

Penn State Alumna to Highlight Discoveries in Using Isotopes to Trace Food Webs

Marilyn L. Fogel, '73 Sci, will give the inaugural Frontiers in Earth Systems Ecology seminar on Tuesday, Sept. 1, at 4 p.m. in 22 Deike.

A senior staff scientist with the Carnegie Institution of Washington, Fogel will discuss recent discoveries in using hydrogen and oxygen isotopes for tracing food webs. About 70 percent of the hydrogen in organic compounds of animals originates from the hydrogen in their diet, so an understanding of how organic hydrogen is passed from one organism up the food chain is key, Fogel says.

“Oxygen sources to animals and plants are critical to understanding the isotopic compositions in a food web and can reveal insights not covered by carbon and nitrogen,” she added

Fogel, who majored in biology at Penn State, earned her Ph.D. in botany from the University of Texas at Austin. Her early research focused on discovering the biological pathways responsible for hydrogen isotope fractionation in plants, microbes and animals.

More recently, she has focused on the study of life's potential on other planets. She has expanded her isotopic studies to examining the isotopic patterns in meteoritic organic matter, volatiles in high temperature silicate phases and Mars analogue environments located in Norway.

The Frontiers in Earth Systems Ecology seminar is sponsored by the Earth and Environmental Systems Institute and the Department of Geosciences.