown by the gray area. (B) Linear correlation between motor response time and premotor activity in the PFC.

(adjusted R^2 = .835; slope = 0.245) and PEP (adjusted R^2 = .846; slope = 0.253) groups, indicating that anticipation in the PFC_PL corresponded with slow RTs (Figure 2B).

Figure 3A shows MRCP waveforms over the medial prefrontal areas in the N-PEP and PEP groups divided into two age cohorts (n = 25): younger (mean age: 25 years) and older (mean age: 65 years). Activity started earlier and was larger in the N-PEP than in the PEP group. The minimum norm estimation (Supplementary Materials) of the cerebral sources that generate prefrontal activity at its peak latency were consistently bilaterally localized within the PFC in the frontal pole (Figure 3B) and showed an increasing gradient of intensity from the younger PEP (the lowest) to the older N-PEP (the highest) participants. This localization agrees well with previous studies that used the same paradigm but a different source localization method (2).

Discussion

The issue of population aging will be a challenge in the coming decades in both advanced and developing countries. Although the clinical literature has recognized for years that exercise affects overall health and brain function (13), less is known about the benefits of physical exercise on executive functions mediated by the PFC across the adult life span. We extended previous investigations by studying a population with a greater age range (15–86 years). Using high-resolution 64-channel EEG, we showed novel results concerning the timing of PFC activity during motor planning, its modulation by physical activity and its relationship with behavioral parameters. Physical activity did not affect PFC activity during young adulthood, but its effect was evident in participants older than 38 years of age: active individuals engaged the PFC less and were faster than less active individuals. We did not observe significant differences in the executive processes of the young participants between the two groups. This suggests that compared with middle-aged and older participants, the young participants were easily able to accomplish the task, showing decreased effortful task preparation, especially in the PFC. The beneficial effects of physical exercise on cognitive functions in

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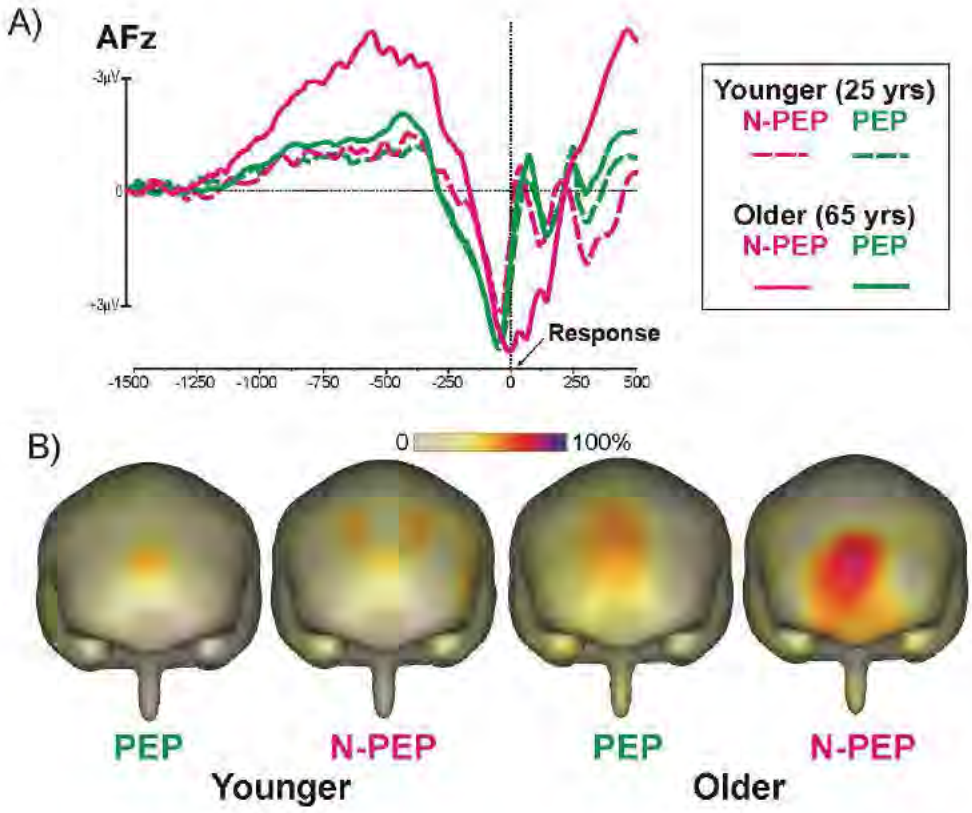

Figure 3. (A) MRCP waveforms over the medial prefrontal cortex (PFC; recorded on AFz) across the four cohorts. Premotor activity shows a gently rising negativity peaking around the stimulus onset. Time zero represents the response onset. (B) Source localization of the aforementioned activity using MNE rendered on a realistic template of the brain (frontal point of view) at PFC_PL. The activation foci were within the mid-dorsal PFC in the middle-frontal gyrus (BAs 9–10).

young people were not detected during the performance of the present task, but they cannot be excluded.

We observed that physical exercise is particularly important from middle age onwards, when the brain faces a series of challenges that can include neurodegenerative diseases. We extended previous fMRI findings, which revealed lower activation of the PFC in older adults during executive control tasks following an exercise intervention (14). The present findings reveal that in middle-aged and older individuals, moderate-to-high levels of physical exercise has beneficial effects on the planning and execution of a response, as well as on the executive functions mediated by the PFC; thus, public policy should focus on ways of increasing volitional activity in adults, starting from middle age.

There are accumulating animal and human studies explaining the metabolic and molecular changes induced by physical exercise that promote cognitive health in older people. Physical exercise has been shown to promote angiogenesis (15,16), neurogenesis (17) (see also *the neurogenic reserve hypothesis*) (18), and synaptogenesis (19) and to modulate central and peripheral levels of key neurochemicals, such as insulin like growth factor 1 and brain-derived neurotrophic factor (20). Physical exercise also induces structural and functional changes across different brain regions, as revealed by neuroimaging findings in response to specific physical exercise interventions (21–23). This study reports the first evidence of changes in the electrophysiology of the PFC induced by physical exercise.

Further studies combining different techniques and behavioral measures would contribute to improving our understanding of the mechanisms underpinning cortical overrecruitment in older adults and how it might be mitigated. Furthermore, further studies should identify methods to choose the most appropriate tools to investigate the aging brain and to propose individually tailored interventions using a combination of physical and cognitive programs for successful aging.

A critical issue of this study is its correlational nature and the lack of a programmed intervention. Future work should seek to replicate the present findings with controlled longitudinal intervention programs.

In summary, these findings are of great importance to researchers in different related fields for fully understanding the aging process and developing effective multidisciplinary therapeutic and prevention strategies to counteract brain diseases.

Supplementary Material

Supplementary material can be found at: http://biomedgerontology.oxfordjournals.org/.

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Who Are the Okinawans? Ancestry, Genome Diversity, and Implications for the Genetic Study of Human Longevity From a Geographically Isolated Population

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Isolated populations have advantages for genetic studies of longevity from decreased haplotype diversity and long-range linkage disequilibrium. This permits smaller sample sizes without loss of power, among other utilities. Little is known about the genome of the Okinawans, a potential population isolate, recognized for longevity. Therefore, we assessed genetic diversity, structure, and admixture in Okinawans, and compared this with Caucasians, Chinese, Japanese, and Africans from HapMap II, genotyped on the same Affymetrix GeneChip Human Mapping 500K array. Principal component analysis, haplotype coverage, and linkage disequilibrium decay revealed a distinct Okinawan genome—more homogeneity, less haplotype diversity, and longer range linkage disequilibrium. Population structure and admixture analyses utilizing 52 global reference populations from the Human Genome Diversity Cell Line Panel demonstrated that Okinawans clustered almost exclusively with East Asians. Sibling relative risk (λ_s) analysis revealed that siblings of Okinawan centenarians have 3.11 times (females) and 3.77 times (males) more likelihood of centenarianism. These findings suggest that Okinawans are genetically distinct and share several characteristics of a population isolate, which are prone to develop extreme phenotypes (eg, longevity) from genetic drift, natural selection, and population bottlenecks. These data support further exploration of genetic influence on longevity in the Okinawans.

Key Words: Okinawa—Longevity—Ancestry—Genome diversity—HapMap.

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THE genetic contribution to human longevity is poorly understood (1). After nearly three decades of candidate gene studies and a plethora of recent genome-wide association studies (GWAS) among other approaches, the only robust and widely replicated human genetic loci remain *APOE* and *FOXO3* (2–11).

Many studies of common variants have been limited by small sample sizes, particularly in GWAS. The problem is exacerbated in the case of rare variants (some of which may have large effect sizes), where even larger sample sizes are required. This suggests one reason why a significant fraction of the heritability of longevity and other complex phenotypes remains unexplained (12). Increased use of population isolates may help overcome these challenges.

Rare variants are more likely to be present with higher frequency in isolated populations in comparison to the general population (13) and the use of isolated populations can facilitate their identification. Isolated populations can also be beneficial in genetic association studies and sequencing studies, owing to increased linkage disequilibrium (LD) and decreased allelic diversity (14–17). This can allow a smaller sample size to be used to achieve the same statistical power as a large sample. This has several major advantages. For example, smaller sample sizes can reduce the cost of such studies. In addition, with rare phenotypes, such as longevity, recruitment of large numbers of study participants may not be feasible. With this in mind, it would be valuable to know more about some of these population isolates and

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their utility for further large-scale studies of human longevity. Here, we explore the utility of the Okinawans for such studies.

Okinawa is the southernmost of 47 prefectures of Japan with a population of approximately 1.3 million persons. It consists of a chain of islands spread in an arc (Ryukyu archipelago) with the northern end of the chain near Amami Islands of Kyushu and the southern end near Taiwan. Okinawa Island, the largest and most populous of the Ryukyu Islands that make up Okinawa prefecture is geographically isolated, situated more than 500 km (300 miles) from mainland Japan, Taiwan, and mainland China. Okinawa prefecture was an independent kingdom (Kingdom of the Ryukyus) until 1879, when it was annexed by Japan and later became a Japanese prefecture. Historically, Okinawa has had a unique culture, including language, music, and religion (18). However, little is known for certain about the origin and genetic structure of its people.

Due to its geographic isolation, Okinawa has likely had few population influxes following the original peopling of the islands sometime during the Upper Paleolithic period (between 50,000 and 10,000 years ago). Archeological and other evidence suggests that at least two major waves of migration reached the Japanese archipelago from Asia likely from both Northern and Southern migratory routes through temporary land bridges to the continent (or island chains) although detailed timing, root populations, migration, and expansion routes are still being debated (19–22). The earliest human remains in Japan (from the Yamashita site in Okinawa) date to about 30,000 years ago and are thought to be ancestors of the Jomon people, whose pottery appeared throughout the Japanese archipelago as far north as Siberia by about 13,000 years ago. New migrants, called the Yayoi people, arrived in Japan from the Korean peninsula about 2,000 years ago causing admixture of the two populations (19,23) but appearing not to have had a major genetic influence in outlying regions such as Okinawa or Hokkaido (21,22). A study of the Y chromosome supports this admixture hypothesis (24) as do recent genetic studies of ancestry-informative human leukocyte antigen (HLA) alleles (25) and genome-wide single-nucleotide polymorphism (SNP) data of the three human populations inhabiting the Japanese archipelago, the Ainu, mainland Japanese, and the Ryukyuan (Okinawan) (26). These data suggest Okinawa has for a long period been a population isolate. Such isolates can develop extreme phenotypes as a result of genetic drift (allele drop-out), natural selection, and population bottlenecks (27,28).

The Okinawans have a very low age-adjusted mortality rate at older ages and among the lowest prevalence of cardiovascular disease and other age-associated diseases in the world (29–32). Furthermore, Okinawa has long had the highest life expectancy at older ages (eg, remaining life expectancy at age 65 years) among the 47 Japanese prefectures, Japan having led the world in life expectancy for several decades (33,34). Okinawa also has had among the highest prevalence of centenarians among the 47 Japanese prefectures since records began to be kept by the Ministry of Health in the early 1960s despite the high birth rate and expanding population of Okinawa prefecture (35). This longevity phenotype has been in existence since records have been kept in Japan (36), and despite the well-known dietary and other nongenetic advantages of the Okinawans (37), there may be some additional unknown genetic influence favoring this extreme phenotype.

Therefore, we hypothesized that the Okinawans would possess characteristics of a population isolate, including a distinct genetic population structure. We hypothesized this would include a more homogeneous genome, with less haplotype diversity and longer range LD, furthering the attractiveness of this population for genetic studies of human longevity. The goal of our study was twofold. One, to investigate the genetic population structure of the Okinawans (extent of genetic variation, diversity, and admixture in this population); two, to estimate the heritability of longevity among siblings of Okinawan centenarians.

Methods

Study Populations

For comparisons of genome diversity and population structure in the Okinawans, a total of 26 healthy, unrelated, middle-aged Okinawans and 24 Okinawan centenarians or near-centenarians (defined as men 94 years or older and women 98 years or older, as they represent the upper 1% survival group (38)) were recruited by the Okinawa Centenarian Study (OCS) research team. The OCS began in 1976, making it the world's longest ongoing population-based study of centenarians (39). *Koseki* (household registration), kept at the city offices were used to confirm the age of centenarians.

Participants provided informed consent and underwent the OCS protocol (includes a physical exam, electrocardiogram (EKG), health questionnaires, among other items described in more detail elsewhere) (39–42). A 25 mL blood sample was collected from the antecubital fossa of each participant by venipuncture. Total cellular DNA was isolated using the PureGene system (Gentra Systems, Inc.) and quantified using PicoGreen staining (Molecular Probes, Eugene, OR). The study was approved by the former local institutional review board at the University of California, San Francisco, CA, Pacific Health Research Institute, and Okinawa International University.

For comparison, we used genotypic data for four HapMap populations that were generated by the same genotyping platform used for genotyping the Okinawans (see below). These data were downloaded from the Affymetrix website (http://www.affymetrix.com/support/technical/sample_data/500k_hapmap_genotype_data.affx). The International HapMap project (43,44) is a multicountry collaboration that

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aims to catalog genetic similarities and differences between human individuals of different ethnicities with the use of approximately 1.2×10^6 SNPs. In the current study, a total of 210 unrelated participants from the HapMap project were used, including 60 independent Caucasian (CEU) samples from Utah, United States with ancestry from Northern and Western Europe; 60 independent Yoruban (YRI) samples from Ibadan, Nigeria; 45 independent Japanese (JPT) samples from Tokyo, Japan; and 45 independent Han Chinese (CHB) samples from Beijing, China. CHB samples were collected at Beijing Normal University and these participants were self-identified as having at least three out of four CHB grandparents. The JPT samples were collected in the Tokyo metropolitan area and were from people who originated from (or whose ancestors originated from) many different parts of Japan. Hence, the JPT samples are considered representative of the majority of the population in Japan. The HapMap samples were genotyped by the International HapMap project.

To discern population structure and determine admixture estimates, we used the global reference populations from the Human Genome Diversity Cell Line Panel HGDP-CEPH (45). HGDP-CEPH is a resource of 1,063 cultured lymphoblastoid cell lines from 1,050 individuals banked at the Foundation Jean Dausset-CEPH in Paris. Samples were selected from 52 populations in seven broad geographic/continental regions (Africa, Europe, Middle East, Central/South Asia, East Asia, Oceania, and Americas). Genotypes of HGDP participants from the Illumina 650Y SNP array are publicly available (http://hagsc.org/hgdp/files.html). In the current study, we used a subset of the HGDP-CEPH that includes a total of 941 participants from the standardized H952 subset (46).

For calculation of sibling relative risk of centenarianism (achieving an age of 100 years), we used information collected by the OCS, which routinely collects family data from centenarians as part of the OCS protocol (39,41,47). We also used demographic data from the Okinawan Prefectural Government from the Okinawan birth cohort of 1886–1890, as the general population for comparison in the calculation of sibling relative risk. There was no age information recorded for both cohorts except if an individual has lived beyond the age of 100 years or not. Therefore, for this analysis, centenarians were defined as those who lived past the age of 100 years.

The OCS included a total of 988 siblings of centenarians (481 males and 507 females). The Okinawa birth cohort of 1886–1890 included a total of 23,563 males and 23,192 females, of which 52 males and 250 females lived past the age of 100 years.

Genotyping and Quality Control

Genotyping of the Okinawan samples (26 middle-aged Okinawans and 24 centenarians) was carried out using the Affymetrix GeneChip Human Mapping 500K (Affymetrix, Santa Clara, CA), according to the manufacturer's protocols (http://www.affymetrix.com). This array contains ~500,000 SNPs. The average call rate for the Okinawan samples was ~98%. To obtain high quality data, we excluded samples for which more than 10% of genotypes were missing. We removed SNPs for which >5% of genotypes were missing and SNPs that deviated significantly from Hardy–Weinberg equilibrium ($p < .001$) in the control samples. This resulted in a dataset of 476,498 SNPs from the 22 autosomes for subsequent analysis.

Statistical Analysis

Population Structure and Diversity

Principal component analysis.—Principal component analysis (PCA) is a linear dimensionality reduction technique used to identify patterns in data. PCA was performed on all SNPs to assess the difference in population structure between the Okinawan samples and the four HapMap populations (see Study populations) using the *prcomp* function in R 2.10.1 statistical software (www.r-project.org). The Okinawans and the four HapMap populations were projected on the top three principal components. To obtain a suitable picture on the extent of genetic structure among the Asian populations, we performed PCA on all of the SNPs common among the Okinawan, JPT, and CHB samples.

Distribution of minor allele frequency, LD decay, and haplotype coverage.—To explore the difference in frequency distribution between the Okinawans and the four HapMap samples for the minor alleles of each genotype that passed the quality control filtering process, we calculated the frequency of SNPs in each of the minor allele frequency bins as shown in (Figure 1).

The Haploview v4.0.1 program (48) was used to evaluate the LD between pairwise SNPs. This program uses Mendelian inheritance and an expectation-maximization (EM) type phasing algorithm to infer the haplotype, and uses the estimated haplotype to calculate LD. Here, LD was measured by r^2 and D'. The decline of LD over distance between SNPs was investigated in the Okinawan and the four HapMap populations by calculating the fraction of common SNPs (minor allele frequency > 0.1) with $r^2 \geq .8$ over certain distance bins with a maximum distance of 1,000 kb.

We calculated the haplotype coverage of the genome. This was compared between the Okinawans and the four HapMap populations. To do this, the whole genome was divided into segments of approximately 300-kb segments. Haploview was used to estimate the haplotype and the haplotype frequency for each segment. The program produces a list of the haplotype and the haplotype frequencies in a descending order of haplotype frequency. For each fixed n, cumulative frequencies of the first n haplotypes were calculated for each segment. Then, the cumulative haplotype frequencies for the first n haplotypes were averaged

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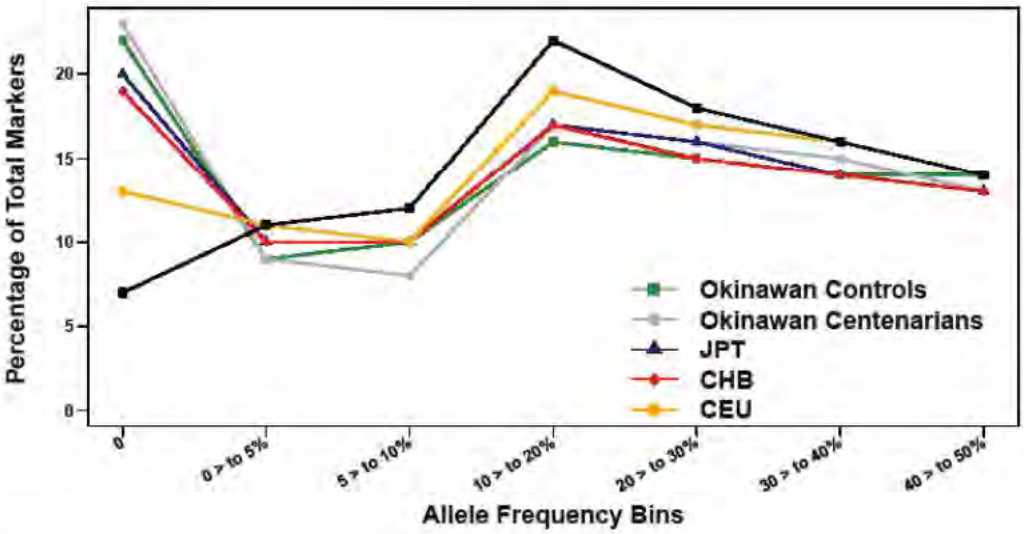

Figure 1. Allele frequency distribution in the Okinawan population and the four HapMap populations. Comparison of the distribution of minor allele frequency in the seven allele frequency bins between the Okinawan population and the four HapMap populations (JPT: Japanese, CHB: Han Chinese, CEU: Caucasian from Utah, YRI: Yoruban from Nigeria). The plot shows that the frequency of nonpolymorphic single-nucleotide polymorphisms (SNPs) in the Okinawans, Chinese, and Japanese (~20%) is higher compared with the Caucasians and Yoruban. For common SNPs, there was no difference in minor allele frequency between the Okinawan and HapMap samples. This shows that Asians have less diverse genomes with higher proportion of nonpolymorphic SNPs compared with the Caucasians and the Yoruban. The color version of this figure is available online.

over all segments. The cumulative haplotype frequencies, so-called haplotype coverage, were compared between the Okinawans and the four HapMap populations.

Population structure and admixture estimation.—To discern population structure and admixture proportions of the Okinawans, we first developed an ancestry-informative markers (AIMs) panel using Illumina 650Y SNP genotypes of 941 HGDP participants assigned to be from one of seven broad geographic/continental regions (Africa, Europe, Middle East, Central/South Asia, East Asia, Oceania and Americas). Starting with a previously developed ancestry-informative markers set of 5,000 markers with high informativeness to distinguish the seven continental regions (49), we chose a subset of 680 overlapping SNPs that were also genotyped in the Okinawan participants. Next, global ancestry of the 50 Okinawans was determined. STRUCTURE v2.3.2.1 (50,51) was used to obtain admixture estimates first considering genetic contributions of all 52 populations from the seven continental regions. Five independent runs were performed under the admixture model using 20,000 burn-in cycles and 20,000 MCMC (Markov Chain Monte Carlo) replications. For the allele frequency model, the "infer α" option with the same, uniform alpha for all populations was used under the $\lambda = 1$ option. Reference populations were predefined at $K = 7$ for the 941 reference participants and allele frequencies were updated using only individuals with population information at a migration prior of 0.05. All other parameters were set at default. CLUMPP v1.1.2 (52) was used to combine the results of the different runs. Finally, to determine Chinese versus Japanese admixture estimates of the Okinawans, the HGDP Han Chinese ($N = 44$) and Japanese ($N = 27$) participants were combined with the HapMap Han Chinese ($N = 84$) and JPT ($N = 86$) participants to build a reference population of 241 participants. STRUCTURE was run including 680 SNPs at $K = 2$ using the above settings.

Sibling relative risk estimate.—To estimate the heritability of longevity among siblings, both the OCS dataset and the Okinawan birth cohorts from 1886 to 1890 were used to calculate the sibling relative risk (λ_s) of centenarianism (becoming a centenarian) for both male and female siblings relative to the general Okinawan population. The relative risk for siblings was calculated as the ratio of the percentage of centenarian siblings among the Okinawan centenarian population and the percentage of centenarian siblings among the general population. All statistical analyses were performed using R 2.10.1 statistical software (www.r-project.org) unless stated otherwise.

Results

Population Structure and Diversity

First, we performed PCA to identify structure in the distribution of the genetic variation across the Okinawan samples and the four HapMap populations. We used the SNP data from the five populations and their projection onto the primary PCA axes. Figure 2A shows the projection of the Okinawan samples along with the four HapMap samples on the top three principal components. The top PC divided the populations into three main clusters (Asian = [Okinawan, JPT, CHB], CEU, YRI). PCA revealed a good separation

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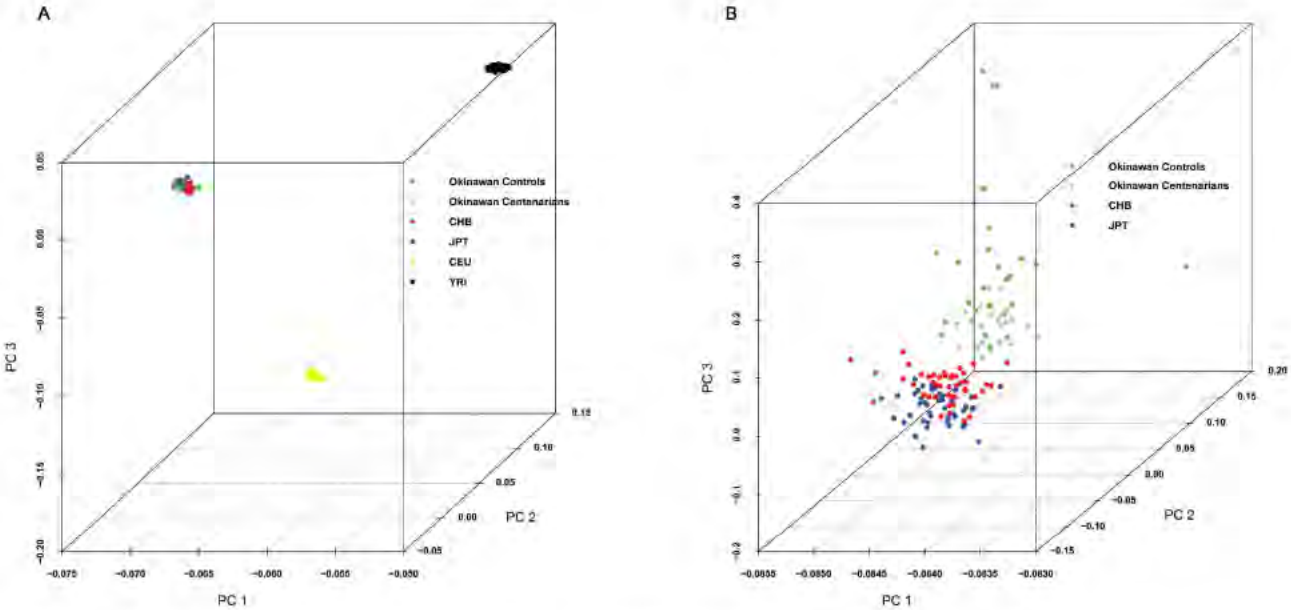

Figure 2. Principal component analysis (PCA) plots for the Okinawan population and the four HapMap populations. (**A**) PCA showing projection of the four HapMap populations and Okinawan samples on the top three principal components (Okinawans in green, Japanese in blue, Chinese in red, Caucasians in yellow, and Yoruban in black): 53.1%, 5.6%, and 2.8% of the variance were explained by PC1, PC2, and PC3, respectively. The Okinawans clustered closer to Japanese and Chinese and further away from the Caucasian and the Yoruban. (**B**) PCA results show the projection of the Okinawan, Japanese, and Chinese samples on the top three principal components (middle-aged Okinawans in green, Okinawan centenarians in gray, Japanese in blue, and Chinese in red); 63%, 0.7%, and 0.3% of the variance were explained by PC1, PC2, and PC3, respectively. The plot suggests: (i) the Okinawans are genetically homogenous and cluster distinctly from the Chinese and the Japanese, (ii) Okinawan centenarians tend to cluster together suggesting some shared genetic loci for longevity. The color version of this figure is available online.

between the Okinawan samples and the YRI as well as the CEU. In addition, the Okinawans were close to both the JPT and the CHB HapMap samples as indicated by the plot, they are all clustered together. However, performing PCA using only the Okinawan and the Asian HapMap samples suggested that the Okinawan population is a homogeneous group and was distinct from the Japanese and the Chinese (Figure 2B). We also observed that the Okinawan centenarians were somewhat grouped together forming one cluster when compared with the middle-aged Okinawans. This may suggest that the Okinawan centenarians have a similar genetic background that contributes to their longevity.

Next, we examined the minor allele frequency distribution in the Okinawan samples and the four HapMap populations by calculating the frequency of SNPs in seven allele frequency bins in all five populations (Figure 1). The frequency of the nonpolymorphic SNPs in the Okinawan, JPT, and CHB (approximately 20%) was higher than in the CEU (13%) and YRI (7%). This is consistent with what has been reported in the literature previously (14). Thus, for nonpolymorphic SNPs, the allele frequency distribution is similar between the Okinawan and the Asian HapMap population with less variation compared with the CEU and the YRI. For common SNPs, we did not, however, observe a significant difference in the distribution of the allele frequency in the five different populations (Figure 1).

To investigate the relative extent of LD in the Okinawan population compared with the four HapMap populations, we calculated the fraction of pairwise common SNPs that were highly correlated (defined as $r^2 > .8$). Figure 3 shows that the LD decay over distance in the Okinawan is longer in comparison with the four HapMap populations. Overall, the Okinawan population had a higher LD between SNPs within 1,000-kb distance, compared with the four HapMap samples when using r^2 as measure for LD, but we did not see this when D' was used as the LD measure. In the Okinawan samples, 54.2% SNP pairs at <5 kb had an $r^2 \geq .8$, compared with 40.9%, 40.9%, 37%, and 23.7% in JPT, CHB, CEU, and YRI, respectively.

When considering SNP pairs that were further apart from each other (80–100 kb), 3.4% of these pairs were in strong LD in the Okinawan compared with 2.2%, 2.1%, 2%, and 0.5% in JPT, CHB, CEU, and YRI, respectively (Figure 3). There were 1.1–3.1 times percentage of SNP pairs (>100 kb apart) in strong LD in Okinawans compared with JPT, and there was 2.9–18.6-fold difference when comparing Okinawans to YRI.

As for the haplotype coverage, the Okinawa samples had higher haplotype coverage compared with the HapMap samples. Within a 300-kb distance of separation, the most common 15 haplotypes on average accounted for 90% of haplotypes that were present in the Okinawans, compared with 70% in JPT and CHB, 62% in CEU, and only 47% in YRI (Table 1). The most common 10 haplotypes on average accounted for 83% of haplotypes that were present in the Okinawans, but only accounted for 38%–61% of the

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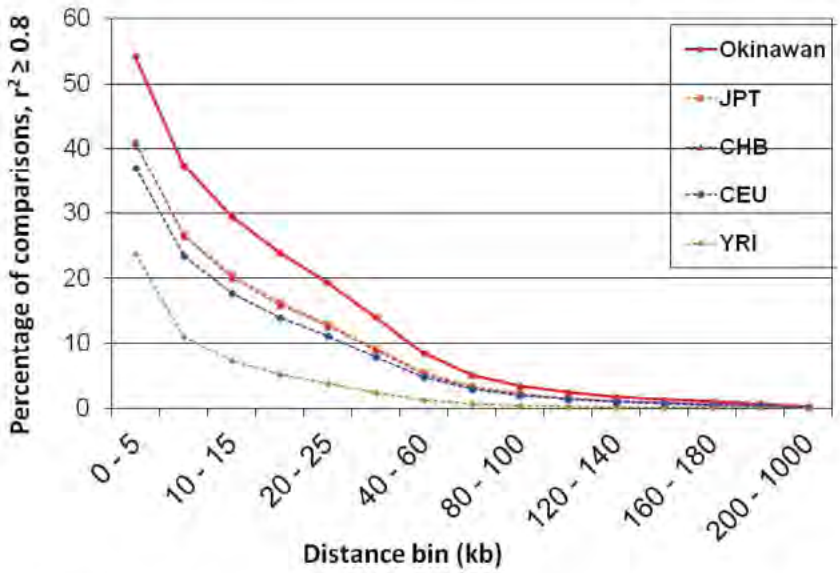

Figure 3. Linkage disequilibrium (LD) decay over distance in the Okinawan and the four HapMap populations. This plot shows the LD decay over distance in the Okinawans is longer compared with the four HapMap populations (JPT: Japanese, CHB: Han Chinese, CEU: Caucasian from Utah, YRI: Yoruban from Nigeria). This suggests that the Okinawans are a population isolate with less genetic diversity and long stretches of LD. The color version of this figure is available online.

Table 1. Percentage of Haplotypes Accounted for by the Most Common Haplotypes

	Number of Most Common Haplotypes							
Population	5	10	15	20	25	30	35	40
Okinawa	66.8	82.6	89.9	94.1	96.5	97.4	97.5	97.6
JPT	46.9	61.1	69.7	75.4	79.9	83.7	86.9	89.5
CHB	47.3	61.4	70.1	75.7	80.1	84	87.3	89.9
CEU	40.9	54.5	62.4	67.1	68.8	69	69	69
YRI	26.1	38.4	46.6	51.8	54	54.2	54.3	54.3

Notes: Comparison of the haplotype coverage between the Okinawans and four HapMap populations (JPT: Japanese, CHB: Han Chinese, CEU: Caucasian from Utah, YRI: Yoruban from Nigeria). These results suggest that the Okinawans have a much lower haplotype diversity compared with the four HapMap populations and, therefore, are more genetically homogeneous.

haplotypes that were present in the four HapMap populations (Table 1). This indicated that the diversity of long-range haplotypes was significantly lower in Okinawan samples compared with the four HapMap samples. These results suggest that the Okinawa population has significantly higher LD and lower haplotype diversity compared with the four HapMap populations.

Population Structure and Admixture Estimation

Using STRUCTURE to discern global ancestry and admixture proportions, we found that the Okinawans clustered consistently with East Asians, with individual ancestry estimates (ie, the estimated membership coefficients for each individual in each of the seven predefined world regions) ranging from 0.928 to 0.997. No other world population present in the reference dataset had a significant contribution to the Okinawan participants (Figure 4A). The maximum ancestry estimate of any Okinawan individual in non-East Asian clusters was 1.6% African, 0.8% European, 1.2% Middle Eastern, 1.6% Central/South Asian, 1.0% Americas, and 6.5% Oceanian.

Based on these results, we next determined Okinawan admixture estimates within East Asian Chinese and Japanese populations only. For this analysis, our reference populations included the Han North and South Chinese, Japanese participants from HGDP, and the HapMap CHB in Beijing, and Japanese participants. On average, the Okinawans were found to share 80.8% (±11.2 *SD*) admixture with Japanese and 19.2% (±11.2 *SD*) admixture with Chinese. Individual admixture estimates were quite variable and ranged from 5.84% to 57.82% Chinese admixture (Figure 4B).

Sibling Relative Risk Estimate

To further quantify the genetic contribution to longevity in the Okinawan population, we calculated the sibling relative risk (λ_s) of centenarianism for the birth cohort of 1886–1890. There were a total of 52 male and 250 female centenarians among this birth cohort with 4 male

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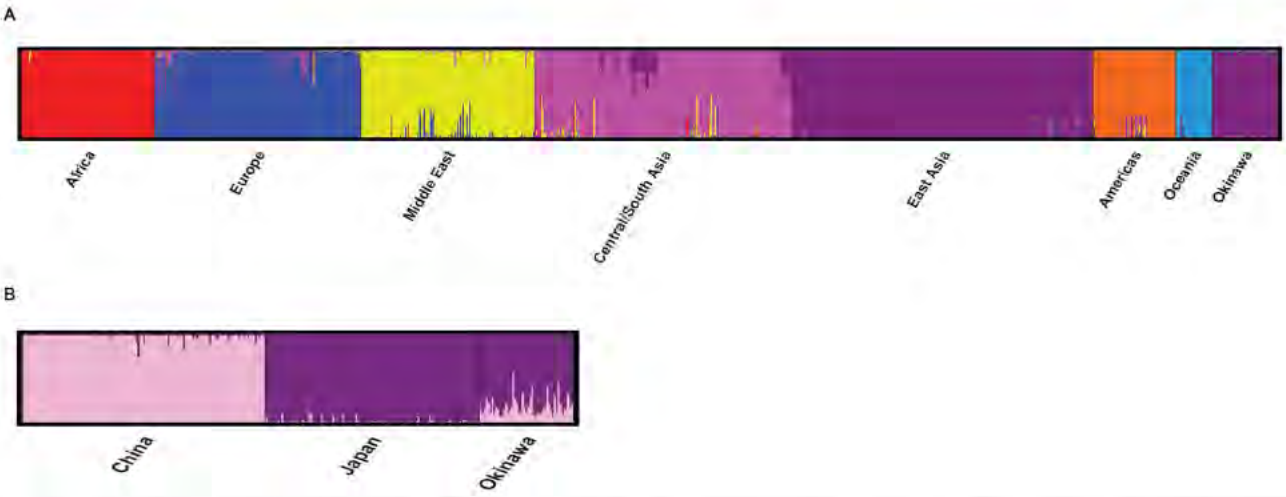

Figure 1. Summary plot of individual admixture proportions. (**A**) Summary plot of individual admixture proportions. These data demonstrate Okinawan ancestry proportions on a global scale from comparisons with 944 Human Genome Diversity Cell Line Panel (HGDP) participants, grouped into seven main global regions/continents (Africa, Europe, Middle East, Central/South Asia, Americas, and Oceania). From the admixture proportions plot, the Okinawans cluster primarily with East Asians and very little contribution (<1% individual ancestry estimates) from the remaining global regions. (**B**) Summary plot of individual admixture proportions. These data demonstrate the results of individual admixture proportions estimated from 680 Ancestry Informative Markers (AIMs), which are polymorphisms that exhibit substantially different frequencies between populations from different geographical regions and can be used to estimate the ancestry of an individual. Each individual is represented by a single vertical line broken into two colored segments, with lengths proportional to each of the two inferred clusters. Pink-colored shade indicates the Han Chinese ancestry proportion, and purple-colored shade indicates the Japanese ancestry proportion. The predefined populations Japanese, Han Chinese, and Okinawans are presented on the abscissa and the ordinate indicates the admixture proportion. On average, the Okinawans were found to share 80.8% (±11.2 *SD*) admixture with Japanese and 19.2% (±11.2 *SD*) admixture with Chinese suggesting that the Okinawans and the Japanese share substantial common ancestry. The color version of this figure is available online.

and 17 female siblings of centenarians who also achieved centenarianism.

Based on λ_s values, we found that male siblings of Okinawan centenarians were 3.77 more likely to be centenarians (95% confidence interval [CI]: 1.37–10.38) compared with 3.11 for female siblings (95% CI: 1.92–5.04).

Discussion

Human longevity is a complex phenotype that is determined by the interplay of genes, environment, and chance. Evidence suggests that a significant proportion of this extreme phenotype may be due to genetic factors (4,53). However, only two genes (*APOE* and *FOXO3*) have been consistently shown to influence this phenotype in humans and studies of genetic pathways and networks are still in their infancy (54). Part of the challenge in studies of human longevity has been the lack of optimal study populations, including lack of birth cohort-matched controls, population stratification, among other issues (54). The more stringent the age qualification for longevity, the more strongly genes likely influence this phenotype (55), yet the longest lived are also the most difficult to recruit and examine. Population isolates can be used to help overcome these challenges (15,27).

In order to understand more about one putative population isolate well known for their longevity, the Okinawans, we performed a pilot GWAS of a small sample of middle-aged Okinawans recruited from the general Okinawan population as well as a small sample of Okinawan centenarians. We examined genetic structure, admixture, and diversity and found that the Okinawans are a genetically homogenous population that is clearly distinct from the four major HapMap populations. They clustered primarily with East Asians (with admixture estimates of about 80% Japanese and 19% Chinese) and no other world region had a significant contribution.

Long stretches of LD and decreased allelic diversity were observed and supports the hypothesis that Okinawans are an isolate with limited gene flow from outside populations, and are likely descended from an original, older ancestral population called the Jomon who already possessed a high degree of differentiation from Paleolithic times (22). These results are also supported by population genetic theory where genetic drift can play a significant role in the LD decay over distance (17). We observed, moreover, a clustering of the Okinawan centenarians into one group suggesting that there might be similar, strong genetic factors contributing to their longevity. In estimating the sibling relative risk (λ_s) for centenarianism, we found that male siblings of Okinawan centenarians were 3.77 (95% CI: 1.37–10.38) times more likely to become centenarians and female siblings 3.11 (95% CI: 1.92–5.04) times more likely. In a prior study of λ_s in long-lived Okinawans, we also found longevity advantages for centenarian siblings, this from an analysis of cumulative survival advantages for siblings of centenarians (56). For the 1890 Okinawan birth cohort, male siblings of centenarians had a 5.43-fold (95% CI: 4.52–6.32) higher likelihood, and female siblings had a 2.58-fold (95% CI: 2.28–2.87) higher likelihood, of nonagenarianism (living at

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least 90 years), compared with other members of their birth cohort.

