

**Harvey Mudd College— Faculty Teaching Module Development in the Quantitative  
Life Sciences  
Call for Proposals**

**Objectives:**

To encourage the development of and extend the teaching offerings in mathematical and computational biology at Harvey Mudd College. The program is intended to provide support for faculty to develop teaching modules that combine interesting and relevant applications that bridge biology and mathematics in existing courses, particularly in courses that do not presently include the integration of biology and mathematics. Ideally, these modules will be usable by other faculty teaching these courses, and perhaps would even be exportable to other colleges.

The level of integration of biology and mathematics should go beyond what one might typically find in a standard mathematics or biology textbook. Collaborations between two or more faculty members are especially encouraged, in particular between members of different departments.

**Eligibility:**

Proposals may be submitted by any HMC faculty member. Proposals for joint module development projects will be accepted if at least one of the participants is an HMC faculty member. Co-investigators who are not HMC faculty are not eligible for support.

**Award Size and Duration:**

Awards will be given in the form of a faculty stipend of \$1,000 per module. The module should provide approximately one to two weeks worth of classroom material. Additional funds for supplies, such as software, may be awarded in amounts up to \$500. If funds for supplies are requested, an explanation should be provided. Awards may be provided for work to be done at any time during the summer or academic year. Proposals should indicate the estimated date of module completion. The number of proposals eligible faculty may submit is not restricted.

**What the Proposal Should Include:**

A brief statement addressing:

1. What the module will be
2. An outline of materials that would go with the module (e.g., slides, demos)
3. The target audience, where in the curriculum the module fits, and the potential curricular impact.

### **Expectations for Module Structure:**

The goal is to produce a self-contained package of materials that another faculty member could incorporate into a course with very little modification. The completed module package might include, for example:

- An outline of the pedagogical goals for the module, and suggested "traditional" courses into which the module could be incorporated.
- A description of the target student audience, and required prerequisite material for this module.
- A set of exercises and projects to help students solidify and extend concepts from lectures.
- Instructor solution sets for the provided exercises. In the case of open-ended projects for which there are no actual solutions, some discussion should be provided as to what outcomes to expect.
- An outline of lecture notes, including, for example, overhead slides.
- Reading materials for the instructor to aid in preparation for module presentation. These materials may be written by the developer, or it may be sufficient to provide a clear list of outside references.
- Reading materials for students to supplement lectures. As above, materials may be custom developed for this module, and/or a list of outside references may be provided.
- Other materials as appropriate (for example, Matlab code for in-class demonstrations.)
- If appropriate, suggested exam problems and solutions.

### **Proposal Evaluation:**

Proposals will be evaluated according to (1) the degree to which mathematics and biology are integrated, (2) the potential impact on the HMC curriculum, and (3) the feasibility of module completion.

Proposals will be evaluated by the Dean of Faculty, in consultation with the co-directors of the QLS Center and other appropriate faculty.

### **Other Considerations:**

The funding available to the Quantitative Life Sciences program is provided by a grant from the Keck Foundation. While proposals are evaluated according to the criteria listed above, restrictions on the Keck funding may limit the number of stipends that can be awarded.

**Conditions:**

- Additional information may be requested as needed to evaluate a proposal.
- At the completion of the project, the module developer is required to submit the final completed module materials.
- Module developers may be asked to share their work with the HMC community at large in the form of a public lecture or discussion.
- Acknowledgment of the funding source should be made in any publication or presentation resulting from sponsored work.
- Module developers retain intellectual property rights.

**Proposal Preparation Format:**

Include on the cover page the following information:

1. Name(s) of HMC faculty members requesting stipend support
2. If applicable, names of all collaborators not requesting support
3. Title of proposed module(s)
4. Proposed date of completion
5. Total funds requested

**Proposal Deadlines:**

Friday March 26, 2004: Call for Proposals

Friday Apr. 23, 2004: Due Date for Proposal (to Dean of Faculty's office).

Friday May 7, 2004: Notification of Awards

Feel free to ask Sheldon Wettack, Lisette de Pillis, or Steve Adolph for more details.