PURDUE UNIVERSITY

2013 PRiME:

Purdue Research in Mathematics Experience

General Information

The Department of Mathematics at Purdue University will offer an 8-week residential program to conduct research in pure mathematics. The program, entitled PRiME (Purdue Research in Mathematics Experience), will run from June 10, 2013 through August 2, 2013.

Between 6 and 8 undergraduate students will be selected to conduct research with Dr. Edray Goins, Associate Professor of Mathematics. Students will choose from two different projects in Number Theory. These projects will focus on the theory of *Dessins d'Enfants*, an emerging field which combines ideas of Abstract Algebra, Complex Analysis, Differential Geometry, Graph Theory, and Number Theory.

Goals and Expectations

During the summer, each of the undergraduate participants will:

- Complete a research project done in collaboration with other PRiME students.
- Give a presentation and write a technical report.
- Attend a series of colloquium talks given by leading researches in their fields.
- Attend workshops aimed at developing skills and techniques needed for research careers in the mathematical sciences.

In order to successfully complete this project, participants will:

- Meet at least 10 hours every week for a minimum of 8 weeks.
- Be introduced to Abstract Algebra, Complex Analysis, Differential Geometry, Graph Theory, and Number Theory.
- Learn how to use an advanced symbolic computational package, such as `Sage` and `Mathematica`.
- Learn how to use LaTeX, a mathematical typesetting language.
- Write a technical paper explaining the details of the project.
- Design a poster giving an overview of the project.

Stipend and Travel

Upon the successful completion of the 8-week program, participants will receive a $4,000 stipend. They will also have room covered for the eight weeks from Sunday, June 9, 2013 and through Saturday, August 3. (Meals will not be covered for the participants.) Travel expenses up to $500 to and from the Purdue West Lafayette campus will also be covered.

Prerequisites

Students must be undergraduates in good standing, although preference will be given to applicants who will begin either their Junior or Senior year in the Fall of 2013. Applicants must have taken a proof-based course in Abstract Algebra, Discrete Mathematics, and/or Number Theory. It is not required that participants be US Citizens.

Application Instructions

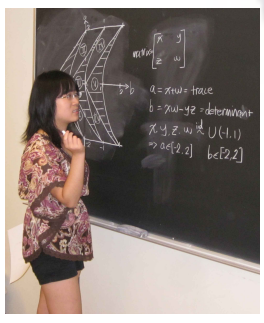
You can fill out application the online by visiting the web site

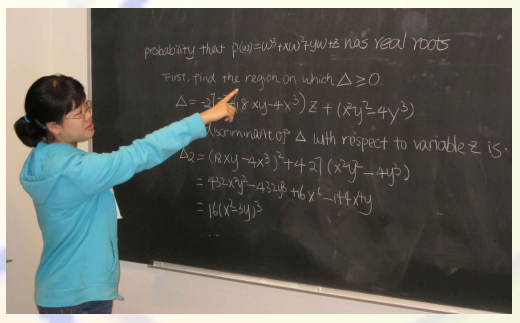
`http://www.math.purdue.edu/~egoins/site//PRiME%202013.html`

Applicants should have the following items sent via e-mail to `egoins@math.purdue.edu`

- Current resume or curriculum vitae
- Unofficial transcript
- Three letters of recommendation

Complete applications should be received no later than **Friday, April 26, 2013**. Decisions will be announced by Monday, April 29, 2013.





The program is being sponsored by the National Science Foundation (NSF) as well as generous gifts from Ruth and Joel Spira (BS '48, Physics) and Andris Zoltners (MS '69, Mathematics). For more information, contact Edray Goins at (765) 494-1936 or `egoins@math.purdue.edu`.