PAsmart
BETTER JOBS FOR STRONGER COMMUNITIES.

Advancing Computer Science and STEM Education Grants

Request for Application

February 2022

pennsylvania
WORKFORCE DEVELOPMENT BOARD

pennsylvania
DEPARTMENT OF EDUCATION

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Summary

The Pennsylvania Department of Education (PDE) is requesting applications for the 2021-22 Governor's PAsmart Advancing Computer Science and STEM Education Initiative.

Grant name: Advancing Computer Science and STEM Education Grants (Advancing Grants)

Grant purpose: To support collective impact approaches to expanding computer science (CS) and science, technology, engineering, and math (STEM) education, by:

- Giving regions the opportunity to leverage or expand CS/STEM ecosystems;

- Growing partnerships between local educational agencies, postsecondary institutions, businesses, libraries, afterschool organizations, and other CS/STEM-focused organizations;

- Improving equitable access to CS/STEM experiences for learners of all ages, including historically underserved populations and adult learners; and

- Increasing the number of highly qualified CS/STEM educators at all levels of Pennsylvania's education system.

Award Amount: Eligible applicants may request up to $500,000. Up to $10 million in competitive funding is available to support programs with increasing access and improving equity of access to computer science and STEM education locally and statewide to learners of all ages.

Letter of Intent: Notify PDE of your intent to apply by emailing RA-EDPAsmart@pa.gov by February 25, 2022. A letter of intent is encouraged but not required.

Application Deadline: Completed applications must be submitted in eGrants no later than 11:59 PM on Monday, March 21, 2022.

Grant Performance Period: Grant funds must be expended between March 1, 2022 and June 30, 2024.

Eligible Applicants: Applicants must submit in partnerships. Eligible lead applicants and partners include, but are not limited to, school districts, cyber intermediate units, career STEM ecosystems, non-profit organizations, local workforce development boards, businesses, and early childhood learning centers. A full list of eligible applicants is contained on pages 7-8. Applicant partnerships must include at least one of the following to serve as fiscal agent: a local educational agency (LEA), a postsecondary institution, or a public library.

This Request for Application (RFA) describes the requirements applicants will be expected to meet and the criteria that will be used to determine status as a successful applicant. More information, including past awards, is available at education.pa.gov/PAsmart.

PAsmart Framework

What is PAsmart?

Governor Wolf proposed the PAsmart initiative to address the feedback Pennsylvanians shared with the 2017 Middle Class Task Force, which identified a need to better coordinate the commonwealth's education, workforce, and economic development initiatives and funding. Over the past three fiscal years, PAsmart has addressed local, regional, and statewide workforce, education, and economic needs through three aligned grant initiatives:

1. Advancing Computer Science and STEM Education, available through the Pennsylvania Department of Education.
2. Growing Registered Apprenticeships and Pre-Apprenticeships, available through the Pennsylvania Department of Labor and Industry.
3. Supporting Next Generation Industry Partnerships, available through the Pennsylvania Department of Labor and Industry.
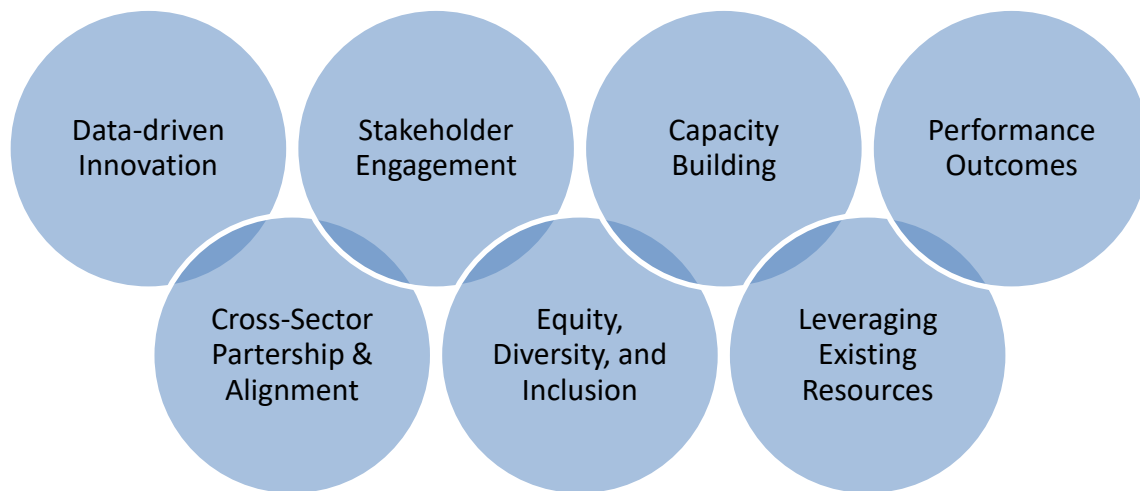
PAsmart is based on four goals:

