

Research in Industrial Projects for Students (RIPS) 2012

June 24 - August 24, 2012

Overview:

The Research in Industrial Projects (RIPS) Program provides an opportunity for high-achieving undergraduate students to work in teams on a real-world research project proposed by a sponsor from industry or the public sector. Each RIPS team is comprised of four students, an academic mentor, and an industrial sponsor. The research problem is developed by the industrial sponsor in consultation with IPAM; it is always a real problem of serious interest to the sponsor and that offers a stimulating challenge to students. Most of these projects involve both analytic and computational work. The students, with direction from their academic mentor and industrial sponsor, will learn about the problem, master the latest analytical and computational approaches and techniques to solve it, and develop report-writing and public-speaking skills to be able to make professional presentations about the progress and results of their work to a scientific audience. Industry mentors provide regular contact between the team and the sponsor, monitoring and helping to guide student work. Ultimately, RIPS provides valuable real-world technical and managerial experience for students as well as valuable R&D for sponsors. RIPS recruits its students from all over the world. Graduating seniors are eligible. See Frequently Asked Questions for more information about qualifications of applicants. RIPS Program Director (see sidebar): Michael Raugh, Ph.D. For more information, see [Comments from RIPS Students](#) and [Frequently Asked Questions](#).

Projects:

Projects are selected to have a major mathematical component and to be something that will pose an interesting challenge to talented undergraduates. Recent projects have included how to do a physics-based animation of a lava lamp, how to stitch together two images, how to analyze cancer data using microarrays, statistical data assimilation methods for weather data, modeling particle transport phenomena in reactors, and designing missions to the moons of Jupiter. This is just a sampling of the types of projects assigned to RIPS teams. New industrial sponsors join the RIPS Program each year and the same projects are never repeated. RIPS 2011 sponsors were The Aerospace Corporation, Arete, HRL, IBM, Los Angeles Police Department, Pixar/Walt Disney Animation Studios, Standard and Poor's, Symantec and The Shoah Foundation. The RIPS-LA 2011 project descriptions are posted here.

<http://www.ipam.ucla.edu/programs/rips2011/sponsors.aspx>

Application

An application form is available at:

<https://www.ipam.ucla.edu/elements/choose.aspx?pc=rips2012>

You must apply and be accepted in order to attend the workshop. The application is also for people requesting financial support. We urge you to apply as early as possible. Applications received by Sunday, February 12, 2012 will receive fullest consideration. Letters of reference may be sent to the address or email address below. Successful applicants will be notified as soon as funding decisions are made.

We have funding especially to support the attendance of recent PhD's, graduate students, and researchers in the early stages of their career; however, mathematicians and scientists at all levels who are interested in this area are encouraged to apply for funding. Encouraging the careers of women and minority mathematicians and scientists is an important component of IPAM's mission and we welcome their applications.

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