Research Experiences for High School Students Project Description

**Project Title:** Develop Social Network Graphs and Participate in Social Media Presence, Community Building Projects & Events

**Overall Research Project**

The National Science Foundation (NSF) funded a ‘Big Data’ Innovation Hub for the Western United States intended to facilitate collaboration among the region’s technology sector and other organizations to address research challenges in areas such as precision medicine, natural resource utilization, hazard management, and metro regional development.

The Western Hub is part of an NSF program that includes four awards totaling more than $5 million to establish regional hubs for data science innovation. The consortia are coordinated by top data scientists at Columbia University (Northeast Hub); Georgia Tech and the University of North Carolina (South Hub); the University of Illinois at Urbana-Champaign (Midwest Hub); and the University of California, San Diego, the University of California, Berkeley, and the University of Washington (West Hub).

Covering all 50 states, they include commitments from 281 organizations – from universities and cities to foundations and Fortune 500 corporations – with the ability to expand further over time. Building upon the [White House National Big Data Research and Development Initiative](https://www.whitehouse.gov/bigdata) announced in 2012, the awards are made through the [Big Data Regional Innovation Hubs (BD Hubs)](https://www.nsf.gov/) program, which creates a new framework for multi-sector collaborations among academia, industry and government.

The program calls for creating an infrastructure to define and evaluate those collaborations. The Western BD Hub will connect state and regional organizations including academia, industry, state agencies, and non-profit organizations that regard the potential of large-scale data management and analysis as transforming or adding value to their operations.

Project principal investigators for the Western BD Hub include Michael Norman, director of the San Diego Supercomputer Center (SDSC) at UC San Diego; Michael Franklin, the Thomas M. Siebel Professor of Computer Science and Chair of the Computer Sciences Division at UC Berkeley; and Ed Lazowska, the Bill & Melinda Gates Chair in Computer Science & Engineering at the University of Washington.

This is an exciting opportunity to work on a high profile national data science project and gain hands-on experience in a professional team environment of software engineers and scientists.

**Number of Students to be supported:** 1-2

**Name of Lead person:** Christine Kirkpatrick, Division Director, Information Technology Systems & Services, San Diego Supercomputer Center, UCSD

**Plan to Integrate Student into Group Activity**
The student will be a part of the small local team working on the larger scale project that includes the project described here. The student will work closely with the lead person and the other personnel involved.

**Student Prerequisite**
Tasks will be built to fit the selected student(s) strengths and expertise.
- Ability to follow through on tasks and ability notify team when stuck or in need of additional guidance or tasks.
- Good communication and writing skills required.
- Command of Microsoft Word, Excel or Google Spreadsheets and Docs.
- Helpful is any scripting experience, but not necessary.

**Number of hours per week**: 20 hours

**Relevant links:**

West Big Data Innovation Hub:  
[http://westbigdatahub.org/](http://westbigdatahub.org/)

San Diego Supercomputer Center:  
[http://www.sdsc.edu/](http://www.sdsc.edu/)