NOAA Interdisciplinary Scientific Environmental Technology (ISET) Educational Partnership Program
Tracy Hansen, Chris Harrop, Isidora Jankov, Steve Koch, Tom LeFebvre, MarySue Schultz, Cathy Smith, and David Welsh
NOAA – Earth System Research Laboratory

Key NOAA Research

Educate, train, and graduate students, particularly from under-represented communities, in NOAA sciences. Students gain valuable research experience, while ESRL leverages students’ state-of-the-art knowledge.


197 students nation-wide – 25 Ph.D. and 34 Master’s candidates/14 student – mentor internships at GSD/PSD in 2009. Collaboration leads to new course, seminars, and graduate programs, feeding future generations of NOAA scientists.

“‘The NOAA ISET program has broadened my horizons. I got the idea for my research on clustering weather data through this internship, which also enabled me to experience a professional environment.’” – Robert Olabode, Graduating 2010 – University of Minnesota

“‘Robert’s work has become a cornerstone feature of the Workflow Manager and is used operationally by many scientists every day.’” – Chris Harrop, ESRL Mentor

Connecting With Student Innovations

Workflows to Access and Manipulate Weather Sensor Data
Cheickna Baber, Ph.D. Candidate, North Carolina A&T State University
ESRL Master's Thesis Committee Member – Tracy Hansen
Impact to Student: Learned and compared workflow software, data access standards, and analysis techniques
Impact to NOAA: Knowledge of OGC standards and workflows for data access and analysis

Earth Information Services
Unifying Theme for Student Projects

Weather and Climate Data Predictions, Correlations

Workflow Manager to Run Weather Models
Kawana Fuller, Master’s Candidate, North Carolina A&T State University
Robert Olabode, Graduating 2010, applying to Master’s program, University of Minnesota
ESRL Mentors – Christopher Harrop and Isidora Jankov
Impact to Students: Experience with software design and implementation, workflows, Python, XML, Graphical User Interfaces
Impact to NOAA: GSD scientists now configure numerical model runs more efficiently

Clustering of Average Yearly Temperature
Robert Olabode, Undergraduate, University of Minnesota
ESRL Mentors – MarySue Schultz and Tom LeFebvre
Impact to Student: Worked with data access standards, data mining, visualization, and analysis techniques.
Impact to NOAA: Knowledge of OGC standards and limitations for data access.

Google Earth Data Display for NOAA Cruises
Tammy Morrison, Master’s Candidate graduating 2010 - North Carolina A&T State University
ESRL Mentor – David Welsh
Impact to Student: Learned Perl, MATLAB, Google Earth visualization techniques
Impact to NOAA: PSD Web page now shows Cruise Data

Self-Generating KML Code for Google Earth
Richard L. Messick, Master’s Candidate, North Carolina A&T State University
ESRL Mentor – Cathy Smith
Impact to Student: Learned data access methodologies using Perl, KML, Google Earth visualization and web interface design.
Impact to NOAA: PSD Web pages now show plots of NCEP/NCAR - Reanalysis and 20th Century Reanalysis on Google Earth.