

A LIMITED SOLICITATION

QUANTITATIVE AND STATISTICAL THINKING IN THE LIFE SCIENCES

**Supports faculty time to allow focus on
building a more rigorous quantitative
graduate education**

Proposal deadline:

April 25, 2018 (2:00 pm EST)

BURROUGHS
WELLCOME
FUND 

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KEY DATES

Grant application portal available	January 23, 2018
Proposal deadline	April 25, 2018 (2:00 pm EST)
Award notification	August 31, 2018

The Burroughs Wellcome Fund announces a one-time award program providing support for faculty time spent on developing improved approaches to training graduate students for a more quantitative and statistically-informed approach to thinking and a more model-driven approach to doing research in the biomedical and related life sciences.

Up to four grants of \$150,000 will support faculty effort and relevant administrative support for up to two years of work on curricular development, and/or pulling together elements from multiple departments, and/or course and workshop development, as well as other efforts focused on building or substantially restructuring didactic elements of graduate training. We hope to seed development of Ph.D.s who will be more quantitative, more formally prepared in experimental design, and more able to think with and from models and statistics.

BACKGROUND

Our goal is to help institutions prepare to train scientists who will go on to bring their rigorous quantitative thinking to a variety of biological systems. Successful applicants will re-think graduate training from day 1 to degree and beyond: what should entering doctoral students learn in the traditional classroom, workshops, boot camps, or via disruptive new approaches? What role can journal clubs or seminar series play in reshaping how trainees and trainers look at problem solving in biology? How will rotation experiences pull statistical thinking and modeling into the laboratory? How will preliminary exams demonstrate the ascendance of this mindset in a student's development? How will dissertation projects bring quantitative thinking deeper into the laboratory realm, or work in the other direction, bringing laboratory thinking into a highly quantitative working group? What kind of postdoc experience might be the trainees' next step?

Successful proposals will communicate how the proposed work will bring together biomedical and related life science department training elements and more quantitative elements to produce lasting change in how the institution prepares its graduate students for high-impact scientific careers. They will describe an education that will foster

deep integration of quantitative habits of mind into a trainee's approach to science, illuminating a student's work with statistical reasoning, model building, and rigorous experimental design. How this is accomplished will vary greatly from institution to institution.

In some places, an application from a single department may be the best approach. In others, an integrated training grant may have brought component ideas together already. At still others, there might currently only be informal ties between individual faculty working to cobble together interactions between their departments.

The intention of this award is to free up a significant volume of faculty time so that a few institutions can focus more effectively on thinking about, then building, the kind of education described. In general, we expect the grant to support substantial effort from a small number of people. We do not anticipate funding proposals that would support small percent efforts from large numbers of people. Proposals may request modest support for an advisory committee, retreat, or other approach to getting faculty buy-in and feedback.

PROGRAM

Biomedical science is a required core component of successful proposals, but proposals may additionally feature biology not focused on human health. Formal reasoning, quantitative analysis, and statistical thinking are also required core components. Proposals more focused on manipulating a quantitative toolset than on building a quantitative mindset will not succeed.

The application consists of five critical questions to be answered in a total of four pages:

- 1. What do you hope to achieve by developing a more quantitative graduate training experience?**
- 2. How is the graduate education you hope to develop different from typical biomedical training?**
- 3. What obstacles currently keep you from offering this type of education?**
- 4. Why is this institution a particularly good place to invest this award?**
- 5. What about the primary faculty involved makes them the right people in whom to invest this award?**

An invited institution, including all of its hospitals, centers, and associated institutes may only participate in **ONE** application to this program.

Proposals involving a partnership between one or more invited institutions are accepted, as are proposals contained within single institutions.

A Burroughs Wellcome Fund advisory committee will review these proposals and recommend up to four for funding.

Proposal Deadline:

Due date: April 25, 2018 (2:00 PM EST)

TERMS OF THE GRANT/USE OF FUNDS

Awards are made to degree-granting institutions in the U.S. or Canada. The institutions are responsible for disbursing the funds and for maintaining adequate supporting records and receipts of expenditures. Indirect costs may not be charged against BWF grants.