1. Strategically investing resources in initiatives to support economic growth, and education and training opportunities;
2. Achieving successful outcomes for Pennsylvania students, workers, businesses, and communities;
3. Improving coordination and alignment of education and workforce development programs, services, and funding; and
4. Transforming inter-agency, cross-sector collaboration around education, workforce, and economic development at state, regional, and local levels.

As part of the PAsmart initiative, in 2021-22 Governor Wolf secured $40 million in state funding for strategic, competitive, and cross-sector investments focused on meeting the education and workforce development needs of students, workers, employers, and communities across Pennsylvania, including those disconnected from education and workforce opportunities (e.g., opportunity youth and young adults, long-term unemployed, etc.). PAsmart grants funded by this investment through the PA Department of Labor and Industry and PDE will support cross-sector partnerships to address unique local, regional, and statewide education, workforce, and economic needs.

PAsmart Framework Principles and Funding Priorities

PAsmart is designed to provide flexible resources to support innovation and cross-sector alignment and collaboration to increase equity, remove barriers to access, and build on existing initiatives and fill gaps, to better serve Pennsylvania students, workers, businesses, and communities. PAsmart grants support the following PAsmart Principles and Funding Priorities, approved by the Pennsylvania Workforce Development Board (PA WBD):

- **Data-driven Innovation:** Proposals identify a clear problem, challenge, or opportunity supported by relevant data and information, and include an innovative strategy to increase opportunity for Pennsylvania students, workers, employers, and communities.
- **Cross-sector Partnership:** Proposals demonstrate an effort to develop strong, high-quality cross-sector partnerships committed to working collaboratively to implement the proposal. Applicants are encouraged to have multiple partners across sectors (e.g., education partner, workforce development, business, economic development, and community partners) that demonstrate their commitment through letters of support.
- **Cross-sector Alignment:** Proposals align with existing local, regional, and state education, workforce, and economic development initiatives.
- **Stakeholder Engagement:** Proposals engage partners, customers, and stakeholders, including the target population, in the development of the proposal and its implementation.
- **Equity, Diversity, and Inclusion:** Proposals demonstrate a commitment to serve and increase access for historically under-represented and under-served learners, workers, businesses, and communities. Applicants are encouraged to identify and address barriers to education and employment.
- **Capacity Building:** Proposals build the applicant's or partners' organizational capacity to better implement the proposal and support students, workers, businesses, and communities.
- **Leveraging Existing Resources:** Proposals demonstrate PAsmart resources will leverage and supplement, not supplant, existing public and private resources (e.g., other federal or state grants and philanthropic contributions, cash, in-kind, etc.). Proposals demonstrate efficient and effective use of resources.
- **Performance Outcomes**: Proposals include measurable performance outcomes and a strategy to collect, analyze, and report performance data.

More information on the PAsmart Framework: Principles and Funding Priorities.

Focus on Computer Science and STEM

PAsmart Advancing Computer Science (CS) and STEM Education Grants provide opportunities to remove barriers in education and the workforce. The top 20 fastest-growing knowledge areas that workers will need for jobs in Pennsylvania by 2028 include Mathematics, Computers and Electronics, Mechanical, Medicine and Dentistry, and Chemistry. By 2028, there are expected to be about 157,000 more occupations in Pennsylvania that require mathematics knowledge than there were in 2018 (representing 65% of all employment in the commonwealth), and about 125,000 more occupations requiring knowledge in computers and electronics (representing 54% of all employment).[1]

Through PAsmart, eligible entities can apply for funding to provide students with access to high-quality, relevant, and equitable CS and STEM education, and provide current and future educators with high-quality training and professional development[2] to effectively teach computer science[3].