Although the current estimates for centenarianism, at least for males, appear to be somewhat lower than our prior estimates for nonagenarianism, they both point to strong familial longevity advantages and we should expect some differences between the two sets of estimates due to methodological differences and the size of the CIs. The prior λ_s estimates used a demographic method and a large study population, where the calculation was based on the cumulative survival rates for siblings of centenarians versus the general population from the 1890 birth cohort. In contrast, the sibling relative risk for centenarianism reported in the current study is based on the ratio of the percentage of centenarian siblings in the centenarian population versus the general population, from the 1886–1890 birth cohorts. Due to the small number of siblings of centenarians who also achieved centenarianism in the current study (4 male centenarians and 17 female centenarians) the 95% CI for the relative risk of centenarianism is relatively wide. Nevertheless, two different methods of estimating λ_s come to the same conclusion—that there is a sizable longevity advantage for siblings of centenarians in Okinawa. In a population-based study of Utah families, the estimated λ_s was 2.3 (95% CI: 2.08–2.56) for near-centenarianism (age 95 years for men and 97 years for women) (57). This may suggest a stronger genetic influence for longevity in the Okinawan population, although more work would have to be done to confirm whether the Okinawan population has a genetic advantage for longevity versus other populations as the wide CI based on our Okinawan samples precludes any definitive conclusions.

Overall, these data suggest that further study of the genetic basis of human longevity utilizing the Okinawan population and other population isolates may be an attractive approach for both common and rare variants. Rare variants, in particular, are more likely to reach a relatively high frequency in population isolates and the possibility of attaining the necessary power to detect causal genetic variants that contribute to complex phenotypes is enhanced.

Past studies using geographically and/or ethnically isolated populations have yielded some interesting findings, with research in this area beginning in earnest in the 1980s. The first such studies came from the OCS research group. A study by Suzuki *et al.* (58) on the Okinawan population was the first to use centenarian pedigrees to demonstrate that long-lived siblings exist in centenarian families. This finding has since been replicated in several centenarian studies (56,59,60).

The first candidate gene study of the genetics of human longevity also used a population isolate. In 1987, Suzuki and colleagues from the OCS assessed *HLA* polymorphisms across age deciles from youth to centenarian years. This study demonstrated that long-lived Okinawans (nonagenarians and centenarians) had overrepresentation of some *HLA-DR* alleles and underrepresentation of others (61), suggesting that some alleles might modify risk for longevity. OCS investigators later extended these findings to other *HLA* alleles (62). Some of these findings, particularly with regard to homozygosity for *HLA-DR* alleles in long-lived persons, have since been replicated in other populations, and the immunogenetics of aging remains an active area of interest (63,64).

Population isolates have also demonstrated that variation in several genes is associated with life span and/or health span in several other candidate gene studies but none have yet been widely replicated. This includes studies of Ashkenazi Jews with the cholesteryl ester transfer protein (*CETP*) gene and the apolipoprotein C-III (*APOC3*) gene (65); Amish, with the *APOC3* (66); Laron Ecuadorians with the growth hormone receptor (*GHR*) gene (67); and Americans of Japanese and Okinawan ethnicity in Hawaii, with the *CETP* gene (42,68). In one of few studies that included a large sample of African Americans, Jazwinski *et al.* (69) found certain combinations of variants in three genes (*APOE*, *HRAS1*, and *LASS1*) are associated with human longevity and healthy aging and replicated the results in a second population.

In 2008, using population isolates in Hawaii (Americans of Okinawan and Japanese ancestry) in a candidate gene study focused on the insulin-signaling pathway, Willcox *et al.* (2) found that long-lived Americans of Okinawan and Japanese ancestry had overrepresentation of several *FOXO3* SNPs that were in LD with each other—suggesting a protective effect for longevity originating from the region of LD. This discovery was inspired by a prior assessment of the most promising, evolutionarily conserved genetic findings from model organisms of aging (70). In the most significant association with longevity (*FOXO3* SNP rs2802292), those heterozygous for the protective allele had almost double the odds of centenarianism and those homozygous had near triple such odds. The protective finding was rapidly and widely replicated (4) in multiple human populations and, after *APOE*, remains the only other widely replicated locus in the genetics of human longevity.

Population isolates also overcome challenges with human population substructure for genetic studies of longevity. The challenges with differing population substructures, typically seen in populations that have had successive waves of recent immigration (eg, U.S. population) have become more obvious since the advent of large-scale GWAS. Genomic technology began rapidly evolving in the 2000s and the first GWAS of centenarian genomes was performed. Puca *et al.* (71) compared siblings of American centenarians (Caucasian descent) with siblings of individuals that died before the age of 73 and reported that siblings of these Caucasian centenarians had suggestive evidence of linkage with life span on chromosome 4 (Logarithm of the Odds score [LOD] = 3.65, p = .044). Geesaman *et al.* (72) subsequently identified a potential susceptibility gene (*MTP*) associated with life span using positional cloning in the same population. This finding

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has not, however, been widely replicated and some evidence suggests that it may be an artifact of population stratification (from differing genetic substructures of the ancestral Caucasian study populations) (73).

The aforementioned studies highlight some of the strengths and challenges with utilizing various study populations. Issues such as nonrandom sampling and population stratification may lead to null or artifactual findings. These challenges may be among the reasons for the lack of findings and/or replications from genetic studies of human longevity. These issues are compounded in GWAS by inadequate means of controlling for multiple comparisons and incomplete coverage of the genome by commercially available platforms.

Population isolates that possess genetic homogeneity and long-range LD can help reduce the problem of population stratification as well as help address issues of inadequate power and incomplete coverage, especially for large-scale genomic studies such as GWAS. With the advent of high-throughput sequencing technologies, exome or whole genome sequencing is becoming an attractive approach in the identification of novel and rare variants associated with many complex phenotypes (74). Sequencing individuals from population isolates with extreme phenotypes such as longevity may also shed some light on the missing heritability.

Although the current study supports the hypothesis that the Okinawans are genetically homogenous and are of special interest to studies in human longevity, our study has several limitations. One limitation is the small sample size. We studied 24 Okinawan centenarians and 26 middle-aged Okinawans. Although we were able to explore genetic structure, admixture, and diversity in the Okinawans, we did not have adequate power to conduct a more in-depth assessment of common variants that might influence longevity in the Okinawans. In addition, the Affymetrix GeneChip Human Mapping 500K array, by design, interrogates common variants, so we are unable to study rare variants. Further, SNPs on the array are not necessarily distributed uniformly across the genome because of experimental difficulties in designing probes in some parts of the genome. For population structure and admixture estimates, we employed the HapMap and the HGDP-CEPH–cultured lymphoblastoid cell lines that have proven useful in numerous population genetic studies (75). A challenge with cell lines is that they may be subject to rearrangements and significant mutations that can alter cell biology. However, genotype calls are affected to a lesser degree (76).

The strengths of the study include the fact that this is the first in-depth study of the Okinawan genome with implications for longevity research, that both average and long-lived Okinawans were studied, and that results were consistent across several different methods of assessing genetic homogeneity in the Okinawans. In addition, all participants provided blood specimens and samples were collected from one center and genotyped in the same lab, which reduces the possible confounding effect of differences between recruitment sites and genotyping labs.

In conclusion, we have demonstrated that the Okinawans are relatively homogeneous at the genetic level, Okinawan centenarians tend to cluster into an even more homogeneous group suggesting some shared genetic mechanisms for longevity, and that Okinawan centenarian siblings show a high relative risk of longevity. Given their high life expectancy, the high prevalence of centenarians, and the availability of a reliable age registration system (77), the aforementioned factors support the notion that the Okinawans could be a valuable population for future larger scale studies of genetic basis of healthy aging and longevity. Future studies in other large population-based samples of centenarians are needed to generalize our findings.

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Capturing Your Reading Process

Take a few minutes to make some notes about the process you went through in order to make sense of this text.

Even if you weren't explicitly aware of them while you were reading, what strategies did you use?

What, if any, "roadblocks" to understanding did you encounter?

Which of these comprehension problems did you solve? How?

What problems, if any, remain unsolved?

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Reading Process Analysis: Resources and Routines for Making the Invisible Visible

Goals and Purposes

As part of your own professional development experience in Reading Apprenticeship, you have experienced a number of reading process analyses (RPAs). Collaborative inquiry is the hallmark of these routines. The goal of an RPA is to tap into your own problem solving processes while reading challenging texts and to share these processes with a community of readers who are likewise engaged in inquiry into their reading processes.

RPAs are intended for use in the classroom as well as in professional development settings—**they are both inquiry activities and instructional strategies**. These routines are key resources for building a shared inquiry into reading among teachers and students. They are also routines in which new comprehension strategies can be introduced and practiced by students, ultimately becoming part of their own approaches to texts.

Benefits

RPAs benefit both teachers and students in a number of ways. They help teachers begin to recognize and articulate their own subject-based expertise in reading and therefore tap into the resources they can bring to classroom instruction. Similarly, they help students see how to build bridges from the competencies they display outside of the classroom to the academic work they are asked to undertake at school.

In addition, RPAs help teachers and students to build richer conceptions of reading, to build an inquiry community where thinking is valued, and to make new approaches to reading tasks available to developing readers. A common language for talking about thinking and reading processes builds over time in the professional and/or classroom community.

Collaborative Inquiry: Grouping Structures

RPAs begin with the individual reading, then make this personal reading process public and shared among the participants through a variety of means. In general, the structure moves from individual to small group to larger group processing, then back to individual reflection, as follows:

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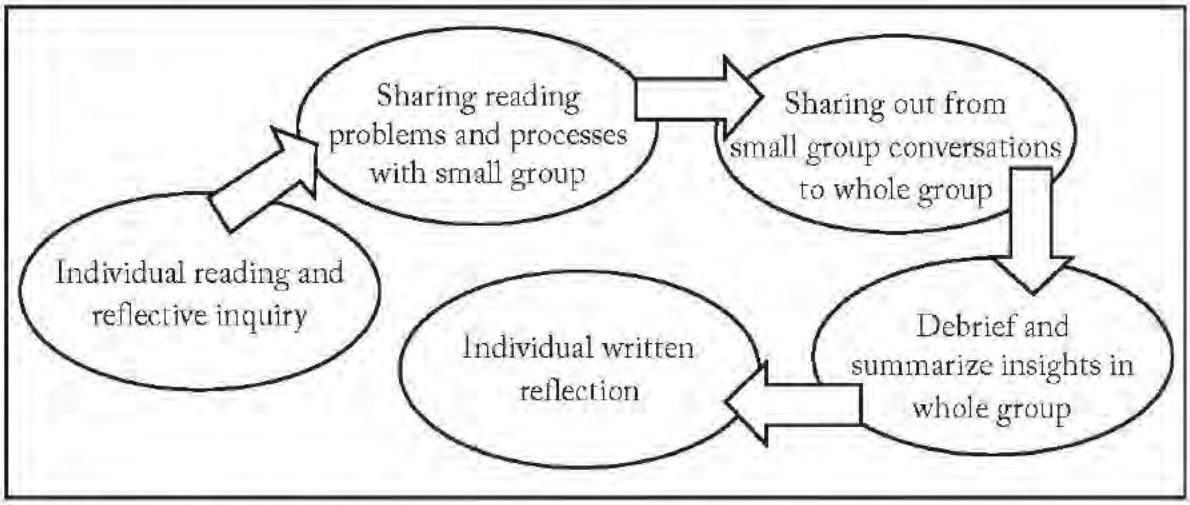

On Choosing Texts for RPAs

In general, the principle of "*planning backwards*" applies to choosing RPA texts, as in any curriculum design. If you want to build awareness of a particular type of reading difficulty and share ways to approach it, or if you want to draw readers' attention to particular aspects of texts or literacy tasks, *be sure to carefully choose a text that will provide the opportunity to surface and explore target concepts and experiences.* This is as true for teacher learning as it is for students.

For example, if you want to be sure that identifying perspective – a key discipline-based reading strategy in history – emerges in the RPA, you will want to choose a text in which word choices, selections of events, and other rhetorical means show a clear perspective on the historical events discussed. If instead you would like participants to reflect on the different challenges presented by primary vs. secondary source materials, you will want to select a text in which both sources are represented. If you want science readers to confront the role that illustrations play in comprehending scientific texts, you will want to be sure to select a text in which illustrations play key parts in the exposition of science ideas. If you are interested in exploring the roles that models play in scientific understanding, you will want to find a text that allows readers to uncover their own use of models as they read. Similarly, depending on your purpose for RPAs in math, you will want to select texts that explore mathematical ideas, or give readers opportunities to engage in problem solving, or offer multiple symbolic languages to "de-code" and comprehend.

When choosing texts for instructional purposes, it is important to keep one thing in mind: The goal of these many experiences with RPA is not to demonstrate how many poorly written texts exist in the world and to invite criticism of the writer. Rather, it is to explore the role that knowledge and experience and strategy play in the reading and

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writing of these texts and the way that "getting in" to a text can rely on sharing a language or code with the author (or perhaps figuring out what the code is and "breaking in" to the text). Further, it is to demonstrate that in this world, experiencing challenge when reading is inevitable, and that we must prepare our students to take on these challenges with a good measure of self assurance, stamina in the face of difficulty, and a set of tools and approaches that will support comprehension.

For the classroom, initial reading process analyses should be carefully planned to invite comfortable participation on the part of all the students. This means that early experiences should draw on student knowledge and experiences to demonstrate, to the students themselves, the ability and resources they bring to reading. Starting with texts that are unfamiliar to you, but very familiar to them, such as song lyrics or strategies for hair styling or video games, can work well. Demonstrating your own difficulty approaching these texts works wonders in setting the tone for inquiry and "making the invisible visible" in the classroom. Over time, reading inquiries should move from familiar to unfamiliar texts, and from easier to more challenging ones, to initiate students into a collaborative inquiry and to encourage them to share their thinking, reading problems, and reading processes with one another. Your goal should be to use reading process analyses to build students' knowledge about the range of texts that are part of your subject area and curriculum, and to help students gain increasingly powerful ways to approach these texts.

The Value of Contrasts (Between Readers, Between Disciplines, Between Types of Text, Between Reading Tasks)

Some of the special power of Reading Process Analysis emerges only when readers have an opportunity to contrast reading experiences. For example, teachers may become more aware of their own discipline-based expertise when they inquire into their reading processes with subject-area texts in the company of colleagues who do not share their subject-area background. Similarly, teachers may become more convinced of the need to support student reading of more expository texts when they have an opportunity to explore the differences in their own reading of narrative fiction versus exposition. Students may only begin to see that they should approach different kinds of reading materials with a different set of strategies when they are able to experience RPAs with different text types, or from different classes, in close proximity to one another.

Because contrasting reading experiences and inquires is so powerful, many facilitators of Reading Apprenticeship professional development make sure to group teachers across

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subject areas at times for these inquiries. In schools, sometimes professional developers have mixed the academic faculty in small groups, giving each group a set of texts from each discipline to explore together. In professional development sessions, following a reading process analysis of one type of text, with a second RPA of another type of text (even two different texts drawn from within a single discipline), is extremely valuable even though it requires a longer time with participants. For example, literature teachers might benefit a great deal from RPAs with a core novel, a passage from a play, and a poem, to begin to articulate the different ways they approach these literary reading experiences.

Types of RPAs and the Learning Opportunities They Offer

Any RPA experience will reveal differences among participating readers in their background knowledge and experiences, as well as in their reading strategies and approaches to texts. However, different types of RPAs offer distinct learning opportunities, because they make particular kinds of reading knowledge and processes visible to the inquiry community.

The next few pages summarize the goals and learning opportunities of the different RPAs that you have experienced or read about in the Metacognitive Conversation supplementary resource packet or in *Reading for Understanding*, chapter nine. For each type of reading process analysis, some guidance about choosing texts for professional development purposes is offered.

Capturing Your Reading Process

Procedures. **After reading** a short but challenging text, participants **write** about their reading processes, including any reading problems they had and what they did to try to solve these problems. As readers **share** reading problems and processes with the group, facilitators and/or group members **ask probing questions** to get underneath "**what**" readers were doing to see "**why**" and "**how**" as well as **what difference** their strategies and approaches made in readers' comprehension.

Opportunities. Participants will likely experience the need to set a purpose for their own reading, or to motivate themselves to read what may be a challenging text. They may also feel social pressure to finish the reading quickly or to demonstrate knowledge and understanding of the text. They will see that their students experience these same needs and social pressures. They will see a great variety in the strategies and approaches different readers bring to this task. They will therefore hear about reading approaches they may want to include in their own repertoires. They will also be able to see how

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different people's knowledge and experiences shape the meanings they derive from texts, and therefore that meaning is in the interaction between individual readers and texts, not contained solely in the text itself.

Choosing texts. For teachers in a professional development setting, texts should be challenging, adult level reading but not so difficult that they discourage teachers from participating. To develop the inquiry community and for first experiences with an RPA like Capturing the Reading Process, you may want to choose a text that is not within the subject area expertise of any of the participants. That way, everyone is likely to be on equal footing with the reading, and surprising areas of individual knowledge or experience can build interest in the collaborative inquiry. At the same time, challenging material can surface behaviors among a community of teachers that look a lot like a typical classroom of adolescents. We have chosen texts like *Notebooks of a Painter* by Henri Matisse and "Father's Butterflies" by Nikolai Nabokov because they offer challenges in content, in word recognition, in sentence processing, and in reader motivation and engagement.

Capturing Your Reading Process with Reader's Strategy List (RSL)

Procedures. As readers share their reading problems and processes after reading the text, someone (the facilitator, teacher, group recorder) **charts** the different problems readers experienced with the text and their different strategies and approaches to text. The RSL is **posted** and **updated** over time, as new reading experiences offer the opportunity for new strategies and approaches to emerge.

Opportunities. The reader's strategy list can be posted as an enduring reminder of the kinds of reading strategies and approaches a reader might try when stymied. This public display offers ongoing opportunities for readers to recall and to try for themselves the reading approaches shared by other readers in the inquiry community. Small groups can prepare their own RSL, which is then shared with the whole group or class, offering opportunities for comparison of similarities and differences among more voices and more readers. The Reader's Strategy List is a living document that is added to, revised, or updated over time as new reading experiences and inquiries occur in the community. It is important to chart the authentic language of participants and build more technical language categories for describing reading processes and strategies as authentic examples emerge. For example, "I was wondering..." and "I thought, why..." and "I really argued with this author, asking what evidence..." should be written down in abbreviated form on the RSL and perhaps labeled by the facilitator or teacher: "So you were questioning. So that's a type of question, isn't it?" Over time, updating the RSL demonstrates how reading

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processes can be tailored to respond to the demands of particular texts and types of text. It also allows a community of readers to chart their changing understanding of strategic reading over time. For example, "Last time we said reading fast was a good strategy, but here we said we slowed down to figure something out. So reading fast isn't always helpful, is it?"

Choosing texts. As mentioned above, for teachers in a professional development setting, texts should be challenging, adult level reading but not so difficult that they discourage teachers from participating. For this audience, working with the RSL should model what teachers will need to be prepared to do in the classroom: chart authentic language, include all strategies offered, label like strategies, update the chart over time. For this reason, it may be important to use the RSL more than once, with contrasting types of texts, to demonstrate this process.

Capturing Your Reading Process in Four Interacting Areas of Reading

Procedures. Like Capturing Your Reading Process, participants engage in reading a **challenging piece of text. After** a brief **reading** episode, they **write** about their **reading process**: comprehension problems they faced and how they approached them. When **sharing** their reading processes, however, the facilitator or the participants as a whole group work to **categorize** individual responses into cognitive and affective **areas of reading** that individuals orchestrate as they read: **fluency** (word recognition, decoding, sentence processing, style or rhythm of language), **motivation** (interest, purpose, engagement), **cognition** (strategic moves to support comprehension), and **knowledge** [(1) of the topic or world; (2) of the text structure; and (3) of the language, conventions, activities, and worldview of an academic discipline that shapes a particular reading of the text.] See RfU, page 158, for an example of this charting.

Opportunities. Categorizing responses from the reading process analysis demonstrates how readers focus on the simultaneous orchestration of many aspects of reading at once. Participants can explore how their prior reading experience influences their fluency in reading particular types of written discourse. In addition, participants can explore the multiple positive and negative influences that affect can play in their reading. For instance, they can recognize that a negative response to a text may either engage them more fully in their reading as they take an argumentative stance toward the text, or disengage them altogether. They also have the opportunity to explore the many ways that a reader's prior knowledge influences their comprehension and meaning making. Among teachers, differences in subject area can shape reading approaches. This presents

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opportunities to foreground participants' different expectations of the text structure and different disciplinary stances toward a text. A literature teacher may read a history text critical of the writing and voice of the piece, while a history teacher may read the same text aware of slant or bias and critical of the perspective taken, or even missing, in the text.

Choosing texts. With a carefully-chosen text, proficient readers have an opportunity to focus on the role of fluency in reading. In particular, they are invited to see that fluent reading involves more than word recognition or fluent decoding. Unfamiliarity with academic language structures and complex syntax is often a barrier to fluency for inexperienced readers. Selecting a text to present fluency challenges to adult readers, often because the discourse style is unfamiliar, is therefore important. As mentioned above, *Notebooks of a Painter* by Henri Matisse and "Father's Butterflies" by Nikolai Nabokov both offer challenges in word recognition and sentence processing. Surprisingly, the *Totalitarianism in the Modern World* text excerpt that accompanies the Rosa case has worked well in surfacing fluency issues, in part because of the very distinct discourse styles of the exposition and the embedded memoir from the *Gulag Archipelago.* This text has also worked well because history teachers read with a critical eye toward point of view and the selection of historical examples offered in the text, while English teachers often critique the expository segments as poorly written, while appreciating the voice and figurative writing of the memoir. Modern textbooks are often composed of multiple discourses and text styles – the use of primary sources in history textbooks or the embedded historical narratives in science textbooks, for instance. Advanced textbooks may therefore be a good source of texts for this RPA. Many essays or authentic texts can be read from a variety of disciplinary perspectives, however. Consider Martin Luther King Jrs.' "Letter from a Birmingham Jail." This piece of persuasive writing could be read as literature, as history, as rhetoric, as psychology, as theology, and as social science. Similarly, many reports of new science advances can be read for their scientific claims as well as for their potential impact on ethics, politics, the economy, and society in general.

Think Aloud

Procedures. **While reading**, participants in a small group **verbalize their thinking processes** in response to a text. They interrupt their (oral or silent) reading of the text to intersperse mental pictures or questions, to puzzle over words or meanings, to make connections from their own lives, to make predictions about the direction the text will take, to share feelings about the text or author, etc. Participants **take turns thinking aloud** in this way with a section of a text. The Think Aloud **bookmarks** offer some prompts that may provide a scaffold for first-time users of this routine. After everyone in

the small group has read and thought aloud through at least one section of the text, the **group discusses** what participants noticed about their own reading or the reading of their partners during the think aloud.

Opportunities. When this RPA is done as authentic inquiry, participants externalize their meaning making as they work with a text. The "gist" of the text emerges and is reconsidered and revised as readers work to make sense of the reading. Readers thinking aloud will likely experience some difficulty reading, attending to their thoughts, and externalizing them through talk, all at once. Thinking aloud takes practice, and this experience as a reader offers participants an opportunity to consider ways they will need to support their students in learning to "think aloud". In addition, readers may experience the kinds of social pressures many RPAs offer: to look "bright", demonstrate understanding rather than confusion, and move through text at a brisk pace. These pressures again raise to awareness the ways reading in the social contexts of the classroom can affect students. Readers may also experience the need to "edit" or even "censor" their thoughts, selectively choosing which responses to externalize to their colleagues. This gives participants an opportunity to talk about the ways different texts tap into the experiences and privacy of readers, and how to manage the social and private dimensions of reading in a classroom. Since it isn't preferable or even possible to choose texts that have no connections to students' private experiences, teachers will need to find ways to address privacy issues and assure students of their safety while at the same time nurturing a social and collaborative reading climate. Readers will also experience the loss of fluency as they slow down to deliberately process the text and externalize their thoughts. This gives facilitators a chance to explore the purposes served by Think Aloud – a focus on learning to deliberately and strategically make sense of text – as distinct from building fluency for students.

Participants who are not taking their turn to think aloud will likely experience some fascination with the mental processing of others and amazement at the distinct ways others are making sense of the text. This difference between readers is an inescapable aspect of "making the invisible visible" and offers opportunities to consider the various meanings that can be constructed from a single text, the various ways skilled readers approach a text, and the intersection of reader knowledge and text at the core of comprehension. Appreciation for these differences gives participants the opportunity to reflect on how to support the various student "readings" and "readers" in classrooms.

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Finally, participants who are listening to others think aloud may experience some difficulty keeping track of the text, or some frustration and impatience to get on with reading rather than taking side journeys through someone else's thoughts. Again, this raises topics for instruction: instructional purposes addressed by Think Aloud, classroom management issues, and ways to support students who are learning to Think Aloud with text. See RfU, page 159 – 161 for an example of an authentic meaning-making Think Aloud.

Types of Think Alouds: Because thinking aloud can serve many different purposes, it is important for a professional developer or a teacher to be clear about their own purposes before using this RPA instructionally. Here are some varied ways we have seen teachers use Think Aloud.

1) **Authentic meaning-making**, usually while reading a text for the first time. Here, the reader is working to construct a sense of the whole, and that goal guides the mental moves authentically taken to work out the meaning of the text. Generally, in professional development sessions with an unfamiliar text, this will be participants' first experience of Think Aloud.

2) **The garden walk.** Here, the reader might follow a train of associations with the text without linking such associations to meaning making with the text itself. The name, the garden walk, indicates the way readers can sometimes be drawn away from the work of comprehension while exploring their own knowledge or prior experiences.

3) **Showcasing.** A more polite way of saying, "showing off", this type of think aloud primarily serves the purpose of demonstrating the impressive scope of knowledge or reading proficiency of the one thinking aloud.

4) **Lecturing in disguise.** Sometimes the first attempts of a teacher to model Think Aloud for students take this form if teachers are too familiar with the texts they are using to model Think Aloud. In this misconception of Think Aloud, teachers' "thoughts" primarily serve the purpose of telling students what the text means, rather than of making visible the invisible thinking processes teachers are using to construct meaning with the text.

5) **Pretending to Think Aloud.** Sometimes teachers will try to model a Think Aloud with a text that offers them no challenge, perhaps because they are very familiar with the text itself. They will say aloud what they imagine a student might say to demonstrate what an authentic Think Aloud might sound like. While such a strategy may be useful

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at times, teachers should be aware that such a Think Aloud may strike their students as inauthentic and thereby work against their instructional goals.

6). **Strategic modeling.** Here, the primary goal of a Think Aloud will be to introduce and offer students practice with a particular reading strategy. This use of Think Aloud will follow initial experiences for students in which they learn to Think Aloud, perhaps with the bookmark prompts. A science teacher may tell students, "Today we are going to use Think Aloud to focus on questioning. Listen while I read this science text and show you what questions I am asking as I read."This may lead to a discussion of types of questions, and allow the teacher and students to identify more and less productive questions in science reading. Students may then practice asking questions and identifying the type of questions they are asking as they Think Aloud in pairs or small groups.

Choosing texts. For an initial experience with Think Aloud, good text selections are those with rich associations and potential personal connections for participants. Like all of the adult level readings for professional development, these texts should also present comprehension challenges. When thinking aloud with a literary text, the experience can be like wading into a body of water – as you go, comprehension becomes deeper as the contours of the literary world you are entering become more clear. *Sula* by Toni Morrison and *The God of Small Things* by Arundhati Roy have been rich texts for think aloud in our work with teachers because the writing is beautiful but offers nuances of meaning and different points of connection and comprehension puzzles, from the first pages. A nonfiction text, such as *The Hot Zone* by Richard Preston, *The Log from the Sea of Cortez* by John Steinbeck, or *The Perfect Storm* by Sabastian Junger, offers an opportunity to draw on scientific, geographical, and technical knowledge while working to comprehend a narrative account of a real life event. With newspaper or journal articles or textbook excerpts, thinking aloud might include identifying the text structure and markers that can assist comprehension, so a first turn at thinking aloud, for instance, might include a survey of the article for headings and subheadings and include thinking aloud while scanning the text. Expository texts that come from modern sports or food or cultural magazines can be good choices for Think Aloud RPAs, because writers for these select audiences sometimes construct their texts to jar expectations and flaunt the conventions of usual magazine writing. For example, we have found an interview with Michael Jordan from *SLAM* magazine to be terrifically challenging for many adult readers. Technical texts can also be wonderfully rich opportunities to think, that is, puzzle aloud. Directions for window installations, or computer manuals, or sections of the tax code may be good choices, depending on the purpose for the RPA.

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Talking to the Text

Procedures. This RPA is very similar to Think Aloud, in that it occurs **while reading** a text, rather than afterward, as in Capturing Your Reading Process. Unlike Think Aloud, however, Talking to the Text (TttT) is **initially** an **individual**, or private, experience. Readers are invited to **write their thoughts** on the text as they read, and for this reason must be provided a copy of the text on which they can mark, with margins wide enough to support their commentary. The Think Aloud **bookmarks** provide some prompts that are useful in initial experiences of TttT. After individuals read and write their **questions, connections, puzzlements, and responses** on the text, it is critical to provide them with an opportunity to **share** their reading processes with others. **In pairs or small groups**, they can share their different markings, debrief the experience, compare this experience to other RPAs, and discuss the text itself.

Opportunities. TttT offers readers an initially private experience of making sense of the text. They can choose which of their markings on the text to share with their pairs of small groups, which can increase participants' feeling of safety to externalize their thinking. Because the thinking and the sharing of thoughts are separated in time, this RPA gives readers additional time to process their thinking process and to find the words to share it with others. This can be especially supportive for second language learners. In addition, TttT leaves an enduring trace of one's own thinking, unlike Think Aloud, which is oral, and therefore ephemeral. With TttT, readers can return to their written questions and puzzles and other marks on the page when discussing the text in a class, when preparing to write a response to the text, etc. TttT can precede experience with Think Aloud in order to scaffold safety and offer processing time to learners. It can also follow Think Aloud as a move toward independent practice. One teacher we know takes his students through a sequence beginning with Think Aloud, moving to TttT, and ultimately to reading logs as a way to avoid having to mark the text itself. Initially, marking the actual text is important, however. One of the opportunities TttT always presents is a discussion among teachers about how to provide students with resources they can mark up, how often they will need to do so, and what other ways they can provide similar experiences without high resource costs.

Choosing texts. Many of the same text choices operate in TttT as in Think Aloud. What is important, however, is that texts for TttT have abundant space for readers to make notes and mark the text.

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Close Reading

Procedures. Participants **read a paragraph** at a time, working **in small groups**. Each group member takes **a turn as the "designated reader"** to **identify**, in her paragraph, a) **what she thinks she knows** at this point in the text, and b) **what in the text,** or about the text, **has prompted her inferences**, assumptions, and associations. After each group member has had an opportunity as the designated reader for a paragraph, the **group debriefs** the process. This procedure is both a reading process analysis and an analysis of text features and structures and their relationships to meaning-making.

Opportunities. This RPA provides an opportunity to connect the reading process to the content and form of the text. Participants are engaged in identifying the text signals that trigger their assumptions or call up their prior knowledge or experiences or associations with the text. The RPA primarily focuses readers' attention on schema, and on the interaction between their own developing understanding of the text, the clues they are using to construct that understanding, and the role their background knowledge plays in supporting comprehension. The close reading RPA helps teachers explore how text interpretations, or meanings, emerge from the complex relationship between such things are the reader's strategies, the text's idiosyncratic features, the text's direct information, and the reader's prior knowledge. Because different readers' interpretation of a text signal or feature will differ, participants will likely disagree about the "meaning" that can be attributed to any particular phrase or feature of the text. The close attention to the text itself is an opportunity to explore text features such as allusions (to something outside of the text readers are supposed to know about), punctuation and other signals (see RfU, p. 91), word choices (what is the word "even" doing in this sentence? What does it imply?), juxtapositions (since this follows directly after that, is there some relationships between the two ideas implied here?), signal words denoting relationship between ideas (RfU, p. 133), and even why certain information may be offered (see RfU, p. 161-163 for an example).

Choosing texts. Because Close Reading focuses the reader's attention on the use he is making of text signals and features, the presence of interesting features should drive the choice of a text to use. In RfU, we use an example from a tongue-in-cheek mystery by James Thurber. This short story exploits the genre of mystery for comedic purpose and so is full of foreshadowing moves, puzzling information that may prove to be important clues to the mystery, and mood-setting word choices that signal the dark, gritty world of detective *film noir*. Just as likely a choice, given the important of text features, would be a discipline-based text, especially a course text like a textbook, where the relationships

between ideas can be explored and identified via features of language or structure, and where what is in the text as well as what is not can be examined. As participants consider what information and other clues are offered directly in the text, and what knowledge or ideas must be brought to the text by the reader, they will naturally want to explore the implications of this text analysis for instruction. When we cannot guarantee that our students will have the experiences or knowledge this text assumes they do have, what is our role as teachers and what is the role we can expect the text to play in their learning?

Dual Entry Journals (What and How)

Procedures. As described in the Metacognitive Conversation resources packet, this use of dual entry journaling is different from the classic use in literature, "quotes and notes" or "reader response journals." The difference is the additional focus on the reading process rather than response, alone. Like TttT, this is **initially** an **individual**, or private, **reading** experience. **After reading**, the reader **writes *what*** he believes the text to be saying, his current understanding, as a brief summary statement in one column of the journal. In another column, the reader **writes *how*** he has come to that interpretation of the text. This often involves a description of the reading process: "First, I read the caption and predicted... Then I read the passage and decided my prediction.. because.." The reader will also likely point to various features of the text and their roles in forming his understanding. However, the focus on text features is less deliberate and analytical than Close Reading. As in TttT, the individual journals are the starting point in a metacognitive conversation, in which different **readers share their interpretations and reading processes in a pair or small group**. After this sharing, the group **debriefs** the process and discusses its impact on their emerging understanding and appreciation of the text.

Opportunities. Dual entry journals, like TttT, offer an enduring record of a reader's sense making. Like other RPAs, sharing journals underscores the different interpretations of passages that will arise from the interaction of different readers' knowledge and experience, different approaches to the reading, etc. The journal sharing offers readers a window into the ways others make sense of the text, and to other sensible interpretations of it. It is an easy adaptation to add a center column that will contain the passage or parts of the passage, to which readers anchor their interpretations and descriptions of their reading processes. Journals like these offer a scaffold for writing essays, because the text excerpts as well as the reader's interpretation of these passages are captured in one place to support writing. While dual entry journals aren't necessarily focused on text features, or on specifically externalizing the knowledge readers are using to construct their

interpretations of the text, teachers can easily focus students on text features and schema as part of the directions for making journal entries at any point in reading instruction.

Choosing texts. In the pilot Academic Literacy class, we used a triple entry journal, with a passage of a text in the middle column, to assess students' reading processes and comprehension of a key passage from the history curriculum. When used to support collaborative inquiry, rather than as assessment, any text that offers participants an experience of comprehension difficulties and problem-solving while reading will serve. To focus attention specifically on text features or the knowledge readers are bringing to the text and its role in their evolving understanding, texts must not only offer opportunities to identify and use specific text features and signals, but the prompts for the journals must be clear about this purpose and clear in the directions to readers.

Uncovering Disciplinary Ways of Reading (FQIP)

Procedures. In this RPA, teachers in the **same subject area read** a challenging, **discipline-specific text** to uncover the specific ways of approaching reading that are shared within an academic community. The group carries out two cycles of reading and writing about their reading processes, then spends time identifying patterns of reading behaviors within individuals and across the group. Finally, the group discusses the ways teachers might make these very discipline-based ways of reading available to their students through classroom instruction and mentoring. This RPA is described in RFU on pages 163 – 165.

More specifically, the RPA begins with participants **looking over the text** they will be reading, and on the basis of this overview, **writing** to two prompts: Before reading this text, what **expectations** do you have about it? What **predictions** do you have about what you will be reading? After this written response, participants **begin to read** as they normally would approach a text of this kind, **for** approximately **ten minutes**, stopping wherever they are to do some writing about their reading process. After the ten minutes of reading, each individual **writes:**

1) where they were **focusing** their attention (and conversely, what they ignored);

2) what specific **questions** they were asking;

3) what **images** or visuals they were forming; and

4) what **predictions** they have, having read this far, about the remainder of the text, and for all of these, **what role** these mental moves played **in their comprehension** of

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the reading. After this reflective writing, the group **reads** for **another ten minutes**, then **records** their **responses to** these **same prompts**. After participants complete this recording, each individual **looks for patterns** in his or her reading process, to summarize it for others.

Group members then **share** their approaches, **recording** their responses under **categories** of 1) **focus**, 2) **question**, 3) **image**, and 4) **predict**. The group works to **characterize** the ways they approach discipline-based reading, focusing on their **commonalities** (but also attentive to their idiosyncracies as readers). If there is time, a **summary paragraph or chart** of the ways "expert readers of science/history/literature/math" read can be created for use in sharing across subject areas. Finally, the group **discusses ways to apprentice students** into the specific discipline-based reading they do as experienced readers in the subject area. They may **design a classroom routine or activity** to focus on a particular discipline-based skill. For example, they may take a Reading Apprenticeship routine such as questioning, or a tool like the bookmark, and **"adapt" this routine or tool to the subject area** by creating a new set of prompts that are more subject-specific.

Opportunities. This RPA gives subject area teachers a chance to "dig in" to their own particular expertise as readers in their discipline. It allows readers to surface and name the interpretive processes of the disciplines, the ways of thinking that always inform them as they approach subject area reading. Some of these interpretive processes concern what rhetoricians call "rules of notice" and "rules of signification". What aspects of a text – the author's language choice, the contents, the structural features – have greater significance over others, in a text? How do you know what to pay attention to, how to distribute your attention? What do students need to know to pay attention to the most significant aspects of a text? The RPA also allows readers to specify the types of questions that best represent the thinking processes of their discipline, and the ways of using visual imagery (sometimes beyond visual, sensory imagery) to support comprehension. Again, these are practices that students can learn from their skilled reading mentors (subject-area teachers) in a Reading Apprenticeship classroom. Finally, the predictions readers are asked to make at several points during this RPA offer an opportunity to tap into and articulate what skilled readers know about recognizing and using the patterned texts of their disciplines (the varied genres or variety of texts in the disciplines, their structures, their language characteristics, their social purposes, functions and goals). And given that there are a variety of texts with disparate forms and functions in each discipline, this RPA can be done a number of times with different discipline-based texts to create discipline- and text-specific reading instruction strategies.

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Choosing texts. The texts for this RPA should primarily be drawn from the professional readings of the discipline. Especially at first, it will be important to engage history teachers in reading authentic historical texts, including primary source materials as well as the historical interpretations and analyses of these sources written by historians. The sources and texts of history are richly varied, and span both visual (photographs, film, drawing, art) and print media of all kinds. Printed materials draw on varied symbolic means in history, as well – timelines and illustrations, tables, graphs, extended text. A very good choice for this RPA might include all of these forms of text in a single, historical argument or essay. After digging in to their discipline-based reading processes, teachers might then turn to the course materials they use in their classrooms to see where opportunities may be for apprenticing students to these ways of reading. And if such opportunities don't seem to be available in the resources they have on hand, they know what to look for in ancillary texts to enrich their curriculum! Clearly this example might be applied to all the other disciplines, including those we may not consider as part of the academic core (e.g. ceramics, physical education, metal arts, technology applications).

