Congressman Visits CICS-MD Training Center Proving Ground

U.S. Congressman Paul Sarbanes (D-MD) visited CICS at the University of Maryland on Tuesday, March 13th. He came to view the new Proving Ground Training Center (PGTC) Visualization Lab.

CICS-MD Scientist Patrick Meyers led the tour and demonstration. The Congressman was also able to meet some of the PGTC staff. UMD President Wallace Loh joined him on the visit.

From left to right, the photo above shows Undergraduate Intern Matt Nicholson, PGTC Scientists Pat Meyers, Mark Sanutti and Shenjian Su, CICS Deputy Director Hugo Berbery, Rep. Sarbanes,
NOAA SCSB Scientist Ralph Ferraro, ESSICS Deputy Director Phil Arkin, ESSIC IT Director Mark Baith, CICS Executive Director Fernando Miralles- Wilhelm, and UMD President Loh [in spirit only: Scott Rudlosky (SCSB ) and Michael Peterson(CICS-MD)]. In his post-visit tweet, Loh thanked Rep. Sarbanes for his support of federal science funding. He noted that this area (UMD, NOAA, and NASA) has the largest concentration of Earth and climate scientists in the U.S. See the article on the CICS-MD website: https://cicsmd.umd.edu/us-congressman--president-loh-visit-cics-proving-ground/.

*Importance:* Congressional visits to NOAA projects at Cooperative Institutes demonstrate how NOAA’s collaborations with universities allow it to leverage scientific expertise. *POC:* P. Meyers

- **Li Fang Develops High-Resolution Soil Moisture Products:**
  CICS-MD Scientist Li Fang (STAR/SMCD/EMB) is the Task Leader of a CICS Task co-funded by NOAA and NASA. Their goal is to fill the gap caused when the NASA Soil Moisture Active Passive (SMAP) satellite lost its ability to provide high-resolution data.

  ![Comparison of SMAP SM data sets](image)

  Figure 1. Comparison of SMAP SM data sets to be validated, over Oklahoma region (100.15W~94.53W, 34.2N~37.06N), on April 30th, 2015, including 1) SMAP SM product at 36km (L3_SM_P); 2) Enhanced SMAP radiometer-based SM at 9km (L3_SM_P_E); 3) Downscaled SMAP SM at 9km based on Thermal Inertial Linear Regression Algorithm using ESI; 4) Downscaled SMAP SM at 1km based on Regression Tree Algorithm, using MODIS LST and LAI (1km)

  She found that downscaling algorithms, which transform SMAP observations into 9 km high-resolution data was closer to the real values on the ground than the 36 km coarse-scale SMAP data (See Figure 1 above).

  ![Comparison of SMAP SM data sets](image)

  Figure 2. Comparison of SMAP SM data sets to be validated, over Texas region (98W~92.5W, 31N~35N), on April 2nd, 2016, including 1) SMAP SM product at 36km (L3_SM_P); 2) Enhanced SMAP radiometer-based SM at 9km (L3_SM_P_E); 3) Downscaled SMAP SM at 9km based on ESI; 4) Downscaled SMAP SM at 1km based on Regression Tree Algorithm, using MODIS LST and LAI (1km)

  Fang then compared all the different downscaling algorithms against each other and found that the Regression Tree Method using the Evaporative Stress Index had the best agreement within the continental United States.

  *Importance:* Developing replacement products when satellite instruments stop working is important for daily users and researchers who need a continuous time record. *POC:* L. Fang