Call for Proposals for FIRE Innovation & Research Streams

Program Introduction

The University of Maryland (UMD) initiated a new program in 2014-15 to provide faculty-led research experiences, mentorship and accelerated opportunity for first-year freshmen from a wide range of academic backgrounds. The UMD First-Year Innovation & Research Experience (FIRE) provides first year students authentic research experience, broad mentorship and institutional connections that impact academic success, personal resilience and professional development. FIRE grew in the academic year 2016-17 and now serves nearly 500 first-year students annually through the operation of fourteen distinct faculty-led research streams. The program is designed to better unite the twin research and educational missions of the institution while driving accelerated student professional development.

Institutional Budgetary Limitations
The number of new innovation & research streams that will be initiated in 2017/18 is not determined. Institutional support presented in the Proposal Options section reflects support offered in the 2014/15, 2015/16 and 2016/17 FIRE RFPs and is the current best estimate for the level of support expected for streams that emerge from this RFP process. Initiation of new streams also depends on which and how many streams initiated in 2014 are retired at the end of 2017.

FIRE Program Process
The FIRE program sequence includes:

- **Recruitment** during the spring and summer prior to student arrival at UMD. The FIRE program will work with admissions and academic units to market the program to prospective first-year students. Faculty members and stream staff will not be responsible for student recruitment.

- **One semester** (3 credits) of program preparation and discipline-independent training. The first fall semester FIRE120 (3 credits) course prepares students for stream productivity through training in primary research analysis, collaborative proposal development and scholarly communication. Students select a stream to join in the next semester.

- **Two semesters** (6 credits) of stream involvement. During the first spring semester in the stream, the focus is on community building, discipline-specific safety, methods and skills training while defining the scope and objectives of research projects. The second semester is defined by the research-application of developed skills and allows students to develop leadership and communication capacities.

- **A final semester** of defining a next-step opportunity. In the final semester of program affiliation, students are assisted in the process of transitioning to a next-step in their professional development. This can include transitioning to a faculty lab, an internship, entrepreneurial pursuits or study abroad.
Advantages to Faculty
Faculty members hosting streams will benefit from a number of positive research and education outcomes.

Faculty members who host a stream create a self-contained training environment from which the faculty member can select the very best students to become upper-division undergraduate research assistants.

Faculty members who host a stream can address problems in methods refinement and variable exploration that would otherwise overwhelm a lab’s graduate students and post-doctoral associates. With a team of trained undergraduates working under the direction of stream leaders, a faculty member’s research staff can focus on the higher-level research program that directly benefits from continually evolving stream goals and outcomes.

Faculty members who host a stream can see increased numbers of peer-reviewed publications from their undergraduate researchers. Research productivity and publication outcomes are often limited when faculty members work with undergraduate students. This is often due to the limited time an undergraduate student has to work for a faculty member combined with the relatively late stage in a student’s undergraduate career when they begin to produce publication-quality research. For example, more than one hundred peer review publications have directly resulted from faculty participation in the University of Texas FRI program since program inception.

Faculty members who host a stream have the opportunity to experience increased professional development in team-based curricular design, project management and technology-mediated communication. FIRE provides faculty members with the opportunity to work with students in an environment built for inquiry-based, student-led curricular and pedagogical techniques.

Finally, faculty members who host a stream can meet the increasingly common research grant requirements to integrate research and broader socio-educational outcomes. Participation in FIRE can provide a powerful venue in which a faculty member can combine their ongoing research agenda with a proven, profound and curricula-integrated educational experience.

Additional Information
- General information about the FIRE program and streams can be found at: http://fire.umd.edu
- Additional information and updates regarding this RFP will be posted at: http://fire.umd.edu/rfp
- An example successful proposal from the 2014 FIRE RFP will be posted at: http://fire.umd.edu/rfp
Proposal Options

Option 1: FIRE Innovation & Research Streams
The typical FIRE stream will serve between 30 and 40 undergraduate students and will function through the collaborative efforts of:

- A single or multiple faculty members.
- A Research Educator.
- Approximately 4 undergraduate peer mentors.

Streams are typically affiliated with a single faculty member. The faculty member provides leadership regarding high-level research goals. They integrate their research agenda with the productive capacity of the stream and work with the group through participation in stream meetings, publication development and FIRE program events. Alternatively, collaborative streams will involve the research interests and guidance of multiple collaborating faculty members.

