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Innovative Tools for Educators: An Interactive Online Atlas of Ocean Productivity

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Summary

Led by the director of the California Space Institute, Dr. Wolfgang Berger, a team of researchers, teachers and students developed an educational website, highlighting topics such as the role of global climate on the ocean’s biological productivity. The website, called Earthguide, is located at <http://earthguide.ucsd.edu>.

Earthguide’s creators describe the site as “an online multimedia resource for busy people who want to know more about how the earth works.” The site is geared to community college students in introductory earth science classes, although the site’s visually captivating design and nontechnical explanations lend themselves for use in high school and grade school classrooms, too.

Earthguide has also been an effective tool for enhancing communication between university scientists and teachers. Earthguide’s content is guided by an advisory

panel composed of instructors from community colleges in the San Diego region, and the University of San Diego.

Earthguide contains many sections, including a news page, an image library, an ocean atlas, a brainteaser question, a collection of children’s poems on the sea, and an extensive section on diatoms—single-celled algae that form the base of the food chain.

Diatoms are used as an object lesson in ecosystem dynamics. Through diatoms, students are shown how changes in ocean water temperatures change diatom populations, which in turn change fish abundance. The intent, Dr. Berger said, is to “improve public literacy in issues related to marine productivity by making current scientific knowledge and materials from the research community accessible.”

Dr. Berger plans to expand Earthguide. Future projects include creating a curriculum that uses real ocean data to illustrate how El Niño and La Niña events alter the productivity of the California Current. He and colleagues also plan to incorporate satellite images of ocean color and wind into the atlas and to continue hiring undergraduate students to work on the design, content and computer



The home page for “Diatoms: Living Opals,” an interactive website designed to facilitate a self-guided exploration of the marine realm.

programming of new webpages.

As the project evolves, students will be able to generate color-coded maps showing the distribution of various oceanographic parameters, including temperature, salinity and dissolved oxygen. These contour maps help students visualize oceanic processes while introducing them to standard data analysis techniques.

Earthguide was exhibited at the San Diego Science Educators Association Conference in San Diego in March 2000. The project will be presented as a “Centennial Contribution” to Scripps Institution of Oceanography, which turns 100 in 2003.

Cooperating Organizations

- California Space Grant
- California Space Institute
- Grossmont Community College
- Mira Costa Community College
- Palomar College
- University of San Diego



With Sea Grant funding, Dr. Wolf Berger and college interns created an educational webpage on diatoms for high school and community college teachers. Photo: Memorie Yasuda, University of California, San Diego.

Publications

Yasuda, M., and W. Berger. 2001.
Earthguide website
<http://earthguide.ucsd.edu/demo/seagrant/>
<http://earthguide.ucsd.edu/diatom/d1.html>
<http://earthguide.ucsd.edu/earthguide/diagrams/levitus/>

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