Bridge to the PhD Program in STEM – Program Evaluation and Best Practices in Promoting Diversity in STEM Graduate Education

The Bridge to the PhD Program in STEM is a two-year, non-degree post-baccalaureate program that aims to increase the participation of students from underrepresented groups in STEM doctoral programs by providing intensive academic, research, and mentoring experiences. For more information, please see our webpage.

The Fellow will conduct programmatic assessments necessary to further the Bridge Program's mission and to provide information regarding diversity, equity, and inclusion (DEI) strategies for the Bridge Program's sponsors and collaborating schools and departments at Columbia University. Since the Bridge Program targets applicants from multiple underrepresented backgrounds, it is critical to compile, organize, and analyze data from our applicant pools and prospective applicants to aid the Bridge Program in shaping the program's recruiting and admission practices.

The second part of the project will be to research other post-baccalaureate programs whose primary focus is to increase diversity in STEM graduate education and compare recruiting and admissions practices of Columbia's Bridge Program to these other programs to learn other successful practices for program development, recruitment, retention, and measurement of participant outcomes, and to establish additional collaborators (both internal and external to Columbia) that will improve access to STEM for underrepresented populations.

Using the Bridge Program as a model, the FAA Fellow should expect to acquire knowledge about practices in programmatic evaluation that will contribute to STEM and diversity-related academic programs at Columbia University and peer institutions. Specifically, the Fellow will gain skills in data collection and analysis, student affairs, and translating data analysis that will generate best practices models for alumni/ae outreach and recruiting and admissions, and support for current participants. Also, the Fellow will develop skills in internal and external communications that will be used to improve academic programming in higher education.

For acclimation into the project(s), the Fellow and the mentor will meet frequently via Zoom to discuss the project's progress and overall goals. Additionally, the Fellow will participate in program update meetings with the Bridge Program's sponsors and collaborators. Finally, the Fellow may have the opportunity to attend meetings regarding admissions for the Bridge Program's fourteenth cohort and practices for improving diversity in higher education.

Fellow Responsibilities

- Create a database by updating the contact information of undergraduate STEM
 departments and research programs. Emphasis will be placed on institutions (e.g.
 Historically Black Colleges and Universities, Hispanic Serving Institutions, and other
 minority-serving institutions) and research programs (e.g. Maximizing Access to
 Research Careers, the Leadership Alliance, the American Physical Society, etc.) that
 promote increased diversity in STEM.
- Extract, classify, and analyze demographic information from the Bridge Program's inquiry form submissions, informational session attendees, and application submissions.
- Prepare application files for review by the Bridge Program's admissions committee.
- Build and administer surveys to determine the academic and professional outcomes of some Bridge Program's applicants. These surveys will be distributed to two populations:

 1) applicants who were not admitted into the Bridge Program; and 2) applicants who

- were admitted into the Bridge program, but decided to accept other post-baccalaureate, graduate, or professional opportunities.
- Generate a list of funded, research-based post-baccalaureate programs in the disciplines of astronomy, the biological sciences, chemistry, earth and environmental sciences, economics, engineering, physics, psychology, and statistics.
- Contact the directors (or coordinators) of other STEM post-baccalaureate programs and assemble information regarding program design, recruiting, admissions, advising, and participant outcomes.
- Compile and review articles and other publications that discuss the need for and
 outcomes of STEM post-baccalaureate programs and focus on recruiting and admissions
 practices (at the post-baccalaureate and graduate level) with a special focus on diversity
 in STEM.

Desired Qualifications

Required:

- Knowledge of issues related to diversity, equity, and inclusion (DEI) in higher education;
- Knowledge of basic computer (e.g. Microsoft Office) and web applications;
- Data management experience;
- Excellent written and verbal communication and analytical skills; and
- Effective time and project management.

Preferred:

- A STEM academic background;
- Experience with qualitative and quantitative research methods for survey design and data collection; and
- Experience with statistical data analysis software (e.g. SPSS, Graphpad, Stata) or advanced Excel skills.

Expected Fellow Time Commitment

8-10 hours/week

Fellowship Mentor

Kwame Osei-Sarfo, Director, Bridge to the PhD Program in STEM

Center for Teaching and Learning – Teaching Development Program (TDP) Consultant

The Center for Teaching and Learning (CTL) partners with faculty, students, and colleagues across the University to support excellence and innovation in teaching and learning. The CTL is committed to advancing the culture of teaching and learning for professional development, curricular enhancement, and academic support through its programs, services, and resources.

