# Weekly Report – August 08, 2025

Cooperative Institute for Satellite Earth System Studies (CISESS)

NOAA/NESDIS/STAR

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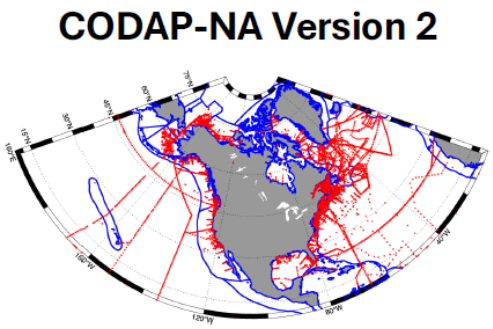
## TRAVEL AND MEETING REPORTS

### Jiang Presents at the Mid-Atlantic Coastal Acidification Network Workshop




On 17 July 2025, CISESS Scientist Li-Qing Jiang presented a talk at the Mid-Atlantic Coastal Acidification Network workshop that was held at the Smithsonian Environmental Research Center in Edgewater, MD. He showcased the work he and fellow CISESS Scientists Alex Kozyr and Hyelim Yoo, along with John Relph at NCEI, are involved in concerning data management and quality control of various observations archived in the Ocean Carbon and Acidification Data System. Jiang gave an overview of various aspects of the system, like metadata templates, the data access portal, the data visualization tool, and products, such as the latest version of the Coastal Ocean Data Analysis Product in North America (CODAP-NA).

*(Li-Qing Jiang, CISESS, liqing.jiang@noaa.gov, Funding: NCEI; Alex Kozyr, CISESS, alex.kozyr@noaa.gov, Funding: NCEI; Hyelim Yoo, CISESS, hyelim.yoo@noaa.gov, Funding: NCEI)*

## TRAINING AND EDUCATION

### CISESS Scientists Help Mentor NOAA Lapenta Summer Interns

Their Summer 2025 internships completed, recipients of this year's William M. Lapenta Student Internship presented final reports on their summer research projects at the NOAA Center for Weather and Climate Prediction (NCWCP) Auditorium in College Park, MD, on 6–7 August. Several CISESS Scientists served as mentors to some of these interns. Their projects, encompassing a wide range of topics, were titled "*Calibration and Validation of High-Resolution Satellite Vegetation Data Products*", "*Changes in the Chesapeake: Investigating Relationships between Winter Phytoplankton Blooms and Bay Conditions*", "*Applying, Fine-tuning and Deploying an Interpretable ML Model for Medium-Range Precipitation Prediction*", "*Wildfire Identification in Active Fire Products Using Satellite-Derived Variables and Random Forest*", and "*Comparing Satellite-derived Ocean Temperature Metrics with In-situ Mooring Observations*".

Introduced this week is one of the summer projects. CISESS Scientist Ron Vogel was on the team of mentors guiding the research of Nour Kastoun, a senior undergraduate student at

Cornell University, on the topic of "Changes in the Chesapeake: Investigating Relationships between Winter Phytoplankton Blooms and Bay Conditions". Some phytoplankton species important to the health of the fish populations may be decreasing in numbers or occurring in the winter rather than the spring, making them unavailable as a key primary producer in the food chain. Nour reports that more robust in-situ phytoplankton sampling is needed, and longer time periods of satellite chlorophyll data are also needed to establish definitive correlations with changing environmental conditions.

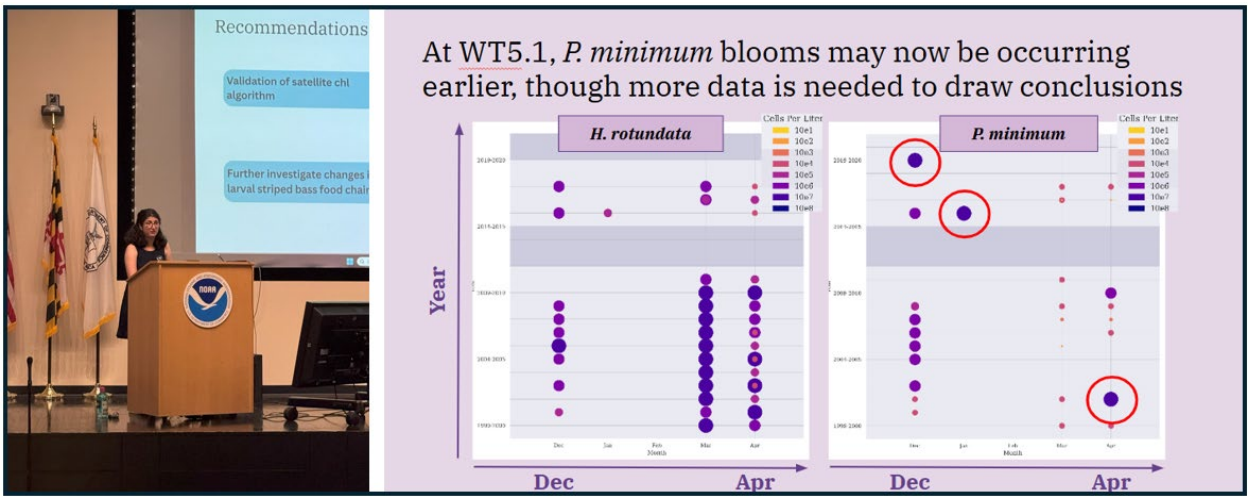



*Figure. (left) Nour presenting her talk at the NCWCP (photo credit: Michelle Tomlinson/NOAA NCCOS) and (right) a slide from her talk showing time series of the concentrations (in cells per liter) of two species of dinoflagellate from a river/stream site in Baltimore County.*