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How Children Succeed PLC Sign in Sheet

Name	11/14	12/5	12/19	1/23	2/6	2/28
Galen K.	✓	absent	✓	✓	✓	✓
Lauren W.	absent	✓	✓	✓	absent	✓
Matt S	✓	✓	✓	✓	✓	✓
Jodi G.	✓	✓	✓	absent	✓	✓
Kristina H.	✓	✓	✓	✓	✓	✓
Heather M.	✓	✓	✓	✓	✓	✓
Kim S.	✓	✓	✓	✓	✓	✓

Topic:	School Improvement
Date:	4/16/15
Hours:	4

Professional Personnel ID	First Name	Last Name	
[redacted]	Kathryn	Coupe	Kathryn Coupe
[redacted]	Sarah	Aungst	Sarah Aungst
[redacted]	Kylene	Ball	
[redacted]	Melissa	Brown	
[redacted]	Peicheng	Chu	Peicheng Chu
[redacted]	Emily	Cloetingh	Emily Cloetingh
[redacted]	Mark	Dickinson	Mark Dickinson
[redacted]	Thomas	Dolan	Thomas Dolan
[redacted]	Benjamin	Dutcher	Benj Dutcher
[redacted]	Laura	Elder	Laura Elder
[redacted]	Amy	Ellsworth	Amy Ellsworth
[redacted]	Monica	Frank	Monica Frank
[redacted]	Steven	Galette	Steve Galette
[redacted]	Heather	Gowton	
[redacted]	Jodi	Grobman	Jodi Grobman
[redacted]	Kathleen	Groff	Kathleen Groff

Topic:	Test Administration Training
Date:	4/6/15
Hours:	3 hours

Professional Personnel ID	First Name	Last Name	
[redacted]	Kathryn	Coupe	Kathy Coupe.
[redacted]	Sarah	Aungst	Sarah Aungst
[redacted]	Kylene	Ball	Kylene Ball
[redacted]	Melissa	Brown	
[redacted]	Peicheng	Chu	Peicheng Chu
[redacted]	Emily	Cloetingh	Emily C
[redacted]	Mark	Dickinson	Mark Dickinson
[redacted]	Thomas	Dolan	Thomas Dolan
[redacted]	Benjamin	Dutcher	Benjamin Dutcher
[redacted]	Laura	Elder	Laura Elder
[redacted]	Amy	Ellsworth	Amy Ellsworth
[redacted]	Monica	Frank	Monica Frank
[redacted]	Steven	Galette	Steven Galette
[redacted]	Heather	Gowton	Heather Gowton
[redacted]	Jodi	Grobman	Jodi Grobman
[redacted]	Kathleen	Groff	Kathleen Groff

Topic:	Reading in the Content Area
Date:	3/6/15
Hours:	

Professional Personnel ID	First Name	Last Name	
	Kathryn	Coupe	
[redacted]	Sarah	Aungst	Sarah Aungst
[redacted]	Kylene	Ball	Kylene Ball
[redacted]	Melissa	Brown	
[redacted]	Peicheng	Chu	
[redacted]	Emily	Cloetingh	
[redacted]	Mark	Dickinson	
[redacted]	Thomas	Dolan	
[redacted]	Benjamin	Dutcher	Benjamin Dutcher
[redacted]	Laura	Elder	Laura Elder
[redacted]	Amy	Ellsworth	Amy Ellsworth
[redacted]	Monica	Frank	
[redacted]	Steven	Galette	Steven Galette
[redacted]	Heather	Gowton	Heather Gowton
[redacted]	Jodi	Grobman	Jodi Grobman
[redacted]	Kathleen	Groff	

Teach Like a Pirate PLC Sign in Sheet

	11/21	12/12	1/9	1/30	2/13	2/27
Name Tommy A.	TA	TA	TA	TA	TA	TA
Katie M.	KM	KM	KM	KM	KM	KM
Emily S.	ES	ES	ES	ES	ES	ES
Mark D.	MD	MD	MD	MD	MD	MD
Heather G.	HMG	HMG	HG	HG	HMG	HMG
Matt K.	MK	MK	MK	MK	—	MK
Steph L.	SL	SL	SL	SL	—	SL
Debbie P.	DP	DP	DP	DP	DP	DP
Nina S.	NS	NS	NS	NS	NS	NS

Financial Statements Appendix

21st CENTURY CYBER CHARTER SCHOOL

FINANCIAL STATEMENTS AND SUPPLEMENTARY INFORMATION

For the Year Ended June 30, 2010

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HERBEIN+COMPANY, INC.
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American Institute of Certified Public Accountants Private Companies Practice Section
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To the Board of School Directors
21st Century Cyber Charter School
Downingtown, Pennsylvania

Independent Auditor's Report

We have audited the accompanying financial statements of the governmental activities and each major fund of the 21st Century Cyber Charter School, as of and for the year ended June 30, 2010, which collectively comprise the 21st Century Cyber Charter School's basic financial statements as listed in the table of contents. These financial statements are the responsibility of the 21st Century Cyber Charter School's management. Our responsibility is to express opinions on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An Audit also includes assessing the accounting principles used and the significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinions.

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and each major fund of the 21st Century Cyber Charter School, as of June 30, 2010, and the respective changes in financial position thereof for the year then ended in conformity with accounting principles generally accepted in the United States of America.

In accordance with *Government Auditing Standards*, we have also issued our report dated December 13, 2010 on our consideration of the 21st Century Cyber Charter School's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* and should be considered in assessing the results of our audit.

HERBEIN+COMPANY, INC.
2763 Century Boulevard Reading, PA 19610 Telephone: 610-378-1175 Facsimile: 610-378-0999
reading@herbein.com

Other Offices: PITTSBURGH GREENSBURG

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CERTIFIED PUBLIC ACCOUNTANTS

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, the budgetary comparison schedule and the schedule of funding progress be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Herbein + Company, Inc.

Reading, Pennsylvania
December 13, 2010

21st CENTURY
CYBER CHARTER SCHOOL

21ST CENTURY CYBER CHARTER SCHOOL

MANAGEMENT'S DISCUSSION AND ANALYSIS
Required Supplementary Information
June 30, 2010

The discussion and analysis of 21st Century Cyber Charter School's (Charter School) financial performance provides an overall review of the Charter School's financial activities for the fiscal year ended June 30, 2010. The intent of this discussion and analysis is to look at the Charter School's financial performance as a whole. Readers should also review the financial statements and the notes to the basic financial statements to enhance their understanding of the Charter School's financial performance.

The Management Discussion and Analysis (MD&A) is an element of the reporting model adopted by the Governmental Accounting Standards Board (GASB) in their Statement No. 34 Basic Financial Statements – and Management's Discussion and Analysis – for State and Local Governments issued June 1999.

FINANCIAL HIGHLIGHTS

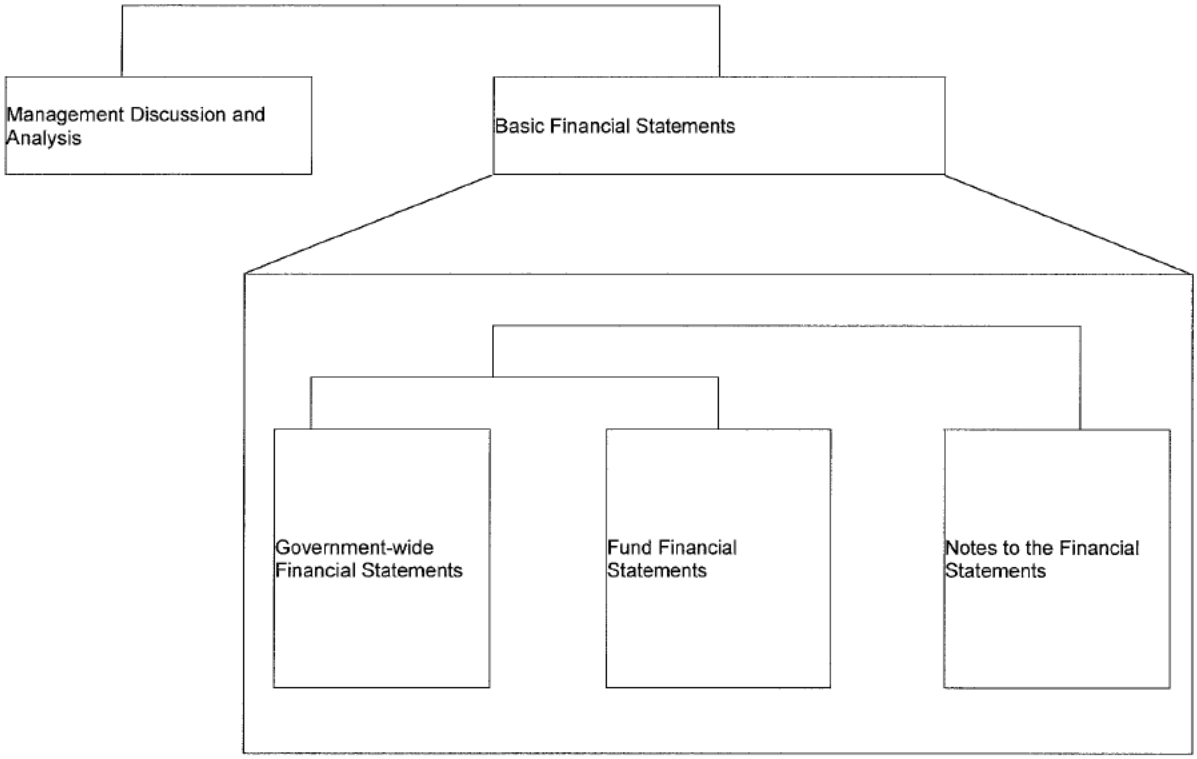
The 21st Century Cyber Charter School's financial results for the 2009-2010 school year resulted in a fund balance of $2,502,416 at June 30, 2010. The June 30, 2009 fund balance was $1,410,727.

Governmental fund total assets at June 30, 2010 were $3,048,951 compared to the June 30, 2009 balance of $2,151,505.

The primary source of revenue for the Charter School is tuition charged to school districts at rates set by the districts.

At June 30, 2009, the 21st Century Cyber Charter School elected the early adoption of GASB 45 – Accounting for Other Post Employment benefits. The liability associated with this adoption is reflected in the government-wide financial statements.

Figure 1
Required Components of 21st Century Cyber Charter School's Financial Report



OVERVIEW OF FINANCIAL STATEMENTS

Figure 2 summarizes the major features of the Charter School's financial statements. The remainder of this overview section of Management's Discussion and Analysis highlights the structure and contents of each of the statements.

Figure 2
21st Century Cyber Charter School's
Government-wide and Fund Financial Statements

		Fund Statements
	Government-wide Statements	**Governmental Funds**
Scope	Entire 21st Century Cyber Charter School (except fiduciary funds)	The activities of the Charter School that are not proprietary or fiduciary, such as education, administration and community services
Required financial statements	Statement of net assets Statement of activities	Balance Sheet Statement of revenues, expenditures, and changes in fund balance
Accounting basis and measurement focus	Accrual accounting and economic resources focus	Modified accrual accounting and current financial resources focus
Type of asset/liability information	All assets and liabilities, both financial and capital, and short-term and long-term	Only assets expected to be used up and liabilities that come due during the year or soon thereafter; no capital assets included
Type of inflow/outflow information	All revenues and expenses during year, regardless of when cash is received or paid	Revenues for which cash is received during or soon after the end of the year; expenditures when goods or services have been received and payment is due during the year or soon thereafter

Government-wide Statements

The government-wide statements report information about the Charter School as a whole using accounting methods similar to those used by private sector companies. The Statement of Net Assets includes all government assets and liabilities. Current year revenues and expenses are accounted for in the Statement of Activities regardless of when cash is received or paid.

The two government-wide statements report the Charter School's net assets and how they have changed. Net assets, the difference between assets and liabilities, are one way to measure the Charter School's financial health or position. Over time, increases or decreases in net assets are an indication of whether the Charter School's financial health is improving or deteriorating.

Governmental activities – All of the Charter School's basic services are included here, such as instruction, administration and pupil health.

Fund Financial Statements

The fund financial statements provide more detailed information about the Charter School's funds. The Charter School has no non-major, proprietary or fiduciary funds and reports all activity as governmental funds.

Government Funds – Includes the Charter School's basic services and generally (1) focuses on how cash and other financial assets can readily be converted into cash inflows and outflows and (2) identifies balances left at year-end that are available for spending. Financial results are reported using an accounting method called modified accrual accounting, which measures cash and all other financial assets. The governmental fund statements provide a detailed short-term view of the Charter School's operations and the services provided. Governmental fund information helps the reader determine the level of financial resources that can be spent in the near future to finance the Charter School's programs. The relationship (or differences) between governmental activities (reported in the Statement of Net Assets and the Statement of Activities) and governmental funds is reconciled in the financial statements.

FINANCIAL ANALYSIS OF THE 21ST CENTURY CYBER CHARTER SCHOOL AS A WHOLE

The Charter School's total net assets were $2,577,035 as of June 30, 2010.

Figure 3
Condensed Statement of Net Assets

June 30, 2010

	Governmental Activities 2009	2010
Current and other assets	$1,822,796	$2,871,953
Capital Assets	$ 328,709	$ 176,998
Total Assets	$2,151,505	$3,048,951
Current and other liabilities	$ 424,351	$ 369,536
Long-term liabilities	$ 81,988	$ 102,380
Total Liabilities	$ 506,339	$ 471,916
Net Assets		
Invested in capital assets, net of related debt	$ 328,709	$ 176,998
Unrestricted	$1,316,457	$2,400,037
Total Net Assets	$1,645,166	$2,577,035
Total Liabilities and Net Assets	$2,151,505	$,3,048,951

Current assets at June 30, 2010 included cash of $2,132,189 and intergovernmental and other receivables of $712,675 and prepaid expenses of $27,089. The Charter School ended the 2009-2010 school year with a positive cash balance because partial subsidy reimbursements were received from the Pennsylvania Department of Education prior to year-end for districts that did not pay charter school tuition directly. The intergovernmental receivables were lower as a direct result of the subsidy payment. Net capital assets decreased from 2008-2009 due to disposals and depreciation of the asset values.

Total liabilities decreased in 2009-2010. Accounts payable balances were $150,010, a decrease of $82,789 from the prior year balance of $232,799. Accrued salaries and benefits increased from $170,816 at June 30, 2009 to $201,582 at June 30, 2010, a direct result of the 2009-2010 staffing additions. The compensated absences accrual which reflects the value of unused vacation time decreased from $65,723 to $60,107 as of June 30, 2010. The Charter School elected early adoption of GASB 45 – Accounting for Other Post Employment Benefits as of June 30, 2009. The long term liability related to this adoption increased by $13,716 to $42,273 at the end of 2009-2010 school year.

Figure 4
Changes in Net Assets from Operating Results

June 30, 2010

	Governmental Activities	
Revenues	**2009**	**2010**
Program Revenues		
Charges for services	$4,604,733	$ 6,032,499
Operating grants and contributions	$ 187,699	$ 240,836
Capital grants and contributions	0	0
General Revenues	$ 0	$ 0
Total Revenues	$ 4,792,432	$ 6,273,335
Expenses		
Instruction - Regular Programs	$2,387,346	$3,171,599
Instruction - Special Programs	$ $371,128	$ 450,155
Support Services	$2,220,947	$1,719,712
Total Expenses	$4,979,421	$5,341,466
Increase (Decrease) in Net Assets	($ 186,989))	$ 931,869
Beginning Net Assets	$1,832,155	$1,645,166
Ending Net Assets	$1,645,166	$2,577,035

Growing enrollments generated approximately $1,442,000 of additional tuition revenue in 2009-2010 compared to the 2008-09 school year.

Total expenses in 2009-2010 were approximately $362,000 higher than in 2008-2009, mainly due to the increase in staffing levels required to serve the increased student enrollments.

BUDGET HIGHLIGHTS

During the fiscal year, the Board authorizes revisions to the original budget to accommodate differences from the original budget to the actual expenditures of the 21st Century Cyber Charter School. A schedule showing the Charter School's original and final budget amounts compared with amounts actually paid and received is provided in the financial statements.

Actual 2009-2010 revenues were $408,658 higher than expected primarily in tuition revenue from school districts. Expenditures were $641,420 lower than the final budget as overall spending levels were less than anticipated. Several new staff positions budgeted for 2009-2010 were not filled during the school year.

The budgetary reserve includes amounts that will be funded for operating contingencies such as unpredictable changes in the cost of goods and services and the occurrence of events which are unknown during the time of the budget process, but which nonetheless may require expenditures by the Charter School during the year of operation.

CAPITAL ASSET AND DEBT ADMINISTRATION

Capital Assets

At June 30, 2010, the Charter School had $ 176,998 invested in furniture and computer equipment.

Figure 5
Capital Assets (net of depreciation)

June 30, 2010

	Governmental Activities	
	2009	**2010**
Building Improvements	$ 93,251	$ 0
Furniture & Computer Equipment	$235,458	$176,998
Total	$328,709	$176,998

Debt Administration

The 21st Century Cyber Charter School has no debt as of June 30, 2010

ECONOMIC FACTORS AND THE CHARTER SCHOOL'S FUTURE

The 21st Century Cyber Charter School is continuing to increase its teaching staff in 2010-2011 in order to accommodate increased enrollments and to expand class offerings and related services. Student enrollments are growing at a steady rate and that growth is projected to continue over the next several years.

The Charter School spent approximately $329,000 in 09-10 to purchase computer hardware and software. These purchases were necessary to outfit new staff, to replace obsolete equipment and to provide new and updated software for students and staff. Another $120,000 was authorized in early 2010-11 to purchase and re-configure workstations for the new staff members.

The Board of Trustees has maintained the agreement between 21CCCS and the Chester County Intermediate Unit to provide accounting, human resource and other services for the foreseeable future. Several CCIU staff members now work at the school each week to better service the school's needs.

The Board of Trustees in 2010 agreed to create an instructional systems design (ISD) department to allow for an expanded online curriculum development. This team will allow the Charter School to expand the development of rich online curriculum that will continue to be the intellectual property of the Charter School. Administration also added additional teaching assistances and tutors during the 2010-11 school year to focus on student achievement.

21st Century Cyber Charter School and the Chester County Intermediate Unit have an agreement, which has established a virtual program to offer online classes to students enrolled in school districts throughout the Commonwealth. The program now offers online courses for original credit course, credit recovery and independent study during the school year and summer school.

To date, no legislation has been passed regarding cyber charter school funding. Management has been told that 21CCCS was selected as the most efficient and effective cyber charter school in the Commonwealth based on achieving Annual Yearly Progress five years in a row while maintaining lower costs per student than many other cyber charter schools. The latest proposals recommend using 21CCCS's costs or similar costs as the basis for a standard statewide tuition rate. The Board of Trustees has approved a program stabilization fund to provide financial assistance to the Charter School, if needed, when the legislation is approved.

CONTACTING THE 21ST CENTURY CYBER CHARTER SCHOOL FINANCIAL MANAGEMENT

Our financial report is designed to provide our citizens, taxpayers, parents, students, investors and creditors with a general overview of the Charter School's finances and to show accountability for the money received. If you have questions about this report or wish to request additional financial information, please contact the Open Records Officer, 21st Century Cyber Charter School, 805 Springdale Drive, Exton, PA 19341, 484-875-5400.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF NET ASSETS

June 30, 2010

	Governmental Activities
ASSETS	
CURRENT ASSETS	
Cash	$ 2,132,189
Intergovernmental Receivables	667,473
State Subsidies Receivable	34,047
Other Receivables, Net	11,155
Prepaid Expenses	27,089
TOTAL CURRENT ASSETS	2,871,953
NONCURRENT ASSETS	
Capital Assets, Net of Depreciation	176,998
TOTAL ASSETS	$ 3,048,951
LIABILITIES AND NET ASSETS	
CURRENT LIABILITIES	
Accounts Payable	$ 150,011
Accrued Liabilities	17,944
Accrued Salaries and Benefits	201,582
TOTAL CURRENT LIABILITIES	369,537
LONG-TERM LIABILITIES	
Compensated Absences	60,107
Other Post Employment Benefits	42,273
TOTAL LONG-TERM LIABILITIES	102,380
TOTAL LIABILITIES	471,917
NET ASSETS	
Invested in Capital Assets, Net of Related Debt	176,998
Unrestricted	2,400,036
TOTAL NET ASSETS	2,577,034
TOTAL LIABILITIES AND NET ASSETS	$ 3,048,951

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF ACTIVITIES

For the Year Ended June 30, 2010

Functions/Programs	Expenses	Program Revenue: Charges for Services	Program Revenue: Operating Grants and Contributions	Net (Expense) Revenue and Changes in Net Assets: Governmental Activities
Governmental Activities:				
Instruction:				
Regular	$ 3,171,599	$ 3,456,850	$ 134,170	$ 419,421
Special	450,155	486,762	30,078	66,685
Total Instructional Services	3,621,754	3,943,612	164,248	486,106
Support Services:				
Instructional Student Support	670,320	737,656	38,168	105,504
Administration and Financial Support Services	1,049,392	1,351,231	38,420	340,259
Total Support Services	1,719,712	2,088,887	76,588	445,763
Total Governmental Activities	$ 5,341,466	$ 6,032,499	$ 240,836	
		Change in Net Assets		931,869
		Net Assets - Beginning		1,645,165
		Net Assets - Ending		$ 2,577,034

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

BALANCE SHEET - GOVERNMENTAL FUND

June 30, 2010

	General Fund
ASSETS	
Cash	$ 2,132,189
Intergovernmental Receivables	667,473
State Subsidies Receivable	34,047
Other Receivables, Net	11,155
Prepaid Expenses	27,089
TOTAL ASSETS	$ 2,871,953
LIABILITIES AND FUND BALANCE	
LIABILITIES	
Accounts Payable	$ 150,011
Accrued Liabilities	8,700
Accrued Salaries and Benefits	201,582
Deferred Revenue	9,244
TOTAL LIABILITIES	369,537
FUND BALANCE	
Reserved for Prepaid Expenditures	27,089
Unreserved, Designated	
New Initiatives Fund	250,000
Program Stabilization Fund	500,000
Curriculum Development	70,000
Future Equipment & Furniture Purchases	127,771
Facility Fund	750,000
PSERS Stabilization Fund	65,928
Unreserved	711,628
TOTAL FUND BALANCE	2,502,416
TOTAL LIABILITIES AND FUND BALANCE	$ 2,871,953

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

RECONCILIATION OF GOVERNMENTAL FUNDS BALANCE SHEET TO THE STATEMENT OF NET ASSETS

June 30, 2010

TOTAL FUND BALANCES - GOVERNMENTAL FUND		$ 2,502,416
Amounts reported for governmental activities on the statement of net assets are different because of the following:		
Capital assets used in governmental activities are not financial resources and therefore, are not reported as assets in governmental funds. The cost of the assets is $322,033 and the accumulated depreciation is $145,035.		176,998
Long-term liabilities are not due and payable in the current period and therefore, are not reported as liabilities in the governmental funds. Long-term liabilities at year-end consist of:		
Other Post Employment Benefits	$ (42,273)	
Accumulated Compensated Absences	(60,107)	(102,380)
TOTAL NET ASSETS - GOVERNMENTAL ACTIVITIES		$ 2,577,034

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE - GOVERNMENTAL FUND

For the Year Ended June 30, 2010

	General Fund
REVENUES	
Local Sources	$ 6,110,624
State Sources	162,711
TOTAL REVENUES	6,273,335
EXPENDITURES	
Current:	
Instruction - Regular Programs	2,964,465
Instruction - Special Programs	419,993
Support Services	1,797,188
TOTAL EXPENDITURES	5,181,646
NET CHANGE IN FUND BALANCE	1,091,689
FUND BALANCE AT BEGINNING OF YEAR	1,410,727
FUND BALANCE AT END OF YEAR	$ 2,502,416

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

RECONCILIATION OF THE GOVERNMENTAL FUNDS STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE TO THE STATEMENT OF ACTIVITIES

For the Year Ended June 30, 2010

NET CHANGE IN FUND BALANCE - GOVERNMENTAL FUNDS		$ 1,091,689
Amounts reported for governmental activities in the statement of activities are different because:		
Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives as depreciation expense. This is the amount by which capital outlays exceeded depreciation in the current period:		
Capital Outlays	$ 21,631	
Less: Depreciation Expense	(90,622)	
Loss on Disposal of Fixed Assets	(82,718)	(151,709)
In the statement of activities, the cost of compensated absences is recorded as additional long-term liabilities. This is the amount of the decrease in compensated absences in the current year.		5,615
Post employment benefits are recognized when they are paid on the fund statements. With the implementation of GASB #45, an estimated liability for future benefits due will be phased in over several years. This amount represents the difference between the estimated annual cost and the amount paid.		(13,726)
CHANGE IN NET ASSETS OF GOVERNMENTAL ACTIVITIES		$ 931,869

See accompanying notes.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The financial statements of the Charter School have been prepared in conformity with generally accepted accounting principles (GAAP) as applied to government units. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and financial principles. The more significant of the government's accounting policies are described below.

Organization

The 21st Century Cyber Charter School (Charter School) was originally chartered through West Chester Area School District. The Charter School was established in April, 2001 and began operations in July, 2001. Effective July 1, 2006, the Charter School became chartered directly through the Pennsylvania Department of Education.

The Charter School is located in Exton, Pennsylvania and was established to provide services to students located in Pennsylvania.

The Charter School is governed by a board made up of the executive directors of the Bucks, Chester, Delaware and Montgomery County Intermediate Units, two school district Superintendents from each county and one parent member.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts on the financial statements and the disclosures of contingencies. Actual results could differ from those estimates.

Reporting Entity

The financial statements of the Charter School include all funds, functions, and activities of the Charter School. The elected Board of Trustees has no oversight responsibility for any other government entity. The criteria for such oversight responsibility are financial interdependency, selection of governing authority, designation of management, ability to significantly influence operations, accountability for fiscal matters and scope of public service. Based on the foregoing criteria, there are no organizations to be considered part of the Charter School's reporting entity.

Basis of Presentation

Government-wide financial statements (i.e., the Statement of Net Assets and the Statement of Activities) report information on all of the nonfiduciary activities of the Charter School. Governmental activities, which normally are supported by taxes and intergovernmental revenues, are reported separately from business-type activities which generally rely, to a significant extent, on fees and charges for support. This Charter School presently only has governmental activities.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

The Statement of Activities demonstrates the degree to which the direct expenses of a given function or segment is offset by program revenues. Direct expenses are those that are clearly identifiable within a specific function or segment. Indirect expenses are allocated to functions/programs based on percentage of expenses in those particular functions/programs. Program revenues include charges to customers who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment. In addition, program revenues include grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Other items not properly included among program revenues are reported instead as general revenues.

Fund financial statements are also provided in the report for all of the governmental funds (the general fund) of the Charter School. The major individual governmental fund is reported as a separate column in the fund financial statements. Nonmajor funds would be aggregated and presented in a single column. The Charter School has no nonmajor funds, proprietary funds or fiduciary funds.

Fund Accounting

The Charter School uses funds to report on its financial position and the results of its operations. Fund accounting is designed to demonstrate legal compliance and to aid financial management by segregating transactions related to certain government functions or activities. A fund is a separate accounting entity with a self-balancing set of accounts.

The Charter School uses the following major fund:

Governmental Fund

The focus of Governmental Fund Types is measured upon determination of financial position and changes in financial position (sources, uses and balances of financial resources) rather than upon net income.

General Fund - The General Fund is the general operating fund of the Charter School. It is used to account for all financial resources.

Measurement Focus and Basis of Accounting

The government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met. Net assets (total assets less total liabilities) are used as a practical measure of economic resources and the operating statement includes all transactions and events that increased or decreased net assets. Depreciation is charged as expense against current operations and accumulated depreciation is reported in the Statement of Net Assets.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

The governmental fund financial statements are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. Revenue from federal, state, and other grants designated for payment of specific Charter School expenditures is recognized when the related expenditures are incurred; accordingly, when such funds are received, they are recorded as deferred revenues until earned. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences and claims and judgments, would be recorded only when payment is due.

Net Assets

The terminology implemented for the individual components of net assets is as follows:

- Invested in capital assets:
  Represents the net book value of property and equipment, net of any related debt.
- Restricted:
  Represents assets restricted for specific uses. The Charter School has no restricted assets.
- Unrestricted:
  Represents net assets available for general operations.

When both restricted and unrestricted funds are available for expenditure, the decision as to which funds are to be used first is left to the discretion of the Charter School Board of Trustees.

Receivables

As all of the intergovernmental and state receivables are due from local school districts and the Pennsylvania Department of Education (PDE), management believes that they are fully collectible. Thus, no allowance has been deemed necessary or recorded in the accompanying financial statements.

Tuition Revenue - School Districts

Local sources revenue includes tuition revenue which represents the tuition paid by various school districts for the students enrolled in the Charter School who reside within that particular school district. This revenue is earned and recognized during the applicable school year.

Long-Term Obligations

In the government-wide financial statements, long-term debt and other long-term obligations are reported as liabilities in the Statement of Net Assets. Bond premiums and discounts, as well as issuance costs, are deferred and amortized over the life of the bonds using the effective interest method. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are reported as deferred charges and amortized over the term of the related debt.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources while discounts on debt issuances are reported as other financial uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures.

The Charter School has not issued any bonds. The only long-term obligation at year end is related to compensated absences.

Capital Assets

Capital assets consist of building improvements, furniture and computer equipment which are reported in the governmental activities in the government-wide financial statements. Capital assets are defined as an asset with an initial individual cost of $1,500 or more and an estimated useful life in excess of one year. These assets are recorded at historical cost and estimated historical cost if purchased or constructed. Donated capital assets are recorded at estimated fair market value at the date of donation. Building improvements, furniture and computer equipment are depreciated using the straight-line method over three to seven years.

Subsequent Events

In preparing these financial statements, the Charter School has evaluated events and transactions for potential recognition or disclosure through December 13, 2010, the date the financial statements were available to be issued.

NOTE 2 - STEWARDSHIP, COMPLIANCE AND ACCOUNTABILITY

Budgetary Data

Budgets are adopted on a basis consistent with generally accepted accounting principles. Annual appropriated budgets are adopted for the general fund. All annual appropriations lapse at fiscal year end. The Charter School's 2010 - 2011 budget was prepared and approved by the Board of Trustees prior to submitting the budget to the Pennsylvania Department of Education in May, 2010.

NOTE 3 - CASH AND CASH EQUIVALENTS AND INVESTMENTS

Under Section 440.1 of the Public School Code of 1949, as amended, the Charter School is permitted to invest funds in the following types of investments:

> Obligations of (a) the United States of America or any of its agencies or instrumentalities backed by the full faith and credit of the United States of America, (b) the Commonwealth of Pennsylvania or any of its agencies or instrumentalities backed by the full faith and credit of the Commonwealth, or (c) any political subdivision of the Commonwealth of Pennsylvania or any of its agencies or instrumentalities backed by the full faith and credit of the political subdivision.
>
> Deposits in savings accounts or time deposits or share accounts of institutions insured by the Federal Deposit Insurance Corporation to the extent that such accounts are so insured and, for any amounts above the insured maximum, provided that approval collateral as provided by law therefore shall be pledged by the depository.

The deposit and investment policy of the Charter School adheres to state statutes. There were no deposits or investment transactions during the year that were in violation of either the state statutes or the policy of the Charter School.

The 21st Century Cyber Charter School's cash and investments at June 30, 2010 are as follows:

Pooled Cash and Investments	$ 2,132,189

All of the Charter School's deposits are in the PA Local Government Investment Trust (PLGIT). Although not registered with the Securities and Exchange Commission and not subject to regulatory oversight, the fund acts like money market mutual funds in that its objective is to maintain a stable net asset value of $1 per share, is rated by a nationally recognized statistical rating organization, and is subject to an independent annual audit.

Interest Rate Risk

The Charter School does have a formal investment policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

Credit Risk

The Charter School has no investment policy that would limit its investment choices to certain credit ratings. As of June 30, 2010, the Charter School's investments were rated as:

Investment	Standard & Poor's
PA Local Government Investment Trust	AAA

NOTE 3 - CASH AND CASH EQUIVALENTS AND INVESTMENTS - CONTINUED

Custodial Credit Risk

For an investment, custodial credit is the risk that, in the event of the failure of the counterparty, the Authority will not be able to recover the value of its investments or collateral security that are in the possession of an outside party. The Charter School has no investment subject to custodial credit risk.

NOTE 4 - INTERGOVERNMENTAL RECEIVABLES

The intergovernmental receivables balance of $667,473 is composed of receivables from numerous school districts and the Pennsylvania Department of Education as of June 30, 2010. Balances not remitted by the school districts will be withheld from the School's basic education subsidy and paid by the Pennsylvania Department of Education.

NOTE 5 - CAPITAL ASSETS

Following is a summary of changes in the capital assets during the fiscal year ended June 30, 2010:

	Balance June 30, 2009	Additions	Deletions/ Transfers	Balance June 30, 2010
Governmental Activities				
Building Improvements	$ 189,155	$ -	$ (189,155)	$ -
Furniture and Computer Equipment	351,049	21,631	(50,647)	322,033
Leased Computers	330,880	-	(330,880)	-
Total Capital Assets	871,084	21,631	(570,682)	322,033
Accumulated Depreciation				
Building Improvements	(95,907)	(27,022)	122,929	-
Furniture and Computer Equipment	(115,590)	(63,600)	34,155	(145,035)
Leased Computers	(330,880)	-	330,880	-
	(542,377)	(90,622)	487,964	(145,035)
GOVERNMENTAL ACTIVITIES, CAPITAL ASSETS, NET	$ 328,707	$ (68,991)	$ (82,718)	$ 176,998

NOTE 5 - CAPITAL ASSETS - CONTINUED

Depreciation expense was charged to function/programs as follows:

Instruction:	
Regular Education	$ 51,928
Special Education	7,312
Instructional Student Support	11,083
Administrative and Financial Support	15,171
Operation and Maintenance of Plant	5,128
	$ 90,622

NOTE 6 - LEASES

During the 08/09 year, the Charter School entered into an operating-type lease agreement for office space that expires August 31, 2013. The Charter School is also responsible for payment of utilities and real estate taxes and must also meet certain minimum insurance requirements.

Total rent charged to expense during 2010 for this commitment was $169,095.

Future minimum payments under operating leases that have remaining terms in excess of one year as of June 30, 2010 are:

2011	$ 187,095
2012	197,345
2013	206,995
2014	17,316

NOTE 7 - COMPENSATED ABSENCES LIABILITY

Compensated Absences:
Vested or accumulated vacation, sick leave, or sabbatical leave that is expected to be liquidated with expendable available financial resources is reported as an expenditure and a fund liability of the governmental fund that will pay it. Amounts of vested or accumulated vacation, sick leave, or sabbatical leave that are not expected to be liquidated with expendable available financial resources are reported in governmental activities. No liability is recorded for nonvesting accumulated rights to receive sick pay benefits. However, a liability is recognized for a portion of accumulating sick leave benefits that is estimated will be taken as "terminal leave" prior to retirement. The Charter School has calculated the amount to be provided for compensated absences as of June 30, 2010 to be $60,107.

Balance July 1, 2009	Additions	Reductions	Balance June 30, 2010	Current Portion
$ 65,723	$ 39,636	$ (45,252)	$ 60,107	$ -

Future liabilities will be paid by the general fund.

NOTE 8 - PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM (PSERS)

Plan Description:
The Charter School contributes to a governmental cost-sharing multiple employer defined benefit pension plan administered by PSERS. Benefit provisions of the plan are established under the provisions of The Public School Employees' Retirement Code and may be amended by an act of the Pennsylvania State Legislature. The plan provides retirement, disability, death benefits, legislatively mandated ad hoc cost-of-living adjustments, and health care insurance premium assistance to qualifying plan members and beneficiaries. It also provides for refunds of a member's accumulated contribution upon termination of a member's employment in the public school sector. PSERS issues a publicly available comprehensive annual financial report that includes financial statements and required supplementary information for the plan. A copy of the report may be obtained by writing to: Public School Employees' Retirement System, PO Box 125, Harrisburg, PA 17108-0125. The report is also available in the publications Section of the PSERS site on the internet at www.psers.state.pa.us.

NOTE 8 - PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM (PSERS) - CONTINUED

Funding Policy:
The contribution policy is established in the Public School Employees' Retirement Code and requires contributions by active employees and participating employers. Active members who joined the System prior to July 22, 1983, contribute at 5.25% (Membership Class TC) or at 6.50% (Membership Class TD) of the member's qualifying compensation. Members joining PSERS on or after July 22, 1983 and who were active or inactive as of July 1, 2001, contribute at 6.25% (Membership Class TC) or at 7.50% (Membership Class TD) of the member's qualifying compensation. Members joining PSERS after June 30, 2001 contribute at 7.50% (automatic Membership Class TD). For all new hires and for members who elected Class TD membership, the higher contribution rates began with service rendered on or after January 1, 2002.

The contributions required of participating employers are based upon an actuarial valuation and are expressed as a percentage of annual covered payroll during the period for which the amount is determined. For the fiscal year ended June 30, 2010, the rate of employer contribution was 4.78 percent of covered payroll. The 4.78 percent rate is composed of a pension contribution rate of 4.00 percent for pension benefits and 0.78 percent for health insurance premium assistance. The Charter School's contribution to PSERS for the fiscal years ended June 30, 2010, 2009 and 2008 was $119,683, $97,796 and $129,924, respectively.

NOTE 9 - POST EMPLOYMENT BENEFITS

Plan Description:
The 21st Century Cyber Charter School administers a single-employer defined benefit healthcare plan (the Retiree Health Plan). The plan provides lifetime healthcare insurance for eligible retirees and their spouses through the Charter School's health insurance plan, which covers both active and retired members. Benefit provisions are established through negotiation with the Charter School and the unions representing the Charter School's employees. The Retiree Health Plan does not issue a publicly available financial report and the Charter School is implementing GASB Statement 45 prospectively.

NOTE 9 - POST EMPLOYMENT BENEFITS - CONTINUED

Funding Policy:
Contribution requirements also are negotiated between the Charter School and union representatives. The required contribution is based on pay as you go financing. For administrators with less than twenty years with the Charter School, the retired plan member contributes the premium in excess of the flat-dollar Charter School contribution for medical insurance determined at the member's retirement for the retired plan member and their spouse. For administrators with twenty years or more with the Charter School the retired plan member must pay premiums for vision. The retired plan member must pay 50% of the cost of term life insurance. The premium sharing for medical insurance is limited to half of the retirees years of service and after that time the retired plan member is responsible for paying 100% of the premiums for medical insurance, and long-term care insurance is provided based on years of service with the Charter School paying 100% of the cost. Over age 65, the retiree must pay the premium in excess of the flat-dollar Charter School contribution determined at age 65. In addition, long-term care insurance is only provided for a period equal to half of the retiree's service.

Project staff are allowed to continue coverage for themselves and dependents until the member reaches Medicare age. The retiree is responsible for payment equal to the premium determined for the purposes of COBRA.

Annual OPEB Cost and Net OPEB Obligation:
The Charter School's annual other postemployment benefit (OPEB) cost (expense) is calculated based on the annual required contribution of the employer (ARC), an amount actuarially determined in accordance with the parameters of GASB Statement 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed thirty years. The following table shows the components of the Charter School's annual OPEB cost for the year, the amount actually contributed to the plan, and changes in the Charter School's net OPEB obligation:

Annual required contribution	$ 14,459
Interest on net OPEB obligation	1,285
Adjustment to annual required contribution	(2,018)
Annual OPEB Cost	13,726
Contributions made (estimated)	-
Estimated increase in net OPEB obligation	13,726
Net OPEB obligation - beginning of year	28,547
Net OPEB obligation - end of year	$ 42,273

NOTE 9 - POST EMPLOYMENT BENEFITS - CONTINUED

The Charter School's annual OPEB cost, the percentage of annual OPEB cost contributed to the plan, and the net OPEB obligation as of June 30, 2010 was as follows:

Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation
6/30/2010	$ 13,726	0.0%	$ 42,273
6/30/2009	14,088	0.0%	28,547
6/30/2008	14,059	0.0%	14,459

Funded Status and Funding Progress:
As of July 1, 2007, the most recent actuarial valuation date, the plan was unfunded. The actuarial accrued liability for benefits was $27,679, and the actuarial value of assets was $0, resulting in an unfunded actuarial accrued liability (UAAL) of $27,679. The covered payroll (annual payroll of active employees covered by the plan) was $1,451,354, and the ratio of the UAAL to the covered payroll was 1.91%.

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented as required supplementary information following the notes to the financial statements, presents information about actuarial value of plan assets and actuarial accrued liabilities for benefits.

Actuarial Methods and Assumptions:
Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

In the July 1, 2007, actuarial valuation, the entry age actuarial cost method was used. The actuarial assumptions included a 4.5% investment rate of return (net of administrative expenses) and an annual healthcare cost trend rate of 9% initially, decreasing 0.5% per year to an ultimate rate of 5% in 2015 and later. The unfunded actuarial accrued liability is being amortized using single period amortization as of the end of the year based on level dollar, blended period of six years for active liability and seven years for retiree liability.

NOTE 10 - FUND BALANCE DESIGNATIONS

The Charter School received Board approval to designate $ 1,763,699 from the June 30, 2010 fund balance for the following items:

- $250,000 to fund new initiatives that are innovative and will enhance the Charter School's offerings
- $500,000 for program stabilization should legislation pass reducing charter school tuition reimbursements
- $70,000 for the development of new online courses
- $7,771 to purchase computer equipment & hardware
- $120,000 to purchase and install furniture for staff expansion
- $750,000 to establish a new building fund for future relocation
- $65,928 for the PSERS stabilization fund

NOTE 11 - RISK MANAGEMENT

The Charter School is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; error and omissions; injuries to employees; and natural disasters. Significant losses are covered by commercial insurance for all major programs except for unemployment compensation, for which the Charter School retains risk of loss. For insured programs, there were no significant reductions in insurance coverages for the 2009-10 year. Settlement amounts have not exceeded insurance coverage for the current year.

In an effort to contain costs related to commercial insurance, the Charter School through the Chester County Intermediate Unit has established an Internal Service Fund to account for and finance its uninsured risks of loss. Under this program, the Charter School through the Chester County Intermediate Unit is self-insured for unemployment compensation purposes. All funds of the Charter School participate in the program and make payments to the Internal Service Fund based on estimates of amounts needed to pay prior and current year claims and to establish a reserve for unexpected losses.

NOTE 12 - JOINT AGREEMENT

The Charter School entered into an agreement with the Chester County Intermediate Unit on April 25, 2002. The Chester County Intermediate Unit provides the Charter School with human resources, accounting, payroll, telecommunication and janitorial services. In exchange, the Charter School will pay Chester County Intermediate Unit an annual fee based on total activity. The arrangement was modified effective November, 2008 when the Charter School moved to a separate location. Total fees paid for the year ended June 30, 2010 was $201,830.

