SDSC Computational Research Experience for High School Students (REHS) Program

Project Opportunity: Spatial Information Systems Lab

Making sense of search in the geosciences: organizing geoscience data, models and software for efficient and more complete search and assessment across science disciplines.

This internship will be a part of NSF-funded EarthCube CINERGI (Community Inventory of EarthCube Resources for Geoscience Interoperability) project. EarthCube is a new large-scale NSF project to create a data and knowledge management system for data sharing among geoscientists. We are working with researchers from several geoscience domains to understand what data and models they use, and how they search for appropriate data and evaluate their fitness for use. As part of it, we assemble a collection of metadata documents, validate them, parse their content and try to reconstruct information that is missing. Interns in this project will work with the project’s programming staff to construct, annotate, test, improve and visualize the metadata catalog that will span multiple disciplines in the geosciences.

The tasks will include: working with geoscientists from several domains (in particular, sedimentology, hydrology, paleogeoscience), to assemble descriptions of data they use into searchable catalogs; creating online visualizations of these catalogs; understanding and describing how researches search for data in different fields; assembling and describing geoscience models and processing tools; linking information about datasets with publications, researchers, models, etc.

**Number of Students to be supported:** 1-3

**Name of Lead person:** Dr. Ilya Zaslavskey, San Diego Supercomputer Center

**Plan to Integrate Student into Group Activity**

The student will be a part of the research team working on the larger scale project that includes the project described here. He or she will attend the group meetings and communicate with the team members using other methods of communication. The student will work closely with the lead person and the other personnel involved.

**Student Prerequisite**

We are looking for students who are interested in both environmental science and in computing. Ideal candidates would have some programming and web design skills, ability to read and understand data and model descriptions, and some familiarity with databases.

**Number of hours per week:** 15-20 hours

**Relevant link:**

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