Request for Proposals (RFP)
2016-2017 STEM Faculty Development Grant
Funded by Accelerated Study in Associate Programs (ASAP)
September 6, 2016

Overview
The City of New York has provided significant funding to CUNY to scale ASAP to 25,000 students by FY19. This major expansion of ASAP will take place across nine colleges: Borough of Manhattan Community College, Bronx Community College, Hostos Community College, Kingsborough Community College, LaGuardia Community College, Queensborough Community College, College of Staten Island, Medgar Evers College, and New York City College of Technology. A major mayoral priority for ASAP expansion is to increase the enrollment, retention, and graduation rates of Science, Technology, Engineering, and Math (STEM) students. Currently, STEM enrollment of entering ASAP students stands at 31% with the goal of reaching and maintaining a program-wide STEM enrollment of at least 35% by academic year 2018/19. ASAP further aims to retain and graduate STEM majors at current program-wide benchmarks (80% one-year retention rate and 50% three-year graduation rate).
For the purposes of this RFP, please find attached a list of STEM majors served by ASAP.

The ASAP Central Office team, located within the CUNY Office of Academic Affairs, seeks proposals from faculty and academic departments that will support the achievement of this goal through the improvement of STEM curriculum and instruction.

The focus of this RFP is on introductory/gateway STEM courses, as the attrition rate of students in STEM majors is highest early in their degree pathways, particularly for community college students (National Academies of Sciences, 2012). According to the 2012 report by the President’s Council of Advisors for Science and Technology, the majority of students who leave STEM majors do so in the first two years and while in good academic standing. The report states,

In the United States, fewer than 40% of the students who enter college with the intention of majoring in a STEM field complete a STEM degree. Most of the students who leave STEM fields switch to non-STEM majors after taking introductory science, math, and engineering courses. Many of the students who transfer out of STEM majors perform well, but they describe the teaching methods and atmosphere in introductory STEM classes as ineffective and uninspiring.

Persistence rates among African-American, Latino, and Native American students in STEM majors are particularly troubling and these students leave STEM majors at a significantly higher rate than their Asian and white peers. In 2009, the completion rates for African-Americans were 22.1%, 18.4% for Latinos, and 18.8% for Native Americans compared to 37.5% for Asian and white students (Hurtado et al., 2010).
Purpose and Objectives
ASAP is providing this funding to support and encourage the redesign of introductory/gateway STEM courses that are critical for success in STEM degree pathways, have high enrollment, and have a pattern of high failure/withdrawal rates at CUNY. The proposed projects should apply evidence-based, high-impact practices to redesign courses to enhance conceptual understanding of subject matter, improve problem-solving skills, increase self-efficacy, and improve learning outcomes for students.

Course redesign projects might incorporate high-impact practices including, but not limited to:

- Flipped classroom - a pedagogical model in which the lecture and homework elements of a course are reversed. Short video lectures are viewed by students in preparation for class sessions and in-class time is devoted to exercises, projects, or discussions;
- Embedded tutoring or supplemental instruction that fosters active and collaborative learning among students;
- Integration of technologies that enhance learning and improve student engagement, retention of knowledge, and attitudes about science learning. For example, Assessment and Learning in Knowledge Spaces (ALEKS), an adaptive testing platform used in precalculus and “classroom clickers,” also known as student response systems (SRS) that allow faculty to quickly collect and analyze student responses to questions during class (National Academy of Sciences, 2012);
- Enhanced experiential learning as an integrated course component, and
- Pedagogical or curricular changes that integrate more practice and applied learning in the classroom.

The above list of practices is by no means exhaustive – there are a myriad of “best practices” in instruction for improving teaching and learning in STEM disciplines. At the end of this RFP, we provide references that highlight a range of “best practices” in instruction in various STEM disciplines.

Award Size and Budget
We anticipate awarding a total of ten grants – seven team grants and up to three individual grants. The maximum award is up $40,000 for a STEM faculty team that consist of up to four members and up to $7,000 for an individual faculty member. Collaboration is strongly encouraged across and within academic departments. Please note that the grant will be split into two payments: The first payment will be made in January 2017 for 60% of the total grant award for planning and summer 2017 implementation with funds to be used by June 30, 2017. The second payment for remaining 40% of the award will be made in summer 2017 for academic year 2017-2018 implementation, evaluation, and dissemination with funds to be used by June 30, 2018.