NOTE 13 - NEW ACCOUNTING STANDARDS

The Government Accounting Standards Board (GASB) has issued the following standards which have not yet been implemented:

- Statement No. 54, Fund Balance Reporting and Governmental Fund Type Definitions. The objective of this statement is to enhance the usefulness of fund balance information and classifies fund balances into the following categories - nonspendable, restricted, committed, assigned and unassigned. The Charter School is required to implement Statement No. 54 by the year ended June 30, 2011.

- Statement No. 57, OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans which is required to be implemented by the year ended June 30, 2012.

- Statement No. 59, Financial Instruments Omnibus which is required to be implemented by the year ended June 30, 2011.

The Charter School has not yet completed the analyses necessary to estimate the financial statement impact of these new pronouncements.

REQUIRED SUPPLEMENTARY INFORMATION

21st CENTURY CYBER CHARTER SCHOOL

BUDGETARY COMPARISON SCHEDULE
GENERAL FUND

For the Year Ended June 30, 2010

	Original Budget	Final Budget	Actual	Variance
REVENUES				
Local Sources	$ 5,783,794	$ 5,700,324	$ 6,110,624	$ 410,300
State Sources	207,360	164,353	162,711	(1,642)
TOTAL REVENUES	5,991,154	5,864,677	6,273,335	408,658
EXPENDITURES				
Instruction				
Regular Programs	3,266,975	3,049,362	2,964,465	84,897
Special Programs	475,217	524,236	419,993	104,243
Total Instruction	3,742,192	3,573,598	3,384,458	189,140
Support Services				
Pupil Personnel Services	385,412	352,244	322,989	29,255
Instructional Staff Services	425,940	362,253	293,263	68,990
Administrative Services	1,338,870	1,523,313	1,166,824	356,489
Pupil Health	13,307	11,658	14,112	(2,454)
Total Support Services	2,163,529	2,249,468	1,797,188	452,280
TOTAL EXPENDITURES	5,905,721	5,823,066	5,181,646	641,420
EXCESS OF REVENUES OVER (UNDER) EXPENDITURES	85,433	41,611	1,091,689	1,050,078
OTHER FINANCING SOURCES (USES)				
Budgetary Reserve	(80,000)	(40,000)	-	(40,000)
REVENUES AND OTHER FINANCING SOURCES OVER (UNDER) EXPENDITURES AND OTHER FINANCING USES	$ 5,433	$ 1,611	1,091,689	$ 1,090,078
FUND BALANCE, BEGINNING			1,410,727	
FUND BALANCE, ENDING			$ 2,502,416	

See note to required supplementary information.

21st CENTURY CYBER CHARTER SCHOOL

SCHEDULE OF FUNDING PROGRESS - POST EMPLOYMENT BENEFITS PLAN

	Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
Governmental Activities	7/1/2007	$ -	$ 27,679	$ 27,679	0.00%	$ 1,451,354	1.91%

See note to required supplementary information.

21st CENTURY CYBER CHARTER SCHOOL

NOTE TO REQUIRED SUPPLEMENTARY INFORMATION

June 30, 2010

BUDGETARY DATA

The budget for the general fund is adopted on the modified accrual basis of accounting which is consistent with generally accepted accounting principles.

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Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

To the Board of School Directors
21st Century Cyber Charter School
Downingtown, Pennsylvania

We have audited the financial statements of the governmental activities and each major fund of 21st Century Cyber Charter School as of and for the year ended June 30, 2010, which collectively comprise the 21st Century Cyber Charter School's basic financial statements and have issued our report thereon dated December 13, 2010. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States.

Internal Control Over Financial Reporting

In planning and performing our audit, we considered 21st Century Cyber Charter School's internal control over financial reporting as a basis for designing our auditing procedures for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the 21st Century Cyber Charter School's internal control over financial reporting. Accordingly, we do not express an opinion on the effectiveness of the 21st Century Cyber Charter School's internal control over financial reporting.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A material weakness is a deficiency, or combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis.

Our consideration of internal control over financial reporting was for the limited purpose described in the fist paragraph of this section and was not designed to identify all deficiencies in internal control over financial reporting that might be deficiencies, significant deficiencies or material weaknesses. We did not identify any deficiencies in internal control over financial reporting that we consider to be material weaknesses, as defined above.

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Compliance and Other Matters

As part of obtaining reasonable assurance about whether 21st Century Cyber Charger School's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

We noted certain other matters that we reported to management of the 21st Century Cyber Charter School in a separate letter dated December 13, 2010.

This report is intended solely for the information and use of the audit committee, management, and the Board of School Directors and is not intended to be and should not be used by anyone other than these specified parties.

Herbein + Company, Inc.

Reading, Pennsylvania
December 13, 2010

21st CENTURY CYBER CHARTER SCHOOL

FINANCIAL STATEMENTS AND SUPPLEMENTARY INFORMATION

For the Year Ended June 30, 2011

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INDEPENDENT AUDITOR'S REPORT

To the Board of School Directors
21st Century Cyber Charter School
Downingtown, Pennsylvania

We have audited the accompanying financial statements of the governmental activities and each major fund of the 21st Century Cyber Charter School, as of and for the year ended June 30, 2011, which collectively comprise the 21st Century Cyber Charter School's basic financial statements as listed in the table of contents. These financial statements are the responsibility of the 21st Century Cyber Charter School's management. Our responsibility is to express opinions on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and the significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinions.

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and each major fund of the 21st Century Cyber Charter School, as of June 30, 2011, and the respective changes in financial position thereof for the year then ended in conformity with accounting principles generally accepted in the United States of America.

As discussed in Note 10 to the financial statements, the 21st Century Cyber Charter School adopted the provisions of Governmental Accounting Standards Board Statement No. 54, *Fund Balance Reporting and Governmental Fund Type Definitions,* beginning with the year ended June 30, 2011.

In accordance with *Government Auditing Standards*, we have also issued our report dated January 3, 2012 on our consideration of the 21st Century Cyber Charter School's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* and should be considered in assessing the results of our audit.

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Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, the budgetary comparison schedule, and the schedule of funding progress and employer contributions be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Herbein + Company, Inc.

Reading, Pennsylvania
January 3, 2012

21st CENTURY
CYBER CHARTER SCHOOL

21ST CENTURY CYBER CHARTER SCHOOL

MANAGEMENT'S DISCUSSION AND ANALYSIS
Required Supplementary Information
June 30, 2011

The discussion and analysis of 21st Century Cyber Charter School's (Charter School) financial performance provides an overall review of the Charter School's financial activities for the fiscal year ended June 30, 2011. The intent of this discussion and analysis is to look at the Charter School's financial performance as a whole. Readers should also review the financial statements and the notes to the basic financial statements to enhance their understanding of the Charter School's financial performance.

The Management Discussion and Analysis (MD&A) is an element of the reporting model adopted by the Governmental Accounting Standards Board (GASB) in their Statement No. 34 Basic Financial Statements – and Management's Discussion and Analysis – for State and Local Governments issued June 1999.

FINANCIAL HIGHLIGHTS

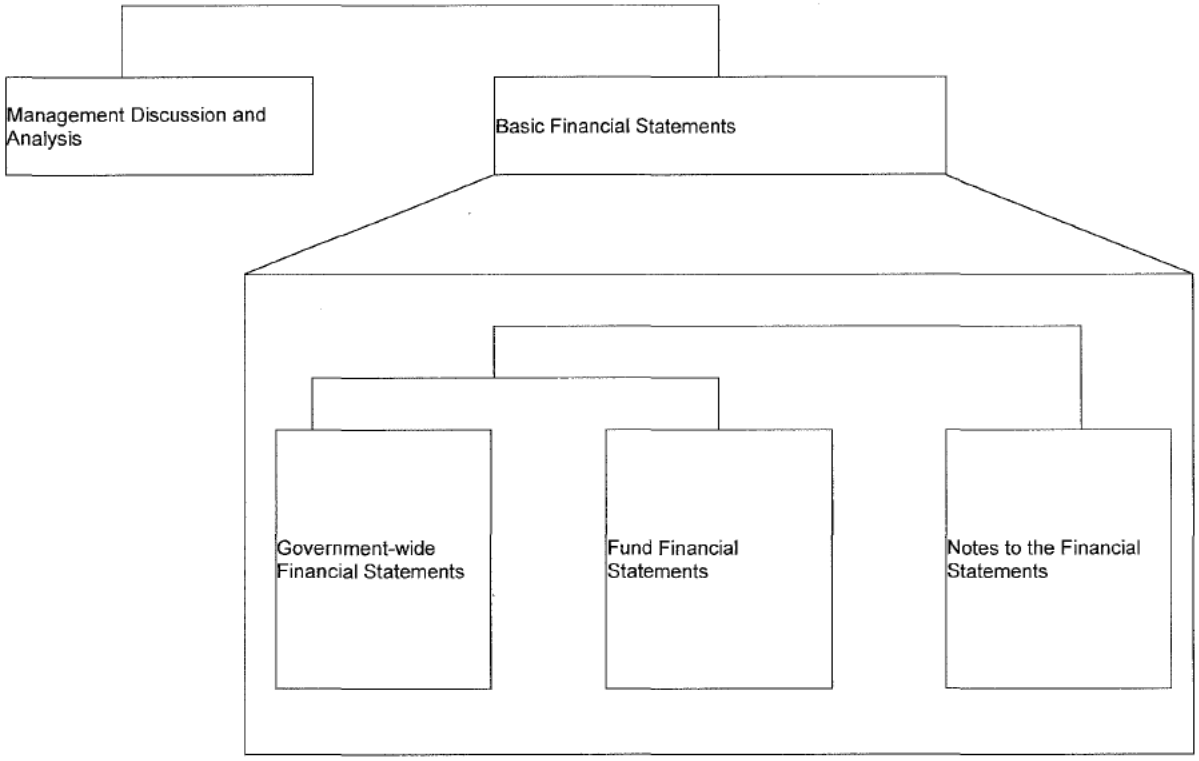
The 21st Century Cyber Charter School's financial results for the 2010-2011 school year resulted in a fund balance of $3,080,193 at June 30, 2011. The June 30, 2010 fund balance was $2,502,416.

Governmental fund total assets at June 30, 2011 were $4,391,248 compared to the June 30, 2010 balance of $3,048,951.

The primary source of revenue for the Charter School is tuition charged to school districts at rates set by the districts.

At June 30, 2009, the 21st Century Cyber Charter School elected the early adoption of GASB 45 – Accounting for Other Post Employment benefits. The liability associated with this adoption is reflected in the government-wide financial statements.

Figure 1
Required Components of 21st Century Cyber Charter School's Financial Report



OVERVIEW OF FINANCIAL STATEMENTS

Figure 2 summarizes the major features of the Charter School's financial statements. The remainder of this overview section of Management's Discussion and Analysis highlights the structure and contents of each of the statements.

Figure 2
21st Century Cyber Charter School's
Government-wide and Fund Financial Statements

		Fund Statements
	Government-wide Statements	**Governmental Funds**
Scope	Entire 21st Century Cyber Charter School (except fiduciary funds)	The activities of the Charter School that are not proprietary or fiduciary, such as education, administration and community services
Required financial statements	Statement of net assets Statement of activities	Balance Sheet Statement of revenues, expenditures, and changes in fund balance
Accounting basis and measurement focus	Accrual accounting and economic resources focus	Modified accrual accounting and current financial resources focus
Type of asset/liability information	All assets and liabilities, both financial and capital, and short-term and long-term	Only assets expected to be used up and liabilities that come due during the year or soon thereafter; no capital assets included
Type of inflow/outflow information	All revenues and expenses during year, regardless of when cash is received or paid	Revenues for which cash is received during or soon after the end of the year; expenditures when goods or services have been received and payment is due during the year or soon thereafter

Government-wide Statements

The government-wide statements report information about the Charter School as a whole using accounting methods similar to those used by private sector companies. The Statement of Net Assets includes all government assets and liabilities. Current year revenues and expenses are accounted for in the Statement of Activities regardless of when cash is received or paid.

The two government-wide statements report the Charter School's net assets and how they have changed. Net assets, the difference between assets and liabilities, are one way to measure the Charter School's financial health or position. Over time, increases or decreases in net assets are an indication of whether the Charter School's financial health is improving or deteriorating.

Governmental activities – All of the Charter School's basic services are included here, such as instruction, administration and pupil health.

Fund Financial Statements

The fund financial statements provide more detailed information about the Charter School's funds. The Charter School has no non-major, proprietary or fiduciary funds and reports all activity as governmental funds.

Government Funds – Includes the Charter School's basic services and generally (1) focuses on how cash and other financial assets can readily be converted into cash inflows and outflows and (2) identifies balances left at year-end that are available for spending. Financial results are reported using an accounting method called modified accrual accounting, which measures cash and all other financial assets. The governmental fund statements provide a detailed short-term view of the Charter School's operations and the services provided. Governmental fund information helps the reader determine the level of financial resources that can be spent in the near future to finance the Charter School's programs. The relationship (or differences) between governmental activities (reported in the Statement of Net Assets and the Statement of Activities) and governmental funds is reconciled in the financial statements.

FINANCIAL ANALYSIS OF THE 21ST CENTURY CYBER CHARTER SCHOOL AS A WHOLE

The Charter School's total net assets were $3,258,596 as of June 30, 2011.

Figure 3
Condensed Statement of Net Assets

June 30, 2011

	Governmental Activities 2010	2011
Current and other assets	$2,871,953	$4,063,960
Capital Assets	$ 176,998	$ 327,288
Total Assets	$3,048,951	$4,391,248
Current and other liabilities	$ 369,536	$ 989,758
Long-term liabilities	$ 102,380	$ 142,894
Total Liabilities	$ 471,916	$ 1,132,652
Net Assets		
Invested in capital assets, net of related debt	$ 176,998	$ 327,288
Unrestricted	$2,400,037	$2,931,308
Total Net Assets	$2,577,035	$3,258,596
Total Liabilities and Net Assets	$3,048,951	$ 4,391,248

Current assets at June 30, 2011 included cash of $2,757,197, intergovernmental and other receivables of $1,267,968, prepaid expenses of $26,224 and deposits of $12,571. The intergovernmental receivables were higher than 2009-2010 year-end balances because enrollments increased by over 24% in 2010-11. The Charter School purchased additional furniture and computer hardware and software to accommodate the increased staff and students in 2010-2011 which resulted in a $150,290 increase in net capital assets.

Total liabilities increased in 2010-2011. Accounts payable balances were $699,399 compared to the prior year balance of $150,011. The increase of $549,388 was the result of amounts due to the Chester County Intermediate Unit for services rendered and expenses paid on behalf of 21CCCS as well as additional purchases in May-June 2011 of laptop, software licenses & equipment. Accrued salaries and benefits increased from $201,582 at June 30, 2010 to $272,458 at June 30, 2011, a direct result of the 2010-2011 staffing additions. The compensated absences accrual which reflects the value of unused vacation time increased from $60,107 to $74,676 (current portion $5,991 + long-term portion $68,685) as of June 30, 2011. The long term liability related to GASB 45 – Accounting for Other Post Employment Benefits increased by $31,936 to $74,209 at the end of 2010-2011 school year.

Figure 4
Changes in Net Assets from Operating Results

June 30, 2011

	Governmental Activities	
Revenues	**2010**	**2011**
Program Revenues		
Charges for services	$6,032,499	$ 7,153,500
Operating grants and contributions	$ 240,836	$ 262,696
Capital grants and contributions	0	0
General Revenues	$ 0	$ 0
Total Revenues	$ 6,273,335	$ 7,416,196
Expenses		
Instruction - Regular Programs	$ 3,171,599	$4,100,171
Instruction - Special Programs	$ 450,155	$ 522,751
Support Services	$ 1,719,712	$2,111,712
Total Expenses	$ 5,341,466	$6,734,634
Increase (Decrease) in Net Assets	$ 931,869	$ 681,562
Beginning Net Assets	$1,645,165	$2,577,034
Ending Net Assets	$2,577,034	$3,258,596

Growing enrollments generated approximately $1,121,000 of additional tuition revenue in 2010-2011 compared to the prior school year.

Total expenses in 2010-2011 were approximately $1,393,000 higher than in 2009-2010 due to increased staffing levels required to serve the additional enrollments, increased demand for special education services, the purchase of additional computer equipment, furniture, and peripheral supply items for student use.

BUDGET HIGHLIGHTS

During the fiscal year, the Board authorizes revisions to the original budget to accommodate differences from the original budget to the actual expenditures of the 21st Century Cyber Charter School. A schedule showing the Charter School's original and final budget amounts compared with amounts actually paid and received is provided in the financial statements.

Actual 2010-2011 revenues were less than 1% lower than budgeted amounts. Expenditures were $523,051 lower than the final budget as overall spending levels were less than anticipated. Several new staff positions budgeted for 2010-2011 were not filled during the school year or were filled later than planned. The Charter School experienced savings in the following areas: postage costs partly due to more efficient shipping procedures; computer equipment as a result of management's decision to delay the purchase of new laptops; and textbooks due to improved class scheduling and better resource planning.

CAPITAL ASSET AND DEBT ADMINISTRATION

Capital Assets

At June 30, 2011, the Charter School had $ 327,288 invested in furniture and computer equipment.

Figure 5
Capital Assets (net of depreciation)

June 30, 2011

	Governmental Activities	
	2010	**2011**
Building Improvements	$ 0	$ 20,706
Furniture & Computer Equipment	$ 176,998	$ 306,582
Total	$ 176,998	$ 327,288

Debt Administration

The 21st Century Cyber Charter School had no debt as of June 30, 2011.

ECONOMIC FACTORS AND THE CHARTER SCHOOL'S FUTURE

The 21st Century Cyber Charter School is continuing to increase its teaching staff in 2011-2012 in order to accommodate increased enrollments and to expand class offerings and related services. Management has expanded the role of teaching assistants which allows teachers to service more students. In addition, as enrollments have increased, so has the demand for special education services. Several of the new teaching positions hired in 2010-11 and 2011-12 required special education certifications.

In May 2011, the Board of Trustees approved a two-year lease for additional office space at 782 Springdale Drive in Exton to house the Charter School's growing staff. The Middle School teaching staff and new principal along with the Instructional Systems Design group moved into the new location in August 2011. Work areas in the Charter School's main location at 805 Springdale Drive were reconfigured for the High School staff and principal, Special Education and Marketing areas. Management has already begun the search to find a suitable location for the entire school when both leases expire on August 31, 2013.

21CCCS was notified in June 2011 that its charter had been renewed effective July 1, 2011 for another 5 years. The Charter School also made Annual Yearly Progress (AYP) in 2010-2011, one of only two cyber charter schools in Pennsylvania to do so. The Charter School is the only statewide cyber charter to have achieved AYP for five consecutive years (2004-2005 through 2008-2009).

In 2006, the 21st Century Cyber Charter School and the Chester County Intermediate Unit entered into an agreement that established a virtual program to offer online classes to students enrolled in school districts throughout the Commonwealth. The program, under the name of Brandywine Virtual Academy (BVA), offers online courses for original credit course and credit recovery during the school year and summer school. The Charter School staff had managed the program since BVA's inception. In early 2011-12, the CCIU took on a larger role and began managing BVA's day-to-day operations and expanding its services. The Charter School's new role is to provide instructional services (teachers and curriculum) only to BVA students.

The Board of Trustees has maintained the agreement between 21CCCS and the CCIU to provide accounting, human resources, instructional systems design and other services for the foreseeable future. Several CCIU staff members continue to work at the school each week to better service the Charter School's needs.

To date, no legislation has been passed regarding cyber charter school funding. The Board of Trustees has approved a program stabilization fund to provide financial assistance to the Charter School, if needed, when the legislation is approved.

CONTACTING THE 21ST CENTURY CYBER CHARTER SCHOOL FINANCIAL MANAGEMENT

Our financial report is designed to provide our citizens, taxpayers, parents, students, investors and creditors with a general overview of the Charter School's finances and to show accountability for the money received. If you have questions about this report or wish to request additional financial information, please contact the Open Records Officer, 21st Century Cyber Charter School, 805 Springdale Drive, Exton, PA 19341, 484-875-5400.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF NET ASSETS

June 30, 2011

	Governmental Activities
ASSETS	
CURRENT ASSETS	
Cash	$ 2,757,197
Intergovernmental Receivables	1,206,080
State Subsidies Receivable	56,759
Other Receivables, Net	5,129
Prepaid Expenses	26,224
Deposits	12,571
TOTAL CURRENT ASSETS	4,063,960
NONCURRENT ASSETS	
Capital Assets, Net of Depreciation	327,288
TOTAL ASSETS	$ 4,391,248
LIABILITIES AND NET ASSETS	
CURRENT LIABILITIES	
Accounts Payable	$ 699,399
Accrued Liabilities	11,910
Accrued Salaries and Benefits	272,458
Current Portion of Compensated Absences	5,991
TOTAL CURRENT LIABILITIES	989,758
LONG-TERM LIABILITIES	
Compensated Absences	68,685
Other Post-Employment Benefits	74,209
TOTAL LONG-TERM LIABILITIES	142,894
TOTAL LIABILITIES	1,132,652
NET ASSETS	
Invested in Capital Assets	327,288
Unrestricted	2,931,308
TOTAL NET ASSETS	3,258,596
TOTAL LIABILITIES AND NET ASSETS	$ 4,391,248

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF ACTIVITIES

For the Year Ended June 30, 2011

Functions/Programs	Expenses	Program Revenue: Charges for Services	Program Revenue: Operating Grants and Contributions	Net (Expense) Revenue and Changes in Net Assets: Governmental Activities
Governmental Activities:				
Instruction:				
Regular	$ 4,100,171	$ 4,252,704	$ 139,211	$ 291,744
Special	522,751	517,250	59,371	53,870
Total Instructional Services	4,622,922	4,769,954	198,582	345,614
Support Services:				
Instructional Student Support	750,299	772,578	33,129	55,408
Administration and Financial Support Services	1,361,413	1,610,968	30,985	280,540
Total Support Services	2,111,712	2,383,546	64,114	335,948
Total Governmental Activities	$ 6,734,634	$ 7,153,500	$ 262,696	
		Change in Net Assets		681,562
		Net Assets - Beginning		2,577,034
		Net Assets - Ending		$ 3,258,596

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

BALANCE SHEET - GOVERNMENTAL FUND

June 30, 2011

	General Fund
ASSETS	
Cash	$ 2,757,197
Intergovernmental Receivables	1,206,080
State Subsidies Receivable	56,759
Other Receivables, Net	5,129
Prepaid Expenses	26,224
Deposits	12,571
TOTAL ASSETS	$ 4,063,960
LIABILITIES	
Accounts Payable	$ 699,399
Accrued Liabilities	11,910
Accrued Salaries and Benefits	272,458
TOTAL LIABILITIES	983,767
FUND BALANCE	
Nonspendable Prepaid Expenditures	26,224
Committed Fund Balance:	
Future Building Fund	750,000
Future Capital Equipment/Software/Furniture Purchases	100,000
Future Curriculum Development Costs	75,000
New Initiatives Fund	150,000
Future Program Stabilization Fund	950,000
Minimum Lease Obligation	561,055
Assigned Fund Balances:	
Encumbrances	16,065
PSERS Retirement Rate Increases	247,058
Unassigned Fund Balance	204,791
TOTAL FUND BALANCE	3,080,193
TOTAL LIABILITIES AND FUND BALANCE	$ 4,063,960

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

RECONCILIATION OF GOVERNMENTAL FUND BALANCE SHEET TO THE STATEMENT OF NET ASSETS

June 30, 2011

TOTAL FUND BALANCES - GOVERNMENTAL FUND		$ 3,080,193
Amounts reported for governmental activities on the statement of net assets are different because of the following:		
Capital assets used in governmental activities are not financial resources and therefore, are not reported as assets in governmental funds. The cost of the assets is $538,679 and the accumulated depreciation is $211,391.		327,288
Long-term liabilities are not due and payable in the current period and therefore, are not reported as liabilities in the governmental funds. Long-term liabilities at year-end consist of:		
Other Post-Employment Benefits	$ (74,209)	
Accumulated Compensated Absences	(74,676)	(148,885)
TOTAL NET ASSETS - GOVERNMENTAL ACTIVITIES		$ 3,258,596

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE - GOVERNMENTAL FUND

For the Year Ended June 30, 2011

	General Fund
REVENUES	
Local Sources	$ 7,223,343
State Sources	192,853
TOTAL REVENUES	7,416,196
EXPENDITURES	
Current:	
Instruction - Regular Programs	4,065,408
Instruction - Special Programs	494,814
Support Services	2,278,197
TOTAL EXPENDITURES	6,838,419
NET CHANGE IN FUND BALANCE	577,777
FUND BALANCE AT BEGINNING OF YEAR	2,502,416
FUND BALANCE AT END OF YEAR	$ 3,080,193

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

RECONCILIATION OF THE GOVERNMENTAL FUND STATEMENT OF REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCE TO THE STATEMENT OF ACTIVITIES

For the Year Ended June 30, 2011

NET CHANGE IN FUND BALANCE - GOVERNMENTAL FUND		$ 577,777
Amounts reported for governmental activities in the statement of activities are different because:		
Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives as depreciation expense. This is the amount by which capital outlays exceeded depreciation in the current period:		
Capital Outlays	$ 225,207	
Less: Depreciation Expense	(72,972)	
Loss on Disposal of Fixed Assets	(1,945)	150,290
In the statement of activities, the cost of compensated absences is recorded as additional long-term liabilities. This is the amount of the increase in compensated absences in the current year.		(14,569)
Post-employment benefits are recognized when they are paid on the fund statements. With the implementation of GASB #45, an estimated liability for future benefits due will be phased in over several years. This amount represents the difference between the estimated annual cost and the amount paid.		(31,936)
CHANGE IN NET ASSETS OF GOVERNMENTAL ACTIVITIES		$ 681,562

See accompanying notes.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The financial statements of the Charter School have been prepared in conformity with generally accepted accounting principles (GAAP) as applied to government units. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and financial principles. The following is a summary of the more significant policies and practices of the Charter School:

Organization

The 21st Century Cyber Charter School (Charter School) was originally chartered through West Chester Area School District. The Charter School was established in April 2001 and began operations in July 2001. Effective July 1, 2006, the Charter School became chartered directly through the Pennsylvania Department of Education. The current charter expires June 30, 2015.

The Charter School is located in Exton, Pennsylvania and was established to provide services to students located in Pennsylvania.

The Charter School is governed by a board made up of the executive directors of the Bucks, Chester, Delaware and Montgomery County Intermediate Units, two school district superintendents from each county and one parent member.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts on the financial statements and the disclosures of contingencies. Actual results could differ from those estimates.

Reporting Entity

In evaluating the Charter School as a reporting entity, management has addressed all potential component units for which the Charter School may or may not be financially accountable, and as such, be includable within the Charter School's financial statements. The Charter School is financially accountable if it appoints a voting majority of the organization governing board and (1) it is able to impose its will on the organization or (2) there is a potential for the organization to provide specific financial benefits to or impose specific financial burden on the Charter School. Additionally, the primary government is required to consider other organizations for which the nature and significance of their relationship with the primary government are such that exclusion would cause the reporting entity's financial statement to be misleading or incomplete.

Based upon the application of these criteria, the Charter School has determined it has no component units.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

Basis of Presentation

The Charter School's financial statements consist of government-wide statements, including a statement of net assets, a statement of activities, and fund financial statements which provide a more detailed level of financial information.

Government-wide financial statements (i.e., the Statement of Net Assets and the Statement of Activities) report information on all of the nonfiduciary activities of the Charter School. Governmental activities, which normally are supported by taxes and intergovernmental revenues, are reported separately from business-type activities which generally rely, to a significant extent, on fees and charges for support. This Charter School presently only has governmental activities.

The Statement of Activities demonstrates the degree to which the direct expenses of a given function or segment is offset by program revenues. Direct expenses are those that are clearly identifiable within a specific function or segment. Indirect expenses are allocated to functions/programs based on percentage of expenses in those particular functions/programs. Program revenues include charges to customers who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment. In addition, program revenues include grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Other items not properly included among program revenues are reported instead as general revenues. The comparison of direct expenses with program revenues identifies the extent to which each governmental function is self-financing on the extent it is covered by general revenues of the Charter School.

Fund financial statements are also provided in the report for all of the governmental funds (the general fund) of the Charter School. The major individual governmental fund is reported as a separate column in the fund financial statements. Nonmajor funds would be aggregated and presented in a single column. The Charter School has no nonmajor funds, proprietary funds or fiduciary funds.

Fund Accounting

The Charter School uses funds to report on its financial position and the results of its operations. Fund accounting is designed to demonstrate legal compliance and to aid financial management by segregating transactions related to certain government functions or activities. A fund is a separate accounting entity with a self-balancing set of accounts.

Governmental Fund

The focus of Governmental Fund Types is measured upon determination of financial position and changes in financial position (sources, uses and balances of financial resources) rather than upon net income.

The Charter School uses the following major fund:

General Fund - The General Fund is the general operating fund of the Charter School. It is used to account for all financial resources.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

Measurement Focus and Basis of Accounting

The government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met. Net assets (total assets less total liabilities) are used as a practical measure of economic resources and the operating statement includes all transactions and events that increased or decreased net assets. Depreciation is charged as expense against current operations and accumulated depreciation is reported in the Statement of Net Assets.

The governmental fund financial statements are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. Revenue from federal, state, and other grants designated for payment of specific Charter School expenditures is recognized when the related expenditures are incurred; accordingly, when such funds are received, they are recorded as deferred revenues until earned. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences and claims and judgments, would be recorded only when payment is due.

Revenues - Exchange and Nonexchange Transactions

Revenue resulting from exchange transactions, in which each party gives and receives essentially equal value, is recorded on the accrual basis when the exchange takes place. On a modified accrual basis, revenue is recorded in the fiscal year in which the resources are measurable and become available. Available means that the resources will be collected within the current fiscal year or are expected to be collected soon enough thereafter to be used to pay liabilities of the current fiscal year.

Receivables

As all of the intergovernmental and state receivables are due from local school districts and the Pennsylvania Department of Education (PDE), management believes that they are fully collectible. Thus, no allowance has been deemed necessary or recorded in the accompanying financial statements.

Tuition Revenue - School Districts

Local sources revenue includes tuition revenue which represents the tuition paid by various school districts for the students enrolled in the Charter School who reside within that particular school district. This revenue is earned and recognized during the applicable school year.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

Long-Term Obligations

In the government-wide financial statements, long-term debt and other long-term obligations are reported as liabilities in the Statement of Net Assets. Bond premiums and discounts, as well as issuance costs, are deferred and amortized over the life of the bonds using the effective interest method. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are reported as deferred charges and amortized over the term of the related debt.

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources while discounts on debt issuances are reported as other financial uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as support service expenditures.

The Charter School has not issued any bonds. The only long-term obligation at year-end is related to compensated absences and other post-employment benefits.

Capital Assets

Capital assets consist of building improvements, furniture and computer equipment which are reported in the governmental activities in the government-wide financial statements. Capital assets are defined as an asset with an initial individual cost of $1,500 or more and an estimated useful life in excess of one year. These assets are recorded at historical cost and estimated historical cost if purchased or constructed. Donated capital assets are recorded at estimated fair market value at the date of donation. Building improvements, furniture and computer equipment are depreciated using the straight-line method over three to seven years.

Net Assets Government-Wide Financial Statements and Proprietary Fund Balance

Net assets represent the difference between assets and liabilities. Net assets invested in capital assets, net of related debt consists of capital assets, net of accumulated depreciation, reduced by the outstanding balances of any borrowings used for the acquisition, construction or improvement of those assets. Net assets are reported as restricted when there are limitations imposed on their use either through the enabling legislation adopted by the Charter School or through external restrictions imposed by creditors, grantors or laws or regulations of other governments.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

Governmental Fund Balances

In the governmental fund financial statements, fund balances are classified as follows:

Nonspendable Fund Balance - Amounts that are not in a spendable form such as inventory and prepaid expenses or are required to be maintained intact such as the principal of an endowment. The nonspendable portion of fund balance must be identified before any other categories are determined.

Restricted Fund Balance - Amounts that can be spent only for the specific purposes stipulated by external resource providers such as grantors or enabling legislation. Restrictions may be changed or lifted only with the consent of the resource providers.

Committed Fund Balance - Amounts that can be used only for a specific purpose determined by a formal action of the board of trustees, the government's highest level of decision-making authority. The formal action to commit fund balance to a specific purpose must occur prior to the end of the reporting period, but the amount which will be subject to the constraint may be determined in the subsequent period. Committed funds may only be changed or lifted by the same formal action taken to commit them.

Assigned Fund Balance - Amounts that the Charter School intends to use for a specific purpose. Assignments of fund balance are made by the director/CEO or designee any time prior to the issuance of the audited financial statements.

Unassigned Fund Balance - Amounts that are not included within any other classification noted. Unassigned amounts are the portion of fund balance not obligated or specifically designated and is available for any purpose. Positive amounts are reported only in the General Fund.

Use of Restricted Resources

When both restricted and unrestricted resources are available for use, it is the Charter School's policy to use restricted resources first, then unrestricted resources as they are needed.

Any expenditure incurred for a purpose in which restricted and unrestricted fund balance amounts are available are satisfied through restricted fund balance amounts before unrestricted fund balance amounts. When an expenditure is incurred for a purpose in which unrestricted fund balance amounts are available under committed, assigned or unassigned fund balances, there are no restrictions placed on the order of the unrestricted fund balances used. The order of the unrestricted fund balances used for disbursements is at the discretion of the director/CEO.

NOTE 2 - STEWARDSHIP, COMPLIANCE AND ACCOUNTABILITY

Budgetary Data

Budgets are adopted on a basis consistent with generally accepted accounting principles. Annual appropriated budgets are adopted for the general fund. All annual appropriations lapse at fiscal year end. The Charter School's 2010/2011 budget was prepared and approved by the Board of Trustees prior to submitting the budget to the Pennsylvania Department of Education in May 2011.

NOTE 3 - CASH AND CASH EQUIVALENTS AND INVESTMENTS

Cash

Custodial Credit Risk - Deposit

Custodial credit risk is the risk that in the event of a bank failure, the government's deposits may not be returned to it. The Charter School does not have a policy for custodial credit risk. As of June 30, 2011, the carrying amount of the Charter School's deposits was $2,757,197 and the bank balance was $2,757,197. Of the bank balance $250,000 was covered by federal depository insurance and $2,507,197 of the Charter School's bank balance was exposed to custodial credit risk because it was uninsured and collateral held by the depository's agent was not in the Charter School's name.

NOTE 4 - INTERGOVERNMENTAL RECEIVABLES

The intergovernmental receivables balance of $1,206,080 is composed of receivables from numerous school districts and the Pennsylvania Department of Education as of June 30, 2011. Balances not remitted by the school districts will be withheld from the School's basic education subsidy and paid by the Pennsylvania Department of Education.

NOTE 5 - CAPITAL ASSETS

Following is a summary of changes in the capital assets during the fiscal year ended June 30, 2011:

	Balance June 30, 2010	Additions	Deletions/ Transfers	Balance June 30, 2011
Governmental Activities				
Leasehold Improvements	$ -	$ 20,764	$ -	$ 20,764
Furniture and Computer Equipment	322,033	204,443	(8,561)	517,915
Total Capital Assets	322,033	225,207	(8,561)	538,679
Accumulated Depreciation				
Leasehold Improvements	-	(58)	-	(58)
Furniture and Computer Equipment	(145,035)	(72,914)	6,616	(211,333)
	(145,035)	(72,972)	6,616	(211,391)
GOVERNMENTAL ACTIVITIES, CAPITAL ASSETS, NET	$ 176,998	$ 152,235	$ (1,945)	$ 327,288

Depreciation expense was charged to function/programs as follows:

Instruction:	
Regular Education	$ 43,351
Special Education	5,272
Support Services:	
Instructional Student Support	7,873
Administrative and Financial Support Services	16,476
	$ 72,972

NOTE 6 - LEASES

During the 2008/2009 school year, the Charter School entered into an operating-type lease agreement for office space at 805 Springdale Drive, Exton, PA that expires August 31, 2013. The Charter School is responsible for payment of utilities and real estate taxes and must also meet certain minimum insurance requirements.

Total rent charged to expense during 2011 for this commitment was $187,200.

In May 2011, the Charter School entered into a short-term lease agreement for office space at 782 Springdale Drive, Exton, PA that commences August 1, 2011 and expires August 31, 2013. The Charter School is responsible for payment of utilities and must meet certain minimum insurance requirements. Real estate taxes and maintenance fees are included in the rental amount.

Future minimum payments under both operating leases that have remaining terms in excess of one year are as follows for the years ended June 30:

2012	$ 233,130
2013	280,722
2014	47,203
	$ 561,055

NOTE 7 - COMPENSATED ABSENCES LIABILITY

Compensated Absences:
Vested or accumulated vacation, sick leave, or sabbatical leave that is expected to be liquidated with expendable available financial resources is reported as an expenditure and a fund liability of the governmental fund that will pay it. Amounts of vested or accumulated vacation, sick leave, or sabbatical leave that are not expected to be liquidated with expendable available financial resources are reported in governmental activities. No liability is recorded for nonvesting accumulated rights to receive sick pay benefits. However, a liability is recognized for a portion of accumulating sick leave benefits that is estimated will be taken as "terminal leave" prior to retirement. The Charter School has calculated the amount to be provided for compensated absences as of June 30, 2011 to be $74,676.

Balance July 1, 2010	Additions	Reductions	Balance June 30, 2011	Current Portion
$ 60,107	$ 56,931	$ (42,362)	$ 74,676	$ 5,991

Future liabilities will be paid by the general fund.

NOTE 8 - PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM (PSERS)

Plan Description:
The Charter School contributes to a governmental cost-sharing multiple employer defined benefit pension plan administered by PSERS. Benefit provisions of the Plan are established under the provisions of The Public School Employees' Retirement Code and may be amended by an act of the Pennsylvania State Legislature. The Plan provides retirement, disability, death benefits, legislatively mandated ad hoc cost-of-living adjustments, and health care insurance premium assistance to qualifying plan members and beneficiaries. It also provides for refunds of a member's accumulated contribution upon termination of a member's employment in the public school sector. PSERS issues a publicly available comprehensive annual financial report that includes financial statements and required supplementary information for the Plan. A copy of the report may be obtained by writing to: Public School Employees' Retirement System, PO Box 125, Harrisburg, PA 17108-0125. The report is also available in the publications Section of the PSERS site on the internet at www.psers.state.pa.us.

Funding Policy:
The contribution policy is established in the Public School Employees' Retirement Code and requires contributions by active employees and participating employers. Active members who joined the System prior to July 22, 1983, contribute at 5.25 percent (Membership Class TC) or at 6.50 percent (Membership Class TD) of the member's qualifying compensation. Members joining PSERS on or after July 22, 1983 and who were active or inactive as of July 1, 2001, contribute at 6.25 percent (Membership Class TC) or at 7.50 percent (Membership Class TD) of the member's qualifying compensation. Members joining PSERS after June 30, 2001 contribute at 7.50 percent (automatic Membership Class TD). For all new hires and for members who elected Class TD membership, the higher contribution rates began with service rendered on or after January 1, 2002.

The contributions required of participating employers are based upon an actuarial valuation and are expressed as a percentage of annual covered payroll during the period for which the amount is determined. For the fiscal year ended June 30, 2011, the rate of employer contribution was 5.64 percent of covered payroll. The 5.64 percent rate is composed of a pension contribution rate of 5.00 percent for pension benefits and 0.64 percent for health insurance premium assistance. The Charter School's contribution to PSERS for the fiscal years ended June 30, 2011, 2010, and 2009 was $160,982, $119,683, and $97,796, respectively.

NOTE 9 - POST-EMPLOYMENT BENEFITS

Plan Description:
The 21st Century Cyber Charter School administers a single-employer defined benefit healthcare plan (the Retiree Health Plan). The Plan provides lifetime healthcare insurance for eligible retirees and their spouses through the Charter School's health insurance plan, which covers both active and retired members. The Retiree Health Plan does not issue a publicly available financial report and the Charter School is implementing GASB Statement 45 prospectively.

NOTE 9 - POST-EMPLOYMENT BENEFITS - CONTINUED

Funding Policy:
The required contribution is based on pay as you go financing. For administrators with less than twenty years with the Charter School, the retired plan member contributes the premium in excess of the flat-dollar Charter School contribution for medical insurance determined at the member's retirement for the retired plan member and their spouse. For administrators with twenty years or more with the Charter School the retired plan member must pay premiums for vision. The retired plan member must pay 50 percent of the cost of term life insurance. The premium sharing for medical insurance is limited to half of the retirees years of service and after that time the retired plan member is responsible for paying 100 percent of the premiums for medical insurance, and long-term care insurance is provided based on years of service with the Charter School paying 100 percent of the cost. Over age 65, the retiree must pay the premium in excess of the flat-dollar Charter School contribution determined at age 65. In addition, long-term care insurance is only provided for a period equal to half of the retiree's service.

