Patrick Meyers wins GOES-R Outstanding Communications Award:
CICS-M Scientist Patrick Meyers received the GOES-R Series Program Award for Outstanding Communication this week. He was lauded for the many visualizations he created depicting Geostationary Lightning Mapper (GLM) imagery to support NESDIS and the GOES-R program. Meyers’ animations have attracted new viewers to NESDIS social media channels. He created what may be the most viewed GLM animation of all time. In September, he helped to create imagery for NESDIS in the days leading up to the landfall of Hurricane Florence. One animation made it to the twitter feed of the President of the United States, and was subsequently viewed over 2 million times, had 12,175 Retweets, and 54,067 likes. The tweet can be viewed at the following link: https://twitter.com/realDonaldTrump/status/1040290603911794689. You can also see more of his visualization work on the CICS-MD website:
  o GLM and Hurricane Florence (9-14-18)
  o GLM and the Iowa Tornado (8-20-18)
  o 3D View of Hurricane Irma Lightning (11-28-17)
He follows another CICS-M Scientist, Michael Folmer, who received this award last year.

The photo shows Meyers explaining an animation to U.S. Congressman John Sarbanes in the Visualization Lab of CICS-MD’s Proving Ground Training Center (PGTC).

Importance: This work supports NOAA’s objective to share knowledge and information with others. POC: P. Meyers
• **Snowfall Detection using both Satellites and Models:**

In its November 2018 issue, the *Quarterly Journal of the Royal Meteorological Society* released a Special Supplement on “Advances in Remote Sensing of Rainfall and Snowfall.” It featured a new article on satellite snowfall detection written jointly by CICS-M Scientists Cezar Kongoli and Jun Dong and SCSB Scientists Huan Meng and Ralph Ferraro. Snowfall detection from satellite passive microwave measurements such as the Advanced Technology Microwave Sounder (ATMS) has not yet achieved the same accuracy as rainfall detection. This study suggests a new approach: combining a statistical algorithm for the satellite data with one using meteorological variables derived from a global forecast model as predictors. A study of the NCEP Global Forecast System (GFS) has shown the most reliable snowfall predictors are cloud thickness and relative humidity at 1 km to 3 km height and vertical velocity. This hybrid algorithm improved forecasts for both major snowfalls and lighter snowfalls.

![Snowfall Detection using both Satellites and Models](image)

The figure above shows the snowfall rate (a) from ATMS and (b) from the new hybrid algorithm along with (c) the near-coincident radar reflectivity. The oval area shows legitimate snowfall that was missed by the satellite algorithm but captured by the new method. **Kongoli, Cezar, Huan Meng, Jun Dong and Ralph Ferraro**, 2018: A hybrid snowfall detection method from satellite passive microwave measurements and global forecast weather models, *Quart. J. Roy. Meteor. Soc.*, **144** (Suppl. 1), 120–132, [http://dx.doi.org/10.1002/qj.3270](http://dx.doi.org/10.1002/qj.3270), in the Special Supplement on “Advances in Remote Sensing of Rainfall and Snowfall.”

**Importance:** An improved Snowfall Rate product would be valuable to NWS forecast offices that have limited or poor quality surface radar data. **POC:** H. Meng
• **International Precipitation Working Group (IPWG) Article Published**

Another article in the recently-released *Quarterly Journal of the Royal Meteorological Society* Special Supplement on “Advances in Remote Sensing of Rainfall and Snowfall” highlights the recent work of International Precipitation Working Group (IPWG). It is coauthored by SCSB Scientist Ralph Ferraro and CICS-M Scientist Nai-Yu Wang. The IPWG, cosponsored by CGMS and WMO, provides is an international forum to address the issues and challenges of satellite-based quantitative precipitation retrievals and products. The most visible project of the IPWG has been its ongoing intercomparison of satellite-based precipitation products. These studies target specific periods and regions comparing both satellite and model-based precipitation products against surface reference datasets from both gauges and radars. IPWG developed a “template” that is now used by the international remote-sensing community for satellite precipitation validation (see the figure below).

IPWG also identifies critical issues, provides recommendations to the CGMS, and supports upcoming precipitation-oriented missions. It has made major contribution to most of the prominent precipitation missions of the last 20 years, including TRMM, Megha-Tropiques, and GPM. Through joint work with the International Workshop on Space-based Snowfall Measurement (IWSSM) group, IPWG has addressed frozen precipitation issues and, with the Ocean Rainfall And Ice-phase precipitation measurement Network (OceanRAIN), precipitation over the oceans. This is just a sampling of the accomplishments documented the article.


*Importance*: NOAA’s participation in WMO activities is critical to the success of global utilization of NOAA data. *POC*: R. Ferraro
• **International Precipitation Working Group (IPWG) Annual Workshop:**

SCSB Scientists Ralph Ferraro and Huan Meng, and CICS-M Scientists Robert Adler, Patrick Meyers and Nai-Yu Wang (as well as several other ESSIC researchers) participated and gave presentations at the 9th Workshop of the International Precipitation Working Group (IPWG-9), which was hosted by Yonsei University in Seoul, Korea (November 5-9, 2018).

IPWG is one of the five science working groups governed by the WMO Coordination Group for Meteorological Satellites (CGMS) and meets bi-annually. Approximately 100 people were in attendance. Topics are focused on satellite algorithms, applications and validation, as well as radiative transfer modeling. The meeting consisted of oral and poster presentations, working group discussions and a training event for young scientists. The workshop also focused on overarching issues such as maintaining the proper satellite observing system, sensor calibration, international coordination, and an upcoming precipitation assessment. Meeting details can be found at [http://ipwg.yonsei.ac.kr/](http://ipwg.yonsei.ac.kr/). The next meeting will be in 2020 and likely to be hosted in the United States. Two new co-chairs were selected, one of which is ESSIC Visiting Scientist Viviana Maggioni (George Mason University).

*Importance*: NOAA and CICS-M participation in CGMS activities are vital to exploit international satellite and precipitation products. The in-person interactions are critical to sustain and build these collaborations. *POC*: F. Ferraro.