



CIRA Overview

Renate Brummer
Acting Deputy Director of CIRA

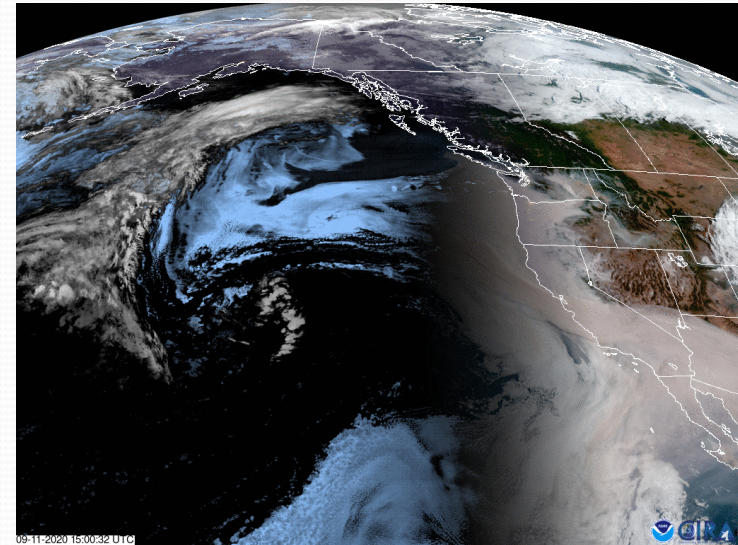
23 June 2023



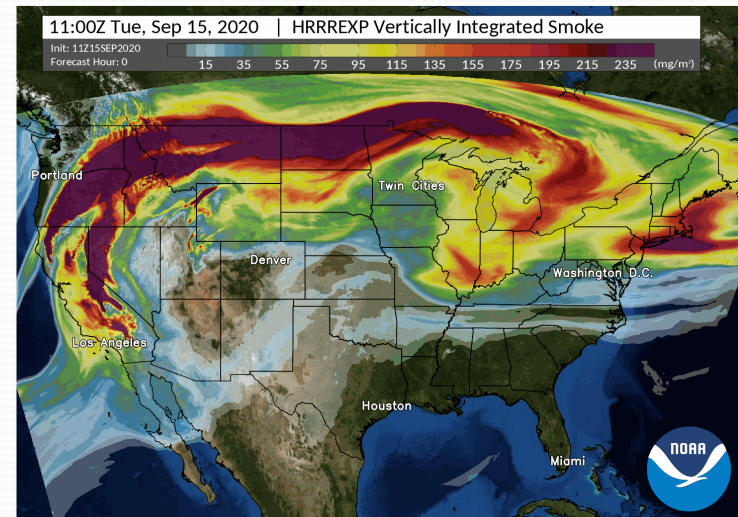
The *Cooperative Institute for Research in the Atmosphere (CIRA)*

- Established in 1980 by CSU Atmos Science Professor Tom Vonder Haar.
- Serve as *Subject Matter Experts* for NOAA's multi-billion \$\$ satellite program, developing algorithms, applications, and training.
- Help to *Enable, Design, and Implement* NOAA's weather and climate forecast models.
- Conduct the *High-Risk, High-Reward Research* that helps keep NOAA on the cutting edge of situational awareness, forecasting guidance, and decision support services.

