MARY GATES ENDOWMENT FOR STUDENTS

RESEARCH APPLICATION WORKSHOP

Autumn 2017

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Center for Experiential Learning and Diversity (EXPD)
MARY GATES ENDOWMENT FOR STUDENTS

- Intended to help UW students grow as independent learners and community leaders.
- An investment in you and your development as a researcher.
- Support your personal growth and passion for project...
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*Important points:*

> Mary Gates Research (MGR) Scholarships are scholarships! They are not research grants; your application is more personal than a grant proposal.

> MGR Scholarships recognize your potential as a scholar.

> MGR Scholarships support your educational expenses so that you can devote more effort to your research/scholarly/creative work.
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Awards Process

> We will make approximately 70 awards this quarter.

> Each application is read and scored by 3 reviewers, including 2 faculty members in your field and one outside reviewer.

> Each of the four criteria receive a score of 0-5 points for a total possible score of 0-20.
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*Competitive Applications:*

> Benefit from good, clear writing (they require editing and re-writes).

> Depend on the fit between the program criteria and your application.

> Are most compelling when your personal passion, commitment, curiosity, motivation come through in your text.
Research Essay Prompt:
> In your own words, describe your research and what you and your faculty mentor hope to learn from your work. Discuss your motivations for getting involved in this research project and how this work contributes to your education and to the development of your future plans.

Maximum Essay Limit:
> 1,250 words, 4 pages, (whichever is shorter)
  – In-text citations are not included in the word limit, but are included in the page limit.
> One additional page for images, figures, references.
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> Comprehensive review of whole application.
> Evaluate this project and its future – not past accomplishments.

Research Review Criteria:
- Characteristics of the Applicant
- Understanding of the Research
- Quality & Intensity of the Experience
- Educational & Long-term Goals
CRITERIA 1: Quality of Applicant

- Adequate academic preparation for proposed work and the student's potential for success
- Motivation: sincere curiosity and interest in topic or research experience
- Mentor's overall assessment of student's abilities and potential for learning and contributing to the research
CRITERIA 1: Quality of Applicant

Preparation, Motivation, Mentor Assessment

Following are two examples excerpted from students’ successful applications.

> How well do these excerpts address criteria #1?

> How might they be improved?
Example 1.

... Biology has always been my passion, both in school and outside of class. I started doing laboratory research while in high school, and quickly became enamored with the work. During my first two years at UW I gained more research experience, and at the same time became heavily interested in cellular biology and medicine. Then, last year, while attending the [Undergraduate] Research Symposium, I met Dr. Ian Sweet and learned about the diabetes research his lab carries out. Working in Dr. Sweet’s lab since late last summer has been a dream come true, because now I am not only studying cellular biology, but I am doing so with tools that allow me to observe cell behavior in real-time! ...
CRITERIA 1: Quality of Applicant

Preparation, Motivation, Mentor Assessment

Example 2.
The critical thinking used in the problem solving process described above is what I enjoy most about the research. Developing elegant, practical, and functional solutions to problems in quality control and site design present different and refreshing challenges from those encountered in more theoretical sciences. My love of the outdoors amplifies my enjoyment of the work; analyzing data on the computer has greater significance to me when the data represents tangible properties of the physical, natural world. ...I value doing work that I believe will have a positive, measurable impact on our civilization. In conjunction to snow modeling’s previously discussed relevance to water supply, snow modeling is also fundamental to the stream forecasting critical in flood control, fisheries management and hydropower operations. ...The opportunity to contribute solutions to society’s challenges is a huge part of my motivation in this research.
CRITERIA 2: Understanding of Research

> Clarity and depth of the project description
> Student’s ability to place his/her research in a broader context
> Student’s demonstrated facility with the concepts, methodologies, and questions in the field of study; project description clearly written in student's own voice
> Student’s articulation of his/her responsibilities and how they relate to the overall research project
CRITERIA 2: Understanding of Research

Clarity, broader context, own voice, student’s responsibilities

Following are two examples excerpted from students’ successful applications.

> How well do these excerpts address criteria #2?

