*Please specify **OTHER** unit affiliation:* N/A

Title of Proposal: PathWayS to Women in Science (PWS)

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Project Summary (200 word maximum)

I am regularly struck by the creativity, analytic prowess, and conceptual abilities of my mentees. Like their male counterparts, the women in my research laboratory are astonishingly bright. However, the progress of women in science is lagging relative to men. Research suggests socialization processes play a role in this discrepancy; fostering girls' interest in science can be powerful. University professors with scientific expertise are uniquely suited to facilitate such socialization. This project, PathWayS to Women in Science (PWS), is designed to connect professors with "future scientists" in order to provide sophisticated mentoring that will springboard mentees into an impactful science career. The project is divided into two phases. Phase I, exploration and preparation, demonstrates proof-of-concept. I have already made important inroads here, including partnering with a school and identifying a candidate. Support from WGC will provide funding for Phase I, and position the project for Phase II, implementation and sustainment, where the ultimate goal is to roll out this program across the nation. I believe PWS can connect university based experts to talented female students and meaningfully change not only the lives of these future scientists but also the larger sociocultural expectations about the important role of women in science.

Is this:

○ an expansion of a current program

◉ a new program

Please list media sites (if any) utilized by your project or program to publicize the project/program, i.e., website, social media, etc?

Phase I does not require marketing efforts per se, but as detailed below, we will utilize the Prism Education Center school website to administer and publicize the project. Prism is a private school in Fayetteville, Arkansas that has agreed to make PWS available to female students [12-18 years] interested in entering Science Technology Engineering and Math (STEM) fields. I have already received permission to use the school's website for this project (see attached letter of support). When PWS moves to Phase II (implementation and sustainability), I will seek permission from local (and ultimately, national) public and private school networks in order to publicize the project.

If your project is funded, describe innovative ways how the WGC will be recognized in the success/completion of your project?

If funded, the WGC will be prominently acknowledged in multiple ways across all phases of this project. First, we will recognize the WGC in the PWS mission statement as a valued partner in efforts to provide a pathway for young women to have successful careers in science. Indeed, with appropriate permissions, the WGC logo will be included on all program materials, including the website, virtual binder (detailed below),and all curriculum materials. Finally, the WGC will be a recognized funder in any published manuscripts or conference presentations documenting program implementation, sustainability efforts, and outcomes.

Describe any unique and/or innovative aspects of your project or program that improves what is already known about your area of inquiry. *(100 word maximum)*

The voluminous mentoring literature evidences the critical importance of "caring non-parents" in the success of youth. We aim to leverage this knowledge in order to address the lingering problem of women's relative lack of progress in the STEM fields as compared to men. PWS candidates will receive individualized mentoring in a faculty member's area of expertise that ranges from classroom-based didactics to hands-on laboratory activities. It is difficult to imagine a more powerful socializing experience for a young woman interested in science.

Please list up to five (5) expected outputs and outcomes with corresponding measurements. (Please note: just listing outputs is not sufficient.)

General domains for expected outputs are listed along with specific examples from my partnership to date with Ms. Willow Newcomb, the 15-year-old future scientist with whom I am currently working to build the proposed program. The goal here is to provide an easy-to-access collection of materials that gives professors and students a framework for constructing an immersive scientific training experience.

1). A detailed description of the core elements of the scientific training curriculum will be provided within the virtual binder, including specific objectives and correlated assessments.

a). Responsible conduct of research: students will be trained in discipline-specific ethics codes, as assessed by having read and discussed relevant documents (e.g., the American Psychiatric Association Code of Ethics) and completing national-level training courses such as the Collaborative Institutional Training Initiative (https://about.citiprogram.org/en/homepage/).
b). Scientific method: students will be trained in a discipline-specific technique from conceptualization to interpretation as assessed by the write-up and oral defense of a "mini-thesis project." As an illustrative example, Ms. Newcomb formulated a research question regarding the effects of sleep deprivation on "choosing joy." She hypothesized that sleep deprivation would negatively impact choosing joy, operationalized as being able to reappraise a neutral stimulus. She designed an on-line experiment in which undergraduate students assigned to either sleep normally or stay awake during the night completed an assessment of reappraisal. Part of Phase I funding will support the completion of her project; she will collect data using an on-line (automated) platform, analyze and interpret the data, and present findings.

2). A detailed description of exemplar approaches to the objectives delineated above, including didactics (structured readings program, sitting in on classroom-based exercises/lectures), in-the-lab training experiences, and dissemination training (local, regional, or national conference presentation). Ms. Newcomb's program will serve as a

template; fillable timeline sheets will be provided so that students and mentors can map out how they will achieve agreed-upon goals.

