

2025 CEDAR / GEM



June 22-27
Des Moines, Iowa



GEM
Geospace Environment Modeling



University of
New Hampshire

Welcome to Des Moines!



Mark Conde, CEDAR Chair
Christine Gabrielse, GEM Chair
June 23, 2024



Steering Committee Voting Members



Christine
Gabrielse
Chair



Allison Jaynes
Chair-Elect



Chris
Mouikis
Meeting
Organizer



Jing Liao
Meeting
Organizer



Erika
Hathaway
Student
Rep



Austin Smith
Student
Rep



Sarah
Vines
MIC



Xiaojia
Zhang
MIC



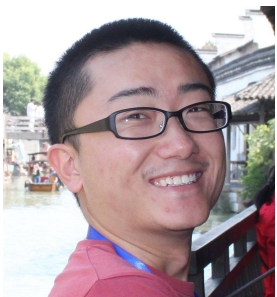
Lynn Wilson
SWMI



Victoria
Wilder
SWMI



Kevin
Genestreti
MPS



Jiang
Liu
MPS



Lunjin
Chen
IMAG



Solène
Lejosne
IMAG



Daniel
Welling
GSM



Kareem
Sorathia
GSM



Ian
Cohen
At-Large



Fraz
Bashir
At-Large



Mike
Shumko
At-Large



Xiangning
Chu
At-Large

Thank you to our outgoing members for your years of service!



CEDAR Science Steering Committee



Mark
Conde
Chair



Lynn Harvey
Chair-
Elect



Angeline
Burrell



Nathaniel
Frissel



Bea
Gallardo-
Lacourt



Federico
Gasperini



Katelynn
Greer



Erin Lay



Shunrong
Zhang



Luis
Alejandro
Navarro



Gareth
Perry



Romina
Nikoukar



Sophie
Phillips
Student Rep



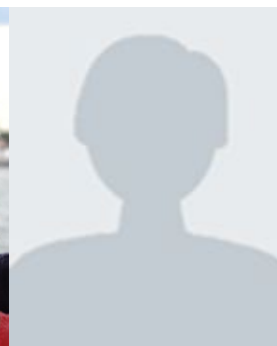
Danny Scipion
International
Rep



Titus Yuan



Kristina
Lynch



Aidan Thayer
Student Rep



Liying Qian
CPAESS



NSF GEM Program Directors and GEM Liaisons



Chia-Lin Huang
MAG & GEM Program Director



Vania Jordanova
MAG & GEM Program Director

Work within the Geospace Cluster in the
Division of Atmospheric and Geospace Sciences

Steering Committee Liaison Members

- Ying Zou (Liaison to CEDAR)
- Joe Borovsky (Liaison to SHINE)
- Masha Kuznetsova (Liaison to CCMC)
- Reinhard Friedel/Patrick Koehn (Liaison to NASA)
- Howard Singer (Liaison to NOAA)
- Shawn Young (Liaison to AFRL)
- Josh Rigler (Liaison to USGS)
- Andrew Dimmock (Liaison to Europe)
- Laura Morales (Liaison to Argentina)
- TBD (Liaison to Australia)
- John Manuel (Liaison to Canada)
- Chi Wang (Liaison to China)
- Yoshizumi Miyoshi (Liaison to ISAS, Japan)
- Junga Hwang (Liaison to Korea)
- Xochitl Blanco-Cano (Liaison to Mexico)
- Lou Lee (Liaison to Taiwan)
- Tom Elsdén (Liaison to MIST/UK)
- Lutz Rastaetter (Liaison for Metrics & Validation RG)
- Bashi Ferdousi (Liaison for Machine Learning RG)



NSF CEDAR Program Directors



Shikha Raizada
Aeronomy (AER)



Tai-Yin Huang
Data Infrastructure

Work within the
Geospace Cluster

in the

Division of Atmospheric
and Geospace
Sciences



Ten Focus Groups



- (CP) The Impact of the Cold Plasma in Magnetospheric Physics (2020 – 2025)
- (SCIMM) Self-Consistent Inner Magnetospheric Modeling (2020 – 2025)
- (GIC) Understanding the causes of geomagnetic disturbances in geospace for hazard analysis on geomagnetically induced currents (2022 – 2026)
- (MESO) Mesoscale drivers of the nightside transition region: ionospheric and magnetotail evaluations (2022 – 2026)
- (MPEC) Magnetospheric Sources of Particle Precipitation and Their Role on Electrodynamical Coupling of Magnetosphere-Ionosphere-Thermosphere Systems (2022 – 2026)
- (COMP) Comparative Planetary Magnetospheric Processes (2023 – 2027)
- (KiTS) Kinetic Plasma Processes in the Magnetotail during Substorm Dynamics (2024 – 2028)
- (MDT) Multiscale Dayside Transients and their Effect on Earth's Magnetosphere (2025 – 2029)
- (RX) Magnetic Reconnection: The Key to Understanding Earth's Space Environment (2025-2029)
- (RBSoS) Radiation Belts as a System of Systems (RB-SoS) (2025-2029)



Ten Focus Groups



- (CP) The Impact of the Cold Plasma in Magnetospheric Physics (2020 – 2025)
- (SCIMM) Self-Consistent Inner Magnetospheric Modeling (2020 – 2025)
- (GIC) Understanding the causes of geomagnetic disturbances in geospace for hazard analysis on

With **TWO** Focus Groups ending this year, please consider proposing a
NEW Focus Group!