The CTL supports the professional development of Columbia graduate students across the University with current or future teaching responsibilities. The CTL also offers an array of support to graduate students to help them reflect on, improve, and measure their teaching at Columbia. Graduate students participating in the CTL's programs and services develop a sense of pedagogical agency, interdisciplinary exchange, and peer-driven inquiry that helps prepare them for the future in a variety of academic and professional settings. They also develop instructional practices that are learner-centered and inclusive.

The Graduate Student Programs and Services (GSPS) team at the CTL seeks a graduate student dedicated to improving teaching development to assist with select program development, delivery, and assessment. In Spring 2021, the GSAS Fellow in Academic Administration will work closely with Caitlin DeClercq, an Assistant Director in the CTL, to support and evaluate the Teaching Development Program (TDP) and related resources. See bit.ly/ctl-tdp for information about the TDP.

This program consultant will:

- Track participant registration and activity in the TDP.
- Provide targeted feedback to TDP participants through defined rubrics.
- Work with CTL staff to strategize communication and outreach around and assessment of the TDP.
- Help conceptualize and facilitate TDP information sessions and support.
- Help strategize new cohort activities and resources for TDP participants.
- Present their work to the GSPS team at the end of their FAA tenure as part of a GSPS staff meeting.

By supporting and monitoring the TDP, the GSAS Fellow will:

- Build awareness of a broad range of teaching support and resources connected to the TDP.
- Help develop strategic thinking for engaging various academic disciplines in foundational teaching development.
- Gain experience with program assessment, communications, and design.
- Develop relationships with professional educational developers, administrators, and communications staff at Columbia.

Fellow Responsibilities

The FAA's responsibilities will be more specifically mapped out in partnership with the Fellow, as it is important for us to involve the Fellow in decisions about the emphasis, order, and flow of work in this project. But overall the Fellow should expect to:

- Track participant registration and activity in the TDP into relevant spreadsheets.
- Review and assess documentation posted by participants in the TDP using programspecific rubrics.
- Strategize ways to engage targeted audiences and assess outcomes around program objectives.

- Participate in planning and delivery of TDP support offerings for graduate students.
- Provide creative suggestions for communications and outreach promoting the TDP.

Desired Qualifications

- Familiarity with CTL programs and services for graduate students;
- Demonstrated interest in graduate student teaching development;
- Strong digital organization skills;
- Communication skills; and
- Familiarity with program goals and activities in the Teaching Development Program
 (bit.ly/ctl-tdp) is strongly encouraged, as is registration in the program itself.
 (Registration for the TDP is available at any time to current Columbia doctoral students.)
 Some familiarity with educational literature and the scholarship of teaching and learning is desirable, but not required.

Expected Fellow Time Commitment

8-10 hours/week

Fellowship Mentor

Caitlin DeClercq, Assistant Director, Graduate Student Programs and Services

Columbia Engineering Graduate Career Placement Center – Program Assessment Fellow

Columbia Engineering's Graduate Career Placement (GCP) Center is dedicated to helping our students achieve their full potential to become the engineering leaders of today and tomorrow. From recruiting partnerships with global organizations, to on-campus and virtual career placement, to professional development sessions, we educate our talented engineers and scientists and connect them with employers.

Each of our 10 Career Placement Officers (CPOs) works with graduate students in a specific program or programs within the School of Engineering and Applied Science (SEAS) so they can better understand the particular needs of specific student populations. At the school level, GCP operations are coordinated by our Executive Director and Career Placement Manager. GCP also works closely with our Professional Development & Leadership team to enhance student education through a wide variety of development opportunities.

Columbia's graduate engineering students are facing a unique array of challenges while searching for internship placement in the rapidly changing landscape brought on by Covid-19. There seem to be fewer internships available, our international students may struggle to gain employment eligibility, and our staff has had to work diligently to establish new and creative opportunities for students to engage with employers across this new virtual landscape. The Program Assessment Fellow will develop and conduct a needs assessment and program evaluation to help identify and track student needs throughout the term so that our Career Placement Officers can make data-informed decisions when planning placement events. The Fellow would also review feedback from all placement events to measure efficacy of each program and make recommendations to improve future opportunities.