Salaries of support personnel and materials appropriate to administering the work should be included as direct costs. Reasonable and justified consultant costs may be included in the budget. Benefits are direct costs.

Institutions must provide an annual progress and financial report. Continued funding will depend on the favorable review of the first report by BWF.

Any unused funds (greater than \$500) held by institutions when awards expire or are terminated must be returned to BWF, unless BWF has granted prior permission to retain the remainder.

Scientific publications or presentations that result from these awards must acknowledge the institution's receipt of a Burroughs Wellcome Fund Quantitative and Statistical Thinking in the Life Sciences Award. Copies of journal articles and other publications should be sent to BWF along with the annual progress report.

BWF will not retain any rights to published results or patents that result from the research. Awardees should follow their institutions' patent, copyright, and intellectual property policies regarding discoveries that result from research conducted under these awards.

BWF expects the appropriate federal, state, and local guidelines with regard to scientific misconduct are in place and enforced at BWF-supported institutions.

APPLICATION PROCESS OVERVIEW

Application Process

Application: A proposal consists of material submitted through the online Internet Grant Application Module (IGAM). Applications are due April 25, 2018 (2:00 PM EST).

How to Submit an Online Proposal Application

To begin a grant submission on or after January 23, use this link: [proposal](#)

To return to a proposal already in progress you must use this link: [saved proposal](#)

It is recommended that applicants bookmark this page to return to a proposal in progress.

Proposal Elements

A complete proposal consists of fields submitted through the online IGAM application.

Online proposal form – available through IGAM
(see links above):

- Applicant Information
- Applicant Demographics
- Institutional Information (degree-granting only)
- Signing Official Information (degree-granting only)
- Proposal Information [Download Forms and Templates](#)

Single PDF Attachments

Prepare in advance the following required documents. Order and combine the supporting materials and upload into one PDF file. Name the file using this format only: Last Name, First Name – QUIP 2018

A. Cover/Signature Page

Using the template provided, enter the requested information and complete the entire form, including applicant signature.

B. Five Critical Questions (maximum of four pages)

There is no set template for the application, but the document should be written in 11 or 12 point font. All five questions must be addressed.

C. Budget

Please use the template provided. Use a standard 11- or 12-point font for the text, and no smaller than a 9- to 10-point font for figures, legends, and tables. The font size requirement for the text will be strictly enforced. Text must be single spaced, with one-inch or larger margins on all sides. Number the pages of the research plan.

D. Biosketches of Key Personnel (five-page limit)

Provide the current NIH biographical sketch. A five page CV may be substituted for applicants at Canadian degree-granting institutions.

E. Letter of Institutional Support

Your institution must provide a letter explaining how the work proposed fits into their long-term vision of graduate education and detailing the institution's own efforts to date in bringing more quantitative thinking into the life sciences.

SUBMISSION PROCESS

Upload the combined file of supporting documents as one attachment on the Attachments tab of the online application. Click the “Review Your Application” on the Attachments tab to see if any errors are identified in your application. All information and required attachments must be provided before the “SUBMIT” button is available. Click the “SUBMIT” button to transmit the application. An automated message will confirm that the application was successfully submitted.

Note to Applicants:

Proposals will not be accepted after 2 p.m. Eastern Time on April 25, 2018. The online application system shuts down automatically at the deadline and the SUBMIT button will no longer be available. Plan to submit your application well in advance of the grant deadline to allow adequate time to troubleshoot any issues. **NO EXCEPTIONS OR EXTENSIONS WILL BE GRANTED.**

After the deadline, applicants with incomplete proposals and those not adhering to instructions will be disqualified without prior notice.

Only grant proposals submitted through BWF online application website IGAM will be accepted.

Questions?

Eligibility and other inquiries should be directed in advance to BWF program staff by contacting:

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