

Weekly Report – April 10, 2026
Cooperative Institute for Satellite Earth System Studies (CISESS)
NOAA/NESDIS/STAR

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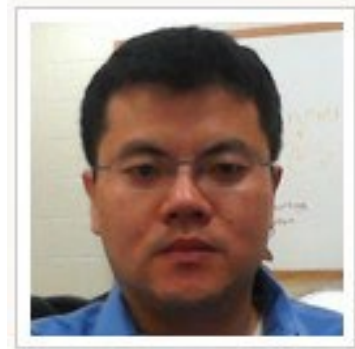
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HIGHLIGHTS FOR NESDIS LEADERSHIP

People

Xi Shao Honored by the University of Maryland College of Computer, Mathematical & Natural Sciences

CISESS Scientist Xi Shao has been selected to receive the University of Maryland College of Computer, Mathematical & Natural Sciences' Distinguished Research Scientist Prize for 2026. This award recognizes the vital role played by Research Scientists in advancing the mission of the College. Shao is recognized for his more than 25 years of interdisciplinary research experience spanning space physics, imaging radiometer calibration and validation, Global Navigation Satellite System radio occultation algorithms, laser proton accelerator design, and advanced radio-frequency transceiver technologies. He will receive the award at the College Award Ceremony on 1 May 2026.



(Xi Shao, CISESS, xshao@umd.edu; Funding: COSMIC2, JSTAR & STAR)

TRAVEL AND MEETING REPORTS

CISESS Scientists Present at the American Meteorological Society 37th Conference on Hurricanes and Tropical Meteorology

(This is a lightly edited version of the original item included in the SOCD Weekly Report.)

The American Meteorological Society 37th Conference on Hurricanes and Tropical Meteorology (30 March-03 April 2026, San Diego, CA) brought together over 500 scientists, students, forecasters, and program managers from a variety of academic, governmental, and commercial entities. Sessions included cutting-edge research, operational insights, and emerging technologies that advance understanding and prediction of tropical weather and climate phenomena, from tropical cyclones and large-scale waves to convection and air-sea interactions. A special session was held to honor Dr. Frank D. Marks, Jr., the former Director of the Hurricane Research Division at the NOAA Atlantic Oceanographic and Meteorological Laboratory. Listed below are presentations with contributions from CISESS Scientists (names in bold).

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- [The Value of Near-Real-Time Subsurface Ocean Information for Assessing Tropical Cyclone Intensity Forecasts from HAFS](#) —

Paige Lavin (Presenter; U of Maryland/CISESS, NOAA/STAR/SOCD), David Trossman (former U of Maryland/CISESS, NOAA/STAR/SOCD), Deirdre Byrne (NOAA/STAR/SOCD), Lewis Gramer (U of Miami/CIMAS, NOAA/AOML)



Figure: Dr. Paige Lavin presenting in the Frank D. Marks, Jr. Special Session on Tropical Cyclone Research and Operations Progress session.

- [What's Next? A Study of NOAA Ocean Heat Content Products and Their Users](#) — Deirdre Byrne (Presenter; NOAA/STAR/SOCD), Stacy L. Bunin (CSS, NOAA/STAR), Jonathan Wrotny (Carr Astronautics), **Paige Lavin (U of Maryland/CISESS, NOAA/STAR/SOCD), David Trossman (former U of Maryland/CISESS, NOAA/STAR/SOCD),** Oaklin Keefe (CSS)
- [Estimating Tropical Cyclone Intensity, Structure, and 2-D Winds from Microwave Temperature Retrievals: Verification and AI Enhancements](#) — Galina Chirokova (Presenter; CIRA/CSU), Mark DeMaria (CIRA/CSU), Zhixing Ruan (CIRA/CSU), Robert DeMaria (CIRA/CSU), Aniket Tomar (CIRA/CSU), Adam B. Milstein (MIT Lincoln Laboratory), Michael Pieper (MIT Lincoln Laboratory), **Shuyan Liu (U of Maryland/CISESS, NOAA/STAR),** John Knaff (NOAA/STAR), Christopher Slocum (NOAA/STAR/SOCD), Stephen Munchak (Tomorrow.io)
- [Enhancing the Assimilation of Microwave and Radar Observations in NWP Models for Improved Tropical Cyclone Prediction](#) **Isaac Moradi (Presenter: U of Maryland/CISESS, NASA GMAO),** Yanqiu Zhu (NASA GMAO), Satya Kalluri (NOAA/NESDIS), Benjamin C. Ruston (JCSDA/UCAR), and Ricardo Todling (NASA GMAO)
- [A Vorticity Factory: Investigating the Role of a Downshear Convective Band in Hurricane Joaquin \(2015\)'s Low-Level Center Reformation Using Trajectory Analysis of a WRF Simulation](#) **William J. S. Miller (Presenter: U of Maryland/CISESS)**

(Paige Lavin, CISESS, paige.lavin@noaa.gov, Funding: Jason & ORS; Shuyan Liu, CISESS, liusy@umd.edu, Funding: JSTAR; William Miller, CISESS, wmiller1@umd.edu, Funding: COSMIC2; Isaac Moradi, CISESS, imoradi@umd.edu, Funding: LEO)

PUBLICATIONS

Lightning and Wildfires in the Western U.S.