Through their work, the GCP Fellow will gain the following:

- 1. A hands-on experience in program assessment, communications, and design.
- 2. The ability to frame and present data to a variety of audiences and stakeholders.
- 3. Valuable communication experience coordinating projects across various working teams.
- 4. An appreciation for the various moving pieces of the higher education system and its strategic planning, structure, culture, and policies.

Fellow Responsibilities

- Assess the effectiveness of current employer placement events and track student needs throughout the spring term.
- Interpret data collected from event surveys and present findings to GCP staff.
- Make recommendations to improve future programs and better serve the student body.
- Gain familiarity with the GCP program, student needs, and current practices.

Desired Qualifications

- Excellent written and verbal communication skills;
- Detail-oriented;
- Efficiently able to organize work time and manage projects;
- Ability to work independently and collaboratively;
- Background in data collection and analysis; and
- Forward-thinking attitude and sense of humor a must.

Expected Fellow Time Commitment

7-10 hours/week

Fellowship Mentor Ryan Day, Graduate Career Placement Manager

The Earth Institute/Columbia Climate School – Climate School Educational Programs Implementation Fellow

The Earth Institute—which blends research in the physical and social sciences, education, and practical solutions to help guide the world onto a path toward sustainability—has a lead role in the new Columbia Climate School design and development process. The mission of the Climate School is to develop innovative education, support groundbreaking research, and foster essential solutions, from the community to the planetary scale. This fellowship offers an opportunity to be part of the launch of a new school focused on addressing the greatest challenge of our time—a rare occasion in the broader context of higher education and also in the history of Columbia.

The Climate School's Educational Design and Technology office supports the design, development, and coordination of educational offerings for the new Columbia Climate School by:

- Managing the design and implementation of online, in-person and hybrid courses for the Climate School using creative, innovative techniques and technologies that are informed by evidence-based research and ongoing assessment.
- Working closely with the Climate School's Director of Academic Administration and faculty to build out a suite of synergistic educational programs and courses for the School, including both degree and non-degree offerings.
- Establishing innovative mechanisms, policies, and practices to support a diverse population of learners across the suite of educational offerings.
- Ensuring course and program content meet both academic and design standards set forth by Columbia.
- Serving as the project coordinator for program and course development, including overseeing the design process and creating necessary infrastructure for program and course development.

The Fellow will assist with the design and development of the Climate School's programs and courses, with a primary focus on resources and services available to faculty and students to support teaching and learning.

These resources and services include, but are not limited to:

- Knowledge Base of process and support documentation
- Troubleshooting and technical assistance
- Educational Design consultations and tutorials

The Spring 2021 fellowship coincides with a key phase in the process of the School's development, during which design work from Fall 2020 will shift toward implementation. In this context, the Fellow will gain unique insight into the inner workings of the University as we engage with various administrative units throughout the University in order to build out the School's organizational infrastructure and related systems architecture.

Over the fellowship term, the Spring 2021 Fellow will also have opportunities to develop foundational competencies and/or build upon their existing knowledge of the learning sciences; educational design and technology; design thinking and innovation; climate change; and higher education administration.

Fellow Responsibilities

Under the guidance of the Associate Director of Educational Design and Technology, the Spring 2021 Fellow will:

- 40% | Assist in the design and development of the Climate School's suite of Educational Design and Technology resources and services. Specific tasks will be assigned based upon the Fellow's experience and goals, and may include documenting educational design processes, drafting Knowledge Base articles, and/or facilitating tutorials.
- 40% | Support the implementation of the Climate School's initial degree and non-degree curricula and course offerings. Specific tasks will be assigned based upon the Fellow's experience and goals, and may include assisting with course development through creating project plans and learner profiles, and/or curating/producing course materials.
- 20% | The Fellow will have the opportunity to allocate time to a project of their choosing. For Spring 2021, this can be an aspect of the ongoing development and implementation of the Climate School's Educational Design and Technology Resources and Services, or a project devised by the Fellow (and approved by the Mentor) that makes a meaningful contribution to the design, development, and coordination of educational offerings for the new Columbia Climate School.

