Weekly Report – August 28, 2026

Cooperative Institute for Satellite Earth System Studies (CISESS)

NOAA/NESDIS/STAR

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TRAVEL AND MEETING REPORTS

Engaging in the Far North!

This is the time of year that brings visitors to Alaska as the signs of winter emerge on the horizon. Over the last couple of weeks, there have been some great engagements at the Geographic Information Network of Alaska (GINA) offices. During these visits, highlighted were the antenna control computers, which are currently receiving 9 LEO weather satellites; the local version of the Advanced Weather Interactive Processing System (AWIPS) with Joint Polar Satellite System products featured; and a display of the Next Generation Fire System dashboard for Alaska. Visitors included:

- NOAA Administrator Dr. Neil Jacobs in a very brief visit
- Ellen Ramirez, Deputy Manager, NESDIS/OSPO Mission Operations Division, Performing the duties of OSPO Deputy Director
- University Affiliated Research Center (UARC) leadership and affiliates, including The Honorable Dr. Joseph Jewell (Assistant Secretary of War for Science and Technology), Valarie Hall (Director of Federally Funded Research Centers/UARC), and Dr. Richard LaVoie (Deputy Assistant Secretary of War for Science & Technology Foundations)

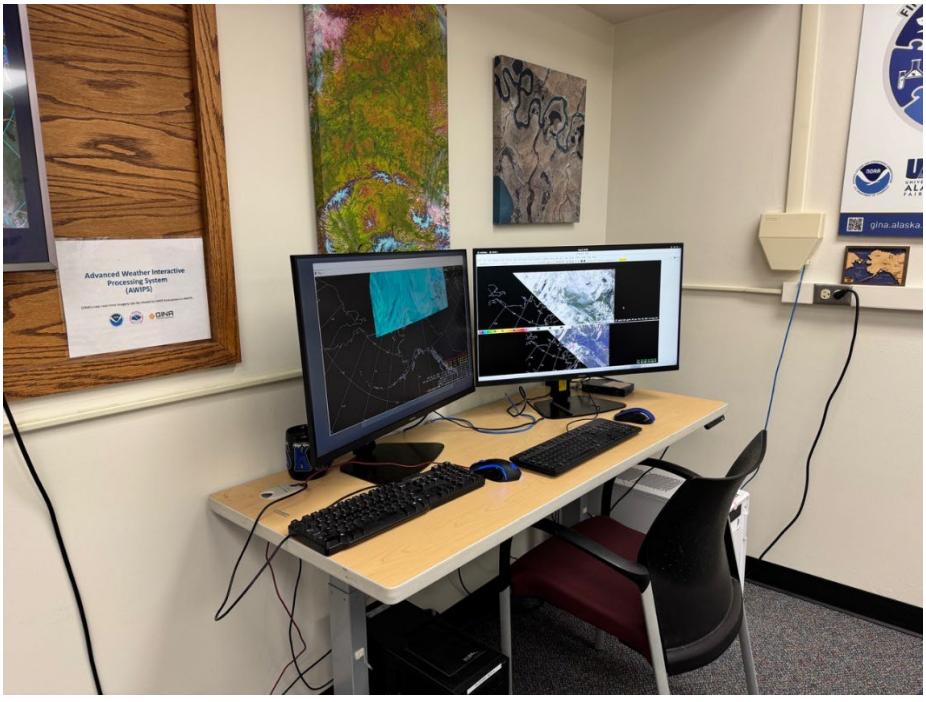

Figure: AWIPS display at GINA (photo credit: Jennifer Delamere).

(Jennifer Delamere, CISESS, jsdelamere@alaska.edu; Funding: IIJA & LEO)

This item was submitted to the "NOAA's LEO Stakeholder Strategy and Customer Impact" weekly report.