Participation in high-quality CS and STEM learning opportunities is uneven not just between LEAs, but also within LEAs. Students of color, low-income students, and female students access these opportunities at lower rates than their wealthier, white, and male peers[4]. Successful PAsmart programs have been marked by their focus on not only increasing access to learning opportunities, but also by their thoughtfulness around how they include learners who are underrepresented in the field, and their focus on instilling a sense of belonging for all people in STEM and CS.

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[1] A "knowledge area" is a key educational or experience requirement for an occupation (e.g., Computers and Electronics). See "Pennsylvania's Projected Job Skills 2018-2028," prepared by the Center for Workforce Information & Analysis at the Pennsylvania Department of Labor and Industry. The projections are specific to Pennsylvania and are based on analysis of Occupational Information Network (ONET) data (www.onetonline.org) and Occupational Employment Projections. https://www.workstats.dli.pa.gov/Products/ProjectedJobSkills/Pages/default.aspx

[2] Professional development activities should be sustained (i.e., not stand-alone or one-day), intensive, collaborative, job-embedded, data-driven and classroom-focused. See Every Student Succeeds Act (ESSA), § 8101(42).

[3] For the purpose of this grant, computer science is defined as "the study of computers and algorithmic processes, including their principles, their hardware and software designs, their applications, and their impact on society." A. Tucker, et al., *A Model Curriculum for K-12 CS: Report of the ACM K-12 Task Force Curriculum Committee (2nd. Ed.)*, Association for Computing Machinery, 2006.

[4] Google Inc. & Gallup Inc. (2016). Diversity Gaps in Computer Science: Exploring the Underrepresentation of Girls, Blacks and Hispanics. Retrieved from http://goo.gl/PG34aH. Additional reports from Google's Computer Science Education Research are available at g.co/cseduresearch

Application Information

Advancing Computer Science & STEM Education Grants, or "Advancing Grants," are designed to support broad, cross-sector partnerships that use ecosystem[5] or networked approaches to:

- Expand access to CS/STEM education and promote inclusion (especially for historically underserved students and communities) through learning experiences such as integrative CS/STEM experiences, standalone CS/STEM courses, out-of-school learning, dual enrollment, industry credentials, work-based learning, internships, and apprenticeships; and
- Expand and diversify the number of CS/STEM educators at all education levels.

Advancing Grants will support partnerships that operate on a larger scale and provide quality CS/STEM experiences to learners of any age—early childhood, preK-12, postsecondary, and adult learners—as part of a high-level strategic approach to CS/STEM workforce readiness.

Examples of previously funded projects are found on the PDE website.

Eligibility

Eligible proposals must represent a partnership and must have an eligible lead applicant and an eligible fiscal agent.

Lead Applicant

Eligible lead applicants include:

- Local education agencies (LEAs), which includes school districts, charter schools, cyber charter schools, career and technical centers (CTCs), and intermediate units (IUs);
- Early childhood learning centers;
- Postsecondary institutions;

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[5] An "ecosystem" is considered for the purpose of this grant to generally fit the definition given by the STEM Learning Ecosystems community of practice: "A STEM Learning Ecosystem encompasses schools, community settings such as after-school and summer programs, science centers and museums, and informal experiences at home and in a variety of environments that together constitute a rich array of learning opportunities for young people. A learning ecosystem harnesses the unique contributions of all these different settings in symbiosis to deliver STEM learning for all children. Designed pathways enable young people to become engaged, knowledgeable and skilled in the STEM disciplines as they progress through childhood into adolescence and early adulthood…STEM Learning Ecosystems provide the architecture for cross-sector learning, offering all young people access to STEM-rich learning environments so they can develop important skills and engagement in science, technology, engineering and math throughout preK-16. Strong STEM Learning Ecosystems feature dynamic collaborations among schools, out-of-school time programs, STEM expert institutions (such as museums, science centers, institutions of higher education and STEM professional associations), the private sector, community-based organizations, youth and families." An "ecosystem" in Pennsylvania may or may not be nationally recognized by the STEM Learning Ecosystems community of practice. See: https://stemecosystems.org/what-are-stem-ecosystems/

- Public libraries;
- Community-based organizations or institutions (out-of-school time providers, etc.);
- Local workforce development boards;
- Businesses and chambers of commerce;
- Labor organizations;
- STEM ecosystems;
- Trade associations;
- Non-profits; and
- Economic development entities.