11 Sep 2020



15 Sep 2020



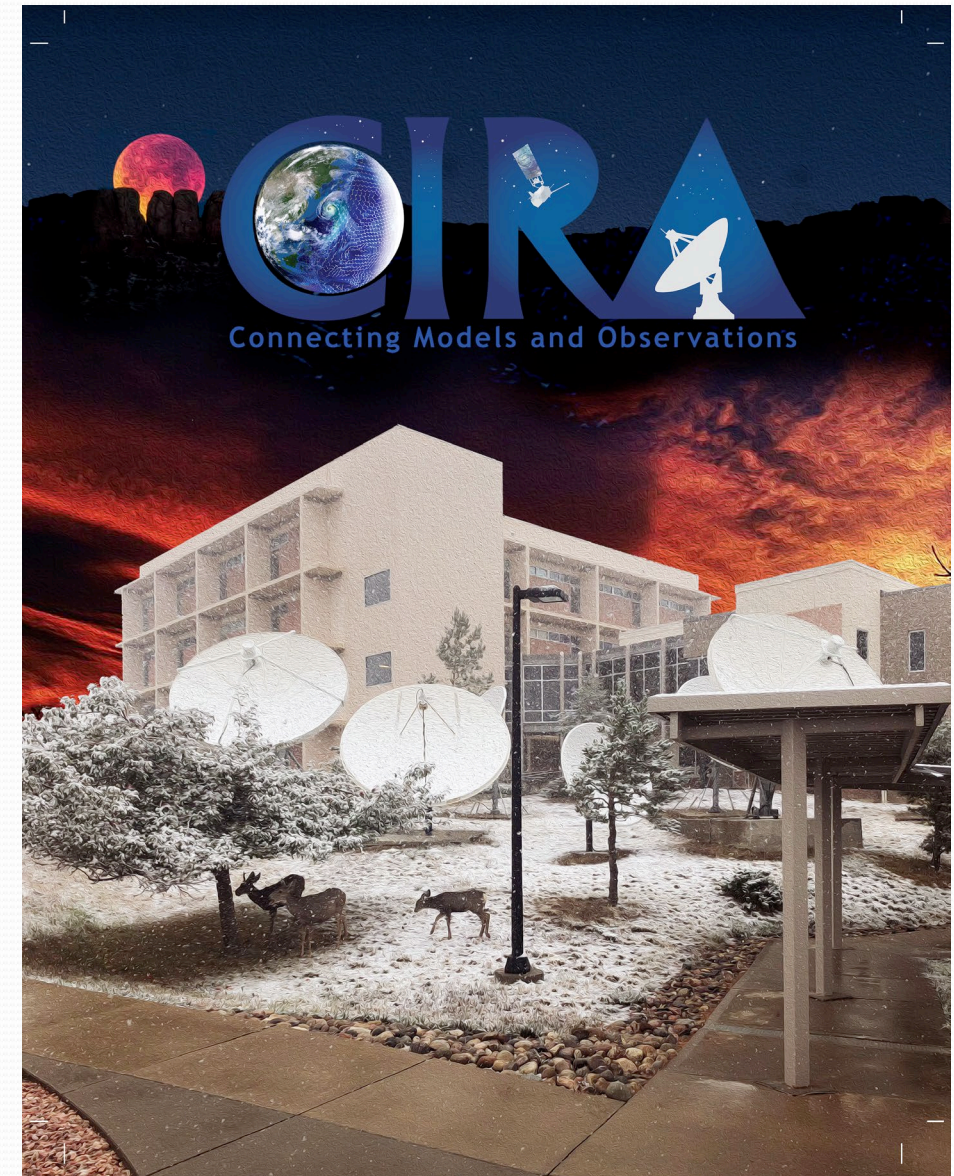


Core Research Themes

1. Satellite Algorithm Development, Training & Education
2. Regional to Global-Scale Modeling Systems
3. Data Assimilation
4. Climate-Weather Processes
5. Data Distribution