TRAINING AND EDUCATION

ESSIC/CISESS Interns Showcased their Impressive Summer Projects

The 2026 Earth System Science Interdisciplinary Center (ESSIC)/CISESS Summer Internship Program culminated in a two-day Intern Presentation Workshop. Each of the summer interns had the opportunity to give a 5-minute talk. On the first day, which was held virtually via Zoom, CISESS Deputy Director Dr. Hugo Berbery welcomed the audience of 45 with words of encouragement and appreciation. Ten students presented their talks virtually. On the second day, which was held in person at ESSIC, 17 summer research projects were presented to an even larger audience. On day two, there were over 50 attendees, including those who were able to attend in person and others who joined via Zoom. There were two informal Q & A sessions with light refreshments and lively conversations. Overall, there was outstanding participation from the CISESS/NOAA scientists who mentored the students this summer. Each of the students was introduced by one of their mentors, and it was apparent how impactful the internship experiences were for both the interns and the mentors. Eight summer interns will be continuing on CISESS projects during the fall semester in addition to four new student projects beginning in September. While the 2026 summer program has come to a close, the benefits of the educational and training opportunities will surely have a lasting impact.

Figure: (Top) Screenshots from the virtual Summer Intern Presentations held via Zoom on August 18th, 2026. (Bottom) Interns and Mentors gathered in the ESSIC Conference Room for in-person Summer Intern Presentations on August 19th, 2026 (photo credit: Cazzy Medley).

(Kate Cooney, CISESS, kscooney@umd.edu; Funding: Task I)

Teaching VIIRS through Fire-AID

Eight undergraduate students from the University of Alaska system spent a week on UAF's Troth Yeddha' campus as part of the Department of Energy-sponsored FireAID: Fighting Wildfire with AI and Deep Learning project. Geographic Information Network of Alaska (GINA) staff and Jennifer Jenkins (U.S. Wildland Fire Service) led training sessions and tours that covered Alaskan wildfire Geographic Information System tools, state fire management practices, and public data resources. Students learned how fire managers leverage Joint Polar Satellite System (JPSS)/Visible Infrared Imaging Radiometer Suite (VIIRS) satellite imagery and VIIRS Active Fire detections, and a GINA student presented their work integrating JPSS air quality data with ground sensors. The workshop concluded with guided, hands-on resource exploration of JPSS data and more. Recent LinkedIn Post: https://urldefense.us/v3/__https://lnkd.in/p/gjtAVdKZ__;!!G_uCfscf7eWS!aVpdzrOLzWxF-3HGx2ib8cxj6xxH3E5lxFuPTchhF8gesaq50JmdDW2-gbEhYGHQdQb82xCsF1Ivj3BB7aJoWw$

Figure: Fire-AID students on the roof of the Geophysical Institute. Mr. Bill Hauer, Senior Science Consultant at the institute, is providing an overview of antennas on campus. A GINA antenna hides in a radome in the background (photo credit: Jennifer Delamere).

(Jennifer Delamere, CISESS, jsdelamere@alaska.edu; Funding: IIJA & LEO)

This item was submitted to the "NOAA's LEO Stakeholder Strategy and Customer Impact" weekly report.

PUBLICATIONS

Smoky Mountain Precipitation
Citation: Major, Dylan, Oliver P. Prat, Brian R. Nelson, Douglas K. Miller, **Veljko Petkovic**, **Malarvizhi Arulraj**, and Ralph Ferraro, 2026: Event-based verification of IMERG precipitation estimates over complex terrain in the southern Appalachian Mountains. *J. Atmos. Ocean. Technol.*, **43**, 309–325, https://doi.org/10.1175/JTECH-D-24-0110.1.
Summary: Western North Carolina is a mountainous region, prone to flooding and landslides when heavy precipitation falls. In 2007, a spatially dense system of tipping-bucket gauges called the Duke Great Smoky Mountain Rain Gauge Network (GSMRGN) was installed in the Great Smoky Mountains National Park's Pigeon River Basin to study complex mountain weather and rainfall patterns. From a different perspective, NASA's Integrated Multi-satellitE Retrievals for the Global Precipitation Measurement (IMERG) provides high-resolution global precipitation estimates from space, covering regions where in-situ measurements are sparse or non-existent. In their paper published in the *Journal of Atmospheric and Oceanic Technology*, CISESS Scientists Veljko Petkovic and Malarvizhi Arulraj and colleagues evaluate the long-term (12 years) performance of IMERG satellite precipitation products in this orographically complex part of the U.S., taking into account the season and direction of propagation of precipitation events. The authors report that IMERG generally overestimates rainfall across the study area compared to ground gauges, but the exact size of the error shifts by season and rain event direction, noting that these biases decrease when storms move in from the northwest. In general, rainfall event directionality with respect to topography is important when evaluating satellite-gridded quantitative precipitation estimations.