*(Ron Vogel, CISESS, vogelr@umd.edu; Funding: ORS)*

**PUBLICATION(S)**

**Another Way of Assessing the Calibration Stability of Advanced Baseline Instruments**
**Citation:** Yu, Fangfang, Xiangqian Wu, **Hyelim Yoo**, Hui Xu, and Haifeng Qian, 2025: Direct comparison of infrared channel measurements by two ABIs to monitor their calibration stability. *Remote Sens.*, **17**, 1656, https://doi.org/10.3390/rs17101656.
**Summary**: The Advanced Baseline Instrument (ABI) is a critical instrument onboard four Geostationary Operational Environmental Satellite platforms (GEOs), collecting measurements from 10 infrared (IR) channels for use in generating a wealth of meteorological and geophysical products. The ABI IR channels must thus be well calibrated, which is usually done by comparing radiances from an ABI on a GEO with those from a hyperspectral sensor on a Low Earth Orbit spacecraft. A complement to this method is the GEO-GEO comparison, the subject of a recent paper by CISESS Scientist Hyelim Yoo and colleagues published in the journal *Remote Sensing*. Their GEO-GEO comparison is based on the pixel-to-pixel radiance differences of uniform

scenes from overlapping ocean areas, providing channel average information after converting radiances to brightness temperatures at 300 K. They focus on the ABIs onboard GOES-16 and GOES-18. Applications of GEO-GEO comparisons include monitoring calibration in near real time, revising the calibration algorithm, detecting calibration anomalies, and assessing calibration stability (see the figure below). Overall, they report that radiometric calibration for all ABIs is stable to within 0.1 K. In the future, the authors plan to evaluate the calibration uniformity among the individual detectors in each spectral band, a topic of interest to the calibration/validation community.

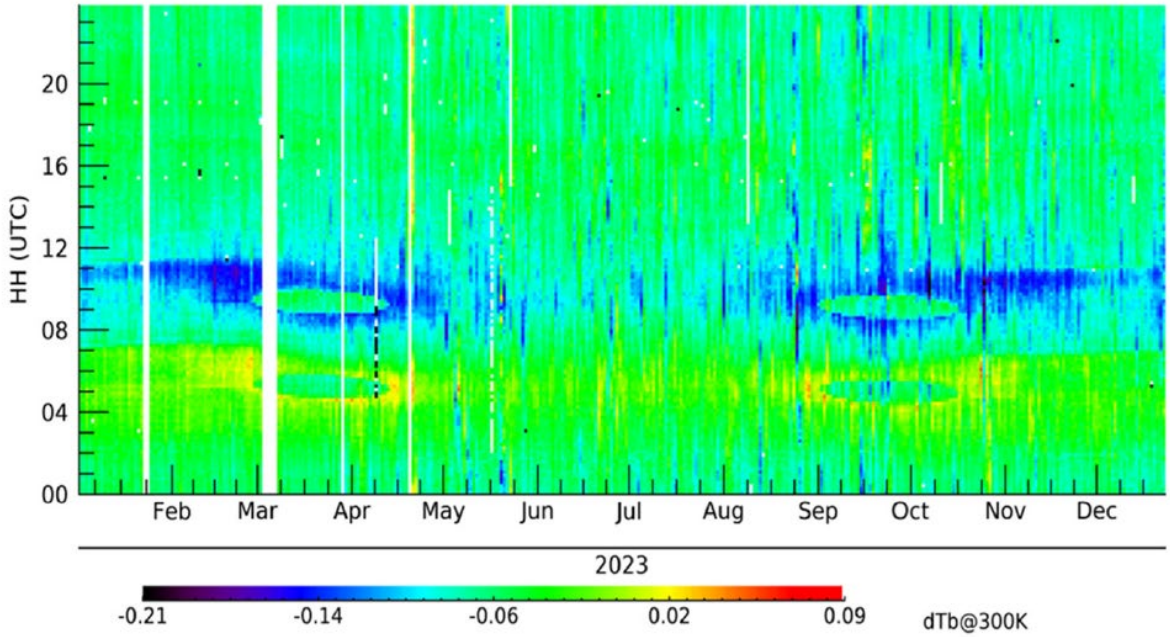



*Figure. Channel-13 differences in brightness temperature at 300 K (dTb@300K) between the GOES-18 (G18) and GOES-16 (G16) ABIs (G18-G16), every ten minutes in a day (vertical axis) and every day in the year of 2023 (horizontal axis). Straylight contamination is suggested by some of the features seen in the time series, and seasonal peculiarities are observed, the topic of a future investigation. This example demonstrates how this kind of comparison can be used to confirm the precision and stability of ABI calibration.*

*(Hyelim Yoo, CISESS, hyelim.yoo@noaa.gov; Funding: NCEI)*

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