Cross-Cutting Activities

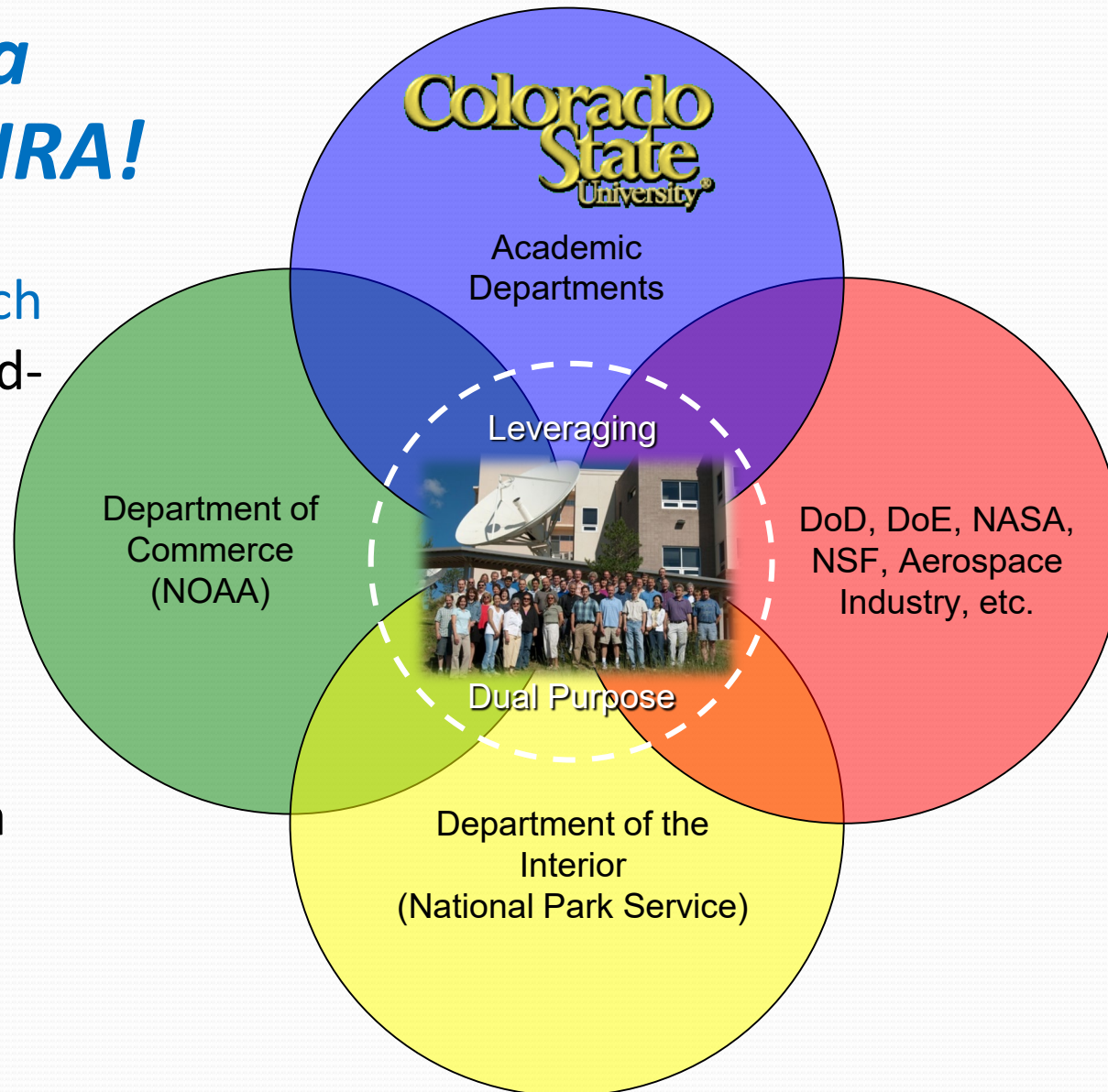
1. Societal and Economic Impacts
2. Machine Learning
3. Visualization Tools
4. Education/Outreach & DEIJ

