

UVMN for WC-WAVE

NSF Highlights—Track 2 Workforce Development

Title

2014-2015 Undergraduate Visualization and Modeling Network (UVMN)

Outcome

Watershed mapping and modeling was the focus of three teams (Sierra Nevada College, NM Highlands University, Mesalands College, NM) and all three have leveraged their UVMN work into longer-term research projects. Several teams built augmented reality sandboxes to be used in geoscience courses (Southwestern Indian Polytechnic Institute, NM; Nevada State College; Western Nevada College).



Impact / Benefits

By the conclusion of the summer workshop, each team had developed a module implementation plan. The scale of the modules ranged from a single class-based virtual lab tour (UNM Valencia) to the development of an entirely new STEM course (College of Southern Idaho). UVMN participants have also benefitted from on-going collaboration across the three-state network. Teams from NM Highlands University and College of Southern Idaho collaborated on the development of data and visualization classroom activities.

Explanation

UVMN is a workforce development initiative of WC-WAVE to provide professional development for instructors (faculty) and students from Primarily Undergraduate Institutions (PUIs) in the three consortium states—ID, NM, and NV. UVMN provides an opportunity to engage diverse students in undergraduate research and CI-enabled education. Eleven faculty/student teams participated in Year 1 activities. The goals of UVMN are: 1.) To improve the undergraduate STEM experience at PUIs through professional development for faculty and the engagement of undergraduate students in research-based activities; and 2.) to increase the diversity of participants in STEM education and research.

Three components comprise UVMN:

- **Summer Workshop.** The 3-day workshop focused on using Google Earth to create GIS content, develop a watershed model and visualize various scenarios, using free geographical data sources and software, and novel approaches to create 3D models.
- **Module Development.** Each faculty/student team collaborated on the development and implementation of an educational module based on the summer workshop content.
- **On-Going Community.** Teams participated in both virtual and face-to-face meetings with project mentors, fellow participants and WC-WAVE research scientists.