Desired Qualifications

Required:

- Excellent writing and editing skills;
- Excellent communication skills:
- Some experience with educational technology, especially Learning Management Systems
 as well as communication and productivity software. (Experience with specific
 software/platforms such as CourseWorks/Canvas is less important than the Fellow's
 willingness and ability to learn.);
- Ability to work independently on discrete tasks while maintaining alignment with the broader project; and
- Ability to problem solve and engage in rapid iteration.

Preferred:

- Experience with one or more of the following:
 - Canvas (Learning Management System)
 - Miro
 - o Airtable
 - o Panopto
 - o Zoom
- Knowledge of basic multimedia production (e.g., record screencasts, segment video files, etc.).

Expected Fellow Time Commitment

10 hours/week

Fellowship Mentor

Ofelia Mangen, Associate Director, Educational Design and Technology

Graduate School of Arts and Sciences Alumni Relations and Development – Alumni Relations Fellow

The GSAS alumni community is a worldwide network of more than 40,000 individuals, united across departments and degrees by their shared Columbia graduate experience. The GSAS Alumni Association is governed by an Alumni Board which works with the GSAS Office of Alumni Relations to create events to nurture the relationship between GSAS and its alumni and create opportunities for alumni and students to connect. The generosity of GSAS alumni has always been vital to the fulfillment of the school's responsibility to take Columbia graduate education and graduate student life to new heights; development staff in the Columbia Office of Alumni and Development undertake outreach to inspire alumni to make gifts to GSAS and steward donors. The key to all of this is engagement of current and future alumni.

The GSAS Alumni Relations Fellow will assist the Associate Director of Alumni Relations with management of the Alumni Board, research of notable alumni and prospective donors, updating of alumni records, and initiatives for the engagement of current students and recent alumni. The Fellow may be trained in the Columbia alumni and development CRM, for which the Fellow will be required to agree to keep all information confidential.

By supporting Alumni Relations and Development, the Fellow will:

- Help develop strategic thinking for the engagement of students and alumni.
- Gain experience in program assessment, communications, and design.
- Develop relationships with alumni relations, development, and communications staff at GSAS and Columbia.
- Achieve a greater understanding of nonprofit constituent engagement, prospect development, and fundraising.
- Gain hands-on experience developing a social media communication strategy to reach Columbia GSAS students and alumni.

Fellow Responsibilities

Engagement

- Attend select meetings with other Columbia alumni relations and development staff sessions to better understand alumni engagement and fundraising.
- Attend and support Alumni Board and committee meetings through preparation of agendas and meeting minutes.
- Help strategize and then conceptualize and facilitate engagement with students and very recent alumni.
- Provide targeted outreach to alumni through defined rubrics.
- Work with alumni presenters in the GSAS Conversations series.
- Track alumni engagement activity.

Communication

- Provide creative suggestions for communications and outreach to students.
- Review existing GSAS social media presence.
- Develop new social media strategy based on proposed modifications to content, timing, and design.
- Collect and report on social media analytics to assess communications strategy (time permitting).

Research and evaluation

Review and assess alumni feedback.

- Collect data on GSAS alumni career outcomes.
- Research alumni on LinkedIn and other social media.

Desired Qualifications

- Interest in either constituent engagement or institutional fundraising or both;
- Familiarity with GSAS programs that support GSAS students;
- Excellent written and verbal communication skills;
- Exceptional interpersonal skills;
- Strong computer skills (including familiarity with Excel and Google Docs) and the ability to learn new software and digital tools;
- Facility with social media;
- Attention to detail;
- Ability to work well as part of a team;
- Ability to work independently and prioritize tasks;
- Efficiently able to organize work time and manage projects; and
- Ability to handle and maintain confidentiality of sensitive data and information.

Expected Fellow Time Commitment

5-10 hours/week

Fellowship Mentor

Erin Hussein, Associate Director of Alumni Relations for GSAS

Office of Public Affairs/Government & Community Affairs – Columbia Tutor Corps Fellow

The Office of Government & Community Affairs (GCA) is the University's primary liaison with federal, state, and local government, as well as with residents, community leaders, and civic organizations in surrounding neighborhoods.

