Welcome!

Faculty Incentive Grant Program for Course Improvements information session

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Today

- Welcome + introductions
- Brief overview of Maine Physical Sciences Partnership campus-based programs
- Information about Faculty Incentive Grants for course modifications
- Examples of two projects
- Questions?
Welcome + introductions

- Susan McKay
  - Professor, Dept. of Physics & Astronomy
  - PI, Maine Physical Sciences Partnership grant
  - Director, Research in STEM Education (RiSE) Center

- Introductions
  - The rest of us
Campus-based programs of the Maine PSP

- National need for more and better-prepared STEM school teachers
- Calls for attention to preparation of college instructors
- Increasing efforts to reform undergraduate STEM instruction

- Challenges:
  - How do undergrads get exposed to teaching as a career?
  - Faculty-in-training (graduate students) have limited opportunities for STEM-specific teaching-focused PD
  - University faculty have very few opportunities for teaching-focused PD (Boyer Commission, 2002)
Project goal: Improve physical science teacher recruitment, retention, and preparation

- Increase number of students in the University’s undergraduate and graduate teacher preparation programs
- Increase number of university courses taught using research-supported practices, especially those taken by future grade 6–9 physical science teachers.
- Research-supported practices = (for example) active learning, collaborative groupwork, Peer Instruction
Faculty Incentive Grant (FIG) program for course improvement

- Faculty propose changes to add or enhance active-engagement, student-centered opportunities to learn
- Faculty (with help from graduate student) examine the impact of the changes on student learning
- Faculty support includes
  - Summer salary for instruction/assessment design and revision
  - Education research graduate student to assist with assessment and evaluation design, data collection, and data analysis
  - Undergraduate Maine Learning Assistants to help with instruction
- Preference given to courses that enroll pre-service teachers
Maine Learning Assistants

- Modeled after program at University of Colorado, Boulder
- Undergraduate students selected who
  - Excelled in the course
  - Express some interest in pursuing/exploring career in teaching
- MLAs participate in
  - Weekly course on learning and teaching
  - Course preparation meetings with faculty and TAs

- Help facilitate activities in recitations or lecture

- Positive impact on student learning, LA learning, and teacher preparation program enrollment rates (UC Boulder, 4th annual NSF report, Otero et al (2010))
2012-2013 FIG projects

- Paul Rawson, School of Marine Sciences, SMS 300: Marine Ecology
  - Implementing a particular form of collaborative group learning ("jigsaw approach") to enhance student learning from case studies and increase opportunities for student participation in discussions.

- Michelle Smith, School of Biology and Ecology, Biology 350: Concepts and Applications of Genetics
  - Using clickers to facilitate peer discussion and to study how knowledge of peers’ answers shapes peer-to-peer discussions. Also using MLAs to help with in-class small group activities.
2012-2013 FIG projects, cont.

- Farahad Dastoor, Michelle Smith, and Mary Tyler, School of Biology and Ecology, BIO 100: Basic Biology
  - Increasing participation in the course and a sense of community by having MLAs work with groups of students to facilitate discussions about content and effective ways of engaging with the course material and activities.

- David Clark, Department of Physics and Astronomy, PHY 121/122: Physics for Engineers and Physical Scientists I/II
  - Enhancing students’ opportunities to learn during small group discussions in recitation by having MLAs as facilitators for those discussions. Also enhancing student engagement with clicker questions in lecture by having MLAs present to facilitate.
2012-2013 FIG projects, cont.

- Karl Kreutz, Earth Sciences and the Climate Change Institute, ERS 201: Global Environmental Change

- Barbara Stewart + Francois Amar, Department of Chemistry, CHY 121: Introduction to Chemistry
Application process

- Application and deadline Information: [http://umaine.edu/mainepsp/university-initiatives/faculty-incentive-grants/](http://umaine.edu/mainepsp/university-initiatives/faculty-incentive-grants/)

- Application consists of:
  - Information about your course
  - Rationale for proposed changes
  - Description of planned use of MLAs
  - Anticipated outcomes
  - Your CV
Thank You!

Questions?

Help?

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