UC SANTA BARBARA

THE Current

June 24, 1998
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# UCSB RECEIVES GRANT TO STUDY ECOSYSTEM DYNAMICS

The University of California, Santa Barbara has received $350,000 from the Andrew W. Mellon Foundation to study soil as a critical component of the Earth's terrestrial ecosystems.

Oliver A. Chadwick, associate professor of geography and environmental studies, is the principal investigator in the study."Soils are one of the most important natural resources in the world," said Chadwick. "Without it we can't grow food. Without it we would drown in our garbage and the carcasses of plants and animals. Soil forms a critical link in the global movement of nutrients from atmosphere and rocks to organisms on land and in water." Chadwick takes an interdisciplinary approach to the study of soils and biogeochemical cycles by adapting methods that were initially developed for use in geology and solar system research. These methods allow researchers to follow specific nutrient elements as they move from one Earth system to another. For example, he tracks carbon and nitrogen as they move from the atmosphere to plants. Likewise, he follows phosphorus, calcium and potassium as they move from rocks to soil and plants. On a larger scale, he follows the transfer of nutrients from continents to oceans.

This research will also explore the application of new geochemical and isotopic tracer techniques to ecosystem research. It will allow researchers to understand how organisms use geologic and atmospheric material in their day-to-day functioning. "This funding allows me to reach out to other disciplines to find new techniques that

will enhance our knowledge of how soils function," said Chadwick.

Chadwick received his B.S. in biology at George Washington University, his M.S. in horticulture and soil fertility from Cornell University, and his Ph.D. in soil and water science from the University of Arizona. He did post-doctoral research at the University of Arizona, and the University of California, Berkeley. Before joining the UCSB faculty in 1995, he was a soil scientist at the Jet Propulsion Laboratory in Pasadena, Calif from 1987-1993.

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## About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.