

**June 26, 2018**

## **DEVELOP applied Earth science program marks anniversary in Mobile**

MOBILE, Alabama — Since 2003, the Mobile County Health Department has served as a host for the National Aeronautics and Space Administration’s (NASA) DEVELOP National Program. The program fosters an interdisciplinary research environment for participants to work on applied science research projects under the guidance of NASA and partner science advisers.

The 20th anniversary of the national program was recently observed at the Mobile Area Chamber of Commerce. Representatives from NASA’s Langley Research Center were present to recognize MCHD for being among the first organizations to host DEVELOP participants.

The foundation for the DEVELOP program began in the summer of 1998 when three student interns at the Langley Research Center co-authored a research paper titled “The Practical Applications of Remote Sensing.” This set the stage for the creation of a new internship program within NASA, and in 1999 the DEVELOP Program was officially formed.

Dr. Bernard H. Eichold II, Health Officer for Mobile County, was attending a policy conference soon after that where the DEVELOP Program was being discussed. He immediately was intrigued and requested that MCHD host one of the teams.

“Humans are just part of a big eco-system; another living organism,” Dr. Eichold said at the Chamber event. “This program helps us better understand our world.

“It is so rewarding to watch young scientists go and make our world a better place. It is an honor to be a part of this program.”

During the event, Dr. Eichold was presented with certificates of appreciation from both the local DEVELOP team and the Langley guests. In 2012, he was awarded NASA’s Exceptional Public Achievement Medal, in honor of his work as a mentor to those students and his support of the research they accomplish.

Attending the Mobile event from Langley were Dr. Kenton Ross, the Lead Science Advisor for DEVELOP; and Lindsay Rogers, the Deputy Program Manager.

Dr. Ross began with DEVELOP at Mississippi’s Stennis Space Center in 2006, advising DEVELOP projects that utilized NASA Earth Observing Systems in innovative ways to assist the Gulf Coast recovery following Hurricane Katrina.

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“DEVELOP provides a bridge between the observations of Earth from space and the decision makers who can use the data to benefit society.” Dr. Ross said.

The Mobile County DEVELOP office conducts three projects (Spring, Summer, Fall) with approximately 16 participants each year, with one project and roughly four or five participants each term. Since being founded, the node has expanded from a single-room office to a nearly an entire floor of a building located on health department property in Downtown Mobile.

The node has partnered with MCHD on several projects addressing public health concerns within the community including air quality, extreme heat and disease transmission.

During the Spring 2018 term, the team’s project was titled “Early Detection of Bark Beetle Outbreaks in the Southeastern United States Using Earth Observations.” Since 2015, bark beetle infestations have increased in the southeastern United States, increasing the potential for devastating wildfires. The DEVELOP team assessed the potential of higher resolution remotely sensed imagery from the Landsat 8 and Sentinel-2 satellites to detect early stages of bark beetle outbreaks occurring in the Oconee National Forest from January 2015 to July 2017.

Farnaz Bayat, the Center Lead in Mobile; and Danielle Quick, Assistant Center Lead and Impact Analysis Fellow; highlighted some of the outstanding projects and accomplishments of DEVELOP in the regional area.

Currently, the DEVELOP Summer participants in Mobile are working on a project titled “New Orleans Urban Development.” The focus is to utilize Earth observations to better understand flood vulnerability in the New Orleans metropolitan area.

The team members include Rupsa Bhowmick, Project Lead (pursuing Ph.D. at the Department of Geography and Anthropology at Louisiana State University), Chelsea Randall (pursuing master’s degree at University of West Florida), Lulin Zheng (pursing master’s degree at University of California Berkley) and Madison Murphy (pursuing bachelor’s degree at University of South Alabama). Each member is focused on a section: Land Use Classification, Land Surface Temperature, Normalized Difference Vegetation Index and Normalized Difference Flood Index.

Joseph Spruce, the DEVELOP Lead Science Adviser to Mobile node, was also presented with certificates of appreciation for his continued support of DEVELOP National Program and the Mobile node. Spruce discussed the tasks of a science adviser and highlighted some of the most successful projects conducted by DEVELOP regionally.

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Two of the Mobile's outstanding alumni, Tyler Lynn (former Center Lead to Mobile node) and Elaina Gonsoroski (Former DEVELOP Impact Analysis Fellow and Assistant Center Lead to Mobile node), returned to speak on how important the DEVELOP Program has been to them. They are both pursuing master's degrees in geography at Florida State University. They learned skills they did not expect they would use every day, while also obtaining knowledge that has put them on a path to their future careers.

The early success of DEVELOP was due to the alignment of projects with the issues facing local and regional communities. DEVELOP gradually expanded from one office at Langley Research Center into a nationwide program that averages 350 participants each year at 13 nodes.

More than 4,500 participants have participated in the DEVELOP program completing 887 projects since 1998. To learn more about the program, please visit <https://develop.larc.nasa.gov/>

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