Project staff are allowed to continue coverage for themselves and dependents until the member reaches Medicare age. The retiree is responsible for payment equal to the premium determined for the purposes of COBRA.

Annual OPEB Cost and Net OPEB Obligation:
The Charter School's annual other post-employment benefit (OPEB) cost (expense) is calculated based on the annual required contribution of the employer (ARC), an amount actuarially determined in accordance with the parameters of GASB Statement 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed thirty years. The following table shows the components of the Charter School's annual OPEB cost for the year, the amount actually contributed to the plan, and changes in the Charter School's net OPEB obligation:

Annual required contribution	$ 33,101
Interest on net OPEB obligation	1,902
Adjustment to annual required contribution	(3,067)
Annual OPEB Cost	31,936
Contributions made (estimated)	-
Estimated increase in net OPEB obligation	31,936
Net OPEB obligation - beginning of year	42,273
Net OPEB obligation - end of year	$ 74,209

NOTE 9 - POST-EMPLOYMENT BENEFITS - CONTINUED

The Charter School's annual OPEB cost, the percentage of annual OPEB cost contributed to the plan, and the net OPEB obligation as of June 30 was as follows:

Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation
6/30/2011	$ 31,936	0.0%	$ 74,209
6/30/2010	13,726	0.0%	42,273
6/30/2009	14,088	0.0%	28,547

Funded Status and Funding Progress:
As of July 1, 2010, the most recent actuarial valuation date, the plan was unfunded. The actuarial accrued liability for benefits was $99,374, and the actuarial value of assets was $0, resulting in an unfunded actuarial accrued liability (UAAL) of $99,374. The covered payroll (annual payroll of active employees covered by the plan) was $2,337,687, and the ratio of the UAAL to the covered payroll was 4.25%.

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented as required supplementary information following the notes to the financial statements, presents information about actuarial value of plan assets and actuarial accrued liabilities for benefits.

Actuarial Methods and Assumptions:
Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

NOTE 9 - POST-EMPLOYMENT BENEFITS - CONTINUED

In the July 1, 2010 actuarial valuation, the entry age normal cost method was used. The actuarial assumptions included a 4.5 percent investment rate of return (net of administrative expenses) and an annual healthcare cost trend rate of 7.5 percent initially, decreasing 0.5 percent per year to an ultimate rate of 5.5 percent in 2014. Rates gradually decrease from 5.3 percent in 2015 to 4.2 percent in 2099 and later based on the Society of Actuaries Long-Run Medical Cost Trend Model. The unfunded actuarial accrued liability is being amortized using single period amortization as of the end of the year based on level dollar, 22-year open period. This is the weighted average of service until retirement (active liability) and payment period (retired liability).

NOTE 10 - FUND BALANCE

Effective July 1, 2010, the District adopted Governmental Accounting Standards Board Statement No. 54, *Fund Balance Reporting and Governmental Fund Type Definitions* to be in conformity with generally accepted accounting principles. The statement established a hierarchy for classifying fund balances into specifically defined classifications resulting in the Charter School adopting a fund balance policy effective for the June 30, 2011 reporting period. Details of the Charter School's governmental fund balance reporting and policy can be found in Note 1, *Summary of Significant Accounting Policies.* Fund balance classifications for the year ended June 30, 2011 were as follows:

General Fund

The general fund has a nonspendable fund balance of $26,224, committed funds of $750,000 for future building costs, $100,000 for capital equipment, $75,000 for curriculum development, $150,000 for new initiatives, $950,000 for program stabilization and $561,055 for future minimum lease obligations; assigned funds of $16,065 for encumbrances, $247,058 for PSERS retirement stabilization, and unassigned fund balance of $204,791. The commitments were authorized by the board of trustees' motion to set aside resources to fund the commitments noted above. The assignments were authorized by the board through adoption of the 2011/2012 general fund budget.

NOTE 11 - RISK MANAGEMENT

The Charter School is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; error and omissions; injuries to employees; and natural disasters. Significant losses are covered by commercial insurance for all major programs except for unemployment compensation, for which the Charter School retains risk of loss. For insured programs, there were no significant reductions in insurance coverages for the 2010/11 school year. Settlement amounts have not exceeded insurance coverage for the current year.

NOTE 11 - RISK MANAGEMENT - CONTINUED

In an effort to contain costs related to commercial insurance, the Charter School through the Chester County Intermediate Unit has established an Internal Service Fund to account for and finance its uninsured risks of loss. Under this program, the Charter School through the Chester County Intermediate Unit is self-insured for unemployment compensation purposes. All funds of the Charter School participate in the program and make payments to the Internal Service Fund based on estimates of amounts needed to pay prior and current year claims and to establish a reserve for unexpected losses.

NOTE 12 - JOINT AGREEMENT

The Charter School entered into an agreement with the Chester County Intermediate Unit on April 25, 2002, whereby the CCIU would provide the Charter School with office space, human resources, accounting, payroll, telecommunication, and janitorial services. In exchange, the Charter School would pay the CCIU an annual fee based on total activity. The arrangement was modified effective November 2008, when the Charter School moved to a separate location. Total fees paid under this agreement for the year ended June 30, 2011 was $269,983.

In addition, the Charter School pays consulting fees for specific CCIU employees to provide services to the Charter School. These consulting fees are based on a percentage of salaries and benefits for the following positions: accounting supervisor, accounts payable bookkeeper, human resource generalist, special ed supervisor, and instructional systems designer. Total fees paid for these services for the year ended June 30, 2011 were $339,380. The CCIU billed the Charter School an additional $69,635 for miscellaneous services including special education evaluations and services, book shipping services, Moodle access and design, and instructional equipment repair.

In September 2009, Chester County Intermediate Unit and the 21st Century Cyber Charter School entered into a cooperative agreement to provide online courses to students enrolled in the Brandywine Virtual Academy (BVA). BVA was created to provide individual students with courses necessary to graduate from high school for enrichment or remediation purposes. Under the agreement, 21st Century Cyber Charter School provides both credited and noncredited courses and the Intermediate Unit takes care of marketing the BVA program and related services. The agreement covers a three-year term through June 2012 and may be renewed.

In 2010/2011, the Charter School billed the Chester County Intermediate Unit $152,912 for providing instruction and curriculum for the CCIU's Brandywine Virtual Academy. The Charter School also received $8,614 to provide a math teacher on a limited basis to a CCIU vocational-technical school.

NOTE 13 - NEW ACCOUNTING PRONOUNCEMENTS

The Government Accounting Standards Board (GASB) has issued the following standards which have not yet been implemented:

- Statement No. 57, OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans which is required to be implemented by the year ended June 30, 2012. The objective of this statement is to address issues related to the use of the alternative measurement method and the frequency and timing of measurements by employers that participate in agent multiple-employer other postemployment benefit (OPEB) plans.

- Statement No. 60, Service Concession Arrangements which is required to be implemented by the year ended June 30, 2013. The objective of this statement is to address how to account for and report service concession arrangements, a type of public-private or public-public partnership that governments are increasingly entering into. At this time, the Charter School does not have any service concession arrangements in place.

- Statement No 61, The Financial Reporting Entity - Omnibus which is required to be implemented by the year ended June 30, 2013. The objective of this statement is to improve financial reporting for a governmental financial reporting entity to better meet user needs and address reporting entity issues. This statement modifies certain requirements for inclusion of component units in the financial reporting entity, and amends the criteria for reporting component units as if they were part of the primary government in certain circumstances. The statement also clarifies the reporting of equity interests in legally separate organizations.

- Statement No. 63, Financial Reporting of Deferred Outflows of Resources, Deferred Inflow of Resources, and Net Position which is required to be implemented by the year ended June 30, 2013. The objective of this statement is to provide a framework that will serve to standardize the presentation of deferred balances and their effects on a government's net position and address uncertainty related to their display.

The Charter School has not yet completed the analysis necessary to estimate the financial statement impact of these new pronouncements.

REQUIRED SUPPLEMENTARY INFORMATION

21st CENTURY CYBER CHARTER SCHOOL

BUDGETARY COMPARISON SCHEDULE
GENERAL FUND

For the Year Ended June 30, 2011

	Original Budget	Final Budget	Actual	Variance
REVENUES				
Local Sources	$ 7,225,163	$ 7,231,303	$ 7,223,343	$ (7,960)
State Sources	306,228	254,110	192,853	(61,257)
TOTAL REVENUES	7,531,391	7,485,413	7,416,196	(69,217)
EXPENDITURES				
Instruction				
Regular Programs	3,944,395	4,337,159	4,065,408	271,751
Special Programs	519,387	441,433	494,814	(53,381)
Total Instruction	4,463,782	4,778,592	4,560,222	218,370
Support Services				
Pupil Personnel Services	580,155	382,030	361,163	20,867
Instructional Staff Services	475,959	539,377	362,978	176,399
Administrative Services	1,903,970	1,634,296	1,539,815	94,481
Pupil Health	12,645	27,175	14,241	12,934
Total Support Services	2,972,729	2,582,878	2,278,197	304,681
TOTAL EXPENDITURES	7,436,511	7,361,470	6,838,419	523,051
EXCESS OF REVENUES OVER (UNDER) EXPENDITURES	94,880	123,943	577,777	453,834
OTHER FINANCING SOURCES (USES)				
Budgetary Reserve	(80,000)	-	-	-
REVENUES AND OTHER FINANCING SOURCES OVER (UNDER) EXPENDITURES AND OTHER FINANCING USES	$ 14,880	$ 123,943	577,777	$ 453,834
FUND BALANCE, BEGINNING			2,502,416	
FUND BALANCE, ENDING			$ 3,080,193	

See note to required supplementary information.

21st CENTURY CYBER CHARTER SCHOOL

SCHEDULE OF FUNDING PROGRESS AND EMPLOYER CONTRIBUTIONS - POST-EMPLOYMENT BENEFITS PLAN

SCHEDULE OF FUNDING PROGRESS

	Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
Governmental Activities	7/1/2010	$ -	$ 99,374	$ 99,374	0.00%	$ 2,337,687	4.25%
Governmental Activities	7/1/2007	-	27,679	27,679	0.00%	1,451,354	1.91%

SCHEDULE OF EMPLOYER CONTRIBUTIONS

	Year	Annual Required Contribution	Percentage Contributed
Annual Required Contribution	2011	$ 33,101	0.00%
	2010	13,726	0.00%
	2009	14,088	0.00%

See note to required supplementary information.

21st CENTURY CYBER CHARTER SCHOOL

NOTE TO REQUIRED SUPPLEMENTARY INFORMATION

June 30, 2011

BUDGETARY DATA

The budget for the general fund is adopted on the modified accrual basis of accounting which is consistent with generally accepted accounting principles.

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Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

To the Board of School Directors
21st Century Cyber Charter School
Downingtown, Pennsylvania

We have audited the financial statements of the governmental activities and each major fund of 21st Century Cyber Charter School as of and for the year ended June 30, 2011, which collectively comprise the 21st Century Cyber Charter School's basic financial statements and have issued our report thereon dated January 3, 2012. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States.

Internal Control Over Financial Reporting

Management of the 21st Century Cyber Charter School is responsible for establishing and maintaining effective internal control over financial reporting. In planning and performing our audit, we considered 21st Century Cyber Charter School's internal control over financial reporting as a basis for designing our auditing procedures for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the 21st Century Cyber Charter School's internal control over financial reporting. Accordingly, we do not express an opinion on the effectiveness of the 21st Century Cyber Charter School's internal control over financial reporting.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency, or combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis.

Our consideration of internal control over financial reporting was for the limited purpose described in the fist paragraph of this section and was not designed to identify all deficiencies in internal control over financial reporting that might be deficiencies, significant deficiencies or material weaknesses. We did not identify any deficiencies in internal control over financial reporting that we consider to be material weaknesses, as defined above.

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Compliance and Other Matters

As part of obtaining reasonable assurance about whether 21st Century Cyber Charger School's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

We noted certain matters that we reported to management of the 21st Century Cyber Charter School in a separate letter dated January 3, 2012.

This report is intended solely for the information and use of the audit committee, management, and the board of school directors and is not intended to be and should not be used by anyone other than these specified parties.

Herbein + Company, Inc.

Reading, Pennsylvania
January 3, 2012

21st CENTURY CYBER CHARTER SCHOOL

FINANCIAL STATEMENTS AND SUPPLEMENTARY INFORMATION

Year Ended June 30, 2012

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INDEPENDENT AUDITOR'S REPORT

To the Board of School Directors
21st Century Cyber Charter School
Downingtown, Pennsylvania

We have audited the accompanying financial statements of the governmental activities and each major fund of 21st Century Cyber Charter School, as of and for the year ended June 30, 2012, which collectively comprise the Charter School's basic financial statements as listed in the table of contents. These financial statements are the responsibility of the 21st Century Cyber Charter School's management. Our responsibility is to express opinions on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and the significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinions.

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and each major fund of the 21st Century Cyber Charter School, as of June 30, 2012, and the respective changes in financial position, and, where applicable, cash flows thereof for the year then ended in conformity with accounting principles generally accepted in the United States of America.

In accordance with *Government Auditing Standards*, we have also issued our report dated December 18, 2012, on our consideration of the 21st Century Cyber Charter School's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* and should be considered in assessing the results of our audit.

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Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, the budgetary comparison schedule, and the schedule of funding progress and employer contributions - post employment benefit plan be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Herbein + Company, Inc.

Reading, Pennsylvania
December 18, 2012

21st CENTURY
CYBER CHARTER SCHOOL

21ST CENTURY CYBER CHARTER SCHOOL

MANAGEMENT'S DISCUSSION AND ANALYSIS
Required Supplementary Information
June 30, 2012

The discussion and analysis of 21st Century Cyber Charter School's (Charter School) financial performance provides an overall review of the Charter School's financial activities for the fiscal year ended June 30, 2012. The intent of this discussion and analysis is to look at the Charter School's financial performance as a whole. Readers should also review the financial statements and the notes to the basic financial statements to enhance their understanding of the Charter School's financial performance.

The Management Discussion and Analysis (MD&A) is an element of the reporting model adopted by the Governmental Accounting Standards Board (GASB) in their Statement No. 34 Basic Financial Statements – and Management's Discussion and Analysis – for State and Local Governments issued June 1999.

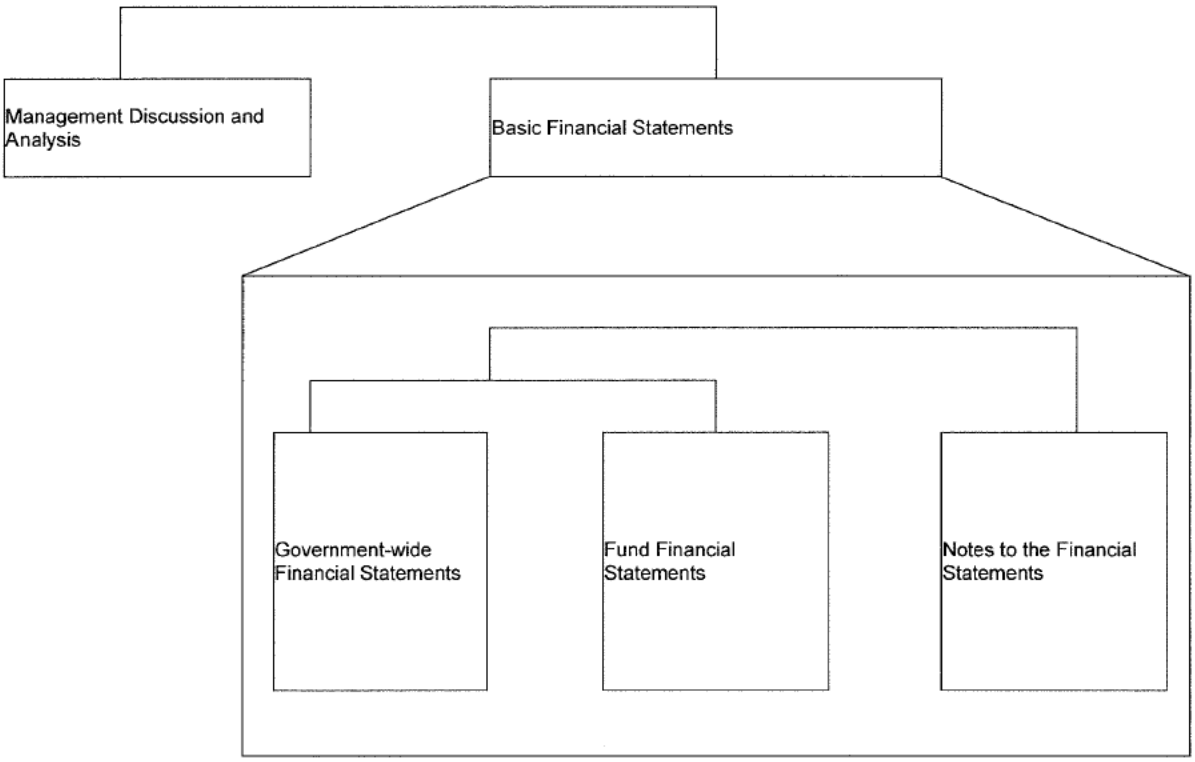
FINANCIAL HIGHLIGHTS

The 21st Century Cyber Charter School's financial results for the 2011-2012 school year resulted in a fund balance of $3,772,998 at June 30, 2012. The June 30, 2010-2011 fund balance was $3,080,193.

Governmental fund total assets at June 30, 2012 were $5,264,504 compared to the June 30, 2011 balance of $4,391,248.

The primary source of revenue for the Charter School is tuition charged to school districts at rates set by the districts.

Figure 1
Required Components of 21st Century Cyber Charter School's Financial Report



OVERVIEW OF FINANCIAL STATEMENTS

Figure 2 summarizes the major features of the Charter School's financial statements. The remainder of this overview section of Management's Discussion and Analysis highlights the structure and contents of each of the statements.

Figure 2
21st Century Cyber Charter School's
Government-wide and Fund Financial Statements

		Fund Statements
	Government-wide Statements	**Governmental Funds**
Scope	Entire 21st Century Cyber Charter School (except fiduciary funds)	The activities of the Charter School that are not proprietary or fiduciary, such as education, administration and community services
Required financial statements	Statement of net assets Statement of activities	Balance Sheet Statement of revenues, expenditures, and changes in fund balance
Accounting basis and measurement focus	Accrual accounting and economic resources focus	Modified accrual accounting and current financial resources focus
Type of asset/liability information	All assets and liabilities, both financial and capital, and short-term and long-term	Only assets expected to be used up and liabilities that come due during the year or soon thereafter; no capital assets included
Type of inflow/outflow information	All revenues and expenses during year, regardless of when cash is received or paid	Revenues for which cash is received during or soon after the end of the year; expenditures when goods or services have been received and payment is due during the year or soon thereafter

Government-wide Statements

The government-wide statements report information about the Charter School as a whole using accounting methods similar to those used by private sector companies. The Statement of Net Assets includes all government assets and liabilities. Current year revenues and expenses are accounted for in the Statement of Activities regardless of when cash is received or paid.

The two government-wide statements report the Charter School's net assets and how they have changed. Net assets, the difference between assets and liabilities, are one way to measure the Charter School's financial health or position. Over time, increases or decreases in net assets are an indication of whether the Charter School's financial health is improving or deteriorating.

Governmental activities – All of the Charter School's basic services are included here, such as instruction, administration and pupil health.

Fund Financial Statements

The fund financial statements provide more detailed information about the Charter School's funds. The Charter School has no non-major, proprietary or fiduciary funds and reports all activity as governmental funds.

Government Funds – Includes the Charter School's basic services and generally (1) focuses on how cash and other financial assets can readily be converted into cash inflows and outflows and (2) identifies balances left at year-end that are available for spending. Financial results are reported using an accounting method called modified accrual accounting, which measures cash and all other financial assets. The governmental fund statements provide a detailed short-term view of the Charter School's operations and the services provided. Governmental fund information helps the reader determine the level of financial resources that can be spent in the near future to finance the Charter School's programs. The relationship (or differences) between governmental activities (reported in the Statement of Net Assets and the Statement of Activities) and governmental funds is reconciled in the financial statements.

FINANCIAL ANALYSIS OF THE 21ST CENTURY CYBER CHARTER SCHOOL AS A WHOLE

The Charter School's total net assets were $4,070,178 as of June 30, 2012.

Figure 3
Condensed Statement of Net Assets

June 30, 2012

	Governmental Activities 2011	Governmental Activities 2012
Current and other assets	$ 4,063,960	$ 4,772,551
Capital Assets	$ 327,288	$ 491,953
Total Assets	$ 4,391,248	$ 5,264,504
Current and other liabilities	$ 989,758	$ 1,016,853
Long-term liabilities	$ 142,894	$ 177,473
Total Liabilities	$ 1,132,652	$ 1,194,326
Net Assets		
Invested in capital assets, net of related debt	$ 327,288	$ 491,953
Unrestricted	$ 2,931,308	$ 3,578,225
Total Net Assets	$ 3,258,596	$ 4,070,178
Total Liabilities and Net Assets	$ 4,391,248	$ 5,264,504

Current assets at June 30, 2012 included cash of $3,598,460, intergovernmental and other receivables of $1,107,907, prepaid expenses of $53,613 and deposits of 12,571. The intergovernmental receivables were lower as a result of subsidy payment. The Charter School purchased additional furniture for additional office space, computer hardware and software, which resulted in a $164,665 increase in net capital assets.

Total liabilities increased in 2011-2012. Accounts payable balances were $635,740, compared to the prior year balance of $699,399. The decrease of $63,659 a result of amounts due for services rendered and expenses paid on behalf of 21CCCS as well as additional purchases. Accrued salaries and benefits increased from $272,458 at June 30, 2011 to $339,830 at June 30, 2012, a direct result of the 2011-2012 staffing additions. The compensated absences accrual, which reflects the value of unused vacation time increased from $74,676 to $89,508 (current portion $17,300 + long-term portion $72,208) as of June 30, 2012. The long term liability related to GASB 45 – Accounting for Other Post Employment Benefits increased by $74,209 to $105,265 at the end of 2011-2012 school year.

Figure 4
Changes in Net Assets from Operating Results

June 30, 2012

	Governmental Activities	
Revenues	**2011**	**2012**
Program Revenues		
Charges for services	$ 7,153,500	$ 8,088,896
Operating grants and contributions	262,696	269,049
Capital grants and contributions	0	0
General Revenues	0	0
Total Revenues	$ 7,416,196	$ 8,357,946
Expenses		
Instruction - Regular Programs	$ 4,099,915	$ 4,453,704
Instruction - Special Programs	522,981	550,458
Support Services	2,111,739	2,542,202
Total Expenses	$ 6,734,635	$ 7,546,364
Increase (Decrease) in Net Assets	$ 681,561	$ 811,582
Beginning Net Assets	2,577,035	3,258,596
Ending Net Assets	$ 3,258,596	$ 4,070,178

Growing enrollments generated approximately $935,000 of additional tuition revenue in 2011-2012 compared to the prior school year.

Total expenses in 2011-2012 were approximately $811,000 higher than in 2010-2011 due to increased staffing levels required to serve the additional enrollments, increased demand for special education services, the purchase of additional computer equipment, furniture, and peripheral supply items for student use.

BUDGET HIGHLIGHTS

During the fiscal year, the Board authorizes revisions to the original budget to accommodate differences from the original budget to the actual expenditures of the 21st Century Cyber Charter School. A schedule showing the Charter School's original and final budget amounts compared with amounts actually paid and received is provided in the financial statements.

Actual 2011-2012 revenues were less than 3% lower than budgeted amounts. Expenditures were $290,406 lower than the final budget as overall spending levels were less than anticipated. Some new and current staff positions budgeted for 2011-2012 were not filled during the school year or were filled later than planned. The Charter School experienced savings in the following other areas: postage costs partly due to more efficient shipping procedures; computer equipment as a result of management's decision to delay the purchase of new laptops; savings on various software cost.

CAPITAL ASSET AND DEBT ADMINISTRATION

Capital Assets

At June 30, 2012, the Charter School had $ 491,953 invested in furniture and computer equipment.

Figure 5
Capital Assets (net of depreciation)

June 30, 2012

	Governmental Activities 2011	Governmental Activities 2012
Building Improvements	$ 20,706	$ 20,014
Furniture & Computer Equipment	306,582	471,939
Total	$ 327,288	$ 491,953

Debt Administration

The 21st Century Cyber Charter School had no debt as of June 30, 2012.

ECONOMIC FACTORS AND THE CHARTER SCHOOL'S FUTURE

The 21st Century Cyber Charter School is continuing to increase its teaching staff in 2012-2013 in order to accommodate increased enrollments and to expand class offerings and related services. Management has expanded the role of teaching assistants which allows teachers to service more students. In addition, as enrollments have increased, so has the demand for special education services. Several of the new teaching positions 2011-12 required special education certifications and in 2012-2013 an increase in special education teachers will help bridge the gap from increased student enrollment for special education.

In May 2011, the Board of Trustees approved a two-year lease for additional office space at 782 Springdale Drive in Exton to house the Charter School's growing staff. The Middle School teaching staff and new principal along with the Instructional Systems Design group moved into the new location in August 2011. Work areas in the Charter School's main location at 805 Springdale Drive were reconfigured for the High School staff and principal, Special Education and Marketing areas. Management has already begun the search to find a suitable location for the entire school when both leases expire on August 31, 2013. In August 2012, with the increase of enrollment and growing staff in the Administration team, Instructional Systems Design group, Marketing and teacher subject area were relocated to the current location 782 Springdale Drive in Exton. The Middle School teaching staff and principal moved to the main location at 805 Springdale Drive, allowing one central location for all teaching staff while a search is conducted for new High School principal.

21CCCS was notified in June 2011 that its charter had been renewed effective July 1, 2011 for another 5 years. The Charter School also made Annual Yearly Progress (AYP) in 2010-2011, one of only two cyber charter schools in Pennsylvania to do so and repeated AYP achievement as one of only three cyber charter schools in Pennsylvania with 2011-2012 school year. The Charter School is the only statewide cyber charter to have achieved AYP for five consecutive years (2004-2005 through 2011-2012).

In 2006, the 21st Century Cyber Charter School and the Chester County Intermediate Unit entered into an agreement that established a virtual program to offer online classes to students enrolled in school districts throughout the Commonwealth. The program, under the name of Brandywine Virtual Academy (BVA), offers online courses for original credit course and credit recovery during the school year and summer school. The Charter School staff had managed the program since BVA's inception. In early 2011-12, the CCIU took on a larger role and began managing BVA's day-to-day operations and expanding its services. The Charter School's new role is to provide instructional services (teachers and curriculum) only to BVA students.

The Board of Trustees has maintained the agreement between 21CCCS and the CCIU to provide accounting, human resources, and other services for the foreseeable future. Several CCIU staff members continue to work at the school each week to better service the Charter School's needs.

The Pennsylvania School Employees Retirement System (PSERS) retirement rate for 2011-12 was 8.65% of qualified wages. The 2011-2012 rate is an increase over the 2010-2011 PSERS rate of 5.64%. The employer contribution rate for fiscal year 2013-2014 will be 16.93%. This rate was determined by PSERS' actuary and is subject to certification by the PSERS Board of Trustees at its meeting on December 6, 2012.

PSERS has developed tentative projections for the employer contribution rate for future years that range from 16.69 % to 26.96%. These tentative projections are based on the actual investment returns and potential actuarial experience losses for the 2011-2012 fiscal year and will have a significant impact on future operations.

To date, no legislation has been passed regarding cyber charter school funding. The Board of Trustees has approved a program stabilization fund to provide financial assistance to the Charter School, if needed, when the legislation is approved.

CONTACTING THE 21ST CENTURY CYBER CHARTER SCHOOL FINANCIAL MANAGEMENT

Our financial report is designed to provide our citizens, taxpayers, parents, students, investors and creditors with a general overview of the Charter School's finances and to show accountability for the money received. If you have questions about this report or wish to request additional financial information, please contact the Open Records Officer, 21st Century Cyber Charter School, 805 Springdale Drive, Exton, PA 19341, 484-875-5400.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF NET ASSETS

June 30, 2012

	Governmental Activities
ASSETS	
CURRENT ASSETS	
Cash	$ 3,598,460
Intergovernmental Receivables	1,060,767
State Subsidies Receivable	47,140
Prepaid Expenses	53,613
Deposits	12,571
TOTAL CURRENT ASSETS	4,772,551
NONCURRENT ASSETS	
Capital Assets, Net of Depreciation	491,953
TOTAL ASSETS	$ 5,264,504
LIABILITIES AND NET ASSETS	
CURRENT LIABILITIES	
Accounts Payable	$ 635,740
Accrued Liabilities	23,983
Accrued Salaries and Benefits	339,830
Current Portion of Compensated Absences	17,300
TOTAL CURRENT LIABILITIES	1,016,853
LONG-TERM LIABILITIES	
Compensated Absences	72,208
Other Post Employment Benefits	105,265
TOTAL LONG-TERM LIABILITIES	177,473
TOTAL LIABILITIES	1,194,326
NET ASSETS	
Invested in Capital Assets	491,953
Unrestricted	3,578,225
TOTAL NET ASSETS	4,070,178
TOTAL LIABILITIES AND NET ASSETS	$ 5,264,504

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF ACTIVITIES

For the Year Ended June 30, 2012

Functions/Programs	Expenses	Program Revenue: Charges for Services	Program Revenue: Operating Grants and Contributions	Net (Expense) Revenue and Changes in Net Assets: Governmental Activities
Governmental Activities:				
Instruction:				
Regular	$ 4,453,704	$ 4,331,974	$ 123,937	$ 2,207
Special	550,458	693,656	68,540	211,738
Total Instructional Services	5,004,162	5,025,630	192,477	213,945
Support Services:				
Instructional Student Support	1,049,209	1,046,704	38,478	35,973
Administration and Financial Support Services	1,492,993	2,008,302	38,094	553,403
Total Support Services	2,542,202	3,055,006	76,572	589,376
Total Governmental Activities	$ 7,546,364	$ 8,080,636	$ 269,049	803,321
		General Revenues:		
		Investment Earnings		8,261
		Change in Net Assets		811,582
		Net Assets - Beginning		3,258,596
		Net Assets - Ending		$ 4,070,178

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

BALANCE SHEET - GOVERNMENTAL FUND

June 30, 2012

	General Fund
ASSETS	
Cash	$ 3,598,460
Intergovernmental Receivables	1,060,767
State Subsidies Receivable	47,140
Prepaid Expenses	53,613
Deposits	12,571
TOTAL ASSETS	$ 4,772,551
LIABILITIES	
Accounts Payable	
Accrued Liabilities	$ 635,740
Accrued Salaries and Benefits	23,983
	339,830
TOTAL LIABILITIES	999,553
FUND BALANCE	
Nonspendable Fund Balance, Prepaid Expenditures, and Deposits	66,184
Committed Fund Balance:	
Future Building Fund	750,000
Future Capital Equipment/Software/Furniture Purchases	60,000
Future Curriculum Development Costs	75,000
New Initiatives Fund	300,000
Future Program Stabilization Fund	1,150,000
Minimum Lease Obligation	305,303
Assigned Fund Balances:	
Encumbrances	21,219
PSERS Retirement Rate Increases	360,371
Unassigned Fund Balance	684,921
TOTAL FUND BALANCE	3,772,998
TOTAL LIABILITIES AND FUND BALANCE	$ 4,772,551

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

RECONCILIATION OF GOVERNMENTAL FUND BALANCE SHEET TO THE STATEMENT OF NET ASSETS

June 30, 2012

TOTAL FUND BALANCES - GOVERNMENTAL FUND		$ 3,772,998
Amounts reported for governmental activities on the statement of net assets are different because of the following:		
Capital assets used in governmental activities are not financial resources and, therefore, are not reported as assets in governmental funds. The cost of the assets is $798,160 and the accumulated depreciation is $306,207.		491,953
Long-term liabilities are not due and payable in the current period and, therefore, are not reported as liabilities in the governmental funds. Long-term liabilities at year-end consist of:		
Other Post Employment Benefits	$ (89,508)	
Accumulated Compensated Absences	(105,265)	(194,773)
TOTAL NET ASSETS - GOVERNMENTAL ACTIVITIES		$ 4,070,178

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE - GOVERNMENTAL FUND

For the Year Ended June 30, 2012

	General Fund
REVENUES	
Local Sources	$ 8,200,609
State Sources	157,337
TOTAL REVENUES	8,357,946
EXPENDITURES	
Current:	
Instruction - Regular Programs	4,111,649
Instruction - Special Programs	650,893
Support Services	2,902,599
TOTAL EXPENDITURES	7,665,141
NET CHANGE IN FUND BALANCE	692,805
FUND BALANCE AT BEGINNING OF YEAR	3,080,193
FUND BALANCE AT END OF YEAR	$ 3,772,998

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

RECONCILIATION OF THE GOVERNMENTAL FUND STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE TO THE STATEMENT OF ACTIVITIES

For the Year Ended June 30, 2012

NET CHANGE IN FUND BALANCE - GOVERNMENTAL FUND		$ 692,805
Amounts reported for governmental activities in the statement of activities are different because:		
Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives as depreciation expense. This is the amount by which capital outlays exceeded depreciation in the current period:		
Capital Outlays	$ 263,881	
Less: Depreciation Expense	(99,216)	164,665
In the statement of activities, the cost of compensated absences is recorded as additional long-term liabilities. This is the amount of the change in compensated absences in the current year.		(14,832)
Post employment benefits are recognized when they are paid on the fund statements. With the implementation of GASB #45, an estimated liability for future benefits due will be phased in over several years. This amount represents the difference between the estimated annual cost and the amount paid.		(31,056)
CHANGE IN NET ASSETS OF GOVERNMENTAL ACTIVITIES		$ 811,582

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

NOTES TO BASIC FINANCIAL STATEMENTS

June 30, 2012

The 21st Century Cyber Charter School (Charter School) was originally chartered through West Chester Area School District. The Charter School was established in April 2001 and began operations in July 2001. Effective July 1, 2006, the Charter School became chartered directly through the Pennsylvania Department of Education. The current charter expires June 30, 2015.

The Charter School is located in Exton, Pennsylvania and was established to provide services to students located in Pennsylvania.

The Charter School is governed by a board made up of the executive directors of the Bucks, Chester, Delaware and Montgomery County Intermediate Units, two school district superintendents from each county, and three parent members.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accounting policies of the 21st Century Cyber Charter School (Charter School) conform to generally accepted accounting principles as applicable to governments. The Governmental Accounting Standards Board (GASB) is the authoritative standard-setting body for the establishment of governmental accounting and financial reporting principles. The following is a summary of the more significant policies and practices of the Charter School.

A. Reporting Entity

In evaluating the Charter School as a reporting entity, management has addressed all potential component units for which the Charter School may or may not be financially accountable, and as such, be includable within the Charter School's financial statements. The Charter School is financially accountable if it appoints a voting majority of the organization governing board and (1) it is able to impose its will on the organization or (2) there is a potential for the organization to provide specific financial benefits to or improve specific financial burden on the Charter School. Additionally, the primary government is required to consider other organizations for which the nature and significance of their relationship with the primary government are such that exclusion would cause the reporting entity's financial statement to be misleading or incomplete.

Based upon the application of these criteria, the 21st Century Cyber Charter School has determined it has no component units.

B. Measurement Focus and Basis of Accounting

The basic financial statements of the Charter School are comprised of the following:

- Government-wide financial statements
- Fund financial statements
- Notes to financial statements

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

1. **Government-wide financial statements** (i.e., the statement of net assets and the statement of activities) report information on all of the nonfiduciary activities of the Charter School. Governmental activities, which normally are supported by intergovernmental revenues, are reported separately from business-type activities which rely to a significant extent on fees and charges for support. The Charter School presently only has governmental activities.

   Government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Under the accrual basis of accounting, revenues, expenses, gains, losses, assets, and liabilities resulting from exchange and exchange-like transactions are recognized when the exchange takes place. Revenues, expenses, gains, losses, assets, and liabilities resulting from nonexchange transactions are recognized in accordance with the requirements of GASB Statement No. 33, *"Accounting and Financial Reporting for Nonexchange Transactions."*

   The statement of activities demonstrates the degree to which the direct expenses of a given function or segment is offset by program revenues. Direct expenses are those that are clearly identifiable within a specific function or segment. Program revenues include charges to customers who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment. In addition, program revenues include grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Other items not properly included among program revenues are reported instead as general revenues. The comparison of direct expenses with program revenues identifies the extent to which each governmental function is self-financing on the extent it is covered by general revenues of the Charter School.

2. **Fund financial statements** The underlying accounting system of the Charter School is organized and operated on the basis of separate funds, each of which is considered to be a separate accounting entity. The operations of each fund are accounted for with a separate set of self-balancing accounts that comprise its assets, liabilities, fund equity, revenues, and expenditures or expenses, as appropriate. Governmental resources are allocated to and accounted for in individual funds based upon the purposes for which they are to be spent and the means by which spending activities are controlled.

   The financial statements for governmental funds are presented after the government-wide financial statements. These statements display information about major funds individually and nonmajor funds in the aggregate for governmental and enterprise funds.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

When both restricted and unrestricted resources are combined in a fund, expenses are considered to be paid first from restricted resources, and then from unrestricted resources.

- **Governmental funds**

  Governmental fund financial statements are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collected within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the Charter School considers revenues to be available if they are collected with 60 days of the end of the current fiscal period.

  Revenue from federal, state, and other grants designated for payment of specific school Charter School expenditures is recognized when the related expenditures are incurred; accordingly, when such funds are received, they are recorded as deferred revenues until earned. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences and claims and judgments, are recorded only when payment is due.

  Under the current financial resources measurement focus, only current assets and current liabilities are generally included on the balance sheet. The reported fund balance is considered to be a measure of "available spendable resources."

  Governmental funds operating statements present increases (revenues and other financing sources) and decreases (expenditures and other financing uses) in net current assets. Accordingly, they are said to present a summary of sources and uses of "available spendable resources" during a period.

  Amounts expended to acquire capital assets are recorded as expenditures in the year that resources were expended, rather than as fund assets. The proceeds of long-term debt are recorded as other financing source rather than as a fund liability. However, debt service expenditures, as well as expenditures related to compensated absences and claims and judgments, are recorded only when payment is due.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

C. Basis of Presentation

The determination of major funds is based on minimum criteria as set forth in GASB Statement No. 34, *"Basic Financial Statements - and Management's Discussion and Analysis - for State and Local Governments."* The nonmajor funds are combined in a column in the fund financial statements. The following is the Charter School's major fund:

1. **Government Fund Types**

   General Fund - The general fund is the general operating fund of the Charter School. It is used to account for all financial resources. All activities of the Charter School are accounted for through this fund.

D. Budgetary Data

Budgets are adopted on a basis consistent with generally accepted accounting principles. Annual appropriated budgets are adopted for the general fund. All annual appropriations lapse at fiscal year-end. The Charter School's 2011-2012 budget was prepared and approved by the board of trustees prior to submitting the budget to the Pennsylvania Department of Education.

All budget amounts presented in the accompanying financial statements have been adjusted for legally authorized revisions of the annual budget during the year. Appropriations, except unexpended grant appropriations and encumbrances, lapse at the end of each fiscal year.

E. Investments and Cash Equivalents

Investments are carried at market value.

Cash equivalents in the basic financial statements include all highly-liquid investments with an original maturity of three months or less.

F. Receivables

As all of the intergovernmental and state receivables are due from local school districts and the Pennsylvania Department of Education (PDE), management believes that they are fully collectible. Thus, no allowance has been deemed necessary or recorded in the accompanying financial statements.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

G. Tuition Revenue - School Districts

Local sources revenue includes tuition revenue which represents the tuition paid by various school districts for the students enrolled in the Charter School who reside within that particular school district. This revenue is earned and recognized during the applicable school year.

H. Capital Assets

Capital assets consist of building improvements, furniture, and computer equipment which are reported in the governmental activities in the government-wide financial statements. Capital assets are defined as an asset with an initial individual cost of $1,500 or more and an estimated useful life in excess of one year. These assets are recorded at historical cost and estimated historical cost if purchased or constructed. Donated capital assets are recorded at estimated fair market value at the date of donation.

The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend asset lives are not capitalized.

All reported capital assets are depreciated using the straight-line method over the following estimated useful lives:

Assets	Years
Leasehold improvements	20 - 50
Furniture and computer equipment	5 - 20

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

I. Long-Term Obligations

In the government-wide financial statements, long-term debt and other long-term obligations are reported as liabilities in the statement of net assets. Bond premiums and discounts, as well as issuance costs, are deferred and amortized over the life of the bonds using the effective interest method. Bonds payable are reported net of the applicable bond premium or discount. Bond issuance costs are reported as deferred charges and amortized over the term of the related debt.