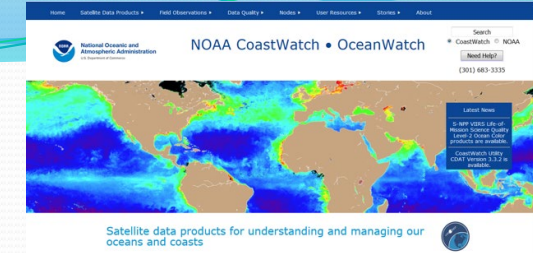
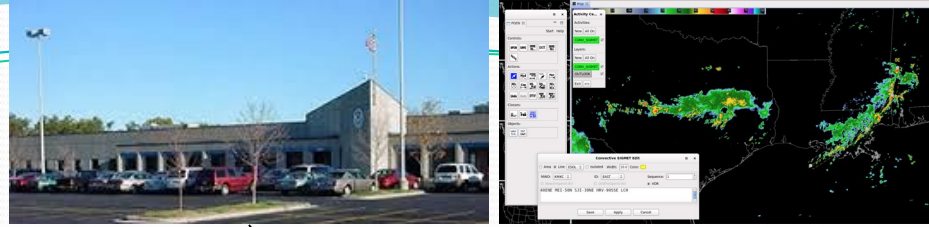




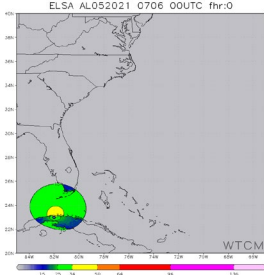
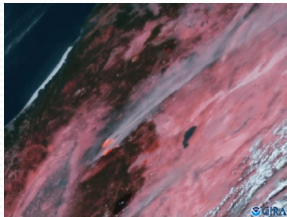
Connection is a Key Strength of CIRA!

- CIRA **connects** Basic Research to the Practical Needs of end-users and decision makers.
- CIRA **connects** Academia, Federal Agencies, and the Private Sector.
- CIRA **connects** Students to a wide array of Employers, including the workforce pipeline to NOAA!





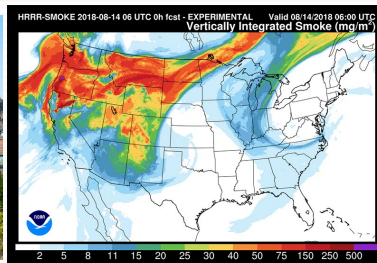
Colorado State University
RAMMB/Ft. Collins, CO



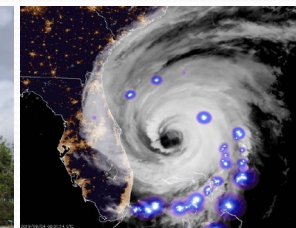
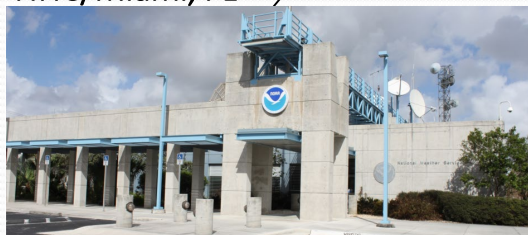
Staffing By Location

	Research	Admin	Total FTE
Boulder, CO	38.0	1.0	39.0
College Park, MD	8.5	0.1	8.6
Fort Collins, CO	64.4	10.3	74.7
Kansas City, MO	12.1	1.1	13.2
Miami, FL	1.6	0.0	1.6
Silver Spring, MD	15.3	0.0	15.3
Total	139.9	12.5	152.4

