

Bridge to the Ph.D. Program in STEM – Examining the Bridge to the Ph.D. Program in STEM as a Conduit for Promoting Diversity in STEM Graduate Education

The Bridge to the Ph.D. 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. Participants of the Bridge Program conduct research in one of our participating STEM departments, take at least one undergraduate or graduate course per semester, participate in at least three academic and/or professional development events per month, and attend monthly one-on-one advising sessions with the program's director. Through the sponsorship of the Office of the Vice Provost for Faculty Advancement and Columbia Engineering, the Bridge Program engages and collaborates with the Departments of Astronomy, Biological Sciences, Chemistry, Earth and Environmental Sciences, Economics, Physics, Psychology, and Statistics.

Programmatic assessments help 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 & departments at Columbia University.

Fellow Responsibilities & Learning Outcomes

This project has two main components: evaluating our program internally and researching other post-baccalaureate programs to come up with a set of best practices and to identify possible intra- and inter-institutional collaborations. Selection of the Bridge Program's 14th cohort occurs from late December to early June. Since the Bridge Program targets applicants from multiple underrepresented backgrounds (e.g. racial, gender, and socioeconomic environments that limit access to STEM education), it is critical to compile, organize, and analyze data from our applicant pools and prospective applicants, and compare our recruiting and admission practices with other similar programs.

Since fully funded post-baccalaureate programs are fairly common in the life sciences (e.g. NIH's Postbaccalaureate Research Education Program) and some disciplines in the physical sciences (e.g. the American Physical Society Bridge Program), this project will identify and research programs whose primary focus is to increase diversity in STEM graduate education. This benchmarking project will increase the Bridge Program's awareness regarding best practices for program development, recruitment, retention, and measurement of participant outcomes. Since many DEI-focused post-baccalaureate programs target the same populations for recruiting and admissions, this project also has the potential to establish additional collaborators (both internal and external to Columbia University) that will improve access to STEM for underrepresented populations.

Specific responsibilities include:

- Update database 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
- Administer surveys to determine the academic and professional outcomes of 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 opportunities

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- Administer surveys to Bridge alumni to determine educational and professional outcomes
- 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 of other STEM post-baccalaureate programs to collect information about program design, recruiting, admissions, advising, and participant outcomes

Using the Bridge Program as a model, the 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 communication.

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
- Basic data management experience
- Excellent written and verbal communication and analytical skills.
- Effective time and project management.

Preferred:

- Familiarity with STEM education
- Experience with qualitative and quantitative research methods for survey design and data collection
- Experience with or desire to learn 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 Ph.D. Program in STEM

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**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 Summer 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.

Fellow Responsibilities & Learning Outcomes

The FAA's responsibilities will be more specifically mapped out in partnership with the Fellow, as it is important for the CTL 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 program-specific 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.
- 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.

Desired Qualifications

- Familiarity with CTL programs and services for graduate students;
- Demonstrated interest in graduate student teaching development;

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- 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

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Dean of Students Office, School of General Studies – Coordinator for Academic Advising

The General Studies Dean of Students Office is the primary advising resource for undergraduate students at GS. Students are matched with a dedicated advisor from matriculation to graduation, and receive individually-tailored advising to support their particular academic interests and professional goals. Advisors provide guidance and clarity on University and GS policies and procedures, and counsel students on their course selections each term, approving all courses counted toward fulfilling core requirements.

In the role of Coordinator for Academic Advising, the Fellow will serve as a key facilitator for incoming student onboarding processes and help provide a seamless transition for new students between the Office of Admissions and Academic Advising. The Fellow will work closely with the Operations team to build systems and practices to communicate effectively with incoming students and advising deans about transfer credit exemptions and GS Core checklists. The Fellow will gain an understanding of GS school policies and procedures, the GS core curriculum as the foundation of a liberal arts education, and best practices for working with and advising undergraduate students.

Fellow Responsibilities & Learning Outcomes

The Fellow's will:

- Develop a firm knowledge and understanding of GS liberal arts core requirements
- Consult and evaluate incoming student transcripts
- Complete transfer credit evaluations for GS Core requirements
- Work with Admissions to ascertain the number of transfer credits for incoming students and communicate this information to Operations and Advising Deans
- Process Summer Withdrawals for continuing students
- Coach students through aspects of the graduate school application process
- Assist with University Studies, a required course for all first-semester GS students, and lead breakout sessions with students and Peer Advisors

Through this position, the Fellow will become knowledgeable about the GS core and about requirements for completing the Columbia undergraduate degree and will become familiar with administrative processes and record keeping. They will acquire skills in reading and understanding transcripts and transfer credit and will evaluate transfer credit for exemption from GS Core Curriculum requirements. The Fellow will also gain an understanding of the administrative policies and systems for student withdrawals and work with the Registrar to process summer withdrawals. Finally, the fellow will grow their understanding of the undergraduate student experience as it touches various offices within the university.