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs during the current period. The face amount of debt issued is reported as other financing sources while discounts on debt issuances are reported as other financial uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as support service expenditures.

The Charter School has not issued any bonds. The only long-term obligation at year-end is related to compensated absences and other post employment benefits.

J. Unearned and Deferred Revenues

Revenues that are received but not earned are deferred in the government-wide financial statements. In the Charter School's governmental funds, deferred revenues arise when potential revenue does not meet both the "measurable" and "available" criteria for recognition in the current period. Deferred and unearned revenues also arise when resources are received by the government before it has legal claim to them. In subsequent periods, when both revenue recognition criteria are met, or when the Charter School has legal claim to the resources, the liability for unearned revenue is removed from the governmental funds' balance sheet and revenue is recognized.

K. Net Assets

Government Accounting Standards requires the classification of net assets into the three components shown below, which are defined as follows:

Invested in capital assets, net of related debt - This category groups all capital assets, including infrastructure, into one component of net assets. Accumulated depreciation and the outstanding balances of debt that are attributable to the acquisition, construction, or improvements of these assets reduce the balance in this category.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

Restricted net assets - This category presents external restrictions imposed by creditors, grantors, contributors or laws or regulations of other governments and restrictions imposed by law through constitutional provisions or enabling legislation.

Unrestricted net assets - This category represents net assets of the Charter School, which are not restricted for any project or other purpose.

L. Governmental Fund Balances

Government Accounting Standards has established accounting and financial standards for all governments that report governmental funds. The standards established criteria for classifying funds balances into specifically defined classifications is as follows:

Government Accounting Standards has established accounting and financial standards for all governments that report governmental funds. The standards established criteria for classifying funds balances into specifically defined classifications as follows:

Nonspendable Fund Balance - Amounts that are not in a spendable form such as inventory and prepaid expenses or are required to be maintained intact such as the principal of an endowment. The nonspendable portion of fund balance must be identified before any other categories are determined.

Restricted Fund Balance - Amounts that can be spent only for the specific purposes stipulated by external resource providers such as grantors or enabling legislation. Restrictions may be changed or lifted only with the consent of the resource providers.

Committed Fund Balance - Amounts that can be used only for a specific purpose determined by a formal action (resolution) of the board of school directors, the government's highest level of decision-making authority. The formal action (resolution) to commit fund balance to a specific purpose should occur prior to the end of the reporting period, but the amount which will be subject to the constraint may be determined in the subsequent period. Committed funds may only be changed or lifted by the same formal action (resolution) taken to commit them.

Assigned Fund Balance - Amounts that the Charter School intends to use for a specific purpose. The authority to make assignments of fund balance is designated by the board of school directors to the director/CEO or designee through the adopted fund balance policy. Assignments may be made any time prior to the issuance of the audited financial statements.

Unassigned Fund Balance - Amounts that are not included within any other classification noted. Unassigned amounts that are the portion of fund balance not obligated or specifically designated and are available for any purpose.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

M. Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

NOTE 2 - CASH AND CASH EQUIVALENTS

Deposits
Custodial Credit Risk
Custodial credit risk is the risk that in the event of a bank failure, the government's deposits may not be returned to it. The Charter School does not have a policy for custodial credit risk. As of June 30, 2012, the carrying amount and the bank balance of the Charter School's deposits was $3,598,460. Of the bank balance, $250,000 was covered by federal depository insurance and $3,348,460 of the Charter School's bank balance was exposed to custodial credit risk because it was uninsured and collateral held by the depository's agent was not in the Charter School's name.

NOTE 3 - INTERGOVERNMENTAL RECEIVABLES

The intergovernmental receivables balance of $1,060,767 is comprised of receivables from numerous districts and the Pennsylvania Department of Education as of June 30, 2012. Balances not remitted by the school districts will be withheld from the school's basic education subsidy and paid by the Pennsylvania Department of Education.

NOTE 4 - CAPITAL ASSETS

Following is a summary of changes in the capital assets during the fiscal year ended June 30, 2012:

	Balance June 30, 2011	Additions	Deletions/ Transfers	Balance June 30, 2012
Governmental Activities				
Leasehold Improvements	$ 20,764	$ -	$ -	$ 20,764
Furniture and Computer Equipment	517,915	263,881	(4,400)	777,396
Total Capital Assets	538,679	263,881	(4,400)	798,160
Accumulated Depreciation				
Leasehold Improvements	(58)	(692)	-	(750)
Furniture and Computer Equipment	(211,333)	(98,524)	4,400	(305,457)
	(211,391)	(99,216)	4,400	(306,207)
GOVERNMENTAL ACTIVITIES, CAPITAL ASSETS, NET	$ 327,288	$ 164,665	$ -	$ 491,953

Depreciation expense was charged to function/programs as follows:

Instruction:	
Regular Education	$ 52,249
Special Education	8,966
Support Services:	
Instructional Student Support	12,749
Administrative and Financial Support Services	25,252
	$ 99,216

NOTE 5 - LEASES

During the 2008/2009 school year, the Charter School entered into an operating-type lease agreement for office space at 805 Springdale Drive, Exton, PA that expires August 31, 2013. The Charter School is responsible for payment of utilities and real estate taxes and must also meet certain minimum insurance requirements.

Total rent charged to expense during 2012 for this commitment was $197,911.

In May 2011, the Charter School entered into a short-term lease agreement for office space at 782 Springdale Drive, Exton, PA that commences August 1, 2011 and expires August 31, 2013. The Charter School is responsible for payment of utilities and must meet certain minimum insurance requirements. Real estate taxes and maintenance fees are included in the rental amount.

Total rent charged to expense during 2012 for this commitment was $42,741.

Future minimum payments under both operating leases that have remaining terms in excess of one year are as follows for the years ending June 30:

2013	$ 258,100
2014	47,203
	$ 305,303

NOTE 6 - COMPENSATED ABSENCES LIABILITY

Compensated Absences

Vested or accumulated vacation, sick leave, or sabbatical leave that is expected to be liquidated with expendable available financial resources is reported as an expenditure and a fund liability of the governmental fund that will pay it. Amounts of vested or accumulated vacation, sick leave, or sabbatical leave that are not expected to be liquidated with expendable available financial resources are reported in governmental activities. No liability is recorded for nonvesting accumulated rights to receive sick pay benefits. However, a liability is recognized for a portion of accumulating sick leave benefits that is estimated will be taken as "terminal leave" prior to retirement. The Charter School has calculated the amount to be provided for compensated absences as of June 30, 2012 to be $89,508.

Balance July 1, 2011	Additions	Reductions	Balance June 30, 2012	Current Portion
$ 74,676	$ 75,393	$ (60,561)	$ 89,508	$ 17,300

Future liabilities will be paid by the general fund.

NOTE 7 - PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM (PSERS)

Plan Description

The Charter School contributes to a governmental cost-sharing multiple employer defined benefit pension plan administered by PSERS. Benefit provisions of the Plan are established under the provisions of The Public School Employees' Retirement Code and may be amended by an act of the Pennsylvania State Legislature. The Plan provides retirement, disability, death benefits, legislatively mandated ad hoc cost-of-living adjustments, and health care insurance premium assistance to qualifying plan members and beneficiaries. It also provides for refunds of a member's accumulated contribution upon termination of a member's employment in the public school sector. PSERS issues a publicly available comprehensive annual financial report that includes financial statements and required supplementary information for the Plan. A copy of the report may be obtained by writing to: Public School Employees' Retirement System, PO Box 125, Harrisburg, PA 17108-0125. The report is also available in the publications Section of the PSERS site on the internet at www.psers.state.pa.us.

Funding Policy

The contribution policy is set by the code and requires contributions by active employees and by participating employers. Active members who joined the system prior to July 22, 1983, contribute at 5.25 percent (Membership Class TC) or at 6.50 percent (Membership Class TD) of the member's qualifying compensation. Members joining PSERS on or after July 22, 1983 and who were active or inactive as of July 1, 2001, contribute at 6.25 percent (Membership Class TC) or at 7.50 percent (Membership Class TD) of the member's qualifying compensation. Members joining PSERS after June 30, 2001 and who were active or inactive as of June 30, 2011 contribute at 7.50 percent (automatic Membership Class TD). For all new hires and for members who elected Class TD membership, the higher contribution rates began with service rendered on or after January 1, 2002. Members joining PSERS on or after July 1, 2011 contribute at 7.50 percent (Membership Class TE) or at 10.30 percent (Membership Class TF). Both membership classes TE and TF contain a "shared risk" which allows for an increase in the contribution percentage up to an additional 2.00 percent based on market results.

The contributions required of participating employers are based upon an actuarial valuation and are expressed as a percentage of annual covered payroll during the period for which the amount is determined. For the fiscal year ended June 30, 2012, the rate of employer contribution was 8.65 percent of covered payroll. The 8.65 percent rate is comprised of a pension contribution rate of 8.00 percent for pension benefits and 0.65 percent for health insurance premium assistance. The Charter School's contribution to PSERS for the fiscal years ended June 30, 2012, 2011, and 2010 was $292,214, $160,982, and $119,683, respectively.

NOTE 8 - POST EMPLOYMENT BENEFITS

Plan Description

The 21st Century Cyber Charter School administers a single-employer defined benefit healthcare plan (the Retiree Health Plan). The Plan provides lifetime healthcare insurance for eligible retirees and their spouses through the Charter School's health insurance plan, which covers both active and retired members. The Retiree Health Plan does not issue a publicly available financial report and the Charter School is implementing GASB Statement 45, prospectively.

Funding Policy

The required contribution is based on pay-as-you-go financing. For administrators with less than twenty years with the Charter School, the retired plan member contributes the premium in excess of the flat-dollar Charter School contribution for medical insurance determined at the member's retirement for the retired plan member and their spouse. For administrators with twenty years or more with the Charter School the retired plan member must pay premiums for vision. The retired plan member must pay 50 percent of the cost of term life insurance. The premium sharing for medical insurance is limited to half of the retirees years of service and after that time the retired plan member is responsible for paying 100 percent of the premiums for medical insurance, and long-term care insurance is provided based on years of service with the Charter School paying 100 percent of the cost. Over age 65, the retiree must pay the premium in excess of the flat-dollar Charter School contribution determined at age 65. In addition, long-term care insurance is only provided for a period equal to half of the retiree's service.

Project staff are allowed to continue coverage for themselves and dependents until the member reaches Medicare age. The retiree is responsible for payment equal to the premium determined for the purposes of COBRA.

NOTE 8 - POST EMPLOYMENT BENEFITS - CONTINUED

Annual OPEB Cost and Net OPEB Obligation

The Charter School's annual other post employment benefit (OPEB) cost (expense) is calculated based on the annual required contribution of the employer (ARC), an amount actuarially determined in accordance with the parameters of GASB Statement 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed thirty years. The following table shows the components of the Charter School's annual OPEB cost for the year, the amount actually contributed to the plan, and changes in the Charter School's net OPEB obligation:

Annual required contribution	$ 33,101
Interest on net OPEB obligation	3,339
Adjustment to annual required contribution	(5,384)
Annual OPEB Cost	31,056
Contributions made (estimated)	-
Estimated increase in net OPEB obligation	31,056
Net OPEB obligation - beginning of year	74,209
Net OPEB obligation - end of year	$ 105,265

The Charter School's annual OPEB cost, the percentage of annual OPEB cost contributed to the plan, and the net OPEB obligation as of June 30 was as follows:

Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation
6/30/2012	$ 31,056	0.0%	$ 105,265
6/30/2011	31,936	0.0%	74,209
6/30/2010	13,726	0.0%	42,273

Funded Status and Funding Progress

As of July 1, 2010, the most recent actuarial valuation date, the plan was unfunded. The actuarial accrued liability for benefits was $99,374, and the actuarial value of assets was $0, resulting in an unfunded actuarial accrued liability (UAAL) of $99,374. The covered payroll (annual payroll of active employees covered by the plan) was $2,337,687, and the ratio of the UAAL to the covered payroll was 4.25%.

NOTE 8 - POST EMPLOYMENT BENEFITS - CONTINUED

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented as required supplementary information following the notes to the financial statements, presents information about actuarial value of plan assets and actuarial accrued liabilities for benefits.

Actuarial Methods and Assumptions
Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

In the July 1, 2010 actuarial valuation, the entry age normal cost method was used. The actuarial assumptions included a 4.5 percent investment rate of return (net of administrative expenses) and an annual healthcare cost trend rate of 7.5 percent initially, decreasing 0.5 percent per year to an ultimate rate of 5.5 percent in 2014. Rates gradually decrease from 5.3 percent in 2015 to 4.2 percent in 2099 and later based on the Society of Actuaries Long-Run Medical Cost Trend Model. The unfunded actuarial accrued liability is being amortized using single period amortization as of the end of the year based on level dollar, 22-year open period. This is the weighted average of service until retirement (active liability) and payment period (retired liability).

NOTE 9 - FUND BALANCE

Details of the Charter School's governmental fund balance reporting and policy can be found in Note 1, *Summary of Significant Accounting Policies.* Fund balance classifications for the year ended June 30, 2011 were as follows:

General Fund
The general fund has a nonspendable fund balance of $53,613 of prepaid expenses and $12,371 of deposits, committed funds of $750,000 for future building costs, $60,000 for capital equipment, $75,000 for curriculum development, $300,000 for new initiatives, $1,150,000 for program stabilization, and $305,303 for future minimum lease obligations; assigned funds of $21,219 for encumbrances, $360,371 for PSERS retirement stabilization, and unassigned fund balance of $684,921. The commitments were authorized by the board of school directors' motion to set aside resources to fund the commitments noted above. The assignments were authorized by the board through adoption of the 2012/2013 general fund budget.

NOTE 9 - FUND BALANCE - CONTINUED

Spending Policy
The Charter School's policy is to first use restricted fund balance when an expenditure is incurred for purposes for which both restricted and unrestricted fund balance is available.

The Charter School's policy states there are no restrictions placed on the order of the unrestricted fund balances used when an expenditure is incurred for a purpose in which unrestricted fund balance amounts are available under committed, assigned or unassigned fund balance. The decision will be made at the discretion of the director/CEO.

Minimum Fund Balance Policy
The Charter School's unassigned fund balance of the general fund may be used for any purpose at the discretion of the director/CEO and/or designee. The minimum balance cannot fall below zero.

NOTE 10 - RISK MANAGEMENT

The Charter School is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; error and omissions; injuries to employees; and natural disasters. Significant losses are covered by commercial insurance for all major programs except for unemployment compensation, for which the Charter School retains risk of loss. For insured programs, there were no significant reductions in insurance coverages for the 2011/12 school year. Settlement amounts have not exceeded insurance coverage for the current year.

In an effort to contain costs related to commercial insurance, the Charter School through the Chester County Intermediate Unit has established an internal service fund to account for and finance its uninsured risks of loss. Under this program, the Charter School through the Chester County Intermediate Unit is self-insured for unemployment compensation purposes. The Charter School makes payments to the internal service fund based on estimates of amounts needed to pay prior and current year claims and to establish a reserve for unexpected losses.

NOTE 11 - JOINT AGREEMENT

The Charter School entered into an agreement with the Chester County Intermediate Unit on April 25, 2002, whereby the CCIU would provide the Charter School with office space, human resources, accounting, payroll, telecommunication, and janitorial services. In exchange, the Charter School would pay the CCIU an annual fee based on total activity. The arrangement was modified effective November 2008, when the Charter School moved to a separate location. Total fees paid under this agreement for the year ended June 30, 2012 was $299,171.

In addition, the Charter School pays consulting fees for specific CCIU employees to provide services to the Charter School. These consulting fees are based on a percentage of salaries and benefits for the following positions: accounting supervisor, accounts payable bookkeeper, human resource generalist, and instructional systems designer. Total fees paid for these services for the year ended June 30, 2012 were $236,140. The CCIU billed the Charter School an additional $61,449 for miscellaneous services including special education evaluations and services, book shipping services, Moodle access and design, and instructional equipment repair.

In September 2009, Chester County Intermediate Unit and the 21st Century Cyber Charter School entered into a cooperative agreement to provide online courses to students enrolled in the Brandywine Virtual Academy (BVA). BVA was created to provide individual students with courses necessary to graduate from high school for enrichment or remediation purposes. Under the agreement, 21st Century Cyber Charter School provides both credited and noncredited courses and the Intermediate Unit takes care of marketing the BVA program and related services. The agreement covers a three-year term through June 2012 and may be renewed.

In 2011-2012, the Charter School billed the Chester County Intermediate Unit $447,734 for providing instruction, curriculum, and other related expenses for the CCIU's Brandywine Virtual Academy.

NOTE 12 - NEW ACCOUNTING PRONOUNCEMENTS

The Government Accounting Standards Board (GASB) has issued the following standards which have not yet been implemented:

- Statement No. 60, Service Concession Arrangements which is required to be implemented by the year ended June 30, 2013. The objective of this statement is to address how to account for and report service concession arrangements, a type of public-private or public-public partnership that governments are increasingly entering into. At this time, the Charter School does not have any service concession arrangements in place.

NOTE 12 - NEW ACCOUNTING PRONOUNCEMENTS - CONTINUED

- Statement No 61, The Financial Reporting Entity - Omnibus which is required to be implemented by the year ending June 30, 2013. The objective of this statement is to improve financial reporting for a governmental financial reporting entity to better meet user needs and address reporting entity issues. This statement modifies certain requirements for inclusion of component units in the financial reporting entity, and amends the criteria for reporting component units as if they were part of the primary government in certain circumstances. The statement also clarifies the reporting of equity interests in legally separate organizations.

- Statement No. 63, Financial Reporting of Deferred Outflows of Resources, Deferred Inflow of Resources, and Net Position which is required to be implemented by the year ending June 30, 2013. The objective of this statement is to provide a framework that will serve to standardize the presentation of deferred balances and their effects on a government's net position and address uncertainty related to their display.

- Statement No. 65, Items Previously Reported as Assets and Liabilities, which is required to be implemented by the year ending June 30, 2013. The objective of this statement is to improve financial reporting by clarifying the appropriate use of the financial statement elements deferred outflows of resources and deferred inflows of resources to ensure consistency in financial reporting. This statement also restricts the use of the term "deferred" only to those items designated as deferred outflows or deferred inflows of resources by the standards.

- Statement No. 67, Financial Reporting for Pension Plans, which is required to be implemented by the year ending June 30, 2014. The objective of this statement is to improve financial reporting by enhancing financial statement note disclosure and required supplementary information for government pension plans.

- Statement No. 68, Accounting and Financial Reporting for Pensions, which is required to be implemented by the year ending June 30, 2015. The objective of this statement is to improve accounting and financial reporting by governments for pensions. This statement establishes standards for measuring and recognizing liabilities, deferred outflows of resources, deferred inflows of resources, and expenditures. This statement also enhances note disclosure and required supplementary information for government pension plans. This pronouncement applies to employers that have a legal obligation to make contributions directly to a pension plan.

The Charter School has not yet completed the analysis necessary to estimate the financial statement impact of these new pronouncements.

REQUIRED SUPPLEMENTARY INFORMATION

21st CENTURY CYBER CHARTER SCHOOL

BUDGETARY COMPARISON SCHEDULE
GENERAL FUND

For the Year Ended June 30, 2012

	Original Budget	Final Budget	Actual	Variance
REVENUES				
Local Sources	$ 8,691,624	$ 8,431,667	$ 8,200,609	$ (231,058)
State Sources	379,338	160,611	157,337	(3,274)
TOTAL REVENUES	9,070,962	8,592,278	8,357,946	(234,332)
EXPENDITURES				
Instruction				
Regular Programs	5,107,627	4,310,593	4,111,649	198,944
Special Programs	718,557	636,725	650,893	(14,168)
Total Instruction	5,826,184	4,947,318	4,762,542	184,776
Support Services				
Pupil Personnel Services	399,434	403,590	402,577	1,013
Instructional Staff Services	707,741	606,184	559,459	46,725
Administrative Services	2,103,471	1,970,228	1,910,655	59,573
Pupil Health	34,132	28,227	29,908	(1,681)
Total Support Services	3,244,778	3,008,229	2,902,599	105,630
TOTAL EXPENDITURES	9,070,962	7,955,547	7,665,141	290,406
EXCESS OF REVENUES OVER (UNDER) EXPENDITURES	$ -	$ 636,731	692,805	$ 56,074
FUND BALANCE, BEGINNING			3,080,193	
FUND BALANCE, ENDING			$ 3,772,998	

See note to required supplementary information.

21st CENTURY CYBER CHARTER SCHOOL

SCHEDULE OF FUNDING PROGRESS AND EMPLOYER CONTRIBUTIONS - POST EMPLOYMENT BENEFITS PLAN

SCHEDULE OF FUNDING PROGRESS

	Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
Governmental Activities	7/1/2010	$ -	$ 99,374	$ 99,374	0.00%	$ 2,337,687	4.25%
Governmental Activities	7/1/2007	-	27,679	27,679	0.00%	1,451,354	1.91%

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Year	Annual OPEB Cost	21st CCCS Contributions	Percent of OPEB Cost Contributed	Net OPEB Obligation
2012	$ 31,056	$ -	0.00%	$ 105,265
2011	31,936	-	0.00%	74,209
2010	13,726	-	0.00%	42,273
2009	14,088	-	0.00%	28,547
2008	14,459	-	0.00%	14,459

See note to required supplementary information.

BUDGETARY DATA

The budget for the general fund is adopted on the modified accrual basis of accounting which is consistent with generally accepted accounting principles.

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Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

To the Board of School Directors
21st Century Cyber Charter School
Downingtown, Pennsylvania

We have audited the financial statements of the governmental activities and each major fund of 21st Century Cyber Charter School as of and for the year ended June 30, 2012, which collectively comprise 21st Century Cyber Charter School's basic financial statements and have issued our report thereon dated December 18, 2012. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States.

Internal Control over Financial Reporting

Management of 21st Century Cyber Charter School is responsible for establishing and maintaining effective internal control over financial reporting. In planning and performing our audit, we considered 21st Century Cyber Charter School's internal control over financial reporting as a basis for designing our auditing procedures for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the 21st Century Cyber Charter School's internal control over financial reporting. Accordingly, we do not express an opinion on the effectiveness of the 21st Century Cyber Charter School's internal control over financial reporting.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the Charter School's financial statements will not be prevented, or detected and corrected on a timely basis.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over financial reporting that might be deficiencies, significant deficiencies, or material weaknesses. We did not identify any deficiencies in internal control over financial reporting that we consider to be material weaknesses, as defined previously.

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Compliance and Other Matters

As part of obtaining reasonable assurance about whether 21st Century Cyber Charter School's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

We noted certain matters that we reported to management of 21st Century Cyber Charter School in a separate letter dated December 18, 2012.

This report is intended solely for the information and use of the management, and the board of school directors and is not intended to be and should not be used by anyone other than these specified parties.

Herbein + Company, Inc.

Reading, Pennsylvania
December 18, 2012

21st CENTURY CYBER CHARTER SCHOOL

FINANCIAL STATEMENTS AND
SUPPLEMENTARY INFORMATION

Year Ended June 30, 2013

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INDEPENDENT AUDITOR'S REPORT

To the Board of School Directors
21st Century Cyber Charter School
Exton, Pennsylvania

Report on the Financial Statements

We have audited the accompanying financial statements of the governmental activities and each major fund of 21st Century Cyber Charter School, as of and for the year ended June 30, 2013, and the related notes to the financial statements, which collectively comprise the Charter School's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

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Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and each major fund of 21st Century Cyber Charter School, as of June 30, 2013, and the respective changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, the budgetary comparison information, and the schedules of funding progress and employer contributions-postemployment benefit plan be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 17, 2013, on our consideration of the Charter School's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Charter School's internal control over financial reporting and compliance.

Herbein + Company, Inc.

Reading, Pennsylvania
December 17, 2013

21st CENTURY
CYBER CHARTER SCHOOL

21ST CENTURY CYBER CHARTER SCHOOL

MANAGEMENT'S DISCUSSION AND ANALYSIS
Required Supplementary Information
June 30, 2013

The discussion and analysis of 21st Century Cyber Charter School's (Charter School) financial performance provides an overall review of the Charter School's financial activities for the fiscal year ended June 30, 2013. The intent of this discussion and analysis is to look at the Charter School's financial performance as a whole. Readers should also review the financial statements and the notes to the basic financial statements to enhance their understanding of the Charter School's financial performance.

The Management Discussion and Analysis (MD&A) is an element of the reporting model adopted by the Governmental Accounting Standards Board (GASB) in their Statement No. 34 Basic Financial Statements – and Management's Discussion and Analysis – for State and Local Governments issued June 1999.

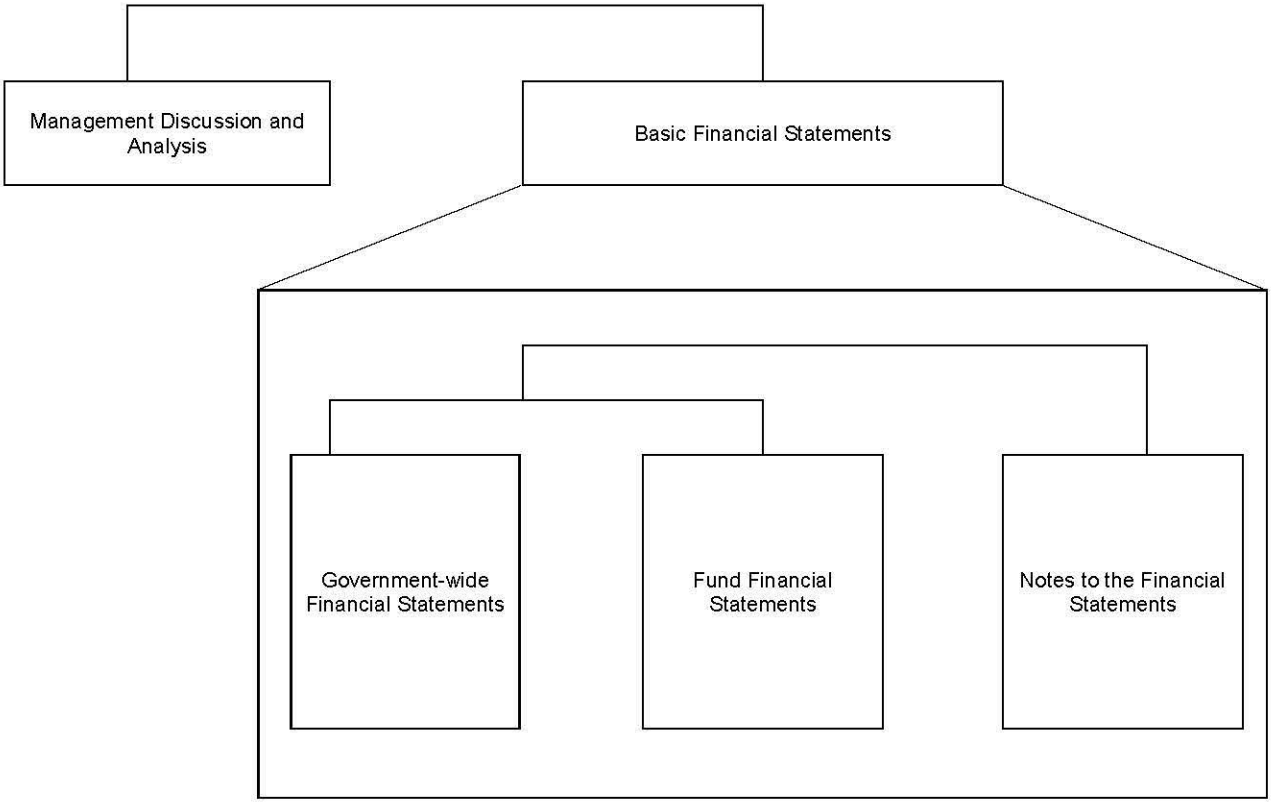
FINANCIAL HIGHLIGHTS

The 21st Century Cyber Charter School's financial results for the 2012-2013 school year resulted in a Governmental Fund balance of $4,372,726 at June 30, 2013. The June 30, 2011-2012 fund balance was $3,772,998.

Governmental fund total assets at June 30, 2013 were $5,479,465 compared to the June 30, 2012 balance of $4,772,551.

The primary source of revenue are payments from school districts for students that live in the district who attend the cyber charter school.

Figure 1
Required Components of 21st Century Cyber Charter School's Financial Report



OVERVIEW OF FINANCIAL STATEMENTS

Figure 2 summarizes the major features of the Charter School's financial statements. The remainder of this overview section of Management's Discussion and Analysis highlights the structure and contents of each of the statements.

Figure 2
21st Century Cyber Charter School's
Government-wide and Fund Financial Statements

		Fund Statements
	Government-wide Statements	**Governmental Funds**
Scope	Entire 21st Century Cyber Charter School (except fiduciary funds)	The activities of the Charter School that are not proprietary or fiduciary, such as education, administration and community services
Required financial statements	Statement of net position Statement of activities	Balance Sheet Statement of revenues, expenditures, and changes in fund balance
Accounting basis and measurement focus	Accrual accounting and economic resources focus	Modified accrual accounting and current financial resources focus
Type of asset/liability information	All assets and liabilities, both financial and capital, and short-term and long-term	Only assets expected to be used up and liabilities that come due during the year or soon thereafter; no capital assets included
Type of inflow/outflow information	All revenues and expenses during year, regardless of when cash is received or paid	Revenues for which cash is received during or soon after the end of the year; expenditures when goods or services have been received and payment is due during the year or soon thereafter

Government-wide Statements

The government-wide statements report information about the Charter School as a whole using accounting methods similar to those used by private sector companies. The Statement of Net Position includes all government assets and liabilities. Current year revenues and expenses are accounted for in the Statement of Activities regardless of when cash is received or paid.

The two government-wide statements report the Charter School's net position and how they have changed. Net position, the difference between assets and liabilities, are one way to measure the Charter School's financial health or position. Over time, increases or decreases in net position are an indication of whether the Charter School's financial health is improving or deteriorating.

Governmental activities – All of the Charter School's basic services are included here, such as instruction, administration and pupil health.

Fund Financial Statements

The fund financial statements provide more detailed information about the Charter School's funds. The Charter School has no non-major, proprietary or fiduciary funds and reports all activity as governmental funds.

Government Funds – Includes the Charter School's basic services and generally (1) focuses on how cash and other financial assets can readily be converted into cash inflows and outflows and (2) identifies balances left at year-end that are available for spending. Financial results are reported using an accounting method called modified accrual accounting, which measures cash and all other financial assets. The governmental fund statements provide a detailed short-term view of the Charter School's operations and the services provided. Governmental fund information helps the reader determine the level of financial resources that can be spent in the near future to finance the Charter School's programs. The relationship (or differences) between governmental activities (reported in the Statement of Net Position and the Statement of Activities) and governmental funds is reconciled in the financial statements.

FINANCIAL ANALYSIS OF THE 21ST CENTURY CYBER CHARTER SCHOOL AS A WHOLE

The Charter School's total net position was $4,559,950 as of June 30, 2013.

Figure 3
Condensed Statement of Net Position

June 30, 2013

	Governmental Activities	
	2012	**2013**
Current and other assets	$ 4,772,551	$ 5,479,465
Capital Assets	$ 491,953	$ 398,406
Total Assets	$ 5,264,504	$ 5,877,871
Current and other liabilities	$ 1,016,853	$ 1,106,739
Long-term liabilities	$ 177,473	$ 211,182
Total Liabilities	$ 1,194,326	$ 1,317,921
Net Position		
Invested in capital assets, net of related debt	$ 491,953	$ 398,406
Unrestricted	$ 3,578,225	$ 4,161,544
Total Net Position	$ 4,070,178	$ 4,559,950
Total Liabilities and Net Position	$ 5,264,504	$ 5,877,871

Current assets at June 30, 2013 included cash of $4,182,335, intergovernmental and other receivables of $1,232,196, prepaid expenses of $27,363 and deposits of $37,571. The intergovernmental receivables were higher as a result of increased subsidy payments. The Charter School disposed of, computer hardware and software, which resulted in a $93,546 decrease in net capital assets.

Total liabilities increased in 2012-2013. Accounts payable balances were $610,194, compared to the prior year balance of $635,740. The decrease of $25,546 is a result of amounts due for services rendered and expenses paid on behalf of 21CCCS as well as additional purchases. Accrued salaries and benefits increased from $339,830 at June 30, 2012 to $484,778 at June 30, 2013, a result of the 2012-2013 staffing additions. The compensated absences accrual, which reflects the value of unused vacation time decreased from $89,508 to $75,716 (current portion is zero + long-term portion $75,716) as of June 30, 2013. The long term liability related to GASB 45 – Accounting for Other Post Employment Benefits increased by $105,265 to $135,466 at the end of 2012-2013 school year.

Figure 4
Changes in Net Position from Operating Results

June 30, 2013

	Governmental Activities	
Revenues	**2012**	**2013**
Program Revenues		
Charges for services	$ 8,088,636	$ 8,525,204
Operating grants and contributions	$ 269,049	$ 366,364
Capital grants and contributions	0	0
Investment Earnings	$ 8,261	$ 9,062
Total Revenues	$ 8,357,946	$ 8,900,630
Expenses		
Instruction - Regular Programs	$ 4,453,704	$ 4,887,154
Instruction - Special Programs	$ 550,458	$ 684,951
Support Services	$ 2,542,202	$ 2,838,753
Total Expenses	$ 7,546,364	$ 8,410,858
Increase (Decrease) in Net Position	$ 811,582	$ 489,772
Beginning Net Position	$ 3,258,596	$ 4,070,178
Ending Net Position	$ 4,070,178	$ 4,559,950

Growing enrollments in the Charter School and partnerships generated approximately $403,000 of additional tuition revenue in 2012-2013 compared to the prior school year.

Total expenses in 2012-2013 were approximately $861,000 higher than in 2011-2012 due to increased staffing levels required to serve the additional enrollments, increased demand for special education services, the purchase of additional computer equipment, and peripheral supply items for student use.

BUDGET HIGHLIGHTS

During the fiscal year, the Board authorizes revisions to the original budget to accommodate differences from the original budget to the actual expenditures of the 21st Century Cyber Charter School. A schedule showing the Charter School's original and final budget amounts compared with amounts actually paid and received is provided in the financial statements.

Actual 2012-2013 revenues were less than .7% lower than budgeted amounts. Expenditures were $438,622 lower than the final budget as overall spending levels were less than anticipated. Some new and current staff positions budgeted for 2012-2013 were not filled during the school year or were filled later than planned. The high school principal position was filled in the 2013-14 school year. The Charter School experienced savings in the following other areas: postage costs partly due to more efficient shipping procedures and discounted services, conferences/travel were held to a minimum.

CAPITAL ASSET AND DEBT ADMINISTRATION

Capital Assets

At June 30, 2013, the Charter School had $ 398,406 invested in furniture and computer equipment.

Figure 5
Capital Assets (net of depreciation)

June 30, 2013

	Governmental Activities	
	2012	**2013**
Building Improvements	$ 20,014	$ 19,322
Furniture & Computer Equipment	$ 471,939	$ 379,084
Total	$ 491,953	$ 398,406

Debt Administration

The 21st Century Cyber Charter School had no debt as of June 30, 2013.

ECONOMIC FACTORS AND THE CHARTER SCHOOL'S FUTURE

The 21st Century Cyber Charter School is continued to increase its teaching staff in 2012-2013 in order to accommodate increased enrollments and to expand class offerings and related services. Management has expanded the role of teaching assistants which allows teachers to service more students. In addition, as enrollments have increased, so has the demand for special education services. Several of the new teaching positions in 2011-12 required special education certifications and in 2012-2013 an increase in special education teachers has helped to bridge the gap from the increase in student enrollment for special education.

In August 2012, with the increase of enrollment and growing staff in the Administration team, Instructional Systems Design group, Marketing and teacher subject area were relocated to the current location 782 Springdale Drive in Exton. The Middle School teaching staff and principal moved to the main location at 805 Springdale Drive, allowing one central location for all teaching staff. Both leases expire on August 31, 2013; therefore the leases were amended in 2012-13 to extend the lease agreement to June 30, 2014. On October 31, 2013 the process was completed for the settlement of the property located at 126 Wallace Avenue in Downingtown. The anticipated move in will be Spring/Summer of 2014.

21CCCS was notified in June 2011 that its charter had been renewed effective July 1, 2011 for another 5 years. The Charter School also made Annual Yearly Progress (AYP) in 2010-2011, one of only two cyber charter schools in Pennsylvania to do so and repeated AYP achievement as one of only three cyber charter schools in Pennsylvania with 2011-2012 school year. The Charter School is the only statewide cyber charter to have achieved AYP for five consecutive years (2004-2005 through 2008-2009). Beginning in 2012 the Department of Education recalculated the figures to determine Annual Yearly Progress. The new recalculation classifies charters as districts and not as individual schools when calculating AYP.

In 2006, the 21st Century Cyber Charter School and the Chester County Intermediate Unit entered into an agreement that established a virtual program to offer online classes to students enrolled in school districts throughout the Commonwealth. The program, under the name of Brandywine Virtual Academy (BVA), offers online courses for original credit course and credit recovery during the school year and summer school. The Charter School staff had managed the program since BVA's inception, in early 2011-12, the CCIU took on a larger role and began managing BVA's day-to-day operations and expanding its services. The Charter School's new role is to provide instructional services (teachers and curriculum) only to Partnership students.

The Board of Trustees has maintained the agreement between 21CCCS and the CCIU to provide accounting, human resources, and other services. The Board of Trustees determined this agreement will end as of June 30, 2014. Several CCIU staff members continue to work with the school daily to service the Charter School's needs.

The Pennsylvania School Employees Retirement System (PSERS) retirement rate for 2012-13 was 12.36% of qualified wages. The 2012-2013 rate is an increase over the 2011-2012 PSERS rate of 8.65%. The employer contribution rate for fiscal year 2014-2015 will be 21.40%. This rate was determined by PSERS' actuary and is subject to certification by the PSERS Board of Trustees.

PSERS has developed tentative projections for the employer contribution rate for future years that range from 16.69 % to 26.96%. These tentative projections are based on the actual investment returns and potential actuarial experience losses for the 2012-2013 fiscal year and will have a significant impact on future operations.

To date, no legislation has been passed regarding cyber charter school funding. The Board of Trustees has approved a program stabilization fund to provide financial assistance to the Charter School, if needed, when the legislation is approved.

