

REQUEST FOR APPLICATIONS

Grace Woodward Grants

For Collaborative Research in Engineering and Medicine

Register Intent to Submit an Application by: March 25, 2014
Application Receipt Date: Noon, April 3, 2014

A. Background: The Dean of the College of Engineering and the Senior Vice President for Health Affairs and Dean, College of Medicine announce the availability of the Grace Woodward Grants for Collaborative Research in Engineering and Medicine. These grants are supported by generous endowments to the Colleges of Engineering and Medicine from the estate of Grace Woodward. The Grace Woodward Engineering-Medicine grants are intended to support projects that create or capitalize upon opportunities for new applications of engineering to problems in the life sciences and medicine. **The program is designed to encourage significant collaborations between engineers and clinicians or biomedical scientists that involve either new avenues of laboratory research or the feasibility testing of new medical devices, instrumentation, or other diagnostic or therapeutic modalities.**

B. Eligibility Criteria:

1. One of the two Co-Principal Investigators (Co-PIs) of an application to this program must have his or her **primary academic appointment in the College of Medicine as an Assistant Professor, Associate Professor or Professor**. In addition to the basic science faculty, virtually all physicians employed by The Penn State Milton S. Hershey Medical Center have a primary academic appointment in the College of Medicine.
2. One of the two Co-Principal Investigators (Co-PIs) of an application to this program must have his or her **primary academic appointment in a tenured or tenure-track position in the College of Engineering at the University Park campus**. College of Engineering faculty members from other Penn State campuses will also be eligible to serve as a Co-PI of an application to this Program if the resources to support their participation are provided by their local campus unit.
3. Additional investigators from these and other campuses/colleges are eligible to participate as co-investigators.
4. Proposals representing a **new area of collaboration between the Co-PIs** that has not previously received support from this or other competitive grant programs are encouraged.
5. Investigators who are currently serving as a Co-PI of an active Grace Woodward Grant are not eligible to submit an application in response to this RFA;
6. An investigator may serve as a Co-PI on only one Grace Woodward Grant application but may serve as a Co-investigator or Collaborator on multiple applications submitted in response to this RFA.

C. Program Guidelines:

1. New proposals as well as revised versions of previously unfunded applications to this program will be considered. Applicants may request up to \$50,000 direct costs for a period of up to 2 years for proposals that:
 - a. Generate preliminary data for a major extramural research proposal that will lead to a productive and sustained collaboration between investigators in both colleges; or
 - b. Demonstrate feasibility or develop a prototype of a new medical device, diagnostic, instrument or other diagnostic or therapeutic modality that will become attractive for commercial development.

Partners submitting applications in either of these two categories may include either clinical science or basic science faculty members at the College of Medicine.

2. Although no minimum percent effort is required for the Co- Principal Investigators, the effort that they and others plan to devote to the project must be specified in the application. Each Co-PI may charge the grant for a maximum of 10% effort for salary up to the current NIH cap (\$181,500).

3. Funds may also be requested for student stipends, research staff, postdoctoral fellows, small equipment, materials/supplies, and expenses related to the involvement of human subjects.

4. Funds may not be requested for teaching release, publication expenses, or travel to conferences; however, travel expenses necessary for the conduct of the research project are allowable.

5. **Each application must include separate budgets for the portions of the project that will be conducted in the College of Engineering and in the College of Medicine. Inasmuch as each college is contributing 50% of the total funding for the program, Co-PIs are encouraged to request approximately equal funding to support the activities in each college.**

6. Co-Principal Investigators of Grace Woodward Grants must also agree to 1) present a progress report for their project to the Associate Dean for Research, College of Engineering and the Vice Dean for Research, College of Medicine and members of the Collaborative Research Review Committee in May 2015; 2) submit a final written progress report within 60 days of completing the project; and 3) report periodically on request on the impact of this award on subsequent sponsored research activities; and

7. Serve as a member of the joint College of Medicine/College of Engineering Collaborative Research Review Committee in future years, on request.

D. Identification of Collaborators: Potential applicants may obtain advice and assistance in identification of potential collaborators with engineering, scientific or clinical expertise in specific areas. Investigators may contact Dr. Anthony Atchley at the College of Engineering (814-865-2151 or atchley@psu.edu) or Dr. Ernest Johnson at the College of Medicine (717-531-6949 or ejohnson@psu.edu) for information and assistance.

E. Register Intent to Submit: Investigators planning to submit an application in response to this RFA should register their intent with Dianne Jones (researchdevelopment@hmc.psu.edu) on or before Tuesday, March 25, 2014. The Registration should include (1) the names, departments and colleges of the Co-PIs; (2) a descriptive title of the application; and (3) the access ID of each Co-PI to enable the submission of an application on a secure website.