GSL/Boulder, CO



NHC/Miami, FL



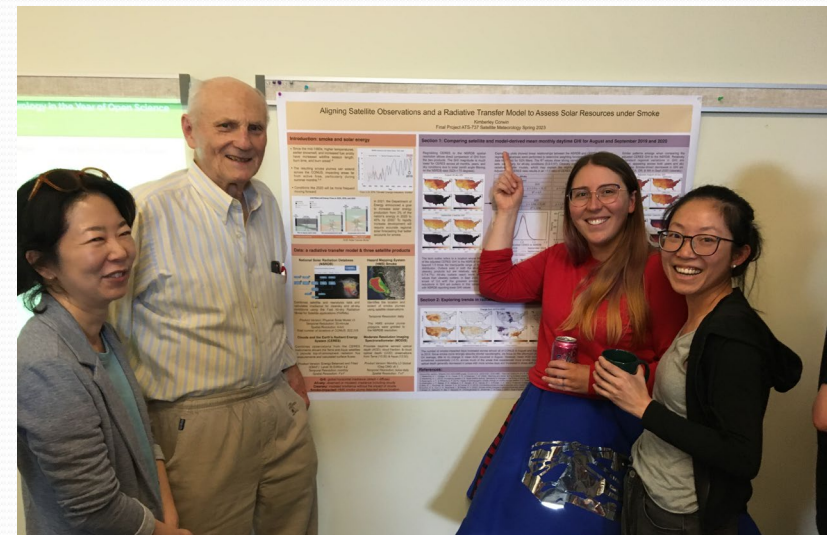
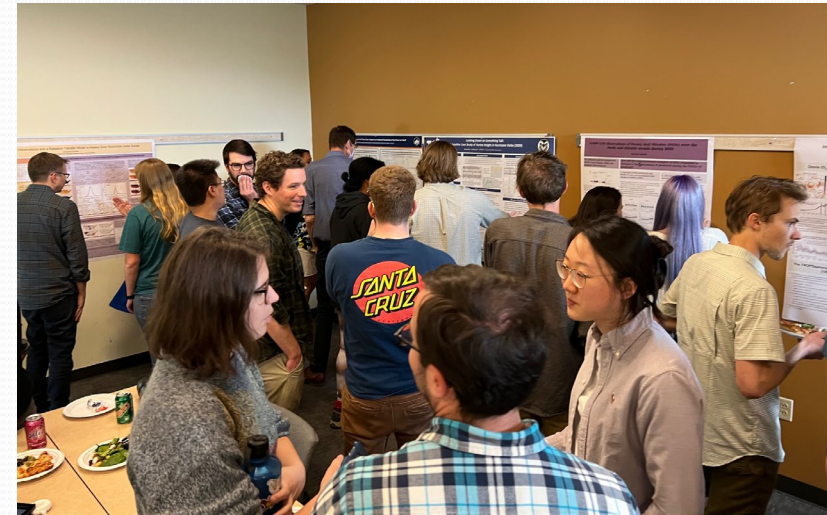
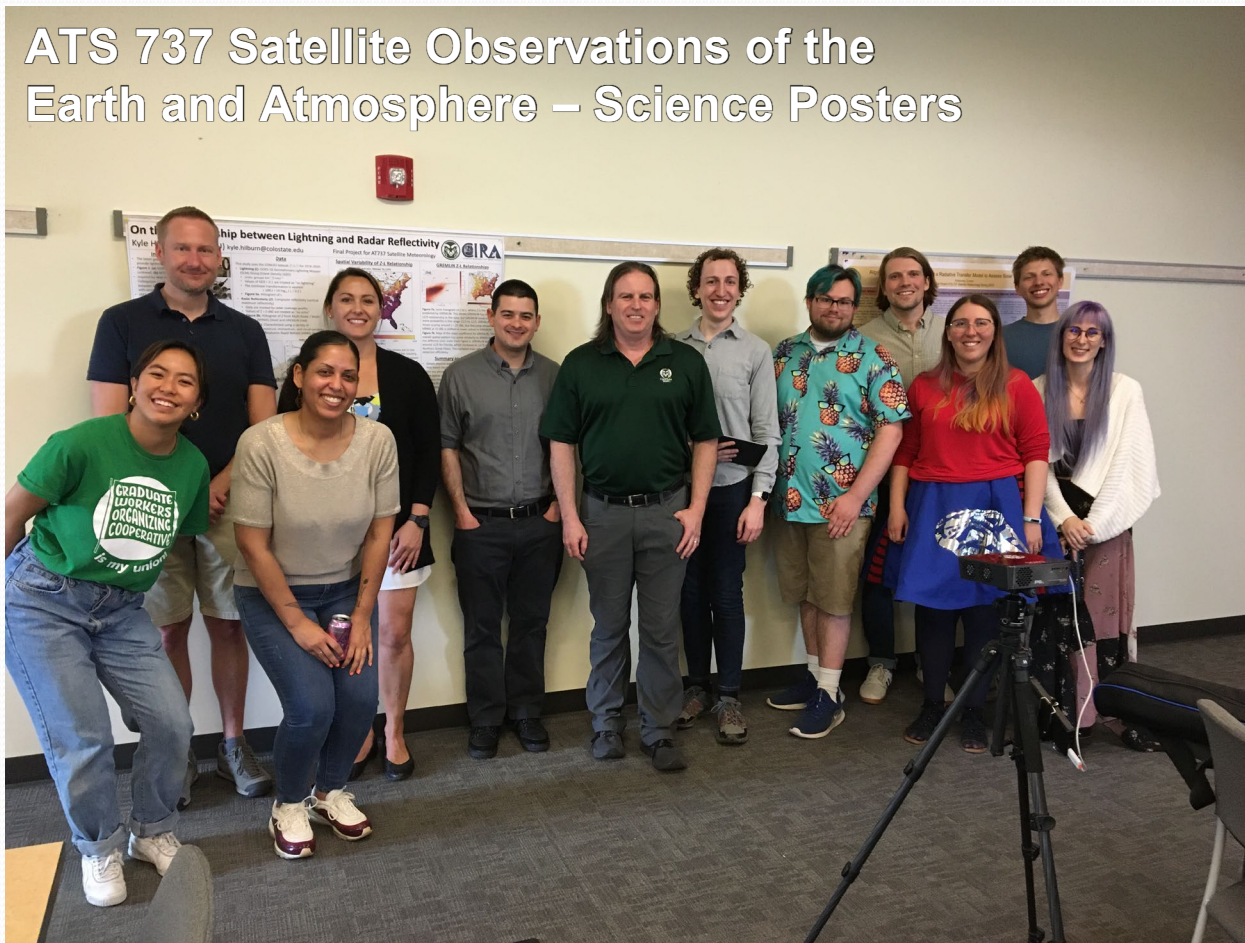
MDL/Silver Spring, MD





