

Faculty Application for HHMI Faculty Scholar Program

Howard Hughes Medical Institute – FIU Faculty Scholar Application

Name: Eric Brewe

Email: ebrewe@fiu.edu

Title: Asst. Prof. Science Education

Course you are proposing to transform (ex PHY 2049): PHY 2048/2048L

Expected Enrollment: 30

Primary student population in course

- Upper Division Majors: _____
- Lower Division Majors: X
- Non-Science Majors: _____
- Service Course: _____

How frequently have you taught this course in the last 3 years? 3x

After you participate in the Faculty Scholar program, do you anticipate continuing to teach this course?

My assignment has been to teach Phy 2048/2049 for the last four years, I have a letter from the Chair of the Physics department which indicates his intention to continue assigning me to this course for the next three years.

Please describe your motivation for transforming this course:

During the last four years, I have been convinced of the importance of giving students a positive experience in the introductory course because this is a good opportunity to get students interested and participating in the physics major. Further, I have been convinced based on the data collected by AAA (faculty member) who participated in the HHMI project that the outcomes shown my in AAA's course could be achieved in Phy 2048. Finally, my participation in the DBER group has given me confidence that with the benefits of summer planning support, the faculty mentors, and the overload pay, I will be able to achieve a course transformation, which I would not have been able to achieve without these supports.

Please describe what you anticipate the course will look like after your participation in faculty scholar program:

Eric Brewe 12/2/2012 2:38 PM

Comment [1]: Statements and supporting documentation like this strengthen the application because it shows that the investment by the HHMI project will continue to impact students beyond the time the Faculty Scholar is supported by HHMI.

Eric Brewe 12/2/2012 3:03 PM

Comment [2]: This response indicates that you have thought about student outcomes, it shows that you have considered local resources for implementing a transformed curriculum and that you have been utilizing DBER as a way of getting input/support during the implementation. Plus it shows that you plan on utilizing the financial incentives for their intended purpose.

I will be working with the Modeling Instruction group, and adopting this established curriculum. Some of the features of Modeling Instruction are: integrated lab and lecture, emphasis on conceptual understanding and developing problem solving, guided inquiry instruction (no lectures).

Have you identified any curricula for potential adoption?

Yes, I will be adopting Modeling Instruction.

If so, why have you identified this curriculum?

Modeling Instruction is a complete curriculum, which includes instructors guides and videos of classroom vignettes, so adopting MI will be facilitated by the resources available. Further, I have seen Dr. BBB present results from MI courses at CCC conference/DBER/Department Colloquium. It seems that using MI would allow me to achieve results such as increased conceptual understanding/improved attitudes/increased success rates/other things that are important to me.

Are you aware of any assessments that could be used to allow us to gauge student learning in the class you will be transforming? (This may include national normed conceptual tests, common exams from national organizations, etc)

Modeling Instruction has benefitted from a variety of assessments that would provide valuable feedback to me as an instructor, and to the HHMI project. These assessments include FCI for conceptual understanding of Newton's Laws, C-LASS-phys for attitudes toward learning physics, SALG for students' perspectives on learning gains, grade analysis for investigating increased retention in the course.

Do you anticipate using LAs in this course?

I anticipate having one Learning Assistant in each of the course's three two-hour meetings for a total of six hours/week.

If so, what will the role of the LAs be?

The Learning Assistants have been used in this course already and I expect to have LAs help support me with the management of labs/lab equipment and to facilitate discussion. These LAs will be expected to attend to a weekly planning meeting where we will discuss the curriculum plan for the week, discuss the upcoming activities and address any concerns with the class.

Do you anticipate using PLTL in this course?

If so, how will you?

Because I will be using LAs I do not anticipate using PLTL in this course.

Do you have anything further you would like us to consider in your application?

Eric Brewé 12/2/2012 3:04 PM

Comment [3]: This indicates that you know what the approach being used is all about.

Eric Brewé 12/2/2012 3:05 PM

Comment [4]: This indicates what some of the features of the curriculum you will be adopting are and how they will translate to outcomes that are important/valuable to you.

Eric Brewé 12/2/2012 3:06 PM

Comment [5]: Identifying assessments is important, especially when it comes to matching them with the expected outcomes that are important to you. Having some assessments identified dramatically reduces the burden on the management team.

Eric Brewé 12/2/2012 3:08 PM

Comment [6]: Using LAs (or PLTL leaders) is a good part of any HHMI course transformation, but knowing what they will do and how they will be prepared to do what they need to do will optimize the role of the LA in the class. It is essential to meet with LAs to help them prepare to be effective.

I have a letter of support for my application from Dr. BBB who has agreed to work with me as a mentor. Dr. BBB has been implementing Modeling Instruction for X years and will be attending the weekly planning meetings and advising me on working with LAs.

Eric Brewe 12/2/2012 3:11 PM

Comment [7]: Identifying any support that you have which can be leveraged to further ensure the success of a project is great to show. Other things that would be beneficial might include an indication of where the results might be presented (we have funds to support this type of activity) or possibly where you will go to get training on the curriculum if there is no local support available.