CONTACTING THE 21ST CENTURY CYBER CHARTER SCHOOL FINANCIAL MANAGEMENT

Our financial report is designed to provide our citizens, taxpayers, parents, students, investors and creditors with a general overview of the Charter School's finances and to show accountability for the money received. If you have questions about this report or wish to request additional financial information, please contact the Open Records Officer, 21st Century Cyber Charter School, 805 Springdale Drive, Exton, PA 19341, 484-875-5400.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF NET POSITION

June 30, 2013

	Governmental Activities
ASSETS	
Cash and Cash Equivalents	$ 4,182,335
Intergovernmental Receivables	1,144,560
State Subsidies Receivable	87,636
Prepaid Expenses	27,363
Deposits	37,571
Capital Assets, Net of Accumulated Depreciation	398,406
TOTAL ASSETS	5,877,871
LIABILITIES	
Accounts Payable	610,194
Accrued Liabilities	11,767
Accrued Salaries and Benefits	484,778
Noncurrent Liabilities	
Long-Term Portion of Compensated Absences	75,716
Postemployment Benefit Obligation	135,466
TOTAL LIABILITIES	1,317,921
NET POSITION	
Net Investment in Capital Assets	398,406
Unrestricted	4,161,544
TOTAL NET POSITION	$ 4,559,950

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF ACTIVITIES

For the Year Ended June 30, 2013

Functions/Programs	Expenses	Program Revenue: Charges for Services	Program Revenue: Operating Grants and Contributions	Net (Expense) Revenue and Changes in Net Position: Governmental Activities
Governmental Activities:				
Instruction:				
Regular	$ 4,887,154	$ 4,758,477	$ 173,482	$ 44,805
Special	684,951	699,899	89,570	104,518
Total Instructional Services	5,572,105	5,458,376	263,052	149,323
Support Services:				
Instructional Student Support	1,111,288	1,034,153	52,363	(24,772)
Administration and Financial Support Services	1,727,465	2,032,675	50,949	356,159
Total Support Services	2,838,753	3,066,828	103,312	331,387
Total Governmental Activities	$ 8,410,858	$ 8,525,204	$ 366,364	480,710
		General Revenues:		
		Investment Earnings		9,062
		Change in Net Position		489,772
		Net Position - Beginning		4,070,178
		Net Position - Ending		$ 4,559,950

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

BALANCE SHEET - GOVERNMENTAL FUND

June 30, 2013

	General Fund
ASSETS	
Cash and Cash Equivalents	$ 4,182,335
Intergovernmental Receivables	1,144,560
State Subsidies Receivable	87,636
Prepaid Expenditures	27,363
Deposits	37,571
TOTAL ASSETS	$ 5,479,465
LIABILITIES AND FUND BALANCE	
LIABILITIES	
Accounts Payable	$ 610,194
Accrued Liabilities	11,767
Accrued Salaries and Benefits	484,778
TOTAL LIABILITIES	1,106,739
FUND BALANCE	
Nonspendable Fund Balance, Prepaid Expenditures, and Deposits	64,934
Committed Fund Balance:	
Future Building Fund	1,400,000
Future Capital Equipment/Software/Furniture Purchases	60,000
Future Curriculum Development Costs	44,000
New Initiatives Fund	300,000
Future Program Stabilization Fund	1,400,000
Minimum Lease Obligation	263,209
Assigned Fund Balances:	
Encumbrances	26,938
PSERS Retirement Rate Increases	360,371
Unassigned Fund Balance	453,274
TOTAL FUND BALANCE	4,372,726
TOTAL LIABILITIES AND FUND BALANCE	$ 5,479,465

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

RECONCILIATION OF GOVERNMENTAL FUND BALANCE SHEET TO THE GOVERNMENT-WIDE STATEMENT OF NET POSITION

June 30, 2013

TOTAL FUND BALANCES - GOVERNMENTAL FUND		$ 4,372,726
Amounts reported for governmental activities on the statement of net position are different because of the following:		
Capital assets used in governmental activities are not financial resources and, therefore, are not reported as assets in governmental funds. The cost of the assets is $748,431 and the accumulated depreciation is $350,025.		398,406
Long-term liabilities are not due and payable in the current period and, therefore, are not reported as liabilities in the governmental funds. Long-term liabilities at year-end consist of:		
Postemployment Benefit Obligation	$ (135,466)	
Long-Term Portion of Compensated Absences	(75,716)	(211,182)
NET POSITION OF GOVERNMENTAL ACTIVITIES		$ 4,559,950

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE - GOVERNMENTAL FUND

For the Year Ended June 30, 2013

	General Fund
REVENUES	
Local Sources	$ 8,667,812
State Sources	232,818
TOTAL REVENUES	8,900,630
EXPENDITURES	
Current:	
Instruction - Regular Programs	4,591,249
Instruction - Special Programs	684,951
Instruction - Other Instructional Programs	25,063
Support Services	2,989,439
Capital Outlay	10,200
TOTAL EXPENDITURES	8,300,902
NET CHANGE IN FUND BALANCE	599,728
FUND BALANCE - BEGINNING	3,772,998
FUND BALANCE - ENDING	$ 4,372,726

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

RECONCILIATION OF THE GOVERNMENTAL FUND STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE TO THE GOVERNMENT-WIDE STATEMENT OF ACTIVITIES

For the Year Ended June 30, 2013

NET CHANGE IN FUND BALANCE - GOVERNMENTAL FUND		$ 599,728
Amounts reported for governmental activities in the statement of activities are different because:		
Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives as depreciation expense.		
Capital Outlays	$ 26,934	
Less: Depreciation Expense	(110,688)	
Loss on Disposal of Asset	(9,793)	(93,547)
In the statement of activities, compensated absences are measured by the amounts earned during the year. In the governmental funds, however, expenditures for these items are measured by the amount of financial resources used. This amount represents the difference between the amount earned versus the amount used.		13,792
Postemployment benefits are recognized when they are paid on the fund statements. With the implementation of GASB #45, an estimated liability for future benefits due will be phased in over several years. This amount represents the difference between the estimated annual cost and the amount paid.		(30,201)
CHANGE IN NET POSITION OF GOVERNMENTAL ACTIVITIES		$ 489,772

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

NOTES TO BASIC FINANCIAL STATEMENTS

June 30, 2013

The 21st Century Cyber Charter School (Charter School) was originally chartered through West Chester Area School District. The Charter School was established in April 2001 and began operations in July 2001. Effective July 1, 2006, the Charter School became chartered directly through the Pennsylvania Department of Education. The current charter expires June 30, 2015.

The Charter School is located in Exton, Pennsylvania and was established to provide services to students located in Pennsylvania.

The Charter School is governed by a board made up of the executive directors of the Bucks, Chester, Delaware and Montgomery County Intermediate Units, two school district superintendents from each county, and three parent members.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A. Reporting Entity

The Charter School used guidance contained in generally accepted accounting principles to evaluate the possible inclusion of related entities (authorities, boards, councils, etc) within its reporting entity. The criteria used by the Charter School for inclusion are financial accountability and the nature and significance of the relationships. In determining accountability in a given case, the Charter School reviews the applicability of the following criteria. The Charter School is financially accountable for:

- Organizations that make up the legal Charter School entity.

- Legally separate organizations if Charter School officials appoint a voting majority of the organizations' governing body and the Charter School is able to impose its will on the organization, or if there is a potential for the organization to provide specific financial benefits to, or impose specific financial burdens on, the Charter School as defined below.

  Impose its will – If the Charter School can significantly influence the programs, projects or activities of, or the level of services performed or provided by, the organization.

  Financial benefit or burden – exists if the Charter School (1) is entitled to the organization's resources; (2) is legally obligated or has otherwise assumed the obligation to finance the deficits of, or provide support to, the organization; or (3) is obligated in some manner for the debt of the organization.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

A. Reporting Entity – (continued)

- Organizations that are fiscally dependent on the Charter School. Fiscal dependency is established if the organization is unable to adopt its budget, levy taxes, set rates or charges, or issue bonded debt without approval by the Charter School.

Based on the foregoing criteria, the 21st Century Cyber Charter School has determined it has no component units.

B. Basis of Presentation – Government-Wide Financial Statements

Government-wide financial statements (i.e., the statement of net position and the statement of activities) display information about the reporting entity, except for its fiduciary activities. All fiduciary activities are reported only in the fund financial statements. The government-wide statements include separate columns for the governmental and business-type activities of the primary government, as well as any discretely presented component units. Governmental activities, which normally are supported by intergovernmental revenues and other nonexchange transactions, are reported separately from business-type activities which rely to a significant extent on fees and charges for support. Likewise, the primary government is reported separately from the legally separate component units for which the primary government is financially accountable. The Charter School presently only has governmental activities.

Governmental activities are supported by intergovernmental revenues. The statement of activities demonstrates the level to which the direct expenses of a given function to the Charter School are offset by the program revenues related to that function. Direct expenses are those that are directly related to and clearly identified with a function. Program revenues include charges to customers or others who purchase, use or directly benefit from services or goods provided by a given function or grants and contributions that are restricted to meet the operational or capital requirements of a function. Other items not properly included among program revenues are reported instead as general revenues.

C. Basis of Presentation – Fund Financial Statements

The fund financial statements provide information about the government's funds, including its fiduciary funds. Separate financial statements are provided for governmental funds, proprietary funds, and fiduciary funds. The emphasis of fund financial statements is on major governmental and enterprise funds, each displayed in a separate column. All remaining governmental funds are aggregated and reported as nonmajor funds. Major individual governmental and enterprise funds are reported as separate columns in the financial statements.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

C. Basis of Presentation – Fund Financial Statements – continued

The Charter School reports the following major governmental fund:

General Fund: The general fund is the general operating fund of the Charter School. It is used to account for all financial resources. All activities of the Charter School are accounted for through this fund.

The Charter School does not currently have any enterprise or fiduciary funds.

D. Measurement Focus and Basis of Accounting

The accounting and financial reporting treatment is determined by the applicable measurement focus and basis of accounting. Measurement focus indicates the type of resources being measured such as *current financial resources* or *economic resources*. The basis of accounting indicates the timing of transactions or events for recognition in the financial statements.

The government-wide financial statements are reported using the *economic resources measurement focus*, and the *accrual basis of accounting*. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

The governmental fund financial statements are reported using the *current financial resources measurement focus* and the *modified accrual basis of accounting*. Revenues are recognized as soon as they are both measureable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the Charter School considers revenues to be available if they are collected within 60 days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences, and claims and judgments, are recorded only when payment is due. General capital asset acquisitions are reported as expenditures in governmental funds. Issuance of long-term debt and acquisitions under capital leases are reported as other financing sources.

Interest associated with the current fiscal period is considered to be susceptible to accrual and so has been recognized as revenue of the current fiscal period. Expenditure-driven grants are recognized as revenue when the qualifying expenditures have been incurred and all other eligibility requirements have been met, and the amount is received during the period or within the availability period for this revenue source (within 60 days of year-end). All other revenue items are considered to be measureable and available only when cash is received by the Charter School.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

E. Budgetary Information

1. Budgetary Basis of Accounting

Annual budgets are adopted on a basis consistent with generally accepted accounting principles for the general fund. All annual appropriations, except unexpended grant appropriations and encumbrances, lapse at fiscal year-end. The Charter School's 2012-2013 budget was prepared an approved by the board of directors prior to submitting the budget to the Pennsylvania Department of Education.

All budget amounts presented in the accompanying financial statements have been adjusted for legally authorized revisions of the annual budget during the year.

F. Assets, Liabilities, Deferred Inflows/Outflows of Resources, and Net Position/Fund Balance

1. Cash and Cash Equivalents

The Charter School's reporting entity considers all highly-liquid investments with a maturity of three months or less when purchased to be cash equivalents.

2. Receivables

As all of the intergovernmental and state receivables are due from local school districts and the Pennsylvania Department of Education (PDE), management believes that they are fully collectible. Thus, no allowance has been deemed necessary or reported in the accompanying financial statements.

3. Prepaid Items

Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items in both the government-wide and fund financial statements. The costs of prepaid items is recorded as expenditures/expenses when consumed rather than when purchased.

4. Capital Assets, Depreciation, and Amortization

The Charter School's property, plant, and equipment with useful lives of more than one year are stated at historical cost and comprehensively reported in the government-wide financial statements. The reported value excludes normal maintenance and repairs which are essentially amounts spent in relation to capital assets that do not increase the capacity or efficiency of the item or extend its useful life beyond the original estimate. In the case of donations, the Charter School values these capital assets at the estimated fair value of the item at the date of donation.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

F. Assets, Liabilities, Deferred Inflows/Outflows of Resources, and Net Position/Fund Balance - continued

4. Capital Assets, Depreciation, and Amortization - continued:

The Charter School generally capitalizes assets with a cost of $1,500 or more as purchase and construction outlays occur. Assets purchased or constructed with long-term debt may be capitalized regardless of the threshold established. The costs of normal maintenance and repairs that do not add to the asset value or materially extend useful lives are not capitalized. Capital assets are depreciated using the straight-line method. When capital assets are disposed, the cost and applicable accumulated depreciation are removed from the respective accounts, and the resulting gain or loss is recorded in operations.

Estimated useful lives, in years, for depreciable assets are as follows:

Assets	Years
Leasehold improvements	20 - 50
Furniture and computer equipment	5 - 20

Interest costs incurred during the construction phase of capital assets are capitalized when incurred by proprietary funds and similar component units on debt where proceeds were used to finance the construction of assets.

5. Deferred Outflows/Inflows of Resources

In addition to assets, the statement of financial position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, *deferred outflows of resources*, represents a consumption of net position that applies to a future period(s) and so will *not* be recognized as an outflow of resources (expense/expenditure) until then.

In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, *deferred inflows of resources,* represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time.

The Charter School has no items that qualify for reporting in these categories.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

F. Assets, Liabilities, Deferred Inflows/Outflows of Resources, and Net Position/Fund Balance - continued

6. Unearned Revenues

Revenues that are received but not earned are presented as unearned revenues in the government-wide, governmental and enterprise funds financial statements. Unearned revenues arise when resources are received prior to the incurrence of qualifying expenditures. In subsequent periods, when both revenue recognition criteria are met, or when the Charter School has legal claim to the resources, the liability for unearned revenue is removed from the respective financial statements and revenue is recognized.

7. Net Position

Government Accounting Standards requires the classification of net position into the three components shown below which are defined as follows:

Net investment in capital assets - This category groups all capital assets, including infrastructure, into one component of net position. Accumulated depreciation and the outstanding balances of debt that are attributable to the acquisition, construction, or improvements of these assets reduce the balance in the category.

Restricted net position - This category presents external restrictions imposed by creditors, grantors, contributors or laws or regulations of other governments and restrictions imposed by law through constitutional provisions or enabling legislation.

Unrestricted net position - This category represents net position of the Charter School, which are not restricted for any project or other purpose.

8. Net Position Flow Assumption

Sometimes the Charter School will fund outlays for a particular purpose from both restricted and unrestricted resources. In order to calculate the amounts to report as restricted - net position and unrestricted - net position in the government-wide financial statements, a flow assumption must be made about the order in which the resources are considered to be applied.

It is the Charter School's policy to consider restricted - net position to have been depleted before unrestricted - net position is applied.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

F. Assets, Liabilities, Deferred Inflows/Outflows of Resources, and Net Position/Fund Balance – continued

9. Fund Balance Flow Assumptions

Sometimes the government will fund outlays for a particular purpose from both restricted and unrestricted resources (the total of committed, assigned, and unassigned fund balance). In order to calculate the amounts to report as restricted, committed, assigned, and unassigned fund balance in the governmental fund financial statements, a flow assumption must be made about the order in which the resources are considered to be applied. The Charter School's policy states there are no restrictions placed on the order of the unrestricted fund balances used when an expenditure is incurred for a purpose in which unrestricted fund balance amounts are available under committed, assigned or unassigned fund balance. The decision will be made at the discretion of the director/CEO.

10. Fund Balance Policies

Fund balance of governmental funds is reported in various categories based on the nature of any limitations requiring the use of resources for specific purposes. The Charter School itself can establish limitations on the use of resources through either a commitment (committed fund balance) or an assignment (assigned fund balance).

The committed fund balance classification includes amounts that can be used only for the specific purposes determined by a formal action of the Charter School's highest level of decision-making authority. The board of directions is the highest level of decision-making authority for the Charter School that can, by adoption of a resolution prior to the end of the fiscal year, commit fund balance. Once adopted, the limitation imposed by the motion remains in place until a similar action is taken (the adoption of another resolution) to remove or revise the limitation.

Amounts in the assigned fund balance classification are intended to be used by the government for specific purposes but do not meet the criteria to be classified as committed. The director/CEO or designee may assign fund balance. Unlike commitments, assignments generally only exist temporarily. In other words, an additional action does not normally have to be taken for the removal of an assignment. Conversely, as discussed above, an additional action is essential to either remove or review a commitment.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

G. Revenues and Expenditures

1. Program Revenues

Amounts reported as *program revenues* include 1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment and 2) grants and contributions (including special assessments) that are restricted to meeting the operations or capital requirements of a particular function or segment. Other internally dedicated resources are reported as general revenues rather than as program revenues.

2. Tuition Revenue - School Districts

Local sources revenue includes tuition revenue which represents the tuition paid by various school districts for the students enrolled in the Charter School who reside within that particular school district. This revenue is earned and recognized during the applicable school year.

3. Compensated Absences

The Charter School allows employees to accumulate sick and vacation leave based on contractual agreements. An employee must be with the Charter School for ten years before they are eligible for a pay-out of sick days. Once eligible, employees are paid at 50% of their per diem rate, up to a maximum of $7,500.

H. Other Use of Estimates

The preparation of the financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, results could differ from those estimates.

NOTE 2 - CASH AND CASH EQUIVALENTS

Deposits

Custodial Credit Risk

Custodial credit risk is the risk that in the event of a bank failure, the government's deposits may not be returned to it. The Charter School does not have a policy for custodial credit risk. As of June 30, 2013, the carrying amount and the bank balance of the Charter School's deposits was $4,182,335. Of the bank balance, $250,000 was covered by federal depository insurance and $3,932,335 of the Charter School's bank balance was exposed to custodial credit risk because it was uninsured and collateral held by the depository's agent was not in the Charter School's name.

NOTE 3 - INTERGOVERNMENTAL RECEIVABLES

As all of the intergovernmental and state receivables are due from local school districts and the Pennsylvania Department of Education (PDE), management believes that they are fully collectible. Thus, no allowance has been deemed necessary or recorded in the accompanying financial statements.

The intergovernmental receivables balance of $1,144,561 is comprised of receivables from numerous districts and the Pennsylvania Department of Education as of June 30, 2013. Balances not remitted by the school districts will be withheld from the school's basic education subsidy and paid by the Pennsylvania Department of Education.

NOTE 4 - CAPITAL ASSETS

Capital asset activity for the year ended June 30, 2013 was as follows:

	Beginning Balance	Increase	Decrease/ Transfers	Ending Balance
Governmental Activities				
Capital assets being depreciated:				
Leasehold Improvements	$ 20,764	$ -	$ -	$ 20,764
Furniture and Computer Equipment	777,396	26,934	(76,663)	727,667
Total at historical cost	798,160	26,934	(76,663)	748,431
Less accumulated depreciation for:				
Leasehold Improvements	(750)	(692)	-	(1,442)
Furniture and Computer Equipment	(305,457)	(109,996)	66,870	(348,583)
Total accumulated depreciation	(306,207)	(110,688)	66,870	(350,025)
GOVERNMENTAL ACTIVITIES, CAPITAL ASSETS, NET	$ 491,953	$ (83,754)	$ (9,793)	$ 398,406

NOTE 4 - CAPITAL ASSETS - CONTINUED

Depreciation expense was charged to function/programs of the governmental activities of the primary government as follows:

Instruction:	
Regular Education	$ 61,544
Special Education	9,133
Support Services:	
Instructional Student Support	13,956
Administrative and Financial Support Services	26,055
TOTAL DEPRECIATION EXPENSE - GOVERNMENTAL ACTIVITIES	$ 110,688

NOTE 5 - LEASES

During the 2008/2009 school year, the Charter School entered into an operating-type lease agreement for office space at 805 Springdale Drive, Exton, PA that expires August 31, 2013. The Charter School is responsible for payment of utilities and real estate taxes and must also meet certain minimum insurance requirements.

Total rent charged to expense during 2013 for this commitment was $211,235.

In May 2011, the Charter School entered into a short-term lease agreement for office space at 782 Springdale Drive, Exton, PA that commences August 1, 2011 and expires August 31, 2013. The Charter School is responsible for payment of utilities and must meet certain minimum insurance requirements. Real estate taxes and maintenance fees are included in the rental amount.

Total rent charged to expense during 2013 for this commitment was $62,437.

During the 2012/2013 fiscal year the Charter School extended both leases through June 30, 2014.

Future minimum payments under both operating leases that have remaining terms in excess of one year are as follows for the years ending June 30:

2014	$ 286,812

NOTE 6 - COMPENSATED ABSENCES LIABILITY

Compensated Absences

Vested or accumulated vacation, sick leave, or sabbatical leave that is expected to be liquidated with expendable available financial resources is reported as an expenditure and a fund liability of the governmental fund that will pay it. Amounts of vested or accumulated vacation, sick leave, or sabbatical leave that are not expected to be liquidated with expendable available financial resources are reported in governmental activities. No liability is recorded for nonvesting accumulated rights to receive sick pay benefits. However, a liability is recognized for a portion of accumulating sick leave benefits that is estimated will be taken as "terminal leave" prior to retirement. The Charter School has calculated the amount to be provided for compensated absences as of follows:

Balance July 1, 2012	Additions	Reductions	Balance June 30, 2013	Current Portion
$ 89,508	$ 44,033	$ (57,825)	$ 75,716	$ -

Future liabilities will be paid by the general fund.

NOTE 7 - PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM (PSERS)

Plan Description

The Charter School contributes to a governmental cost-sharing multiple employer defined benefit pension plan administered by PSERS. Benefit provisions of the Plan are established under the provisions of The Public School Employees' Retirement Code and may be amended by an act of the Pennsylvania State Legislature. The Plan provides retirement, disability, death benefits, legislatively mandated ad hoc cost-of-living adjustments, and health care insurance premium assistance to qualifying plan members and beneficiaries. It also provides for refunds of a member's accumulated contribution upon termination of a member's employment in the public school sector. PSERS issues a publicly available comprehensive annual financial report that includes financial statements and required supplementary information for the Plan. A copy of the report may be obtained by writing to: Public School Employees' Retirement System, PO Box 125, Harrisburg, PA 17108-0125. The report is also available in the publications Section of the PSERS site on the internet at www.psers.state.pa.us.

NOTE 7 - PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM (PSERS) - CONTINUED

Funding Policy

The contribution policy is set by the code and requires contributions by active employees and by participating employers. Active members who joined the system prior to July 22, 1983, contribute at 5.25 percent (Membership Class TC) or at 6.50 percent (Membership Class TD) of the member's qualifying compensation. Members joining PSERS on or after July 22, 1983 and who were active or inactive as of July 1, 2001, contribute at 6.25 percent (Membership Class TC) or at 7.50 percent (Membership Class TD) of the member's qualifying compensation. Members joining PSERS after June 30, 2001 and who were active or inactive as of June 30, 2011 contribute at 7.50 percent (automatic Membership Class TD). For all new hires and for members who elected Class TD membership, the higher contribution rates began with service rendered on or after January 1, 2002. Members joining PSERS on or after July 1, 2011 contribute at 7.50 percent (Membership Class TE) or at 10.30 percent (Membership Class TF). Both membership classes TE and TF contain a "shared risk" which allows for an increase in the contribution percentage up to an additional 2.00 percent based on market results.

The contributions required of participating employers are based upon an actuarial valuation and are expressed as a percentage of annual covered payroll during the period for which the amount is determined. For the fiscal year ended June 30, 2013, the rate of employer contribution was 12.36 percent of covered payroll. The 12.36 percent rate is comprised of a pension contribution rate of 11.50 percent for pension benefits and 0.86 percent for health insurance premium assistance. The Charter School's contribution to PSERS for the fiscal years ended June 30, 2013, 2012, and 2011 was $441,565, $292,214, and $160,982, respectively.

NOTE 8 - POSTEMPLOYMENT BENEFITS

Plan Description

The 21st Century Cyber Charter School administers a single-employer defined benefit healthcare plan (the Retiree Health Plan). The Plan provides lifetime healthcare insurance for eligible retirees and their spouses through the Charter School's health insurance plan, which covers both active and retired members. The Retiree Health Plan does not issue a publicly available financial report.

NOTE 8 - POSTEMPLOYMENT BENEFITS - CONTINUED

The required contribution is based on pay-as-you-go financing. For administrators with less than twenty years with the Charter School, the retired plan member contributes the premium in excess of the flat-dollar Charter School contribution for medical insurance determined at the member's retirement for the retired plan member and their spouse. For administrators with twenty years or more with the Charter School the retired plan member must pay premiums for vision. The retired plan member must pay 50 percent of the cost of term life insurance. The premium sharing for medical insurance is limited to half of the retirees years of service and after that time the retired plan member is responsible for paying 100 percent of the premiums for medical insurance, and long-term care insurance is provided based on years of service with the Charter School paying 100 percent of the cost. Over age 65, the retiree must pay the premium in excess of the flat-dollar Charter School contribution determined at age 65. In addition, long-term care insurance is only provided for a period equal to half of the retiree's service.

Project staff are allowed to continue coverage for themselves and dependents until the member reaches Medicare age. The retiree is responsible for payment equal to the premium determined for the purposes of COBRA.

Annual OPEB Cost and Net OPEB Obligation

The Charter School's annual other postemployment benefit (OPEB) cost (expense) is calculated based on the annual required contribution of the employer (ARC), an amount actuarially determined in accordance with the parameters of GASB Statement 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed thirty years. The following table shows the components of the Charter School's annual OPEB cost for the year, the amount actually contributed to the plan, and changes in the Charter School's net OPEB obligation:

Annual required contribution	$ 33,101
Interest on net OPEB obligation	4,737
Adjustment to annual required contribution	(7,637)
Annual OPEB Cost	30,201
Contributions made (estimated)	-
Estimated increase in net OPEB obligation	30,201
Net OPEB obligation - beginning of year	105,265
Net OPEB obligation - end of year	$ 135,466

NOTE 8 - POSTEMPLOYMENT BENEFITS - CONTINUED

The Charter School's annual OPEB cost, the percentage of annual OPEB cost contributed to the plan, and the net OPEB obligation as of June 30 was as follows:

Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation
6/30/2013	$ 30,201	0.0%	$ 135,466
6/30/2012	31,056	0.0%	105,265
6/30/2011	31,936	0.0%	74,209

Funded Status and Funding Progress

As of July 1, 2010, the most recent actuarial valuation date, the plan was unfunded. The actuarial accrued liability for benefits was $99,374, and the actuarial value of assets was $0, resulting in an unfunded actuarial accrued liability (UAAL) of $99,374. The covered payroll (annual payroll of active employees covered by the plan) was $2,337,687, and the ratio of the UAAL to the covered payroll was 4.25%.

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented as required supplementary information following the notes to the financial statements, presents information about actuarial value of plan assets and actuarial accrued liabilities for benefits.

Actuarial Methods and Assumptions

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

In the July 1, 2010 actuarial valuation, the entry age normal cost method was used. The actuarial assumptions included a 4.5 percent investment rate of return (net of administrative expenses) and an annual healthcare cost trend rate of 7.5 percent initially, decreasing 0.5 percent per year to an ultimate rate of 5.5 percent in 2014. Rates gradually decrease from 5.3 percent in 2015 to 4.2 percent in 2099 and later based on the Society of Actuaries Long-Run Medical Cost Trend Model. The unfunded actuarial accrued liability is being amortized using single period amortization as of the end of the year based on level dollar, 22-year open period. This is the weighted average of service until retirement (active liability) and payment period (retired liability).

NOTE 9 - FUND BALANCE

Fund balance classifications for the general fund were as follows for the year ended June 30, 2013:

Nonspendable		
Prepaid Expenditures	$	27,363
Deposits		37,571
Committed		
Future Building Fund		1,400,000
Future Capital Equipment Costs		60,000
Future Curriculum Development		44,000
New Initiatives Fund		300,000
Future Program Stabilization Fund		1,400,000
Minimum Lease Obligation		263,209
Assigned		
Encumbrances		26,938
PSERS Retirement Rate Increases		360,371
Unassigned		453,274
Total Fund Balance	$	4,372,726

The commitments were authorized by the board of school directors' motion to set aside resources to fund the commitments noted above. The assignments were authorized by the board through adoption of the 2013/2014 general fund budget.

NOTE 10 - RISK MANAGEMENT

The Charter School is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; error and omissions; injuries to employees; and natural disasters. Significant losses are covered by commercial insurance for all major programs except for unemployment compensation, for which the Charter School retains risk of loss. For insured programs, there were no significant reductions in insurance coverages for the 2012/13 school year. Settlement amounts have not exceeded insurance coverage for the current year.

In an effort to contain costs related to commercial insurance, the Charter School through the Chester County Intermediate Unit has established an internal service fund to account for and finance its uninsured risks of loss. Under this program, the Charter School through the Chester County Intermediate Unit is self-insured for unemployment compensation purposes. The Charter School makes payments to the internal service fund based on estimates of amounts needed to pay prior and current year claims and to establish a reserve for unexpected losses.

NOTE 11 - JOINT AGREEMENT

The Charter School entered into an agreement with the Chester County Intermediate Unit on April 25, 2002, whereby the CCIU would provide the Charter School with office space, human resources, accounting, payroll, telecommunication, and janitorial services. In exchange, the Charter School would pay the CCIU an annual fee based on total activity. The arrangement was modified effective November 2008, when the Charter School moved to a separate location. Total fees paid under this agreement for the year ended June 30, 2013 was $319,169.

In addition, the Charter School pays consulting fees for specific CCIU employees to provide services to the Charter School. These consulting fees are based on a percentage of salaries and benefits for the following positions: accounting supervisor, accounts payable bookkeeper, and human resource generalist. Total fees paid for these services for the year ended June 30, 2013 were $182,198. The CCIU billed the Charter School an additional $56,085 for miscellaneous services including special education evaluations and services, book shipping services, Moodle access and design, and instructional equipment repair.

Subsequent to year end, the board of school directors issued a directive to management to terminate the contract with the CCIU for administrative support no later than 2014.

In September 2009, Chester County Intermediate Unit and the 21st Century Cyber Charter School entered into a cooperative agreement to provide online courses to students enrolled in the Brandywine Virtual Academy (BVA). BVA was created to provide individual students with courses necessary to graduate from high school for enrichment or remediation purposes. Under the agreement, 21st Century Cyber Charter School provides both credited and noncredited courses and the Intermediate Unit takes care of marketing the BVA program and related services. The original agreement covered a three-year term through June 2012 and was renewed in September 2012 for a 1-year term ending June 2013.

Subsequent to year end, the Charter School renewed the agreement for an additional one year term ending June 30, 2014.

In 2012-2013, the Charter School billed the Chester County Intermediate Unit $460,953 for providing instruction, curriculum, and other related expenses for the CCIU's Brandywine Virtual Academy.

NOTE 12 - NEW ACCOUNTING PRONOUNCEMENTS

Effective June 30, 2013, the Charter School adopted Governmental Accounting Standards Board Statements No. 63, *Financial Reporting of Deferred Outflows of Resources, Deferred Inflow of Resources, and Net Position* and No. 65, *Items Previously Reported as Assets and Liabilities*, to be in conformity with generally accepted accounting principles.

Statement No. 63 establishes guidance for reporting deferred outflows of resources, deferred inflows of resources, and net position in a statement of financial position. The statement provides a framework that specifies where deferred outflows of resources and deferred inflows of resources, as well as assets and liabilities, should be displayed. The statement also discusses how net position, no longer net assets, should be displayed.

Statement No. 65 establishes guidance to improve financial reporting by clarifying the appropriate use of the financial statement elements deferred outflows of resources and deferred inflows of resources to ensure consistency in financial reporting. This statement also restricts the use of the term "deferred" only to those items designated as deferred outflows or deferred inflows of resources by the standards. The adoption of this standard resulted in no restatement to the Charter School's beginning net position as of July 1, 2012.

NOTE 13 - NEW ACCOUNTING STANDARDS

The Government Accounting Standards Board (GASB) has issued the following standards which have not yet been implemented:

- Statement No. 67, *Financial Reporting for Pension Plans*, which is required to be implemented by the year ending June 30, 2014. The objective of this statement is to improve financial reporting by enhancing financial statement note disclosure and required supplementary information for government pension plans.

- Statement No. 68, *Accounting and Financial Reporting for Pensions*, which is required to be implemented by the year ending June 30, 2015. The objective of this statement is to improve accounting and financial reporting by governments for pensions. This statement establishes standards for measuring and recognizing liabilities, deferred outflows of resources, deferred inflows of resources, and expenditures. This statement also enhances note disclosure and required supplementary information for government pension plans. This pronouncement applies to employers that have a legal obligation to make contributions directly to a pension plan.

The Charter School has not yet completed the analysis necessary to estimate the financial statement impact of these new pronouncements.

NOTE 14 - SUBSEQUENT EVENTS

On October 31, 2013 the Charter School completed settlement on the purchase of a new administrative building at 126 Wallace Avenue in Downingtown, PA 19335. The total purchase cost was $1,420,600, which includes building, settlement costs, taxes, and transfers. The building purchase was funded using cash on hand.

On December 10, 2013 the Charter School board of school directors approved bids to various construction companies totaling approximately $1,350,000 for the renovation of the new administration offices. The commitment will be funded through cash on hand and future borrowing of long term debt.

REQUIRED SUPPLEMENTARY INFORMATION

21st CENTURY CYBER CHARTER SCHOOL

BUDGETARY COMPARISON SCHEDULE
GENERAL FUND

For the Year Ended June 30, 2013

	Original Budget	Final Budget	Actual	Variance
REVENUES				
Local Sources	$ 9,502,502	$ 8,714,700	$ 8,667,812	$ (46,888)
State Sources	258,408	253,037	232,818	(20,219)
TOTAL REVENUES	9,760,910	8,967,737	8,900,630	(67,107)
EXPENDITURES				
Instruction				
Regular Programs	5,174,967	4,782,552	4,591,249	191,303
Special Programs	846,615	789,229	684,951	104,278
Other Instructional Programs	50,665	50,665	25,063	25,602
Total Instruction	6,072,247	5,622,446	5,301,263	321,183
Support Services				
Pupil Personnel Services	401,832	401,092	360,671	40,421
Instructional Staff Services	657,073	657,073	650,885	6,188
Administrative Services	1,666,403	1,556,362	1,370,452	185,910
Pupil Health	83,960	31,500	34,683	(3,183)
Operation & Maintenance of Plant Services	465,687	471,051	572,748	(101,697)
Total Support Services	3,274,955	3,117,078	2,989,439	127,639
Capital Outlay	-	-	10,200	(10,200)
TOTAL EXPENDITURES	9,347,202	8,739,524	8,300,902	438,622
EXCESS OF REVENUES OVER (UNDER) EXPENDITURES	$ 413,708	$ 228,213	599,728	$ 371,515
FUND BALANCE - BEGINNING			3,772,998	
FUND BALANCE - ENDING			$ 4,372,726	

See note to required supplementary information.

21st CENTURY CYBER CHARTER SCHOOL

SCHEDULE OF FUNDING PROGRESS AND EMPLOYER CONTRIBUTIONS - POSTEMPLOYMENT BENEFITS PLAN

Schedule of Funding Progress

	Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
Governmental Activities	7/1/2010	$ -	$ 99,374	$ 99,374	0.00%	$ 2,337,687	4.25%
	7/1/2007	-	27,679	27,679	0.00%	1,451,354	1.91%

Schedule of Employer Contributions

Year	Annual OPEB Cost	Employer Contributions	Percent of OPEB Cost Contributed	Net OPEB Obligation
2013	$ 30,201	$ -	0.00%	$ 135,466
2012	31,056	-	0.00%	105,265
2011	31,936	-	0.00%	74,209
2010	13,726	-	0.00%	42,273
2009	14,088	-	0.00%	28,547
2008	14,459	-	0.00%	14,459

See note to required supplementary information.

BUDGETARY DATA

The budget for the general fund is adopted on the modified accrual basis of accounting which is consistent with generally accepted accounting principles.

HERBEIN+COMPANY, INC.
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Independent Auditor's Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

To the Board of School Directors
21st Century Cyber Charter School
Exton, Pennsylvania

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the governmental activities and each major fund of 21st Century Cyber Charter School as of and for the year ended June 30, 2013, and the related notes to the financial statements, which collectively comprise 21st Century Cyber Charter School's basic financial statements and have issued our report thereon dated December 17, 2013.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered 21st Century Cyber Charter School's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of 21st Century Cyber Charter School's internal control. Accordingly, we do not express an opinion on the effectiveness of 21st Century Cyber Charter School's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the Charter School's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

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Compliance and Other Matters

As part of obtaining reasonable assurance about whether 21st Century Cyber Charter School's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Herbein + Company, Inc.

Reading, Pennsylvania
December 17, 2013

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21st CENTURY
CYBER CHARTER SCHOOL

21st CENTURY CYBER CHARTER SCHOOL

FINANCIAL STATEMENTS AND
SUPPLEMENTARY INFORMATION

Year Ended June 30, 2014

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INDEPENDENT AUDITOR'S REPORT

To the Board of School Directors
21st Century Cyber Charter School
Exton, Pennsylvania

Report on the Financial Statements

We have audited the accompanying financial statements of the governmental activities and each major fund of 21st Century Cyber Charter School, as of and for the year ended June 30, 2014, and the related notes to the financial statements, which collectively comprise the Charter School's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and each major fund of 21st Century Cyber Charter School, as of June 30, 2014, and the respective changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, the budgetary comparison schedule - general fund, and the schedules of funding progress - postemployment benefits plan be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated January 13, 2015, on our consideration of the Charter School's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Charter School's internal control over financial reporting and compliance.

Herbein + Company, Inc.

Reading, Pennsylvania
January 13, 2015

21st CENTURY
CYBER CHARTER SCHOOL

21ST CENTURY CYBER CHARTER SCHOOL

MANAGEMENT'S DISCUSSION AND ANALYSIS
Required Supplementary Information
June 30, 2014

The discussion and analysis of 21st Century Cyber Charter School's (Charter School) financial performance provides an overall review of the Charter School's financial activities for the fiscal year ended June 30, 2014. The intent of this discussion and analysis is to look at the Charter School's financial performance as a whole. Readers should also review the financial statements and the notes to the basic financial statements to enhance their understanding of the Charter School's financial performance.

The Management Discussion and Analysis (MD&A) is an element of the reporting model adopted by the Governmental Accounting Standards Board (GASB) in their Statement No. 34 Basic Financial Statements – and Management's Discussion and Analysis – for State and Local Governments issued June 1999.

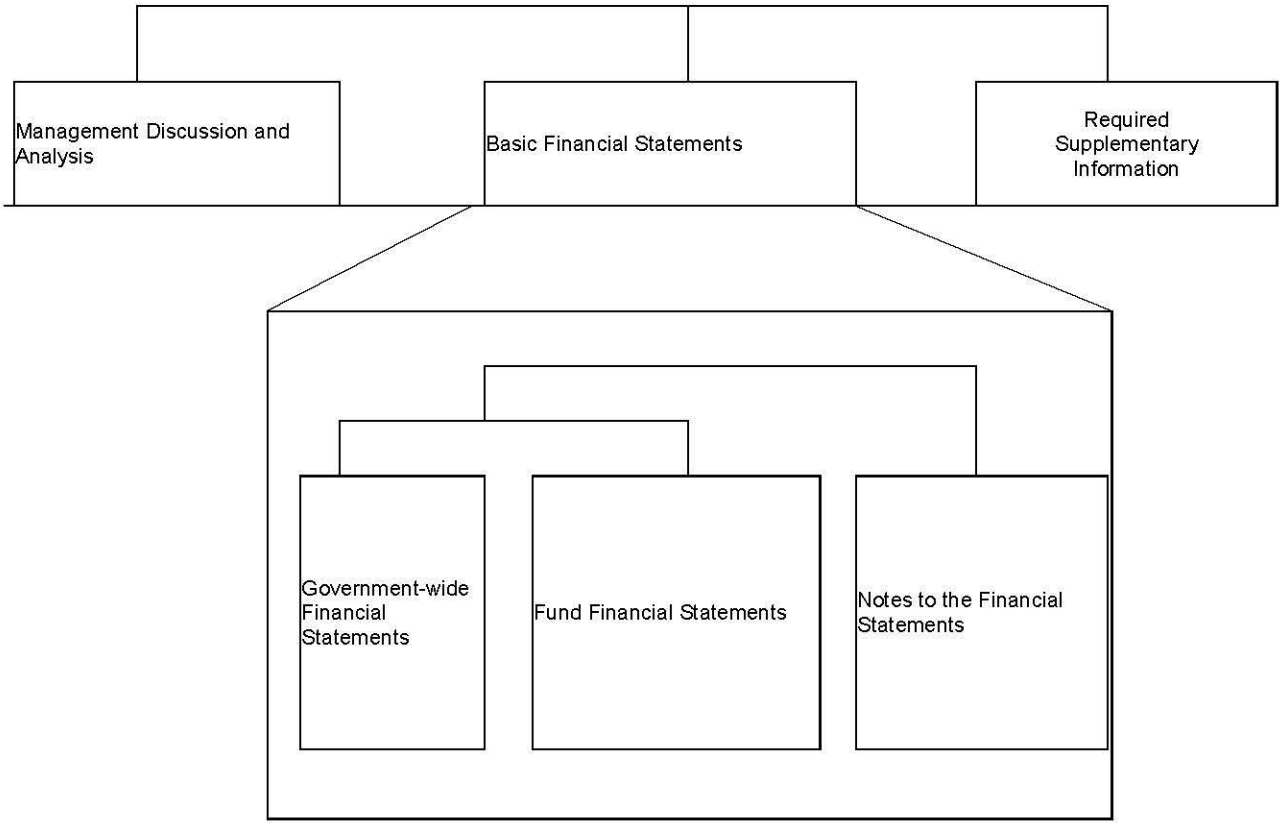
FINANCIAL HIGHLIGHTS

The 21st Century Cyber Charter School's financial results for the 2013-2014 school year resulted in a total net position of $5,850,695 and a Governmental Fund balance of $2,656,897 at June 30, 2014. The June 30, 2012-2013 net position was $4,559,950 and fund balance was $4,372,726.

Governmental fund total assets at June 30, 2014 were $5,028,548 compared to the June 30, 2013 balance of $5,479,465.

The primary source of revenue for the Charter School is tuition charged to school districts at rates determined by the completion of PDE from 363.

Figure 1
Required Components of 21st Century Cyber Charter School's Financial Report



OVERVIEW OF FINANCIAL STATEMENTS

Figure 2 summarizes the major features of the Charter School's financial statements. The remainder of this overview section of Management's Discussion and Analysis highlights the structure and contents of each of the statements.