> How might they be improved?
CRITERIA 2: Understanding of Research

Clarity, broader context, own voice, student’s responsibilities

Example 1.
Diabetes is a health problem of epidemic proportions, affecting approximately 170 million people worldwide. It is especially prevalent in the US, where an estimated 12.9% of adults are diabetic (1). The vast majority (~95%) of those affected have type 2 diabetes, characterized by elevated blood glucose due to insulin resistance or deficiency. The conditions of the disease can cause severe and diverse complications such as heart disease, neuropathy, blindness, kidney failure, and the need to amputate extremities. Understanding the etiology of these complications on a cellular level is critically important because it can provide the foundation for new or improved therapies. Unfortunately, the causes and contributing factors of these diseases remain largely undetermined. (continued)
CRITERIA 2: Understanding of Research

Clarity, broader context, own voice, student’s responsibilities

Example 1 (continued).
The dysfunction of endothelial cells, however, appears to be crucially linked to the development of many diabetic complications (2). The goal of my project is to understand how endothelial energy metabolism is affected by oxygen concentration. Previous experiments on endothelial metabolism were carried out at ambient O2 levels of around 20%, whereas the actual physiological level of O2 in human endothelial tissue is below 5%. We predict that at lower O2 levels, endothelial cells will favor glycolytic pathways to a greater extent, which would accordingly exacerbate inflammation. Whatever the result, measurements of cells’ energy metabolism at 5% O2 will provide a better understanding of what occurs in the endothelial cells of a whole organism. To study the energy metabolism of endothelial cells, I will be measuring cells’ oxygen consumption rate ... and generation of lactic acid ... under different oxygen concentrations. ...
Example 2:
My thesis explores the changes in culture and environmental ethics that have occurred alongside rapid development in Oman; an extremely arid nation in the Arabian Peninsula. My analysis investigates the transformation in water governance from a common property management system to a private rights system. Traditionally, water use in Oman was governed by strict socio-religious norms, and after one generation of intense urbanization and development, Omanis still largely maintain these values. However, as piped water and desalination have made a higher level of consumption possible, Omanis have come to glorify some types of luxury water use in urban environments – such as building large public parks and grassy highway medians – while still labeling personal wastefulness as irresponsible. ... my research seeks to explain why water-intensive development in urban environments has received strong public support while the conservative water ethic has simultaneously persevered as a norm and social value
CRITERIA 2: Understanding of Research

Clarity, broader context, own voice, student’s responsibilities

Identify a partner to work with for this part.

> Take a look at your draft – find a passage that you think addresses criteria #2 and mark it in the margins. [If you don’t have a draft, spend a few minutes listing some bullet points that you want to be sure to include in this part of your application]

> Share your drafts with each other– is your partner’s meaning clear? Did he/she explain the context, or “big picture” behind their research? Did he/she say what they are doing/how they carry out their research?

> How might your section be improved?
CRITERIA 3: Quality and Intensity of Experience

> Student's investment of time and effort in the research

> Level of participation and challenge for the student's point of development

> Quality of mentoring support and the research environment
CRITERIA 3: Quality and Intensity of Experience

Student’s investment; level of challenge; support available

Following are two examples excerpted from students’ successful applications.

> How well do these excerpts address criteria #3?

> How might they be improved?
CRITERIA 3: Quality and Intensity of Experience

Student’s investment; level of challenge; support available

Example 1:
... I will learn to conduct extensive library research, process application for Human Subjects Review (IRB), administer interviews, analyze and interpret data, utilize GIS technologies to visualize data (under the additional supervision of a faculty member from the Geography Department), write and present a scholarly paper that summarizes my findings, and assist in integrating my research with his. I am extremely excited to undertake rigorous and challenging academic research that promises to be life-changing for me, and all of those who will be touched by this work.
CRITERIA 3: Quality and Intensity of Experience

Student’s investment; level of challenge; support available

Example 2:
Given that my current investigation into Toni Cade Bambara’s “Mississippi Ham Rider” has taken on a life of its own and taken over much of my life, I have decided to apply for a Mary Gates Research Scholarship for Winter and Spring Quarters to support the next phases of my research, analysis, writing and submission for publication of my summary findings. Dr. Retman, as my mentor for this paper, will help me contextualize my work in terms of the larger field of Ethnic Studies. Her expertise in the areas of the Blues and the Blues’ relationship to racial “authenticity” has proved instrumental in helping me frame my argument in terms appropriate for the audience I am trying to reach.
CRITERIA 3: Quality and Intensity of Experience

Student’s investment; level of challenge; support available

Identify a partner to work with for this part.