Lead applicants are encouraged to develop cross-sector proposals and apply as a consortium. Proposals initiated and led by applicants other than LEAs, postsecondary institutions, or public libraries are welcome.

Applications must be submitted via PDE's eGrants system. LEAs, postsecondary institutions, and public libraries will use their current eGrants access to enter the system and upload their proposals. A lead applicant that is not an LEA, postsecondary institution, or public library must have its fiscal agent submit the application on its behalf.

Fiscal Agent

The following entities may serve as a grant fiscal agent:

- LEAs (school districts, charter schools, cyber charter schools, CTCs, and IUs);
- Postsecondary institutions; and
- Public libraries.

The fiscal agent will receive, manage, and disburse grant funds. Fiscal agents may use funds to pay partners in the consortium for their services. An LEA may serve as a fiscal agent for more than one application.

Partnership Requirements

Local support and collaborative efforts from business, industry, education, philanthropic, nonprofit, and community partners are essential to the success of PAsmart programs. To be considered for funding, lead applicants must identify partners to assist with:

- Expanding access and inclusion to CS/STEM education; and
- Expanding and diversifying the number of CS/STEM educators statewide.

Eligible partners include:

- LEAs (school districts, charter schools, cyber charter schools, CTCs, and IUs);
- Early childhood learning centers;
- Postsecondary institutions;
- Public libraries;

- Community-based organizations or institutions (out-of-school time providers, etc.);
- Local workforce development boards;
- Businesses and chambers of commerce;
- Labor organizations;
- STEM ecosystems;
- Trade associations;
- Non-profits; and
- Economic development entities.

Funding

Eligible applicants may request up to $500,000. Funding is not guaranteed and will be awarded based upon the availability of funds.

The grant period begins March 1, 2022 and ends June 30, 2024.

Application Scoring Criteria and Funding Priorities

Advancing Grant applications will be reviewed by a cross-sector team for the following:

1. Identification of program goals, and their alignment to the goals of the governor's PAsmart initiative (see "What is PAsmart?" above);

2. A program narrative describing the activities for which funding will be used, including details of how the proposed program/activity will improve capacity to offer high-quality CS/STEM learning, maintain sustainable programming and training, and address barriers of access and inclusion for underrepresented students;

3. Detailed budget information that supports the goals and objectives of the proposal, is accurate and itemized using a per-unit cost and total expenditure, and is summarized into three categories: Contracted Services, Supplies, and Other;

4. Expected program outcomes that are stated in measurable terms including baseline information and expected improvement, with a clear plan for assessing the impact of the program being funded through the grant; and

5. Accuracy of the information submitted.

Responses on the application will be scored according to the strength of their alignment to the Governor's PAsmart Framework (see "PAsmart Framework Principles and Funding Priorities" above). Below are examples of how previous grantees aligned to these framework principles:

- **Data-driven Innovation:**
  - A specific need, problem, or opportunity is clearly identified and supported by evidence and data[6].
  - Strategies are supported by evidence or data.
  - Strategies are innovative.
- **Cross-sector Partnership & Alignment:**
  - There are multiple partners representing multiple sectors.
  - Partners have clear roles.
  - Services and activities are collaborative in nature and engage multiple partners.
  - The proposal aligns to existing education, workforce, or economic initiatives at the local, regional, or state level.
- **Stakeholder Engagement:**
  - The target population engages meaningfully in the development of the proposal.
  - The target population engages meaningfully in the implementation.
  - Performance outcomes are collected and analyzed by or in partnership with the target populations.
- **Equity, Diversity, and Inclusion:**
  - Partners identify a specific target population and clearly explain why that population was selected, citing specific barriers to access, opportunity, and inclusion of that population in CS/STEM.
  - Strategies and activities are geared toward increasing access, opportunity, and inclusion for historically underserved populations.
  - Strategies remove barriers at the program, system, or policy level.
- **Capacity Building:**
  - Expected outcomes build the partners' capacity to offer CS or STEM programming beyond the grant period.
  - Expected outcomes increase the number and diversity of trained educators in CS/STEM.
- **Leveraging Existing Resources:**
  - Applicant assesses existing resources and connects existing resources to the needs the grant will address.
  - Services or activities are supported with in-kind resources such as facilities or human capital.
  - Partners extend or link existing resources to address the identified problem, need, or opportunity.
- **Performance Outcomes**:
  - There are short-term and long-term milestones.
  - Expected outcomes can be measured or assessed.

