Grant designed to bring public closer to Lake Tahoe, Lake Champlain

The public will be able to visually immerse themselves in two of the best-known lakes in the United States thanks to a $2.3 million grant from the National Science Foundation to UC Davis' Tahoe Environmental Research Center.

The three-year grant will be used to develop three-dimensional visualization technology to enhance public understanding and stewardship of freshwater lake ecosystems and earth-science processes. The project will directly reach about 400,000 visitors to Lake Tahoe in California and Nevada, and Lake Champlain in Vermont and New York.

The project's collaborators hope it will serve as a global prototype for lake and watershed education.

Key to the project will be "immersive" 3-D visualizations of lake and watershed processes, with the Lake Tahoe portion being housed in the Otellini 3-D Visualization Theater at the Lake Tahoe center. Content for the visualizations will be developed from a variety of sources including high-resolution lidar, a laser-based remote sensing technology; sonar; satellite imaging; 3-D hydrodynamic modeling; and in-situ lake measurements. The audience will be enveloped by the data and, by accessing a suite of visualization, measurement and navigation tools, can explore every facet of the virtual display.

The resulting educational program will focus on water quality and ecosystem health, lake formation, lake food webs, weather and climate, and the impact of people on the ecosystem. In addition to 3-D visualizations, the lessons also will be conveyed via portable science stations, docent training guides

and manuals for informal science education venues.

The project also aims to evaluate how 3-D visualizations and related technologies can be used more broadly to support education and training in the areas of science, technology, engineering and mathematics.

Collaborating on the project with the Tahoe Environmental Research Center will be the W.M. Keck Center for Active Visualization in the Earth Sciences (KeckCAVES) at UC Davis, the UC Berkeley Lawrence Hall of Science, ECHO Lake Aquarium and Science Center in Vermont, and the Institute for Learning Innovation in Maryland.