

# Implementation of Climate Change Education at Morgan State University

by Dr. Chunlei Fan  
Associate Professor  
Biology Department/PEARL  
Morgan State University

This report summarizes the education activities on climate change at Morgan State University as the results of a series workshops, student research and outreach activities, and faculty preparation efforts via workshops of NASA NICE, NSF OEDG program, and USDA capacity building program.

## 1. Implementation of NASA NICE workshop materials in the classroom teaching:

The NASA NICE program tools and materials were included into the BIOL205 “Ecology and Adaptation”, and BIOL603 “Marine Science” at Morgan State University. I developed a lab module and use the NASA website and data to analyze temperature data from a variety of cities around the nation and the world. Students in the class need to write a 200 word essay comparing and contrasting the climates of the three cities over time and in their geographic context and from this data set determine if global warming is real, not real or equivocal and why you think so.

The screenshot displays a computer desktop with three main windows. At the top is a web browser window showing the NASA GISS Surface Temperature Analysis page. The page includes a navigation menu on the left with options like 'GISS Home', 'News & Features', and 'Education'. The main content area is titled 'GISS Surface Temperature Analysis' and contains text about station data and a line graph comparing Northern Hemisphere and Southern Hemisphere temperatures from 1950 to 2010. Below the graph is a form for downloading data. In the middle is a Microsoft Word document titled 'BIOL 205 Lab 3 (2) - Microsoft Word'. The document content includes the title 'Lab 3 Exercise: Global Climate Change Lab, An Analysis of Historical Temperature Data: Is Global Warming Real?' and an introduction paragraph. At the bottom is a taskbar with various application icons and a system clock showing 10:58 AM on 2/11/2014.

## ***2. Research Experience for Undergraduate:***

The summer program of research experience for undergraduates at Morgan State University Estuarine Research Center was established with the supports from NSF OEDG program. This program offers the hand-on research experience to the students in marine science discipline.



## ***3. Outreach activities to the high school teachers and student:***

This outreach effort was supported by NOAA EPP program and NSF OEDG program. We collaborated with W. E. B. DuBois High School for Environmental Science at Baltimore City to offer the high school teacher workshop, as well as student field trip to Morgan Patuxent Aquatic and Environmental Lab (PEARL). The teacher workshop provided high school teachers necessary knowledge and experience in environmental science that can be transferred to classroom teaching. The student field trip engage large numbers of students and teachers in inquiry-based field trips focused on environmental issues related to the Chesapeake Bay.