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[6] Data may include, but are not limited to, the following: relevant policies and programs; program or course participation demographics; number and assignments of CS/STEM educators; school and community data (e.g., student enrollment, demographics, etc.); and regional labor market information.

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- o Expected outcomes address the specific need, problem, or opportunity the partners identified.
- o Expected outcomes are logical and directly relate results of the planned strategies.
- o Applicant has a plan for collecting, analyzing, and reporting data on the results of the strategies. The plan considers the who, what, when, and how.

Priority will be given to proposed initiatives that:

- **Expand access to and opportunities in** high-quality CS/STEM courses and programs for Pennsylvania's preK-12 students, with a focus on increasing learning opportunities for students in grades preK-8;
- **Increase the number of educators** prepared to teach CS/STEM courses, including courses of rigor[7], in preK-12 public schools through new and expanded educator preparation, training, and professional development; and
- **Boost inclusion** in CS/STEM education for women, girls, students of color, students in rural and urban areas, students with disabilities, Workforce Innovation and Opportunity Act (WIOA) Priority of Service populations, adult learners, and other historically underserved and underrepresented populations.
- **Include as partners LEAs that received PAsmart Targeted Computer Science grants.** In 2018-18 and 2019-20, PDE awarded PAsmart Targeted grants to public schools with limited or no CS offerings. Grantees received professional development in CS instruction and funding to purchase technology to begin offering CS programs in their schools. See list of [PAsmart Targeted Grant grantees](#)[8] on the PDE website.

PDE also is interested in receiving proposals that focus on the following (note that this is not an exhaustive list):

- Connecting educators with industry level professionals, perhaps building on prior Teacher in the Workplace experience or models;
- Creating career exploration/career pathways;
- Focusing on preK-8 educators and educators who are mid-career (those with 3-8 years of service);
- Developing or expanding Master Teacher Fellowship, Residency, and/or Apprenticeship Models;
- Developing or expanding Work-Based Learning models, especially in high-growth occupations in the region;
- Aligning learning experiences with labor market priorities;
- Building partnership models that have a deep understanding of collective impact and start, expand, or accelerate STEM ecosystems;

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[7] PDE defines "rigorous courses of study" as Advanced Placement (AP), International Baccalaureate (IB) and dual credit coursework and PDE-approved CTE programs of study.

[8] https://www.education.pa.gov/Policy-Funding/SchoolGrants/PAsmart/Pages/PAsmartRecipients.aspx

- Building cross-sector alignment with regional initiatives (e.g., local preK-12 Guidance Plans; WIOA State, Regional and/or Local Plans; industry cluster analyses, etc.);
- Integrating computer science into existing math, science, humanities, arts, and English Language Arts coursework, or coursework in career and technical education (CTE);
- Creating secondary CS/STEM course offerings; and
- Addressing policy and regulatory barriers to expanding CS/STEM offerings.

Due to limited funding, only items and activities directly related to eligible programs and activities covered in this RFA will be funded.

Applications that do not include all the required information as stated on the application will not be considered for funding. All budgets will be reviewed to evaluate appropriateness and connection to proposed grant activities and goals. Applications that include more than 25% of unallowable expenses will not be reviewed or scored. All qualifying applications will be reviewed and scored.

Application Process

Advancing Grant applications must be submitted via the PDE eGrants system no later than 11:59 PM on Monday, March 21, 2022. Note that gaining access to eGrants may take more than one week. In advance of completing the application online, applicants are strongly encouraged to build a draft using the application materials provided at education.pa.gov/PAsmart.

To apply:

1. Notify PDE of your intent to apply by emailing RA-EDPAsmart@pa.gov by February 25, 2022. A letter of intent is not required, but it will help PDE improve the efficiency of the review period. You do not yet need to have determined partnerships or roles such as which partner will serve as the fiscal agent. This is also an opportunity to ask any initial questions. Questions then will be compiled and answered in the form of FAQs posted at education.pa.gov/PAsmart.
2. Reach out to potential partners and determine an applicant partnership. Identify a lead applicant and a fiscal agent.
3. Identify an individual from a partner LEA, postsecondary institution, or public library who will complete and submit the application in eGrants.
4. For the person who will complete and submit the application in eGrants: Check that you can log in to eGrants and can begin the application. If not, immediately submit a brief online form[9] providing your name and basic contact information, so that PDE staff can help you gain access the application in the eGrants system. Please allow at least one week after submission of this form to obtain access.