Desired Qualifications

- Teaching experience at the college level
- An understanding of the General Studies student body comprising returning and non-traditional students, international and transfer students, and low-income and first-in-family students seeking an Ivy League degree full- or part-time.

Expected Fellow Time Commitment

8 hours/week

Fellowship Mentor

Kristy Barbacane, Assistant Dean

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Public Books – Publicity and Social Media Strategy

Public Books is an internationally recognized online magazine dedicated to making scholarly research and ideas accessible to the educated public. Each weekday, we publish a 2000-word essay that uses an idea generated in the humanities, social sciences, and arts to reflect on recent books, music, television shows, films, or current events. We also publish interviews with scholars, university press editors, and artists. The majority of our contributors are academics at all career stages; the majority of our readers are people aged 25-34, both inside and outside the academy. We are committed to diversity and to gender parity in who we review and who does our reviewing, and our content reflects that commitment.

To reach readers, *Public Books* relies on social media, events, and a newsletter that we send to subscribers once a week. The Summer 2021 Fellow will assist in expanding *Public Books*'s audience and bringing our projects to a growing readership. The Fellow may also have the opportunity to work on our podcast, *Public Books 101*, and/or contribute to the editorial process.

Fellow Responsibilities & Learning Outcomes

The Publicity and Social Media Strategy Fellow will:

- Write copy and identify compelling pull quotes to use when publicizing *Public Books* essays.
- Identify essays to promote from the archive that connect to current news and events, and identify appropriate audiences and institutions for article publicity.
- Work with the team on project-specific publicity and outreach.
- Investigate other communities of potential readers and devising methods for introducing them to *Public Books*.
- Attend weekly staff meetings.

Time permitting, and if the Fellow is interested, they may also:

- Work on planning and production for Season 4 of the *Public Books 101* podcast.
- Identify works for review, identify reviews, and commission an essay for *Public Books*. (This is not a required project, but many past fellows have valued the opportunity to gain editorial experience.)

One of the missions of *Public Books* is to communicate well-researched, academic ideas to a broader public. By working to devise and execute the *Public Books*'s outreach strategy, the Fellow will develop an understanding of how to communicate the importance of research to many different audiences.

By researching how, where, and to whom to publicize *Public Books* essays, the Fellow will develop a broader understanding of the academic landscape across many departments, disciplines, types of institution, and geographical regions.

At a magazine with a small staff, nearly everyone is involved with all aspects of the magazine. Should the Fellow be interested in learning about any of the specific stages of the publishing process (pitching, commissioning, editing, copyediting, fact-checking, uploading, publicity, and more), we would create opportunities for shadowing these tasks as well.

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Desired Qualifications

- Excellent writing and communication skills;
- Good recordkeeping skills; and
- Combination of creativity and dogged patience

Expected Fellow Time Commitment

5–10 hours/week, with some variability depending on weekly projects

Fellowship Mentor

Kelley McKinney, Publisher at *Public Books* and Associate Director of Communications and Special Projects at the Society of Fellows and Heyman Center for the Humanities

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 meant to expand the resources available to undergraduate students who are interested in applying to competitive fellowships, or who we believe would be excellent candidates for such fellowships. This project has multiple objectives: we hope it will allow the Fellow to work in an advisory capacity with students who are interested in fellowships and research opportunities, often for students who themselves are considering graduate school. In addition, we hope this project will allow the Fellow to contribute to the development of a summer program for first generation, low-income students to support them as they explore postgraduate fellowships.

Fellow Responsibilities & Learning Outcomes

Specific responsibilities include:

- Weekly advising for students (feedback on writing, advise on supporting materials);
- Fellowship application management and involvement in the selection for two small summer opportunities, the [Rose Fellows Program](#) and the [Center for the Study of Congress and the Presidency Program](#).
- Program development and workshop lead for First-Generation Low-Income (FGLI) series (in collaboration with URF)
- Development of materials to help students seeking support in developing application materials such as a research and/or personal statement.

These projects 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.

Desired Qualifications

- Good writing/communication skills;
- Ability to commit to a regular schedule;
- Experience advising or teaching students;
- Commitment to increasing awareness of and access to research and fellowship opportunities for first-generation, low-income students;
- Self-starter; and
- Great attitude and genuine interest in advising, research, and fellowships for undergraduates.

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Expected Fellow Time Commitment

8 hours/week

Fellowship Mentor

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