3). Other student tools:
a). Hours tracking log: Ms. Newcomb's approach to tracking hours spent in didactic (individual or course-based), reading, creating annotated bibliographies, completing on-line tutorials, and acquiring, analyzing, and interpreting data will be provided as a template. Using Ms. Newcomb's experience as a guide, students could expect to invest 250-300 hours over a 12-month partnership period (with faculty investing approximately 1 hour/week).
b). Logic model: Ms. Newcomb's logic model, which details every outcome and step throughout this process, serves as an overarching guide, detailing specific short and long-term project goals as well as specific activities that subserve those goals.

4). Other mentor tools:
a).Mini-thesis assessment rubric: a customizable template for assessing the student's project will be included to allow mentors to provide feedback across a wide array of key dimensions including conceptual clarity, literature integration, project significance, methodological approach, and interpretation of findings.
b). Letter of reference materials: verbiage for describing the partnership, its goals, and its outcomes will be provided to mentors, along with a checklist of plausible outcomes along interpersonal, conceptual, methodological, analytical, and interpretative dimensions. This will facilitate communication about the student's experience to important entities (e.g., college admissions boards).

5). Fundraising: for those students (like Ms. Newcomb) who need resources in order to complete their mini-thesis project, a comprehensive guide to fundraising will be provided, including a list of local and national funding bodies as well as approaches to seeking sponsors and other sources of support.

Document if there are other programs/projects that attempt to address the same needs as your proposal. If so, describe whether and how you will collaborate with them.*(100-word maximum)*

There are no local or national programs like PWS. In Phase I, the primary collaborative partner is Prism, with whom I already have an effective working relationship. I will continue working with Prism to understand what is most helpful for this developmental age range (12 to 18 years) in terms of science training. In Phase II, I plan to partner with some of the STEM camps for girls (e.g., Spectacles of Wesleyan College), to publicize PWS and learn about their approaches to training young women in science.

Demographic Considerations

First generation students engaged in the project: ○ Yes ◉ No

Number of current UA students engaged in the project:

Geographic region served:

◉ Northwest Arkansas
○ Southwest Arkansas
○ Northeast Arkansas
○ Southeast Arkansas
○ Central Arkansas
○ Campus

Budgetary Considerations

Have you received WGC Funding before?

○ Yes
◉ No

Please provide the year(s) and project name(s).

N/A

Total proposed budget for project or program: (proposed budgets of more than $20K will not be considered; in typical years WGC proposals fall within in the $5-10K range):
$ $6,490

Should match Item 1 on Budget Request sheet.

Please list total funding commitments from external or campus sources to date:
$ 0

Should match Item 2 on Budget Request sheet.

How much, if any, of your request involves funding for the following?
Please estimate using percentages
Student Compensation: 0 %
Equipment: 0 %

Total funds requested from WGC Grant:
$ $6,490

Should match Item 3 on Budget Request sheet.

If this project or program will continue after WGC grant money has been spent, please describe how you will continue to fund this project or program.

As detailed in the comments section of the budget, requested funds will support a proof-of-concept as executed by Ms. Willow Newcomb (and supervised by Dr. Ellen Leen-Feldner). Ultimately, a documented "case test" that PWS can work is needed, and Ms. Newcomb has proven she has the tenacity to serve as such. Moving to Phase II, relatively few resources will be needed to sustain the program. With the proposed materials in place (e.g., website publicizing the project, virtual binder, requisite materials for tracking student progress), we will be well-positioned to partner with other institutions to keep the program going.

In the rare case that grant resources cannot be expended, be prepared to return the remaining funds to WGC.

If selected as a recipient for a WGC grants, you will be required to submit two progress reports, including a budget summary, as well as a poster of your project for purposes of grant presentation.

Please be sure to save this document within the Grant Application Packet.

May 8th, 2017

Dear Dr. Leen-Feldner,

I am very excited about the prospect of PathWayS for Women in Science (PWS). As evidenced by your fruitful collaboration with Willow Newcomb specifically, and Prism Education Center more generally, this program promises to provide outstanding scientific training for interesting young women. As such, it will help offset the relative lack of progress women have made relative to men in the STEM fields.

Prism Education Center is proud to be a founding partner for PWS. You will have access to our website as a platform to advertise your program, house important materials and forms, and track program outcomes.

We look forward to a long and prosperous collaboration with you and PWS. Thank you for your efforts in seeking to provide high-quality scientific training for young women.

Thanks,

Jessica Lagrone, Confluence Supervisor