The Research Educators are ideally but not exclusively post-PhD scholars, experts in their disciplines and are responsible for the daily progress, management and success of students. Research Educators have a strong interest in continued research, program administration and education. Research educators manage the curriculum, instruction, assessment, evaluation, research goals, laboratory environment, fiscal budget and peer mentors. They are available to the students of the stream during most business hours of daily operation and provide direct leadership, insight and perspective to peer mentors and students. These individuals are the instructors of record for FIRE stream courses and will be appointed as UMCP Assistant Clinical Professors (PhD required).

Peer mentors are experienced undergraduates recruited to assist the Research Educator in the mentorship and guidance of stream students. Peer mentors will be recruited from existing research programs to assist in the first year of stream operation. In subsequent years, peer mentors will come from the previous cohort of stream-participating students thus allowing advanced students to continue research with the stream and gain valuable leadership experience.
**Option1: Institutional Support**
The Office of the Provost will provide support for the following items:

- Faculty members will be provided with an annual $2,500 professional development stipend, which can be used flexibly in recognition of their commitment and service to their research stream and the FIRE program.

- No additional institutionally funded workload reduction or course buyout, overload, or summer salaries are provided as a part of this initiative.

- Salary and benefits support for the *Research Educator*:
  - Estimated at $57,500 plus benefits, annually.
  - While the post-PhD Research Educator model is encouraged, the Research Educator position may take alternative forms. If multiple individuals are utilized, the aggregate should sum to 1 FTE.

- Support for the recruitment and training of undergraduate peer mentors:
  - Positions will be compensated through academic credit.

- Support for equipment and consumables needed for operation:
  - Variable per discipline & research proposal.
  - Not to exceed $15,000, annually.

- Support for facilities development:
  - Stream operations will generally not take place in faculty labs or research facilities unless desired by the faculty member involved.
  - Assistance will be offered locating and preparing appropriate facilities for stream operation.
  - Strong proposals will come with college or departmental support for existing facilities.
**Option 2: FIRE+ Research Groups**

Starting with the 2016-17 FIRE cohort, nearly 500 students will complete their FIRE stream experience annually. These students have been trained in a broad range of disciplines including the natural, computational, social sciences and engineering. A FIRE+ research group is an opportunity for a faculty member to assemble a team of trained and motivated sophomores to attack a specific research problem.

**FIRE+ Research Group Guidelines**

The following guidelines will guide the design of FIRE+ research groups and the selection of students.

FIRE+ research groups will:

- Be comprised of **approximately 5 students** who have completed the FIRE stream sequence. Students will apply for FIRE+ research groups during their FIRE Semester 3 and will be selected by faculty members leading each group. *FIRE Research Educators will provide letters of reference and will evaluate skills, commitment and communication.*
- Be provided with a modest research budget **supplement**. *FIRE+ research groups are extensions of a faculty member’s research and costs beyond the supplement will be provided by the faculty member.*
- Be mentored directly by **research faculty** (compared to FIRE streams which are mentored by Research Educators). *Because FIRE+ research groups are comprised of trained and vetted students, the amount of mentorship needed to regularly provide perspective and direction is expected to be modest and manageable.*
- Operate with **no long-term commitment** from the faculty or the students. *Students may come and go (per semester) as best served by their long-term interests and faculty members may discontinue the research engagement at the end of any completed semester. Research credit will be provided to students by either the faculty member (if preferred) or the FIRE program.*

**Option 2: Institutional Support**

The Office of the Provost will provide support for the following items:

- Faculty members will be provided with a $1,500 professional development stipend per semester, which can be used flexibly in recognition of their commitment and service to their FIRE+ research group and the FIRE program.
- No additional institutionally funded workload reduction or course buyout, overload, or summer salaries are provided as a part of this initiative.
- A research consumables supplement of $1,500 per semester.
Proposal Details

Option 1: FIRE Innovation & Research Streams
- Option, Title & General Description
  o What would be a potential name for this group?
  o What are the goals of the stream? Please use accessible language.
- Student Engagement Plan
  o How will students be involved in the faculty member’s research agenda?
  o How will research be scaled for up to ~40 undergraduate students?
  o What is the general two-semester plan for student involvement?
  o How will the stream research plan balance between student autonomy in the experimental process and serving a larger, collective goal?
- Innovation & Research Methods Utilized
  o Enumerate techniques and methodologies students will engage.
- Resources Provided by Faculty & Department
  o Table that includes annual consumables budget, start-up equipment and facilities provided by faculty and/or department (if any – none required).
- Institutional Resources Required
  o Table that includes annual consumables budget, start-up equipment and facilities required by institutional funding.
- Faculty Information & Status
  o Detail all faculty member appointments and academic titles.
  o Detail relevant experience in undergraduate education and/or research.
- Research Educator Information
  o Has a qualified individual been identified or would one need to be recruited? If identified, please provide a short summation of this individual’s academic and professional qualifications.
- Student Recruitment Description
  o How would you describe the proposed research, its larger purpose and the methods engaged in a way that will capture student interest?
  o If you were given 15 minutes to pitch your stream to FIRE students in the process of selecting the stream they will join, what would you say?
  o This is your opportunity to step beyond the technical aspects of the proposed research plan and demonstrate this opportunity will be compelling for potential students.
  o Please devote between ½ to 1 page to this section.

