Summer Research Experience

The objectives of the Institute are to provide training and hands on experience in the use of computational techniques for science and engineering students, and to prepare those who choose to pursue graduate studies in technology areas which are dependent upon computational science and engineering.

Students are encouraged to continue work with AHPCRC professors at their home universities upon completion of the program and many students are offered opportunities for internships at the Army Research Laboratory the subsequent summer.

Prerequisites: Students MUST be US citizens. This program is intended for undergraduate students who anticipate graduation in Spring 2014 or later.

Application Information

It is expected that all students in the summer Institute will have completed freshman calculus and will have some computer programming experience.

Applications should include the following form which is available at: **www.ahpcrc.org**

A one page statement including career and research objectives and computer experience.

A current transcript of coursework, "Unofficial Transcripts" are acceptable.

Two letters of recommendation (recommendations from AHPCRC affiliated faculty are given preference, but not required).

This information should be emailed to the following address by February 28, 2013 (late applications might not be given assurance of full consideration)

AHPCRC Summer Institute

Grace Fontanilla
Stanford University
Durand Bldg
496 Lomita Mall
Stanford, CA 94305
email: fontanillla@stanford.edu

Experience Silicon Valley at its Premier Research University

AHPCRC
Army High Performance Computing Research Center

In 2011, Adam Duran, a student at New Mexico State University, created an android app that turns an android tablet into a braille input device for sight impaired students. The app was so successful that a patent is being filed for the technology. Adam's project is one of a number of successful research projects performed by students at the Summer Institute. For more information see link:

http://me.stanford.edu/research/centers/ahpcrc/news.html

Army High Performance Computing Research Center

http://www.ahpcrc.org

June 24 - August 16, 2013

Army High Performance Computing Research Center
Stanford University, Stanford, CA

The Summer Institute is an intensive eight week program. Its curriculum combines short courses in computational engineering methods concentrating on structural mechanics, biological fluid flows and computer programming for parallel clusters, with research experience working with one of the AHPCRC research groups at Stanford University.

The 2013 Curriculum will include courses such as:

C Programming, JAVA
Parallel Computing
Android Development
Introduction to Computational Engineering
Computational Meshes
Numerical Solutions of ODE Boundary
Integral Techniques
Linear Algebra and Optimization

The students will gain valuable research experience working with Principal Investigators and mentors in one of the following AHPCRC research groups listed below:

HPC-Enabled Parametric Studies of Underbody Blasts: From High-Fidelity to Reduced Order Models

2D Nano-Electromechanical Devices

LisztFE: Finite Element Codes for Exascale Computing

Computational Fluid Dynamics for Blood Transfusions

Computational Modeling of the Inhalation of Toxic Agents in the Lungs

Scalable, Shared, and Distributed Memory Algorithms for Computational Solids, Fluids and Geometry

High Performance Data Analytics

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