2017 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 5, 2017 through July 28, 2017. The program will be directed by Edray Goins (Purdue University) and Jonathon Peterson (Purdue University). Students will work together on research projects in either algebraic geometry or in random walks and probability theory. More details can be found at the website

http://www.math.purdue.edu/people/bio/egoins/PRiME.html

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 at MAA's MathFest and write a technical report.
- Attend a series of colloquium talks given by leading researchers 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 receive up to $850 for travel (to and from Purdue and also to attend conferences after the completion of the PRiME program). The program will provide on-campus housing at Purdue University.

Prerequisites and Application Instructions

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 2017. Applicants must have taken a proof-based course in Abstract Algebra, Discrete Mathematics, Number Theory, and/or Probability Theory. NSF funding also requires that participants must be US Citizens. Applications should be submitted through `MathPrograms.org`:

https://www.mathprograms.org/db/programs/516

For a complete application, potential participants will need to submit

- Three letters of recommendation.
- An unofficial transcript or list of math courses and grades. An official transcript may be required upon admission.
- A cover letter addressing your interest in the PRiME program. Applicants should address what they hope to get out of participating in PRiME and also which of the two research topics they prefer to participate in.

For full consideration, applications should be received no later than **Friday, February 10, 2017**. Decisions will be announced by Monday, March 3, 2017.