Option 2: FIRE+ Research Groups
- Option, Title & General Description
  o What would be a potential name for this group?
  o What are the goals of the stream? Please use accessible language.
- Student Engagement Plan
  o How will students be involved in the faculty member’s research agenda?
- Innovation & Research Methods Utilized
  o Enumerate techniques and methodologies students will engage.
Proposal Requirements
Please include a letter of proposal awareness from Department Chair or Academic Unit Head. This letter is not counted in the page limit.

Please download and use the 2017 FIRE Proposal Template for submission and adhere to the font size, spacing and margin parameters of the template.

It is expected that Option 2 proposals could be significantly less than 5 pages in length. There is no need to fill the space provided.
Proposal Commitments, Eligibility & Selection

Faculty & Research Educator Commitments

Option 1 FIRE Stream Proposals
Successful proposals will be funded for three years of operation pending a positive annual review. Annual reviews will focus on the service to students including positive student feedback and outcomes, progress toward annual goals and a continued growth plan. Faculty members should be committed to a minimum three-year duration of operation beginning January 2018 and concluding December 2020.

The Research Educator will be supported for the stated three-year duration and candidates recruited for this position should be prepared for this commitment. Given the institutional funding and broad curricular and operational responsibilities of the Research Educator position, the faculty time commitment to stream consultation and FIRE program events is expected to be low. Faculty members commit to regular meetings with the stream Research Educator and FIRE program recruitment and operation events. The Research Educator position is a full-time commitment that will co-report to the faculty member who leads the stream and to the Director of First-Year Research Programs in the Office of the Provost. In addition to the stream-based responsibilities of the position, the Research Educator will be expected to contribute to an administrative function of the FIRE program. The Research Educator will be the instructor of record for all stream-based course credits and will instruct one section of FIRE120 (3 credits) each fall semester (fall 2018, 2019 & 2020). The Office of the Provost will collaboratively approve all final hiring decisions for Research Educators and peer mentors supported by institutional funds.

Option 2 FIRE+ Research Group Proposals
Faculty members commit to FIRE+ research groups on a semester-by-semester basis starting in January 2018. FIRE+ groups will be regularly reviewed for student engagement and productivity. The Office of the Provost reserves the right to discontinue the commitment at the conclusion of any semester. Per ongoing positive reviews, proposals selected will be guaranteed support for 1 calendar year (2018) with strong potential for extension depending on the availability of funds.

Faculty Eligibility
Full-time research-active faculty members with supervisory capacity and engaged in scholarship, regardless of tenure status, are invited to submit a proposal. Postdoctoral associates who have a compelling proposal idea and are interested in the Research Educator position are encouraged to collaborate with a full-time faculty member in the submission of a proposal.
Proposal Selection Criteria
Submitted proposals will be evaluated according to the following criteria:

- **Student Integration into Innovation & Research Activities**
  - Will students be integrated with and involved in the authentic innovation and research goals of the faculty member?
  - Is there a clear plan by which the research will be subdivided or scaled to engage up to students?

- **Student Recruitment & Development**
  - Will students gain a valuable range of methodological skills, technical capacities and/or computational skills?

- **Student Recruitment Description**
  - Will this stream or group attract potential students? Is there clear language that can translate the research objectives of the stream to students in a manner that will be of interest?

Proposal Submission & Evaluation Timeline
Selected proposals will begin the first year of operations during the spring semester of 2018. Research educators will be recruited during the summer of 2017 with appointment dates to begin at the beginning of the spring semester in 2018.

A selection committee will evaluate proposals according to the schedule below:

### Proposal Key Dates
- **December 2016**
  - RFP Released
- **January 2017**
  - RFP Updated
  - (simplified & dates extended)
- **Friday, March 31, 2017**
  - All Proposals Due
- **Friday, April 28, 2017**
  - Successful Proposals Announced
  - (contingent on Research Educator search for Option 1 proposals)

### Proposal Submission Process
All Proposals should be emailed as a single PDF file to: pkillion@umd.edu

If you have questions, please contact:

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