<u>Columbia Tutor Corps</u> provides expert, free tutoring, and educational enrichment support to families in Harlem and beyond who are struggling to cope with the exigencies of the pandemic. Since the onset of COVID-19, we have signed up a total of 1,800 committed volunteer tutors and deployed them to serve over 600 families in subjects and skills ranging from astronomy to algebra to Mandarin and dance. Dr. Jonathan Susman, CUIMC, is the faculty lead and champion for the Tutor Corps. The Office of Public Affairs/Government & Community Affairs is charged with the development of administrative infrastructure and expanding community engagement.

The Tutor Corps' priority now goes beyond the children of CUIMC faculty and is reaching out to families of non-medical essential workers. Their goal is to enhance and innovate traditional structures of education and continue that mission past the current pandemic. The initiative is also looking at coordination with other universities across the country.

The Tutor Corps Fellow will have a significant role in stewardship of relationship between the families and the tutors. The Fellow will be key to initiating a process that insists on mutual respect and accountability between all parties. The Fellow will work directly with leadership on operational support, including volunteer engagement, intake of tutors and families, facilitate matches between families needing free tutoring support for their children and volunteer tutors (Columbia students and beyond) along with coordinating other administrative functions, including client email communication, program planning, tutor job-aid resource development, etc.

The Fellow will have an opportunity to contribute to growth and development of a nascent community initiative and facilitate services to thousands of children in need during this pandemic and well beyond. This is a unique opportunity to understand how an institution of higher learning can contribute to the educational enrichment of a neighboring community. The Fellow will engage with senior administrators from Public Affairs, Office of Government and Community Affairs, CUIMC, and Office of the Provost, and will be invited to weekly meetings and planning sessions and provided with opportunities for informational discussions to learn more about various administrative departments across the University.

Fellow Responsibilities

Operations (50%)

- Answering emails from parents and tutors
- Processing feedback from parents and tutors regarding sessions
- Aligning tutors with families/parents in need of support
- Coordinating meetings with administrative volunteers

Program management and expansion (30%)

- Recruiting new tutors
- Creating and facilitating expansion plans

Program development (20%)

- Developing teaching facilitation resources for tutors to use
- Developing special programming (classes in specific topics, etc.)

Desired Qualifications

- Program/project management experience;
- Exemplary writing skills and email etiquette;
- Some familiarity with New York City school system and social services/resources; and
- Fluency in Spanish and/or Mandarin (a plus, but not required).

Expected Fellow Time Commitment

10 hours/week

Fellowship Mentor

Shaba R. Keys, Associate Vice President, Strategic Initiatives

The Office of the Vice Provost for Academic Programs - Accreditation Fellow

The Office of the Vice Provost for Academic Programs (OVPAP) is responsible for overseeing the academic programs across three undergraduate schools and thirteen graduate and professional schools at Columbia University. In that capacity, OVPAP works closely with schools and program to create new educational programs and initiatives, collaborates with academic units to establish educational partnerships with U.S. and foreign universities and organizations, and manages the University's accreditation process with both state and federal entities. The office also manages a variety of internal funding competitions for faculty and graduate students, including the President's Global Innovation Fund (PGIF) and the Presidential Teaching Awards for Outstanding Teaching.

The Office seeks an Accreditation Fellow to play an important role in preparation for the University's decennial accreditation. Accreditation is a voluntary process that is intended to strengthen, sustain, and foster confidence in the quality and integrity of an institution, and in the institution of higher education. It involves a deep look at institutional mission, and its links to judgement around quality, fiscal integrity, the maintenance of adequate institutional resources, and academic freedom of the faculty. It is also used as a measure of quality to enable access to federal financial aid.

The Accreditation Fellow will have an opportunity to engage in the accreditation process at the ground level, at its earliest stages. Preparation for accreditation will include the undertaking of a detailed self-study of all schools and programs within the University, and culminate with a site visit during the 2024-2025 academic year. In order to begin planning for the next University accreditation review, the Accreditation Fellow will help with reviewing and summarizing the current MSCHE accreditation standards and self-study guidelines. The Fellow will also review materials collected for the prior accreditation, identifying areas that will require significant updating, planning and preparation, and proposing areas of focus. Please see our website for further information: https://provost.columbia.edu/content/university-reaccreditation.

The Fellow will gain an understanding of and experience with the role of national accreditation standards in higher education, and make a significant contribution to the strategic planning for, and development of, accreditation activities. This Fellowship will also provide a close-up view into the work of planning and executing University-wide projects and initiatives, and an opportunity to play a role in an important institutional effort. This project will provide a rare view of the scope and breadth of Columbia's activities.