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[9] The form for Advancing Grant applicants is available at:
https://forms.office.com/Pages/ResponsePage.aspx?id=QSiOQSgB1U2bbEf8Wpob3odpKZ6qbVdMuTNkQ0Ku38xU
QVVTQzNKWlFXUUZWMVAzREVOTDdIMzhBNy4u

5. Review the application questions and coordinate with partners to answer the application questions. Applicants are strongly advised to write application responses in a separate document before filling out the application in eGrants. Application materials are provided at education.pa.gov/PAsmart.
6. View an applicant webinar for more explanation about the grant and application process.
7. Direct questions and requests for technical assistance to RA-EDPAsmart@pa.gov.
8. Submit the completed application in eGrants by 11:59 pm on Monday, March 21, 2022.

Questions regarding the grant application process must be sent to RA-EDPAsmart@pa.gov. PDE will periodically post responses to questions at education.pa.gov/PAsmart for all applicants to review.

Proposed Timeline and Grant Period

PAsmart Advancing Grant funding must be expended between March 1, 2022 and June 30, 2024. All selected grantees will be required to sign the appropriate agreement with PDE. The department reserves the right to seek repayment of funds if it is determined that funds were not utilized for the original stated and approved purpose. Applicant costs incurred outside the grant period outlined in the appropriate agreements are not the responsibility of the commonwealth.

Award Administration

The commonwealth may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to: (1) the budget is not appropriate or reasonable; (2) only a portion of the application is selected for award; (3) the commonwealth needs additional or clarifying information; and/or (4) special terms and conditions are required. Failure to satisfactorily resolve the issues identified by the commonwealth within a specific period determined by the commonwealth may preclude award to the applicant.

Pursuant to Executive Order 2021-06, *Worker Protection and Investment* (October 21, 2021), the Commonwealth is responsible for ensuring that every Pennsylvania worker has a safe and healthy work environment and the protections afforded them through labor laws. To that end, contractors and grantees of the Commonwealth must certify that they are in compliance with all applicable Pennsylvania state labor and workforce safety laws. Such certification shall be made through the Worker Protection and Investment Certification Form (BOP-2201) and submitted with the bid, proposal, application, or quote.

The commonwealth reserves the right, without qualification, to reject any or all applications received in response to this announcement and to select any application, in whole or in part, as a basis for negotiation and/or award. The contracting officer is the only individual who can make awards or commit the commonwealth to the expenditure of public funds. A commitment by other than the contracting officer, either explicit or implied, is invalid.

Program Reporting and Evaluation

Grantees will be required to submit program and fiscal reports during and upon conclusion of the funded project. All required forms will be supplied by the commonwealth and outlined in the award package. For PAsmart Advancing Grants, all close-out final reports must be submitted no later than August 30, 2024, or within 60 days of full award expenditure (whichever occurs first). In addition to report submissions, awardees are required to participate in routine calls with commonwealth staff, unless otherwise determined, to identify grant progression, share best practices and receive technical support. Additional information will be provided upon award selection.

Key Dates for 2021-22 Advancing Grants

Date/Time	Event or deadline
Thursday, February 10, 2022	Release of Request for Application Application opens in eGrants system
Week of February 21, 2022	Office hours for interested applicants. See education.pa.gov/PAsmart for details to join.
By Friday, February 25, 2022	Applicants are asked to notify PDE of intent to apply (partnerships, fiscal agent roles do not yet need to be finalized)
Week of February 28, 2022	Webinar for interested applicants. See education.pa.gov/PAsmart for details to join.
Friday, March 4, 2022	Strongly recommended date by which all fiscal agents should verify they have access to eGrants or submit a form requesting access
By Monday, March 7, 2022	FAQs published at education.pa.gov/PAsmart
Monday, March 21, 2022 at 11:59PM	**Application Deadline**
April 2022	Award announcements

PAsmart