Figure 2
21st Century Cyber Charter School's
Government-wide and Fund Financial Statements

		Fund Statements
	Government-wide Statements	**Governmental Funds**
Scope	Entire 21st Century Cyber Charter School (except fiduciary funds)	The activities of the Charter School that are not proprietary or fiduciary, such as education, administration and community services
Required financial statements	Statement of net position Statement of activities	Balance Sheet Statement of revenues, expenditures, and changes in fund balance
Accounting basis and measurement focus	Accrual accounting and economic resources focus	Modified accrual accounting and current financial resources focus
Type of asset/liability information	All assets and liabilities, both financial and capital, current and noncurrent, and deferred inflows and outflows of resources	Only assets expected to be used up and liabilities that come due during the year or soon thereafter; no capital assets or noncurrent liabilities included
Type of inflow/outflow information	All revenues and expenses during year, regardless of when cash is received or paid	Revenues for which cash is received during or soon after the end of the year; expenditures when goods or services have been received and payment is due during the year or soon thereafter

Government-wide Statements

The government-wide statements report information about the Charter School as a whole using accounting methods similar to those used by private sector companies. The Statement of Net Position includes all governmental assets and liabilities. Current year revenues and expenses are accounted for in the Statement of Activities regardless of when cash is received or paid.

The two government-wide statements report the Charter School's net position and how it has changed. Net position, the difference between assets and liabilities, is one way to measure the Charter School's financial health or position. Over time, increases or decreases in net position are an indication of whether the Charter School's financial health is improving or deteriorating.

Governmental activities – All of the Charter School's basic services are included here, such as instruction, administration and pupil health.

Fund Financial Statements

The fund financial statements provide more detailed information about the Charter School's funds. The Charter School has no non-major governmental, proprietary or fiduciary funds and reports all activity as governmental funds.

Governmental Funds – Includes the Charter School's basic services and generally (1) focuses on how cash and other financial assets can readily be converted into cash inflows and outflows and (2) identifies balances left at year-end that are available for spending. Financial results are reported using an accounting method called modified accrual accounting, which measures cash and all other financial assets. The governmental fund statements provide a detailed short-term view of the Charter School's operations and the services provided. Governmental fund information helps the reader determine the level of financial resources that can be spent in the near future to finance the Charter School's programs. The relationship (or differences) between governmental activities (reported in the Statement of Net Position and the Statement of Activities) and governmental funds is reconciled in the financial statements.

FINANCIAL ANALYSIS OF THE 21ST CENTURY CYBER CHARTER SCHOOL AS A WHOLE

The Charter School's total net position was $5,850,695 as of June 30, 2014.

Figure 3
Condensed Statement of Net Position

June 30, 2014

	Governmental Activities	
	2013	**2014**
Current and other assets	$ 5,479,465	$ 5,028,548
Capital Assets	$ 398,406	$ 3,886,897
Total Assets	$ 5,877,871	$ 8,915,445
Current and other liabilities	$ 1,106,739	$ 2,371,651
Long-term liabilities	$ 211,182	$ 693,099
Total Liabilities	$ 1,317,921	$ 3,064,750
Net Position		
Invested in capital assets, net of related debt	$ 398,406	$ 3,475,638
Unrestricted	$ 4,161,544	$ 2,375,057
Total Net Position	$ 4,559,950	$ 5,850,695
Total Liabilities and Net Position	$ 5,877,871	$ 8,915,445

Current assets at June 30, 2014 included cash of $3,503,534, intergovernmental and other receivables of $1,431,138, prepaid expenses of $81,255 and deposits of $12,621. The intergovernmental receivables were higher as a result of increased subsidy payments. The Charter School purchased and renovated the new building located at 126 Wallace Avenue, which resulted in a $3,488,491 increase in net capital assets.

Total liabilities increased in 2013-2014. Accounts payable balances were $1,923,502, compared to the prior year balance of $610,194. The increase of $1,313,308 is a result of amounts due for services rendered, construction cost and expenses paid on behalf of 21CCCS as well as additional purchases. Accrued salaries and benefits decreased from $484,778 at June 30, 2013 to $428,906 at June 30, 2014, a result of the 2013-2014 staffing changes. The compensated absences accrual, which reflects the value of unused vacation time increased from $75,716 to $101,635 (current portion is $115 + long-term portion $101,520) as of June 30, 2014. The long term liability related to GASB 45 – Accounting for Other Postemployment Benefits increased by $44,739 to $180,205 at the end of 2013-2014 school year.

Figure 4
Changes in Net Position from Operating Results

June 30, 2014

	Governmental Activities	
Revenues	**2013**	**2014**
Program Revenues		
Charges for services	$ 8,525,204	$ 9,638,604
Operating grants and contributions	$ 366,364	$ 488,908
Capital grants and contributions	$ 0	$ 0
Investment Earnings	$ 9,062	$ 6,631
Total Revenues	$ 8,900,630	$ 10,134,143
Expenses		
Instruction - Regular Programs	$ 4,887,154	$ 4,775,360
Instruction - Special Programs	$ 684,951	$ 791,097
Support Services	$ 2,838,753	$ 3,275,524
Interest on Long-Term Debt	$ 0	$ 1,417
Total Expenses	$ 8,410,858	$ 8,843,398
Increase (Decrease) in Net Position	$ 489,772	$ 1,290,745
Beginning Net Position	$ 4,070,178	$ 4,559,950
Ending Net Position	$ 4,559,950	$ 5,850,695

Growing enrollments in the Charter School and new/existing partnerships generated $1,233,511 of additional tuition revenue in 2013-2014 compared to the prior school year.

Total expenses in 2013-2014 were approximately $432,540 higher than in 2012-2013 due to increased staffing in the Business Administration department.

BUDGET HIGHLIGHTS

During the fiscal year, the Board authorizes revisions to the original budget to accommodate differences from the original budget to the actual expenditures of the 21st Century Cyber Charter School. A schedule showing the Charter School's original and final budget amounts compared with amounts actually paid and received is provided in the financial statements.

Actual 2013-14 revenues were 2.7% lower than budgeted amounts, not inclusive of building renovations financing. Expenditures were $1,509,881 lower than the final budget as overall spending levels were less than anticipated. Some new and current staff positions budgeted for 2013-14 were not filled during the school year or were filled later than planned. The Charter School experienced savings in the following other areas: postage costs partly due to more efficient shipping procedures and discounted services, conferences/travel were held to a minimum, computer repair cost, and marketing.

CAPITAL ASSET AND DEBT ADMINISTRATION

Capital Assets

At June 30, 2014, the Charter School had $ 3,886,897 invested in building improvements, furniture and computer equipment, net of depreciation.

Figure 5
Capital Assets (net of depreciation)

June 30, 2014

	Governmental Activities	
	2013	**2014**
Construction in Progress	$ 0	$3,501,445
Building Improvements	$ 19,322	$18,630
Furniture & Computer Equipment	$ 379,084	$ 366,822
Total	$ 398,406	$3,886,897

Debt Administration

The 21st Century Cyber Charter School had debt of $411,259 for 126 Wallace Avenue building renovations as of June 30, 2014.

ECONOMIC FACTORS AND THE CHARTER SCHOOL'S FUTURE

The 21st Century Cyber Charter School is continued to increase its teaching staff in 2013-2014 in order to accommodate increased enrollments and to expand class offerings and related services. Management has expanded the role of teaching assistants which allows teachers to service more students. In addition, as enrollments have increased, so has the demand for special education services. Several of the new teaching positions required special education certifications and in 2013-2014 an increase in special education teachers has helped to bridge the gap from the increase in student enrollment for special education.

On October 31, 2013 the process was completed for the settlement of the property located at 126 Wallace Avenue in Downingtown. Renovations are still being completed as of June 2014. Both leases at 805 Springdale Drive and 782 Springdale Drive expired on August 31, 2013; therefore the leases were amended in 2012-13 to extend the lease agreement to June 30, 2014. The 21CCCS staff moved into the new location during the summer of 2014.

21CCCS was notified in June 2011 that its charter had been renewed effective July 1, 2011 for another 5 years. The Charter School also made Annual Yearly Progress (AYP) in 2010-2011, one of only two cyber charter schools in Pennsylvania to do so and repeated AYP achievement as one of only three cyber charter schools in Pennsylvania with 2011-2012 school year. The Charter School is the only statewide cyber charter to have achieved AYP for five consecutive years (2004-2005 through 2008-2009). Beginning in 2012 the Department of Education recalculated the figures to determine Annual Yearly Progress. The new recalculation classifies charters as districts and not as individual schools when calculating AYP.

In 2006, the 21st Century Cyber Charter School and the Chester County Intermediate Unit entered into an agreement that established a virtual program to offer online classes to students enrolled in school districts throughout the Commonwealth. The program, under the name of Brandywine Virtual Academy (BVA), offers online courses for original credit course and credit recovery during the school year and summer school. The Charter School staff had managed the program since BVA's inception, in early 2011-12, the CCIU took on a larger role and began managing BVA's day-to-day operations and expanding its services. The Charter School's new role is to provide instructional services (teachers and curriculum) only to Partnership students. This agreement was terminated on June 30, 2014.

The Board of Trustees has maintained the agreement between 21CCCS and the CCIU to provide accounting, human resources, and other services. The Board of Trustees determined this agreement will end as of June 30, 2014. In March 2014, with the resolution between 21CCCS and CCIU the new 21CCCS Business Administrator was assigned to develop a new department with a payroll clerk and two fiscal assistants to replace the CCIU positions that will no longer be contracted. Several CCIU staff members continue to work with the school daily to service the Charter School's needs.

The Pennsylvania School Employees Retirement System (PSERS) retirement rate for 2013-14 was 16.93% of qualified wages. The 2013-2014 rate is an increase over the 2012-2013 PSERS rate of 12.36%. The employer contribution rate for fiscal year 2014-2015 and 2015-16 will be 21.40% and 25.84% respectively. This rate was determined by PSERS' actuary and is subject to certification by the PSERS Board of Trustees.

PSERS has developed tentative projections for the employer contribution rate for future years that range from 21.40% to 26.96%. These tentative projections are based on the actual investment returns and potential actuarial experience losses for the 2013-2014 fiscal year and will have a significant impact on future operations.

To date, no legislation has been passed regarding cyber charter school funding. The Board of Trustees has approved a program stabilization fund to provide financial assistance to the Charter School, if needed, when the legislation is approved.

CONTACTING THE 21ST CENTURY CYBER CHARTER SCHOOL FINANCIAL MANAGEMENT

Our financial report is designed to provide our citizens, taxpayers, parents, students, investors and creditors with a general overview of the Charter School's finances and to show accountability for the money received. If you have questions about this report or wish to request additional financial information, please contact the Open Records Officer, 21st Century Cyber Charter School, 805 Springdale Drive, Exton, PA 19341, 484-875-5400.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF NET POSITION

June 30, 2014

	Governmental Activities
ASSETS	
Cash and Cash Equivalents	$ 3,503,534
Intergovernmental Receivables	1,431,138
Prepaid Expenses	81,255
Deposits	12,621
Capital Assets Not Being Depreciated:	
Construction in Progress	3,501,445
Capital Assets, Net of Accumulated Depreciation	
Building Improvements	18,630
Furniture and Computer Equipment	366,822
TOTAL ASSETS	8,915,445
LIABILITIES	
Accounts Payable	1,923,502
Accrued Liabilities	10,000
Accrued Salaries and Benefits	428,906
Unearned Revenues	9,243
Noncurrent Liabilities	
Due Within One Year	8,665
Construction Loan	402,709
Long-Term Portion of Compensated Absences	101,520
Postemployment Benefits Obligation	180,205
TOTAL LIABILITIES	3,064,750
NET POSITION	
Net Investment In Capital Assets	3,475,638
Unrestricted	2,375,057
TOTAL NET POSITION	$ 5,850,695

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF ACTIVITIES

For the Year Ended June 30, 2014

Functions/Programs	Expenses	Program Revenue: Charges for Services	Program Revenue: Operating Grants and Contributions	Net (Expense) Revenue and Changes in Net Position: Governmental Activities
Governmental Activities:				
Instruction:				
Regular	$ 4,775,360	$ 5,205,809	$ 236,006	$ 666,455
Special	791,097	862,655	102,166	173,724
Total Instructional Services	5,566,457	6,068,464	338,172	840,179
Support Services:				
Instructional Student Support Services	1,095,865	1,194,223	81,698	180,056
Administration and Financial	1,531,221	1,669,407	63,666	201,852
Operation & Maintenance of Plant Services	648,438	706,510	5,372	63,444
Total Support Services	3,275,524	3,570,140	150,736	445,352
Noninstructional Services:				
Interest on Long-Term Debt	1,417	-	-	(1,417)
Total Noninstructional Services	1,417	-	-	(1,417)
Total Governmental Activities	$ 8,843,398	$ 9,638,604	$ 488,908	1,284,114
		General Revenues:		
		Investment Earnings		6,631
		Change in Net Position		1,290,745
		Net Position - Beginning		4,559,950
		Net Position - Ending		$ 5,850,695

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

BALANCE SHEET - GOVERNMENTAL FUND

June 30, 2014

	General Fund
ASSETS	
Cash and Cash Equivalents	$ 3,503,534
Intergovernmental Receivables	1,431,138
Prepaid Expenditures	81,255
Deposits	12,621
TOTAL ASSETS	$ 5,028,548
LIABILITIES AND FUND BALANCE	
LIABILITIES	
Accounts Payable	$ 1,923,502
Accrued Liabilities	10,000
Accrued Salaries and Benefits	428,906
Unearned Revenues	9,243
TOTAL LIABILITIES	2,371,651
FUND BALANCE	
Nonspendable Fund Balance: Prepaid Expenditures and Deposits	93,876
Committed Fund Balance:	
Future Capital Equipment/Software/Furniture Purchases	60,000
Future Curriculum Development Costs	44,000
New Initiatives Fund	300,000
Future Program Stabilization Fund	1,400,000
Assigned Fund Balances:	
2014 - 2015 Budgeted Revenue Shortfall	269,577
PSERS Retirement Rate Increases	360,371
Unassigned Fund Balance	129,073
TOTAL FUND BALANCE	2,656,897
TOTAL LIABILITIES AND FUND BALANCE	$ 5,028,548

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

RECONCILIATION OF GOVERNMENTAL FUND BALANCE SHEET TO THE GOVERNMENT-WIDE STATEMENT OF NET POSITION

June 30, 2014

Amounts reported for governmental activities on the statement of net position (page 3) are different because:		
TOTAL FUND BALANCES - GOVERNMENTAL FUND (page 5)		$ 2,656,897
Capital assets used in governmental activities are not financial resources and, therefore, are not reported as assets in governmental funds. The cost of the assets is $4,349,749 and the accumulated depreciation is $462,852.		3,886,897
Long-term liabilities are not due and payable in the current period and, therefore, are not reported as liabilities in the funds. Long-term liabilities at year-end consist of:		
Postemployment Benefits Obligation	$ (180,205)	
Construction Loan	(411,259)	
Long-Term Portion of Compensated Absences	(101,635)	(693,099)
TOTAL NET POSITION - GOVERNMENTAL ACTIVITIES		$ 5,850,695

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE - GOVERNMENTAL FUND

For the Year Ended June 30, 2014

	General Fund
REVENUES	
Local Sources	$ 9,787,370
State Sources	346,775
TOTAL REVENUES	10,134,145
EXPENDITURES	
Current:	
Instruction	5,399,268
Support Services	3,357,946
Capital Outlay	3,502,602
Debt Service - Interest	1,417
TOTAL EXPENDITURES	12,261,233
DEFICIENCY OF REVENUES OVER EXPENDITURES	(2,127,088)
OTHER FINANCING SOURCES	
Proceeds from Issuance of Construction Loan	411,259
NET CHANGE IN FUND BALANCE	(1,715,829)
FUND BALANCE - BEGINNING	4,372,726
FUND BALANCE - ENDING	$ 2,656,897

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

RECONCILIATION OF THE GOVERNMENTAL FUND STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE TO THE GOVERNMENT-WIDE STATEMENT OF ACTIVITIES

For the Year Ended June 30, 2014

Amounts reported for governmental activities in the statement of activities (page 4) are different because:		
NET CHANGE IN FUND BALANCE - GOVERNMENTAL FUND (page 7)		$ (1,715,829)
Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives as depreciation expense. This is the amount by which capital outlays exceeded depreciation in the current period:		
Capital Outlays	$ 3,601,318	
Less: Depreciation Expense	(112,827)	3,488,491
In the statement of activities, certain operating expenses - compensated absences are measured by the amounts earned during the year. In the governmental funds, however, expenditures for these items are measured by the amount of financial resources used. This amount represents the difference between the amount earned versus the amount used.		(25,919)
Issuance of long-term debt provides current financial resources to governmental funds, while the repayment of principal of long-term debt consumes the current financial resources of governmental funds. However, neither transaction has any effect on net position. Also, governmental funds report the effect of premiums, discounts, and similar items when debt is first issued, whereas these amounts are deferred and amortized in the statement of activities. The effect of these transactions in the statement of activities is shown below:		
Issuance of Construction Loan		(411,259)
Postemployment benefits are recognized when they are paid on the fund statements. With the implementation of GASB #45, an estimated liability for future benefits due will be phased in over several years. This amount represents the difference between the estimated annual cost and the amount paid as reported in the statement of activities.		(44,739)
CHANGE IN NET POSITION OF GOVERNMENTAL ACTIVITIES		$ 1,290,745

See accompanying notes.

21st CENTURY CYBER CHARTER SCHOOL

NOTES TO BASIC FINANCIAL STATEMENTS

June 30, 2014

The 21st Century Cyber Charter School (Charter School) was originally chartered through West Chester Area School District. The Charter School was established in April 2001 and began operations in July 2001. Effective July 1, 2006, the Charter School became chartered directly through the Pennsylvania Department of Education. The current charter expires June 30, 2015.

The Charter School is located in Exton, Pennsylvania and was established to provide services to students located in Pennsylvania.

The Charter School is governed by a board made up of the executive directors of the Bucks, Chester, Delaware and Montgomery County Intermediate Units, two school district superintendents from each county, and three parent members.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A. Reporting Entity

As required by generally accepted accounting principles, the financial statements of the reporting entity include only statements of the Charter School.

The Charter School used guidance contained in generally accepted accounting principles to evaluate the possible inclusion of related entities (authorities, boards, councils, etc) within its reporting entity. The criteria used by the Charter School for inclusion are financial accountability and the nature and significance of the relationships. In determining financial accountability in a given case, the Charter School reviews the applicability of the following criteria. The Charter School is financially accountable for:

- Organizations that make up the legal Charter School entity.

- Legally separate organizations if Charter School officials appoint a voting majority of the organizations' governing body and the Charter School is able to impose its will on the organization, or if there is a potential for the organization to provide specific financial benefits to, or impose specific financial burdens on, the Charter School as defined below.

  Impose its will - If the Charter School can significantly influence the programs, projects or activities of, or the level of services performed or provided by, the organization.

  Financial benefit or burden - exists if the Charter School (1) is entitled to the organization's resources; (2) is legally obligated or has otherwise assumed the obligation to finance the deficits of, or provide support to, the organization; or (3) is obligated in some manner for the debt of the organization.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

A. Reporting Entity - continued

- Organizations that are fiscally dependent on the Charter School. Fiscal dependency is established if the organization is unable to adopt its budget, levy taxes, set rates or charges, or issue bonded debt without approval by the Charter School.

Based on the foregoing criteria, the 21st Century Cyber Charter School has determined it has no component units.

B. Basis of Presentation - Government-Wide Financial Statements

Government-wide financial statements (i.e., the statement of net position and the statement of activities) display information about the reporting entity, except for its fiduciary activities. All fiduciary activities are reported only in the fund financial statements. The government-wide statements include separate columns for the governmental and business-type activities of the primary government, as well as any discretely presented component units. Governmental activities, which normally are supported by intergovernmental revenues and other nonexchange transactions, are reported separately from business-type activities which rely to a significant extent on fees and charges for support. Likewise, the primary government is reported separately from the legally separate component units for which the primary government is financially accountable. The Charter School presently only has governmental activities.

Governmental activities are supported by intergovernmental revenues. The statement of activities demonstrates the level to which the direct expenses of a given function to the Charter School are offset by the program revenues related to that function. Direct expenses are those that are directly related to and clearly identified with a function. Program revenues include charges to customers or others who purchase, use or directly benefit from services or goods provided by a given function or grants and contributions that are restricted to meet the operational or capital requirements of a function. Other items not includable in program revenues are reported as general revenues.

C. Basis of Presentation - Fund Financial Statements

The fund financial statements provide information about the government's funds, including its fiduciary funds. Separate financial statements are provided for governmental funds, proprietary funds, and fiduciary funds. The emphasis of fund financial statements is on major governmental and enterprise funds, each displayed in a separate column. All remaining governmental funds are aggregated and reported as nonmajor funds. Major individual governmental and enterprise funds are reported as separate columns in the fund financial statements.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

C. Basis of Presentation - Fund Financial Statements - continued

The Charter School reports the Following Major Governmental Fund:

General Fund: The general fund is the general operating fund of the Charter School. It is used to account for all financial resources. All activities of the Charter School are accounted for through this fund.

The Charter School does not currently have any enterprise or fiduciary funds.

D. Measurement Focus and Basis of Accounting

The accounting and financial reporting treatment is determined by the applicable measurement focus and basis of accounting. Measurement focus indicates the type of resources being measured such as *current financial resources* or *economic resources*. The basis of accounting indicates the timing of transactions or events for recognition in the financial statements.

The government-wide financial statements are reported using the *economic resources measurement focus*, and the *accrual basis of accounting*. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

The governmental fund financial statements are reported using the *current financial resources measurement focus* and the *modified accrual basis of accounting*. Revenues are recognized as soon as they are both measureable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the Charter School considers revenues to be available if they are collected within 60 days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences, and claims and judgments, are recorded only when payment is due. General capital asset acquisitions are reported as expenditures in governmental funds. Issuance of long-term debt and acquisitions under capital leases are reported as other financing sources.

Interest associated with the current fiscal period is considered to be susceptible to accrual and so has been recognized as revenue of the current fiscal period. Expenditure-driven grants are recognized as revenue when the qualifying expenditures have been incurred and all other eligibility requirements have been met, and the amount is received during the period or within the availability period for this revenue source (within 60 days of year-end). All other revenue items are considered to be measureable and available only when cash is received by the Charter School.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

E. Budgetary Information

1. Budgetary Basis of Accounting

Annual budgets are adopted on a basis consistent with generally accepted accounting principles for the general fund. All annual appropriations, except unexpended grant appropriations and encumbrances, lapse at fiscal year-end. The Charter School's 2013-2014 budget was prepared and approved by the board of directors prior to submitting the budget to the Pennsylvania Department of Education.

All budget amounts presented in the accompanying financial statements have been adjusted for legally authorized revisions of the annual budget during the year.

F. Assets, Liabilities, Deferred Inflows/Outflows of Resources, and Net Position/Fund Balance

1. Cash and Cash Equivalents

The Charter School's reporting entity considers all highly-liquid investments with a maturity of three months or less when purchased to be cash equivalents.

2. Receivables

As all of the intergovernmental receivables are due from local school districts and the Pennsylvania Department of Education (PDE), management believes that they are fully collectible. Thus, no allowance has been deemed necessary or reported in the accompanying financial statements.

3. Prepaid Items

Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items in both the government-wide and fund financial statements. The costs of prepaid items is recorded as expenditures/expenses when consumed rather than when purchased.

4. Capital Assets, Depreciation, and Amortization

The Charter School's capital assets with useful lives of more than one year are stated at historical cost and comprehensively reported in the government-wide financial statements. The reported value excludes normal maintenance and repairs, which are essentially amounts spent in relation to capital assets that do not increase the capacity or efficiency of the item or extend its useful life beyond the original estimate. In the case of donations, the Charter School values these capital assets at the estimated fair value of the item at the date of its donation.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

F. Assets, Liabilities, Deferred Inflows/Outflows of Resources, and Net Position/Fund Balance - continued

4. Capital Assets, Depreciation, and Amortization - continued:

The Charter School generally capitalizes assets with a cost of $1,500 or more as purchase and construction outlays occur. Assets purchased or constructed with long-term debt may be capitalized regardless of the threshold established. The costs of normal maintenance and repairs that do not add to the asset value or materially extend useful lives are not capitalized. Capital assets are depreciated using the straight-line method. When capital assets are disposed, the cost and applicable accumulated depreciation are removed from the respective accounts, and the resulting gain or loss is recorded in operations.

Estimated useful lives, in years, for depreciable assets are as follows:

Assets	Years
Building improvements	20 - 50
Furniture and computer equipment	5 - 20

Interest costs incurred during the construction phase of capital assets are capitalized when incurred by proprietary funds and similar component units on debt where proceeds were used to finance the construction of assets.

5. Deferred Outflows/Inflows of Resources

In addition to assets, the statement of financial position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, *deferred outflows of resources*, represents a consumption of net position that applies to a future period(s) and so will *not* be recognized as an outflow of resources (expense/expenditure) until then.

In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, *deferred inflows of resources,* represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time.

The Charter School presently has no items that qualify for reporting in these categories.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

F. Assets, Liabilities, Deferred Inflows/Outflows of Resources, and Net Position/Fund Balance - continued

6. Unearned Revenues

Revenues that are received but not earned are reported as unearned revenues in the government-wide, governmental and proprietary funds financial statements. Unearned revenues arise when resources are received prior to the incurrence of qualifying expenditures. In subsequent periods, when both revenue recognition criteria are met, or when the Charter School has legal claim to the resources, the liability for unearned revenue is removed from the respective financial statements and revenue is recognized.

7. Net Position Flow Assumptions

Sometimes the Charter School will fund outlays for a particular purpose from both restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted - net position and unrestricted - net position in the government-wide financial statements, a flow assumption must be made about the order in which the resources are considered to be applied.

It is the Charter School's policy to consider restricted resources to have been depleted before unrestricted resources is applied.

8. Fund Balance Flow Assumptions

Sometimes the government will fund outlays for a particular purpose from both restricted and unrestricted resources (the total of committed, assigned, and unassigned fund balance). In order to calculate the amounts to report as restricted, committed, assigned, and unassigned fund balance in the governmental fund financial statements, a flow assumption must be made about the order in which the resources are considered to be applied. The Charter School's policy states there are no restrictions placed on the order of the unrestricted fund balances used when an expenditure is incurred for a purpose in which unrestricted fund balance amounts are available under committed, assigned or unassigned fund balance. The decision will be made at the discretion of the director/CEO.

9. Fund Balance Policies

Fund balance of governmental funds is reported in various categories based on the nature of any limitations requiring the use of resources for specific purposes. The Charter School itself can establish limitations on the use of resources through either a commitment (committed fund balance) or an assignment (assigned fund balance).

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

F. Assets, Liabilities, Deferred Inflows/Outflows of Resources, and Net Position/Fund Balance – continued

9. Fund Balance Policies - continued

The committed fund balance classification includes amounts that can be used only for the specific purposes determined by a formal action of the Charter School's highest level of decision-making authority. The board of directions is the highest level of decision-making authority for the Charter School that can, by adoption of a resolution prior to the end of the fiscal year, commit fund balance. Once adopted, the limitation imposed by the resolution remains in place until a similar action is taken (the adoption of another resolution) to remove or revise the limitation.

Amounts in the assigned fund balance classification are intended to be used by the government for specific purposes but do not meet the criteria to be classified as committed. The director/CEO or designee may assign fund balance. Unlike commitments, assignments generally only exist temporarily. In other words, an additional action does not normally have to be taken for the removal of an assignment. Conversely, as discussed above, an additional action is essential to either remove or revise a commitment.

G. Revenues and Expenditures

1. Program Revenues

Amounts reported as program revenues include 1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment and 2) grants and contributions (including special assessments) that are restricted to meeting the operations or capital requirements of a particular function or segment. Other internally dedicated resources are reported as general revenues rather than as program revenues.

2. Tuition Revenue - School Districts

Local sources revenue includes tuition revenue which represents the tuition paid by various school districts for the students enrolled in the Charter School who reside within that particular school district. This revenue is earned and recognized during the applicable school year, net of any refunds.

3. Compensated Absences

The Charter School allows employees to accumulate sick and vacation leave based on contractual agreements. An employee must be with the Charter School for ten years before they are eligible for a pay-out of sick days. Once eligible, employees are paid at 50% of their per diem rate, up to a maximum of $7,500.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES - CONTINUED

H. Other Use of Estimates

The preparation of the financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

NOTE 2 - CASH AND CASH EQUIVALENTS

Deposits

Custodial Credit Risk

Custodial credit risk is the risk that in the event of a bank failure, the government's deposits may not be returned to it. The Charter School does not have a policy for custodial credit risk. As of June 30, 2014, the carrying amount of the Charter School's deposits was $3,503,534 and the bank balance was $3,494,320. Of the bank balance, $250,000 was covered by federal depository insurance and $3,244,320 of the Charter School's bank balance was exposed to custodial credit risk but covered by collateralization requirements in accordance with Act 72.

NOTE 3 - INTERGOVERNMENTAL RECEIVABLES

As all of the intergovernmental and state receivables are due from local school districts and the Pennsylvania Department of Education (PDE), management believes that they are fully collectible. Thus, no allowance has been deemed necessary or recorded in the accompanying financial statements.

The intergovernmental receivables balance of $1,431,138 is comprised of receivables from numerous districts and the Pennsylvania Department of Education as of June 30, 2014. Balances not remitted by the school districts will be withheld from the school's basic education subsidy and paid by the Pennsylvania Department of Education.

NOTE 4 - CAPITAL ASSETS

Capital asset activity for the year ended June 30, 2014 was as follows:

Governmental Activities	Beginning Balance	Increase	Deletions/ Decrease/ Transfers	Ending Balance
Capital assets not being depreciated:				
Construction in Progress	$ -	$ 3,501,445	$ -	$ 3,501,445
Capital assets being depreciated:				
Building Improvements	20,764	-	-	20,764
Furniture and Computer Equipment	727,667	99,873	-	827,540
Total assets being depreciated	748,431	99,873	-	848,304
Less accumulated depreciation for:				
Building Improvements	(1,442)	(692)	-	(2,134)
Furniture and Computer Equipment	(348,583)	(112,135)	-	(460,718)
Total accumulated depreciation	(350,025)	(112,827)	-	(462,852)
TOTAL CAPITAL ASSETS BEING DEPRECIATED, NET	$ 398,406	$ (12,954)	$ -	$ 385,452
GOVERNMENTAL ACTIVITIES, CAPITAL ASSETS, NET	$ 398,406	$ 3,488,491	$ -	$ 3,886,897

Depreciation expense was charged to functions/programs of the governmental activities of the primary government as follows:

Instruction:	
Regular Education	$ 42,888
Special Education	6,909
Support Services:	
Instructional Student Support	9,582
Administrative and Financial Support Services	53,448
TOTAL DEPRECIATION EXPENSE - GOVERNMENTAL ACTIVITIES	$ 112,827

NOTE 5 - LEASES

During the 2008/2009 school year, the Charter School entered into an operating-type lease agreement for office space at 805 Springdale Drive, Exton, PA that expired August 31, 2013. During the 2012/2013 fiscal year, the lease was extended through June 30, 2014. The Charter School is responsible for payment of utilities and real estate taxes and must also meet certain minimum insurance requirements.

Total rent charged to expense during 2014 for this commitment was $208,666.

In May 2011, the Charter School entered into a short-term lease agreement for office space at 782 Springdale Drive, Exton, PA that commenced August 1, 2011 and expired August 31, 2013. During the 2012/2013 fiscal year, the lease was extended through June 30, 2014. The Charter School is responsible for payment of utilities and must meet certain minimum insurance requirements. Real estate taxes and maintenance fees are included in the rental amount.

Total rent charged to expense during 2014 for this commitment was $79,276.

NOTE 6 - LONG-TERM LIABILITIES

On March 24, 2014, the Charter School entered into a commercial construction to permanent loan agreement with a financial institution. The proceeds of the loan are being used to finance the renovation of the new facility at 126 Wallace Avenue. The loan agreement provides advances up to $1,600,000 through the conversion date of April 1, 2015 or such other date as determined by the financial institution in its sole discretion. Interest only payments are due monthly at the wall street journal prime rate plus 50 basis points, with a floor of 4.00% through the conversion date. Commencing on the April 1, 2015, principal and interest payments are due monthly through maturity on March 1, 2035. The loan bears interest at a fixed rate of 4.25% per annum. As of June 30, 2014, the Charter School has advanced $411,259. The agreement has a prepayment penalty that varies based upon the timing of the prepayment ranging from 1% to 5%. The loan may be prepaid in whole or in part through internal cash flow, if the collateral is sold to a disinterested third party, or if refinanced with the existing financial institution at any time without penalty. Otherwise full prepayment will result in a penalty charged.

NOTE 6 - LONG-TERM LIABILITIES - CONTINUED

Subsequent to year end, the Charter School advanced the available $1,600,000 from loan. These proceeds were used to reimburse the general fund for capital outlay paid with existing cash reserves and to fund outstanding commitments at June 30, 2014. The future annual payments required to satisfy the fully advanced loan for the years ending June 30 are as follows:

	Principal	Interest
2015	$ 8,550	$ 11,318
2016	52,589	66,620
2017	54,868	64,341
2018	57,245	61,964
2019	59,727	59,482
2020 - 2024	339,778	256,267
2025 - 2029	420,068	175,977
2030 - 2034	519,330	76,714
2035	87,845	1,562
	$ 1,600,000	$ 774,245

Long-term liability balance and activity, except for the postemployment benefit obligation, for the year ended June 30, 2014 was as follows:

	Beginning Balance	Additions	Reductions	Ending Balance	Due Within One Year
Govermental Activities					
Construction Loan	$ -	$ 411,259	$ -	$ 411,259	$ 8,550
Compensated Absences	75,716	94,066	(68,147)	101,635	115
TOTAL GOVERNMENTAL LONG-TERM LIABILITIES	$ 75,716	$ 505,325	$ (68,147)	$ 512,894	$ 8,665

Payment on the outstanding loan is made by the general fund. The compensated absence liability will also be liquidated by the general fund. Total interest paid during the year ended June 30, 2014 was $1,417.

NOTE 7 - EMPLOYEES RETIREMENT PLAN

Plan Description

The Charter School contributes to a governmental cost-sharing multiple employer defined benefit pension plan administered by the commonwealth of Pennsylvania Public School Employees Retirement System (PSERS). Benefit provisions of the Plan are established under the provisions of the PSERS code ("the Code") and may be amended by an act of the Pennsylvania State Legislature. The Plan provides retirement, disability, and death benefits, legislatively mandated ad hoc cost-of-living adjustments, and health care insurance premium assistance to qualifying plan members and beneficiaries. It also provides for refunds of a member's accumulated contribution upon termination of a member's employment in the public school sector. PSERS issues a publicly available financial report that includes financial statements for the plan. The report may be obtained by writing to: PSERS, PO Box 125, Harrisburg, PA 17108-0125. The report is also available on the PSERS website at www.psers.state.pa.us/publications/cafr/index.htm.

Funding Policy

The contribution policy is set by the code and requires contributions by active employees and by participating employers. Active members who joined the system prior to July 22, 1983, contribute at 5.25 percent (Membership Class TC) or at 6.50 percent (Membership Class TD) of the member's qualifying compensation. Members joining PSERS on or after July 22, 1983 and who were active or inactive as of July 1, 2001, contribute at 6.25 percent (Membership Class TC) or at 7.50 percent (Membership Class TD) of the member's qualifying compensation. Members joining PSERS after June 30, 2001 and who were active or inactive as of June 30, 2011 contribute at 7.50 percent (automatic Membership Class TD). For all new hires and for members who elected Class TD membership, the higher contribution rates began with service rendered on or after January 1, 2002. Members joining PSERS on or after July 1, 2011 contribute at 7.50 percent (Membership Class TE) or at 10.30 percent (Membership Class TF). Both membership classes TE and TF contain a "shared risk" which allows for an increase in the contribution percentage up to an additional 2.00 percent based on market results.

The contributions required of participating employers are based upon an actuarial valuation and are expressed as a percentage of annual covered payroll during the period for which the amount is determined. For the fiscal year ended June 30, 2014, the rate of employer contribution was 16.93 percent of covered payroll. The 16.93 percent rate is comprised of a pension contribution rate of 16.00 percent for pension benefits and 0.93 percent for health insurance premium assistance. The Charter School's contribution to PSERS for the fiscal years ended June 30, 2014, 2013, and 2012 was $667,271, $441,565, and $292,214, respectively.

NOTE 8 - POSTEMPLOYMENT BENEFITS

Plan Description

The 21st Century Cyber Charter School administers a single-employer defined benefit healthcare plan (the Retiree Health Plan). The Plan provides lifetime healthcare insurance for eligible retirees and their spouses through the Charter School's health insurance plan, which covers both active and retired members. The Retiree Health Plan does not issue a publicly available financial report.

Funding Policy

The required contribution is based on pay-as-you-go financing. For administrators with more than ten but less than twenty years of service with the Charter School, the retired plan member contributes the premium in excess of the flat-dollar Charter School contribution for medical insurance determined at the member's retirement for the retired plan member and their spouse. For administrators with twenty years or more with the Charter School the retired plan member must pay premiums for vision. The retired plan member must pay 50 percent of the cost of term life insurance. The premium sharing for medical insurance is limited to half of the retirees years of service and after that time the retired plan member is responsible for paying 100 percent of the premiums for medical insurance, and long-term care insurance is provided based on years of service with the Charter School paying 100 percent of the cost. Over age 65, the retiree must pay the premium in excess of the flat-dollar Charter School contribution determined at age 65. In addition, long-term care insurance is only provided for a period equal to half of the retiree's service.

Project staff are allowed to continue coverage for themselves and dependents until the member reaches Medicare age. The retiree is responsible for payment equal to the premium determined for the purposes of COBRA.

Annual OPEB Cost and Net OPEB Obligation

The Charter School's annual other postemployment benefit (OPEB) cost (expense) is calculated based on the annual required contribution of the employer (ARC), an amount actuarially determined in accordance with the parameters of GASB Statement 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed thirty years. The following table shows the components of the Charter School's annual OPEB cost for the year, the amount actually contributed to the plan, and changes in the Charter School's net OPEB obligation:

Annual required contribution	$ 47,988
Interest on net OPEB obligation	6,096
Adjustment to annual required contribution	(9,345)
Annual OPEB Cost	44,739
Contributions made (estimated)	-
Estimated increase in net OPEB obligation	44,739
Net OPEB obligation - beginning of year	135,466
Net OPEB obligation - end of year	$ 180,205

NOTE 8 - POSTEMPLOYMENT BENEFITS - CONTINUED

The Charter School's annual OPEB cost, the percentage of annual OPEB cost contributed to the plan, and the net OPEB obligation as of June 30 was as follows:

Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation
6/30/2014	$ 44,739	0.0%	$ 180,205
6/30/2013	30,201	0.0%	135,466
6/30/2012	31,056	0.0%	105,265

Funded Status and Funding Progress

As of July 1, 2013, the most recent actuarial valuation date, the plan was unfunded. The actuarial accrued liability for benefits was $188,943, and the actuarial value of assets was $0, resulting in an unfunded actuarial accrued liability (UAAL) of $188,943. The covered payroll (annual payroll of active employees covered by the plan) was $3,814,562, and the ratio of the UAAL to the covered payroll was 4.95%.

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented as required supplementary information following the notes to the financial statements, presents information about actuarial value of plan assets and actuarial accrued liabilities for benefits.

Actuarial Methods and Assumptions

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

NOTE 8 - POSTEMPLOYMENT BENEFITS - CONTINUED

In the July 1, 2013 actuarial valuation, the entry age normal cost method was used. The actuarial assumptions included a 4.5 percent investment rate of return (net of administrative expenses) and an annual healthcare cost trend rate of 7.0 percent initially, decreasing 0.5 percent per year to a rate of 5.5 percent in 2016. Rates gradually decrease from 5.3 percent in 2017 to 4.2 percent in 2089 and later based on the Society of Actuaries Long-Run Medical Cost Trend Model. The unfunded actuarial accrued liability is being amortized using single period amortization as of the end of the year based on level dollar, 24-year open period. This is the weighted average of service until retirement (active liability) and payment period (retired liability).

NOTE 9 - RISK MANAGEMENT

The Charter School is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; error and omissions; injuries to employees; and natural disasters. Significant losses are covered by commercial insurance for all major programs except for unemployment compensation, for which the Charter School retains risk of loss. For insured programs, there were no significant reductions in insurance coverages for the 2013/14 school year. Settlement amounts have not exceeded insurance coverage for the current year.

In an effort to contain costs related to commercial insurance, the Charter School through the Chester County Intermediate Unit has established an internal service fund to account for and finance its uninsured risks of loss. Under this program, the Charter School through the Chester County Intermediate Unit is self-insured for unemployment compensation purposes. The Charter School makes payments to the Chester County Intermediate Unit based on estimates of amounts needed to pay prior and current year claims and to establish a reserve for unexpected losses.

NOTE 10 - COMMITMENTS

At June 30, 2014 the Charter School has entered into a number of contracts related to the building renovation project. Commitments outstanding totaled $64,630 at June 30, 2014. The Charter School intends to use proceeds from the construction loan to satisfy these commitments.