As a member of the Office of the Vice Provost for Academic Programs team, the Fellow will meet regularly with the Vice Provost and her senior staff, including opportunities to present their work to the OVPAP team. Based on their interests, the Fellow will also have opportunities to gain exposure to other units with the Office of the Provost (faculty diversity and development, appointments and tenure, teaching and learning and online education, etc).

Fellow Responsibilities

- Review current MSCHE Standards; summarize and advise on any updates to standards since last reaccreditation.
- Review Columbia University's 2016 self-study report and identify areas that will need updating and or significant planning and preparation.
- Review the structure and content of the Provost Office Document Database (PODD); advise on necessary updates.

- Research recent peer institution self-study examples and share exemplary ideas and samples.
- Prepare a presentation to the OVPAP team that includes an overview of recommendations and findings.

Desired Qualifications

- Excellent oral and written communication skills;
- Technological skills relevant to academic administration including experience with Microsoft Office; and
- Project planning skills.

Expected Fellow Time Commitment

5-10 hours/week

Fellowship Mentor

Julie Kornfeld, Vice Provost for Academic Programs

Undergraduate Research and Fellowships – Expanding and Developing Resources for Undergraduate Research

Undergraduate Research and Fellowships (URF) is a recently formed division within the College's Office of Academic Affairs. URF seeks to support Columbia undergraduates and alumni in exploring and applying for internal, national and international fellowships. We also work with students who seek to engage in research opportunities. Our office oversees a number of funded opportunities and Scholars programs that support students who are interested in engaging in undergraduate research full-time over the summer.

Broadly conceived, the project to which the Fellow will be assigned is a project meant to expand the resources available to undergraduate students from all three undergraduate divisions—Columbia College, SEAS, and General Studies—who are interested in engaging in research. This project has multiple objectives: we hope it will allow the Fellow to work in an advisory capacity with students who are interested in research, and who are themselves considering graduate school. In addition, we hope this project will allow the Fellow to contribute to the development of a summer research program, from application advising to selection to programming, thus allowing them to get firsthand experience in the operations and oversight involved in a program that supports undergraduate research. Finally, the project will allow the Fellow to develop 1-2 workshops to present to undergraduates that pick up important and underexplored topics regarding undergraduate research.

This project will allow the Fellow to gain exposure to the expanding area of undergraduate research, and the fellowships that are available to support such endeavors. The Fellow will gain skills and experience advising students and understanding the challenges around supporting young researchers. On the administrative side, the Fellow will be able to participate in an application and selection process, from managing applications (which will include an introduction to the TerraDotta/StudioAbroad platform) to selecting fellows and building out the program. Finally, the Fellow will gain presentation and pedagogical skills through the development of workshop materials. The goal is to allow the Fellow to gain knowledge about the ways in which university structures can support an exciting and important area of students' intellectual development.

Fellow Responsibilities

- Advising students as they develop research project proposals and other application materials. (Advising might include providing feedback on a research proposal or other written materials; helping students identify a faculty mentors or affiliates; etc.)
- Working with the mentor on selection processes and program development for a summer program that funds a cohort of students who will engage in research for 6 weeks. (This work will include application management, participation in the selection process, working with selected students on their research proposals, and considering workshops that will help these undergraduates be successful as they pursue their independent research projects.)
- Developing and presenting 1-2 workshops to undergraduate students during the semester. Workshops are typically one hour in length, and are open to the entire undergraduate community. The Fellow would have the opportunity to develop and present a workshop on ethics and integrity in research—a workshop that all students who receive funding for summer research through our office would attend. In addition, there is great interest among undergraduates to have formal programming around the graduate school application process. We believe the Fellow would be well-positioned to develop (time permitting!) a workshop that explores the written materials included in a

graduate school application. The Fellow would work with their mentor to develop these presentations.

Desired Qualifications

- Good writing/communication skills;
- Ability to commit to a regular schedule;
- Interest in and possible experience advising or teaching students;
- Self-starter; and
- Great attitude and genuine interest in advising, research and fellowships for undergraduates.

Expected Fellow Time Commitment

8 hours/week

Fellowship Mentor

Ariella Lang, Associate Dean of Academic Affairs, Director of Undergraduate Research and Fellowships