

Earth System Science – Bringing context to graduate study

R. Quinn Thomas, University of New Hampshire, Durham, NH

Earth system science education is an important component of graduate coursework.



In December 2005 I found myself standing at the San Francisco convention center lobby surrounded by American Geophysical Union Fall (AGU) Meeting signs. Despite it being the large scientific gathering in the world, I was attending it with only minimal interest in the scientific content of the meeting. Before I began the Earth system science (ESS) class as a first year masters degree student at the University of New Hampshire, AGU seemed inapplicable to my scientific career, even with the plethora of scientific fields and diverse ideas it represents.

In early fall 2005, my advisor at UNH offered to fund a trip to AGU to present research I had completed during the previous year as an undergraduate. With only a passing interest in the science represented at the conference, I accepted the invitation primarily for a chance to travel and present my research. This lack of curiosity was presumably due to my education in ecological sciences before attending UNH. My course work focused on population and community ecology, and I had traveled to Costa Rica to study large tree demography. When I thought of a conference with topics relevant to my scientific consciousness, the Ecological Society of America meeting was the first to come to mind, not AGU with research ranging from space informatics to hydrology. My enthusiasm for the conference was lacking after looking at the session titles. I was worried I would feel scientifically ill suited.

Upon arriving at AGU, I found myself far less indifferent. Instead, I felt a growing sense of context as I thumbed through the program. I began to be aware of the connectivity between the ecological systems that define the biosphere and interact with the greater Earth system. The topics at AGU were now exciting because they had direct connections to my scientific interest in ecology. At the conference, I explored ideas ranging from the biogeochemical importance of cloud water to the impending mega-droughts of the Southwest. I realized that everything at the conference had some relationship to the biosphere.



The Earth system science class I took between my initial invitation to the conference and my attendance enlightened my perspective on ecological systems. Before the class, I knew that ecological systems were not isolated from the Earth system. However, I never was able to appreciate the Earth system interactions that affected ecological systems. I

became able to comprehend the real importance of those interactions only after I gained a working knowledge of the many different components of the Earth system. I now see my education in ESS as an important component of my graduate coursework. As a graduate student I am passionate about a specific field of science, and a class in ESS was essential for grasping the context that surrounds that field.

Quinn Thomas' earlier interests at Dartmouth -

<http://www.dartmouth.edu/~news/releases/2003/08/13.html>

Quinn Thomas' web page –

<http://www.unh.edu/natural-resources/grad-thomas.html>