CIRA Connects Students with NOAA-Relevant Research!

ATS 737 Satellite Observations of the Earth and Atmosphere – Science Posters





Graduate and Undergraduate Student Engagement: *A Win-Win Relationship!*



Goal: introduce students from minority and underrepresented backgrounds to career opportunities and pathways in STEM.

- CIRA participates in the NSF *Research Experience for Undergrads (REU)* program – focus on recruiting students from minority-serving institutions (MSIs).
- CIRA initiated an internally-funded pilot program for graduate student support – recruits 1-2 MSI Masters’ candidates (per year) and supports the students through funding and scientific research mentorship.
- *Student remains enrolled at their Institution* –helps grow research program at MSIs, fosters partnerships and collaborations for CIRA, grows a base for pursuit of new funding opportunities, and provides a pipeline from the MSI to NOAA research!
- Our first student (Elaine Famutimi Valdez, from City College of New York) just defended her MS degree in Spring 2023. She developed an ML version of short-term solar forecasting product that beat our original “CIRACast” advection tool! 😊



The Path Forward

- We are always looking to increase our direct involvement with students, both within ATS and extending to other Departments and Colleges throughout CSU.
- We seek to expand and converge our AI/ML and Societal Impacts initiatives.
- Close communication and relationships with NOAA leadership, combined with ongoing strong support from CSU, ensure that CIRA will continue to evolve in lock-step with NOAA's priorities & strategic plan!





CIRA Video Clip