

STATEMENT OF TEACHING

I have been teaching at the university level since 1992 and the courses I have developed can be grouped into three thematic “threads”:

General Core Curriculum (Science): Undergraduate

- Earth System Science
- Environmental Sciences
- Oceanography

Upper Level Curriculum in Environmental Sciences: Undergraduate

- Oceanography
- Instrumental Analysis
- Quantitative Chemical Analysis
- Sophomore Seminar
- Senior Seminar

Specialized Curriculum in Environmental Management: Graduate

- Math for Management and Sciences
- Climate Change and Water Resources
- Ecosystem Functioning and Biogeochemical Cycling
- Environmental Chemistry and Regulatory Toxicology
- Environmental Economics in Oceanography

To achieve appropriate learning outcomes towards the understanding of large-scale and dynamical environmental cycles, I use two approaches: **1) authentic inquiry** that relies on the use of laboratory setting and/or information technology to provide the learner with the opportunity to manipulate complex data sets, test and develop conceptual models based on available information, and be exposed to ill-constrained and complex problems, and **2) the contextualization of scientific information** that provides a structure by which learners can integrate the understanding of complex natural systems into problem solving approaches.

1) Authentic inquiry

Most of my courses are based on both minds-on (data manipulation) and hands-on (instrumental analysis) approaches that use real research data/instruments to solve current projects in environmental sciences. I apply the analytical expertise I develop in the lab towards the development of applied courses in instrumental methods. The courses are also supported by specific websites where lectures, supplementary information, study guides, and homeworks/labs are posted. I design these websites myself publishing, in some instances, entire course sections in an autonomous web-based format. One such course (*Earth System Science*) was offered in a bilingual option (English/Spanish) in support of remote education programs for in-service and pre-service teachers as well as foreign students (Latin America). Another of such courses (*Environmental Economics in Oceanography*) was designed entirely as a web-based tutoring tool for students entering a graduate program in marine resources management and who were missing some general background in economics and marine sciences.

2) Contextualization of scientific information

More than half of the courses I have developed were intended for either non-science majors (general core curriculum or education) or graduate students in environmental management programs. All such courses were thus built with a strong multidisciplinary foundation. In many instances, the scientific concepts of these courses had to be integrated into a much wider context in support of training decision makers in the social sciences rather than future experts in a natural science field. Context is a key in multidisciplinary approaches to make sure that the scientific material is integrated in a way that is relevant, and not foreign, to the needs of the end users (educators, decision makers).

Teaching Awards

– Texas A&M University - Association of Former Students: Distinguished Achievement Award. 2010

Graduate and Undergraduate Students

Matt Norwood, (Advisor)

- Ph.D. ongoing. Texas A&M University – Oceanography.
- Undergraduate Senior Thesis. Texas A&M University. 2010-2011

Sally Walker, Ph.D. ongoing (Thesis Committee), Texas A&M University - Oceanography.

Richard Smith, Ph.D. ongoing (Thesis Committee), Texas A&M University - Oceanography.

Eric Chan, Ph.D. ongoing (Thesis Committee), Texas A&M University - Oceanography.

Xin-Xin Li, Ph.D. ongoing (Thesis Committee), Texas A&M University - Oceanography.

Ching-Ping Lu, Ph.D. ongoing (Thesis Committee), Texas A&M University - Oceanography.

Josh Williams, Ph.D. ongoing (Thesis Committee), Texas A&M University - Oceanography.

Kandice Williams, NSF-REU (Summer 2011)

Heili Lowman, NSF-REU (Summer 2010)

Stacey Moller, NSF-REU (Summer 2010)

Shaya M. Seward, M.Sc. completed (Advisor). Texas A&M University - Oceanography. 2010

Omar R. Harvey, Ph.D. completed (Thesis Committee), Texas A&M University - Geology & Geophysics. 2010

Li-Jung Kuo, Ph.D. completed (Co-Advisor), Texas A&M University - Geology & Geophysics. 2009

Brandon Laroy, M.Sc. completed (Thesis Committee), Texas A&M University - Fisheries. 2009

Ryan Schloesser, M.Sc. completed (Thesis Committee), Texas A&M University - Fisheries. 2009

Danielle Aguirre, B.Sc. Senior Thesis, completed (Advisor), Texas A&M University. 2009

Christina Pondell, B.Sc. Senior Thesis, completed (Advisor), Texas A&M University. 2008

Marie Alexis, Ph.D. completed (External Thesis Reviewer). Université Pierre et Marie Curie. 2007

Lillian Pitts, MPA completed (Advisor), Columbia University. 2004

Post-Doctoral Associates

Dr. Stephane Houel, University of Québec in Montréal. 2003-2005