F. Review Process: Applications will undergo an initial review for scientific and technical merit by a joint College of Medicine/College of Engineering Collaborative Research Review Committee that will consider the responsiveness of the proposal to this RFA and evaluate the scientific and technical merit of the proposal using the NIH review criteria and scoring metric which may be accessed at: (<http://www.pennstatehershey.org/web/researchdevelopment/home/internal/reviewcriteria>). In this regard, the Committee will evaluate the significance, investigator(s), innovation, approach and environment and any additional criteria that are relevant to each proposal including the potential for the project to subsequently

attract significant support for research and/or commercial development of a promising new medical device, diagnostic, instrument or other diagnostic or therapeutic modality from an external sponsor. In addition, the Collaborative Research Review Committee will be asked to identify changes in study design and methodology that would strengthen each proposal and these recommendations will be returned to the applicant with the reviewer's critique at the conclusion of the review process. The Review Committee will make its recommendations through the Director, Research Development to the Research Deans and Deans of the College of Engineering and the College of Medicine who will make all final decisions regarding awards.

G. Awards: A reserve of \$100,000 direct costs has been set aside to support this Program. Contingent on the receipt of meritorious applications, it is anticipated that two or three awards will be announced on or about June 1, 2014 in response to this RFA. The anticipated start date for these awards is July 1, 2014.

H. Additional Information: Any questions regarding this RFA may be referred to Research Development (Email researchdevelopment@hmc.psu.edu ; Phone 717-531-6949).

INSTRUCTIONS FOR APPLICANTS

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Applicants must use the following format

- 1. Face Page:** Titled "New" or "Revised" 2014 Grace Woodward Grant Application" followed by a descriptive title of the project, the name, position, department, college, and contact information(email and phone) for each Co-PI, the amount requested, the project period and a short Table of Contents.
- 2. Lay Abstract:** Briefly summarize the objective, specific aims and health-relatedness of the project in terms that will be understood by a non-scientific lay audience.
- 3. Introduction:** For **revised applications only** to address previous reviewer comments (1 page)
- 4. Program Goals:** Identify the goal of the program as either (1) establishment of a new line of laboratory research that will likely lead to extramural funding, or (2) feasibility demonstration or prototype development for a new medical device, diagnostic, instrument or other diagnostic or therapeutic modality that will become attractive for commercial development. If of type (2), identify whether this is an engineering-basic science or engineering-clinical science partnership.
- 5. Research Plan: The Research Plan** should not exceed **5 pages single-spaced** including figures and tables, using Arial-11, Helvetica-11 or equivalent type and should be organized as follows:
 - a. **Specific Aims-** List the specific aims of this proposal and explain how their accomplishment will help achieve the program goals identified above;
 - b. **Significance-** Explain how the proposal addresses an important problem or clinical barrier;
 - c. **Innovation-** How does the proposal challenge or shift existing paradigms? Specifically highlight any novel concepts, approaches, methods, or instrumentation;
 - d. **Approach-** Describe the proposed experimental design, preliminary studies, and anticipated results; and
 - e. **Environment-** Describe the research environment and resources that will contribute to this project.
- 6. Investigator Contributions:** This program is designed to encourage significant collaborations between engineers and clinicians or biomedical scientists and it is anticipated that each Co-PI will make critical and meaningful contributions to the project. Use this section of the application to clearly and fully describe the contributions that the Co-PI from COE and the Co-PI from COM will each make to this project, both individually

and collaboratively. If one Co-PI will be more fully involved early on in the year and the other somewhat later, the timetable for that should be clearly described in the application. Proposals that require only token or minor contributions from one Co-PI or the other (such as obtaining tissue samples or analysis or engineering modest refinements to an existing device or process) should seek support from other more appropriate mechanisms.

7. Human Subjects and/or Vertebrate Animals: Describe involvement, if any.

8. Literature Cited: List references.

9. Budget: Each application must include separate budget forms for the portions of the project that will be conducted in the College of Engineering and in the College of Medicine. Use the budget forms that are posted on the following website: <http://www.pennstatehershey.org/web/researchdevelopment/home/forms>. Indicate any cost-share from local departments, research centers, or university consortia in the space provided. No university indirect costs are to be recovered from these funds. The budget period should be 7/1/2014 through either 6/30/2015 or 6/30/16.

10. Budget Justification: Provide a separate justification page for the budget request from each college (1 page each). Explain and justify all proposed expenditures so that it is clear why they are essential for the success of the project.

11. Biographical Sketch: Include Biosketches for both Co-Principal Investigators and all Collaborating Investigators. (Use short NSF or NIH format). Please include the **personal statement** in each Biosketch. Information on the personal statement may be found on the NIH form (<http://www.pennstatehershey.org/web/researchdevelopment/home/forms>).

12. List Other Support: Include all active and pending support for both Co-Principal Investigators. Indicate clearly whether each project listed does or does not overlap with this application and explain the nature of any overlap.

13. Future Plans: Assuming that the project is successful, describe plans to secure continued funding including the most probable sponsor and expected receipt date for the first application. For feasibility/prototype projects, describe the most probable licensee, plan for commercialization, and summary of IP portfolio. For both types of projects, explain how you envision that collaboration between the Co-PIs and potentially other members of the team will be extended and sustained.

Application Submission: Please submit an electronic Adobe version (.PDF) of the entire application **in one file string** to the following website www.engr.psu.edu/woodward and provide four paper copies as follows: **two paper** copies to Michelle Smith in 101 Hammond in the College of Engineering and **two copies** to the College of Medicine Research Development Office (C1630) **on or before Noon on Thursday, April 3, 2014**. Please refer any questions regarding these instructions to researchdevelopment@hmc.psu.edu; 717-531-6949.