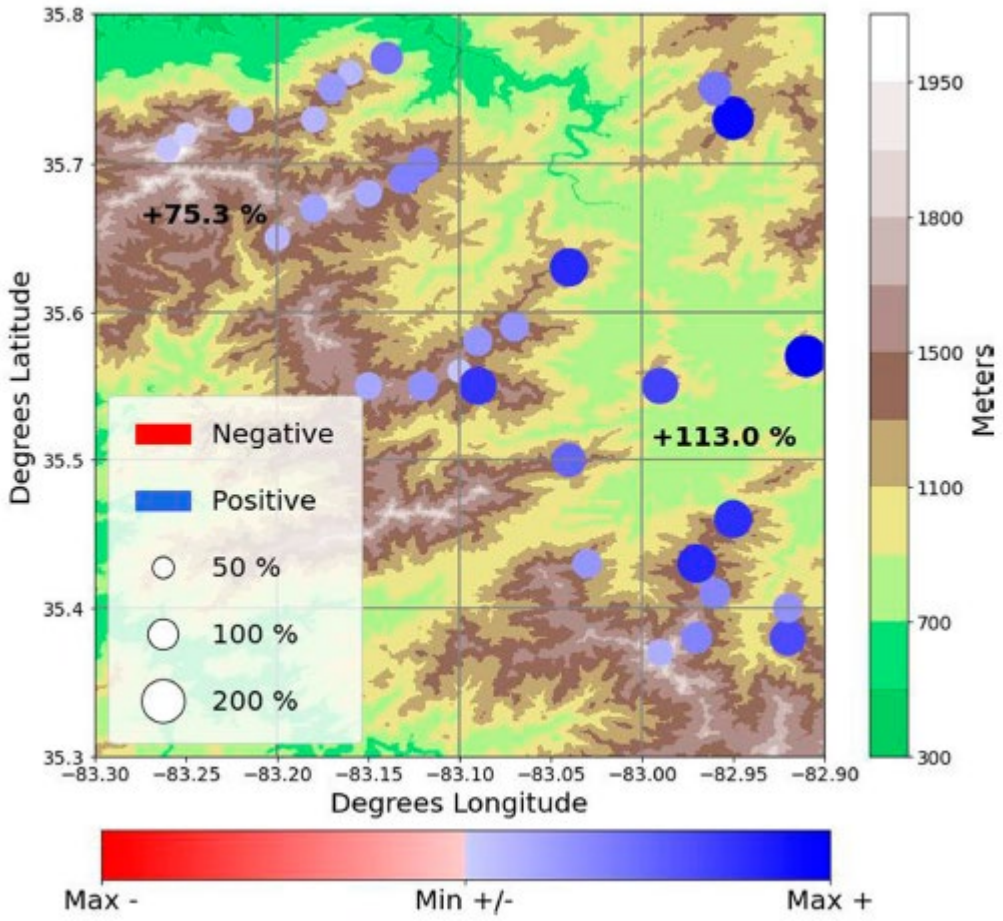

Figure: Relative bias for daily precipitation between IMERG and the gauges for the entire period of record (July 2009–September 2021). The boxes delineated by the gray crosshairs represent the footprint of the 12 IMERG pixels over the domain of study. The points are at the location of the gauges, and the size of their radius represents the IMERG quantitative precipitation estimations (QPE) bias compared to the gauge measurements. Red is a negative bias and is shaded from the largest present negative bias to the smallest. Blue is a positive bias and is shaded from the largest present positive bias to the smallest. The background color represents elevation expressed in meters taken from USGS data. The number in the top left is the average relative bias in the northwesternmost four QPEs, while the number on the right is the average relative bias across the other QPEs.

(Veljko Petkovic, CISESS, veljko@umd.edu, Funding: JSTAR, JSTAR GCOM & LEO; Malarvizhi Arulraj, CISESS, marulraj@umd.edu, Funding: JSTAR)

(Maureen Cribb, CISESS, mcribb@umd.edu, Funding: CISESS Task I)