> Take a look at your draft – find a passage that you think satisfies criteria #3 and mark it in the margins. [If you don’t have a draft, spend a few minutes listing some bullet points that you want to be sure to include in this part of your application]

> Share your draft with your partner and give each other feedback: is the level of challenge of the research appropriate to the applicant’s level? Is there adequate mentoring and research support available to make the project successful?

> How might the section be improved?
CRITERIA 4: 
*Educational and Long-Term Impact*

- Application explains the achieved and potential learning benefits of the research experience
- Longer-term education and/or career goals; student describes how this research experience moves them toward their stated goals
- Impact of financial support on student's engagement with research and impact of being named a Mary Gates Scholar
CRITERIA 4: Educational and Long-Term Impact

Learning benefits; progress toward goals; impact of award

Following are two examples excerpted from students’ successful applications.

> How well do these excerpts address criteria #4?

> How might they be improved?
Understanding how peoples’ perceptions of water are formed will be essential as many regions of the world are beginning to face extreme water shortages, bringing with them the potential for social and economic crisis. I believe that understanding the social issues surrounding limited water resources will become central issues in international affairs and I intend to become an academic and professional authority on this topic. Finally, by writing a thesis of roughly 80 pages and defending it in an oral evaluation setting I will prepare myself for pursuing a doctorate degree in the future.
Learning benefits; progress toward goals; impact of award

Conducting research with Dr. Auyong allows me to refine my experience in the research process, as well as further expand my understanding of clinical practice. After graduation I will use my unique perspectives in pursuit of a degree in Translational Medicine en route to a medical degree. My goal is to improve research development and communication to get cutting-edge research into the clinical sphere more efficiently, and then ensuring that the populations who need healthcare improvements receive the necessary medical support. Regardless of what my final field of practice becomes, I desire to work in a teaching hospital or clinic, inspiring each new wave of young clinicians as Dr. Auyong and Dr. Pun have inspired me to continually work to improve their practice, research, and publish their findings to improve patient care worldwide.
CRITERIA 4: 
Educational and Long-Term Impact

Learning benefits; progress toward goals; impact of award

*Identify a partner to work with for this part.*

> Take a look at your draft – find a passage that you think satisfies criteria #4 and mark it in the margins. [If you don’t have a draft, spend a few minutes listing some bullet points that you want to be sure to include in this part of your application]

> Share your drafts with each other – Did your partner explain how their research experience will help them achieve longer term goals? Did he/she talk about the impact of receiving the award?

> How might the section be improved?
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Final Advice:

> Ask your research mentor and someone outside of your research field to read your draft for clarity and accuracy;
> Write first draft without stressing about the length – then cut;
> Include data, figures and/or references if relevant;
> Include enough specific description that a subject matter expert will see that you understand what you are doing;
> Make it clear and easy to follow so that a non-expert will understand why your work is important, and (generally) how you do it;
> Let your voice and enthusiasm come through; be sincere.
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> **Deadlines**
  - Leadership: Oct. 23 at 5:00 PM
  - **Research:** Oct. 30 at 5:00 PM

> **Letter of Recommendation from Mentors are due two days later:**
  - Leadership: Oct. 25
  - **Research:** Nov. 1

> **Next application cycle in Winter 2018.**
  - CoMotion Mary Gates Innovation Internship applications accepted in Spring.
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> **Special thanks to:**
  - Mark Lisowskii
  - Allison Ross
  - Sarah Boone
  - Amanda Cortez
  - Haley Millet
  - Josh Pahang
  - Adam Massmann
  - Michael Peralta

> **Questions?**
  - expd.uw.edu/mge
  - mgates@uw.edu
  - Drop-In Advising:
    > Thursdays, 2:30-4:30 PM
    > MGH 171