

DEPARTMENT OF MATHEMATICS

# VIGRE Funding Report

(due 30 days after semester of support)

Semester/Summer and Year:

Summer 2009

Name: Thomas Occhipinti

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

Course	Title	Grade	Instructor

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

Some Mordell Weil Groups of Large Rank, July 17, Park City Mathematics Institute

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.

During my research period this summer I discovered a one parameter family of elliptic curves over function fields in positive characteristic which attain large Mordell Weil rank under certain extensions of the ground field. This particular example seems unlike previous examples of this occurrence because the set of extensions which lead to extra rank is larger. I also spent a significant chunk of the summer working on composing my dissertation.

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.

## VIGRE Report for Thomas Occhipinti

This summer was a productive one for me. I spent three weeks at the Park City Mathematics Institute in Utah. The subject of the institute was arithmetic properties of  $L$ -functions, and many of the talks were particularly relevant to my research. In particular, my advisor Douglas Ulmer gave a week long series of talks which were intimately tied in with my research. I also got to meet and talk with many academics in my area from other universities. I met many fellow grad students in my area while being the teaching assistant for Ulmer's lectures.

This summer has also been very productive for my research. I was able to make a significant discovery which will form the basis of my dissertation. I also began writing my dissertation in earnest, and made significant strides in that direction. I am well on track for my goal of finishing this year.

I completed and distributed my algebra qualifying exam review packet that I mostly wrote last summer to help the students prepare for the algebra qualifying exam. I also helped out at the integration workshop, which seemed to be a significant success.