

# UC San Diego

## Research Summaries

**Title**

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

**Permalink**

<https://escholarship.org/uc/item/1766j34w>

**Author**

Berger, Wolfgang H.

**Publication Date**

2002-02-01

E/G-12PD: 11.1.1998–8.31.2000

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

**Wolfgang H. Berger**

Director, California Space Institute, University of California, San Diego

### Summary

**L**ed 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/>

## For more information:

Dr. Wolfgang H. Berger  
Director, California Space Institute  
University of California, San Diego  
Tel.: (858) 822-2545  
Email: [wberger@ucsd.edu](mailto:wberger@ucsd.edu)

PUB. NO. CSG-ED-02-002

FEBRUARY 2002

*California Sea Grant is a statewide, multiuniversity program of marine research, education, and outreach activities, administered by the University of California. Sea Grant-sponsored research contributes to the growing body of knowledge about our coastal and ocean resources and, consequently, to the solution of many marine-related problems facing our society. Through its Marine Extension Program, Sea Grant transfers information and technology developed in research efforts to a wide community of interested parties and actual users of marine information and technology, not only in California but throughout the nation. Sea Grant also supports a broad range of educational programs so that our coastal and ocean resources can be understood and used judiciously by this and future generations.*

*The national network of Sea Grant programs is a unique partnership of public and private sectors, combining research, education, and technology transfer for public service and dedicated to meeting the changing environmental and economic needs in our coastal, ocean, and Great Lakes regions.*

*This work is sponsored in part by a grant from the National Sea Grant College Program, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, under grant number NA06RG0142, Project number A/P-1. The views expressed herein are those of the author and do not necessarily reflect the views of NOAA or any of its sub-agencies. The U.S. Government is authorized to reproduce and distribute for governmental purposes.*



---

CALIFORNIA SEA GRANT COLLEGE PROGRAM

Russell A. Moll, Director • Dolores M. Wesson, Deputy Director • Paul Olin, Interim Associate Director for Extension  
• Marsha Gear, Communications Coordinator

University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0232  
Phone: (858) 534-4440 Fax: (858) 453-2948 Web site: <http://www-csgc.ucsd.edu>