Eligibility
All CUNY full and part-time faculty in STEM disciplines at an ASAP partner college are invited to submit applications. Priority will be given to proposals from STEM faculty teams (teams of two or more faculty members). The proposed project must be implemented during one of the following semesters: summer 2017, fall 2017, or spring 2018 and should target course sections of which at least 50% of enrollment will be ASAP students.
Proposal Guidelines

Proposals must be no longer than four pages, be single spaced, and use 12-point font. Proposals should be written in a manner that is accessible to reviewers who are not experts in the specified STEM area. Incomplete proposals will not be reviewed. Proposals must include the following components:

1. **Cover Sheet**: The attached cover sheet must be fully completed (not part of the four-page maximum mentioned above).

2. **Letter of Support from the Applicant’s Department Chair** (include one from each chair if a team of faculty from several departments apply).

3. **Abstract**: Briefly describe the purpose, goals and objectives, method for meeting these objectives, anticipated results, and potential impact of the project.

4. **Proposal Narrative (should include the following headings)**:
   a) **Problem Statement**: Provide a concise account of current STEM education at your college and/or within your academic department, including an overview of current interventions. Clearly describe the current design of the targeted introductory/gateway STEM course(s), student enrollment figures, outcomes, and a rationale for selecting the targeted course(s) for redesign.
   b) **Goals and Objectives**: Clearly explain the goals and objectives you have established for the project.
   c) **Project Description and Timeline**: Describe the course redesign project, including the high-impact practice(s) that will be integrated into the course to address the problem statement. Explain how the redesign will be implemented, the central components of the redesign, when the redesigned course(s) will be offered and by whom, and how many ASAP and non-ASAP students are expected to be enrolled. Include a brief timeline of key activities.
   d) **Potential for Broad Impact**: Explain the broad impact this project may have on teaching and learning in STEM disciplines. Specifically, address how the project improves student engagement and quality of classroom instruction in introductory/gateway STEM courses.
   e) **Measurement of Project Impact on Student Learning**: Include a plan for examining and measuring the impact of the project on student learning.
   f) **Dissemination**: Describe how you will disseminate the results of the project to colleagues in your department and at your college, and any plans to share findings with external audiences (for example, by publishing on the project’s outcomes).
   g) **Sustainability/Institutionalization of Project**: Describe how you plan to sustain the successful ideas from your project. For example, how will the practices or curriculum developed be utilized by faculty within your department; how will you encourage broader adoption of best practices in your department or college? Include potential limitations to sustainability and institutionalization of the project.

5. **Budget**: Submit an itemized project budget request and rationale, delineating projected expenses for personnel and OTPS. Include a brief explanation of how budgetary requests are tied to the project’s goals and objectives. (Not part of the four-page maximum.)

6. **Short Bio or CV of All Applicants**
Review Process
Proposals will be reviewed by a small committee including Center for Teaching and Learning (CTL) directors and faculty from a range of STEM disciplines at ASAP partner colleges. After reviewing all proposals, the committee will provide a recommended set of awardees to the CUNY Office of Academic Affairs ASAP team, who will in turn share names of awardees with college Vice Presidents for Academic Affairs/Provosts. Reviewers will not assess proposals from their own campuses.

Deliverables
Awardees will be asked to share their work and any materials developed (in-progress and completed) at faculty development sessions/retreats within their colleges. Awardees will also be required to submit an interim and final report as follows (templates will be provided).

*Interim Report:* Briefly describes the implementation of the project by providing an update on the status of project activities and progress toward meeting stated objectives. Identify challenges and accomplishments and provides information on how students have been impacted.

*Final Report:* Provides an evaluation of the project, including a description of project outcomes and whether the goals/objectives were met. Additionally, lays out next steps, including plans for dissemination and scaling as well as for adjusting practices based on assessment data.

Timeline

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<td>Submission of Proposals</td>
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<td>Notification of Awards</td>
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<td>Project Planning</td>
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<td>Implementation</td>
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<td>Assessment, Evaluation, and Dissemination of Findings</td>
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Application Submission
Proposals are due by close of business on **November 15, 2016.** Please send all proposals by email to Dr. Theresa Williams, ASAP Director for STEM Initiatives and Special Projects at theresa.williams@cuny.edu. The cover page, signature page, and letter of support may be scanned and emailed. Please direct any questions about the RFP or submission process to Dr. Williams.
References