Citation: Rudlosky, Scott D., Joseph Patton, Daile Zhang, Thanyporn Noiplab, Ruoming Jin, Lena Heuscher, and Jason A. Otkin, 2025: Characterizing the relation between lightning and

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wildfires in the western United States. *J. Appl. Meteor. Climatol.*, **64**, 2021–2036, <https://doi.org/10.1175/JAMC-D-25-0032.1>.

Summary: Just over half of the total acreage burned in the contiguous U.S. is the result of wildfires started by lightning. What are the conditions under which lightning ignites fires? That is the burning question CISESS Adjunct Assistant Professor Scott Rudlosky, CISESS Scientist Joseph Patton and colleagues answer in their paper published in the *Journal of Applied Meteorology and Climatology*, focused on the western United States from 2020 to 2022. They looked at meteorological variables and fuel information to better diagnose the conditions under which lightning ignites fires. Critical information include National Lightning Detection Network and Geostationary Lightning Mapper observations for identifying and characterizing ignition strokes and flashes. Multi-Radar Multi-Sensor System data were used to characterize areal precipitation and the storm environment. The High-Resolution Rapid Refresh numerical weather prediction model provided near-storm environment variables, and the land surface was characterized by the Landscape Fire and Resource Management Planning Tools Project dataset. The authors ultimately compiled a comprehensive fire-centric lightning climatology, revealing interesting details about what types of lightning start fires. For example, of the 4400 strokes/pulses linked to lightning ignition locations, 88.9% were cloud to ground. Overall, the authors show that patterns in lightning activity, land surface characteristics, and meteorological conditions can be used to identify environments most prone to lightning ignitions.

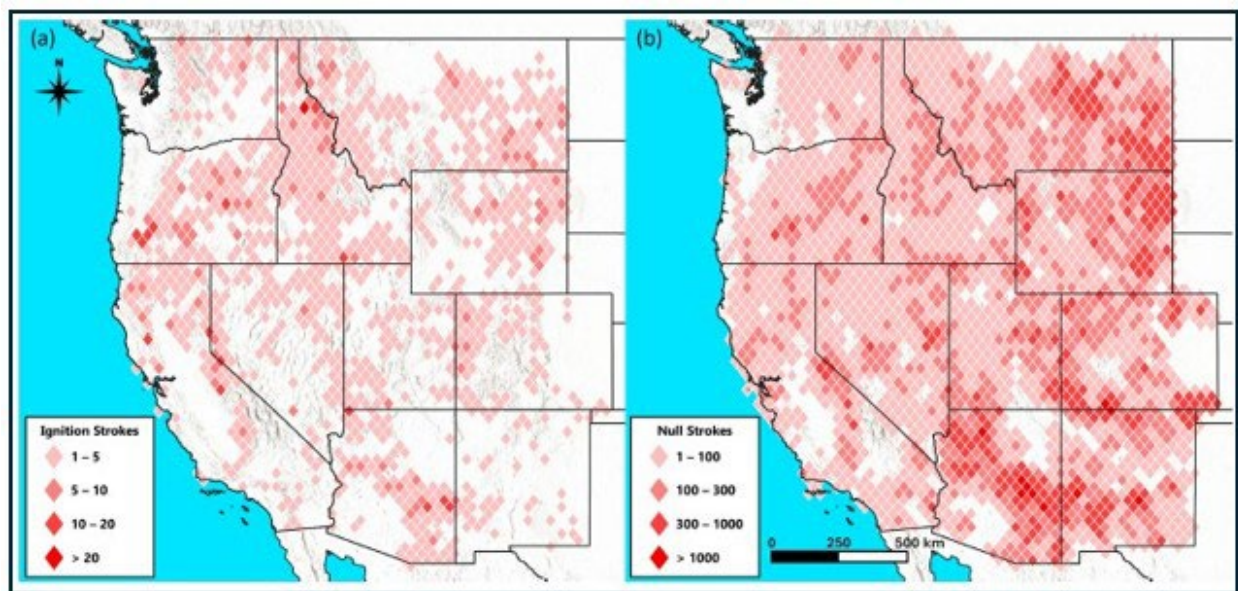


Figure: Spatial distributions of (a) confirmed lightning ignitions and (b) nonignition strokes during 2020–2022.

(Joseph Patton, CISESS, jpatton4@umd.edu, Funding: GEO-XO, GOES-R AWG, GOES-R PGRR & IJJA; Scott Rudlosky, CISESS, scott.rudlosky@noaa.gov, Funding: GEO-XO, GOES-R AWG, GOES-R PGRR & IJJA)

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