

DEPARTMENT OF MATHEMATICS

VIGRE Funding Report**(due 30 days after semester of support)**

Semester/Summer and Year:

Spring 2008

Name: Michael Bishop

List the graduate courses you have taken this semester (including independent studies), your grades, and the instructors:

Course	Title	Grade	Instructor
Math 511B	Algebra	A	Savitt
Math 523B	Analysis	A	Friedlander
Math 534B	Topology - Geometry	A	Flaschka
Math 596G	Research Tutorial Group	A	McLaughlin

List the title, date and location of any talks you have given, either here or elsewhere:

If you are working on your dissertation, include a one paragraph description of your research progress. If you have not yet begun dissertation research, describe your progress toward finding a dissertation topic and advisor and beginning that research.

The RTG seminar provided a great jumping off point for this. I enjoyed Professor Wehr's talks on Percolations theory and met with him about some problems in probability and differential equations. While I am not yet proficient in graduate probability theory to begin seriously discuss the questions, I will take a probability course in the Fall so that I may meet with Prof. Wehr and discuss this as a possible dissertation problem. Likewise, Prof. Lux's talk on group theory was excellent, and I will likely work with him on a paper in the fall (for the RTG course). Last, for Prof. Flaschka's course, I wrote a paper on the Euler Characteristic and its relation to Dynamical Systems on Smooth Manifolds. It was a fun paper to write and we discussed the possibility of working on something related to that topic. I will probably pursue Prof. Flaschka about it after the qualifying exams.

List publications, if any.

Check all activities you completed during the funded period:

Academics:

- Independent Study
- Oral Comprehensive Exam
- Commence Thesis Research
- Conference attendance
- Conference participation
- Complete PhD

Professional development and outreach:

- AP Calculus Visit
- High School Workshops
- Undergraduate Research Project
- Undergraduate Research Seminar
- Super TA
- Mentoring junior graduate students for the qualifying exams
- RTG (help organize)
- Research Seminar (help organize)

Other (please specify)

Attach a brief statment about your academic progress and professional development during the period of support.

Michael Bishop

Spring 2008 Vigre Report

My main goal this semester was to do well in my core courses, to make progress towards passing the qualifying exams, and to continue to investigate research opportunities. I made good progress towards all three goals.

My goal in my core course was to continue to do well in both Algebra and Geometry and improve my grade in Analysis. I did very well in my core courses, getting A's in all three courses. Algebra continued to be difficult, but Prof. Savitt did an excellent job teaching, and I absorbed the material readily. Geometry was fun, (as it was last semester). I enjoyed writing my paper for the course, and will continue study in the area. And through hard work, I was able to improve my understanding of Analysis as well as my grade. Without a doubt, the Vigre fellowship freed me from teaching duties and eased the burden on my course load. As a result, I had far more time to study notes, read the textbooks, and work on problems for my courses.

As a result, I feel much more prepared for my qualifying exams. With the free time, I was able to work on the problems from the qualifying exams packets and get a better idea of what I will need to know for the exams. In addition, the extra time let me mull over a lot of the material from the year. As problem sessions begin, it is clear the Vigre scholarship gave me a head start on qualifying exam preparation.

My last goal was to investigate research opportunities. The RTG seminar provided a great jumping off point for this. I enjoyed Professor Wehr's talks on Percolations theory and met with him about some problems in probability and differential equations. While I am not yet proficient in graduate probability theory to begin seriously discuss the questions, I will take a probability course in the Fall so that I may meet with Prof. Wehr and discuss this as a possible dissertation problem. Likewise, Prof. Lux's talk on group theory was excellent, and I will likely work with him on a paper in the fall (for the RTG course). Last, for Prof. Flaschka's course, I wrote a paper on the Euler Characteristic and its relation to Dynamical Systems on Smooth Manifolds. It was a fun paper to write and we discussed the possibility of working on something related to that topic. I will probably pursue Prof. Flaschka about it after the qualifying exams.

All in all, the progress I have made is better than I expected. Hopefully, I will do well on my qualifying exams and