Last year, a **NEW** selection process that allowed for community feedback prior to mini-GEM was successfully implemented. Calls for proposals now come in September with an October deadline. Watch for the GEM Messenger Announcement for this year's call in September!

- (RBSoS) Radiation Belts as a System of Systems (RB-SoS) (2025-2029)

- “Umbrella” groups that work *with* Focus Groups to help achieve scientific goals
- Modeling Methods and Validation (MMV) (2020—present)
 - Ex., MMV can work with a Focus Group that models the ionosphere to organize ways to validate the models
- Machine Learning (ML) (2024—present)
 - Ex., ML can work with the Radiation Belt Focus group to design a session on ML techniques for studying the radiation belts



CEDAR Grand Challenges



- Grand Challenge workshops address urgent, overarching questions that require a multiyear effort and are of high CEDAR importance
- GC workshops are 3 year efforts organized by a diverse team of conveners with a clear schedule and specific goals and topics
- Each year one new grand challenge workshop is selected by the CEDAR Science Steering Committee. The selection considers:
 - Relationship to the CEDAR Science Plan
 - Timeliness of the proposed topic
 - Uniqueness, compared to past GC topics



Current Grand Challenges



Year 3

The role of gravity waves in the mesosphere, thermosphere and ionosphere cross-scale coupling and irregularities: Observations and numerical simulations. Lead Convener: Titus Yuan

Year 2

Impact of Terrestrial Weather on the Space Weather of the Ionosphere-Thermosphere-Mesosphere. Lead Convener: Jens Oberheide

Year 1

Redefining Polar Cap Patches: Understanding High-Latitude Irregularities, and their implications for the coupled MIT system. Lead Convener: Leslie Lamarche



CEDAR Prizes



- CEDAR provides awards to honor outstanding science at every career stage: Science Highlights, Prize Lectures, Distinguished Lectures, and Student Poster Prizes.
- The Science Highlight Lectures honor recent outstanding scientific contributions, including awards specifically for Early-Career scientists.
- The CEDAR Prize Lecture honors a recent outstanding scientific contribution of importance to the CEDAR community.
- The Distinguished Lecture recognizes CEDAR community members that have made sustained important contributions over a period greater than 10 years.
- Student poster awards are presented for work in Mesosphere and Lower Thermosphere (MLT) and Ionosphere Thermosphere (IT) regions, with undergrad and graduate students considered separately.



CEDAR-GEM 2025: Information



- ~264 in person attendees
- ~205 poster title/abstract submitted
- NSF-GEM is supporting:
 - 89 graduate students,
 - 2 international students,
 - 21 postdoc/early career scientists,
 - 8 undergraduates
- ~344 in person attendees
- ~202 poster title/abstract submitted, of which 111 are in the student competition
- NSF-CEDAR is supporting:
 - 46 graduate students,
 - 4 undergraduates

Total of 608 in-person attendees, 407 posters, and 170 supported student/early career scientists!



Meeting Structure and Overview



- **Joint plenaries:** Monday morning, Wednesday morning, Thursday afternoon, Friday morning.
 - **Split plenaries:** Tuesday morning, Thursday morning.
 - **Breakout workshops:** Second part of the day.
 - **Poster sessions:** Tuesday & Wednesday afternoon. All posters will be displayed all week.
 - **Community Care Sessions:** Multiple sessions addressing the health & vitality of our field, and sustaining our workforce.
- Plus:**
- Various lunch-time events.
 - Agency office hours.
 - Various side meetings.
 - Banquet.
 - Multiple other extracurricular events.
 - Suggestion box.

For central location with Zoom links/schedule: gemworkshop.org

Launch GEM App



CEDAR-GEM Activities this Week



- **GEM's Sam Bingham Community Cares Initiative (SBCCI) / CEDAR's MATRIX Activities**
 - **Plenary Tutorial:** Anti-Harassment Tutorial - This session!
 - **GEMEE Mentoring Program:** Lunch today!
 - **Quiet Room:** No talking space (Room 302)
 - **Prayer Room:** Room 301
 - **Recreational Room:** Room 311 See reg desk to reserve the space for your activity and to see calendar of events.
 - **Addressing Burn-Out:**
 - **Compassionate Leadership for Burnout:** Thursday 10-11am Breakout Session
 - **Unraveling Burnout for Scientists:** Thursday 1:30-3:30 Plenary
 - **Coaching Session for <5 years past PhD:** Thursday 4-4:45pm Breakout
 - LIMITED to <10; click QR to enter lottery or see registration desk.
 - **Coaching Session for >5 years past PhD:** Thursday 5:15-6pm Breakout
 - LIMITED to <10; click QR to enter lottery or see registration desk.
- **Student Dinner:** Tonight; Career Panel Discussion
- **Excursion: Iowa Cub's Game:** Tuesday, 6:40pm Game, meet at the Hilton lobby at 6pm
- **Agency Office Hours:** Wednesday during lunch
- **Queer Beers (Community-organized):** Wednesday, 6:30pm meet by Registration Desk, walk to The Garden
- **Townhall: Addressing Advocacy in the Face of Heliophysics Funding Uncertainty:** Friday 12:15-1:15pm





CEDAR CPAESS Code of Conduct



UCAR | UNIVERSITY CORPORATION
FOR ATMOSPHERIC RESEARCH

PARTICIPANT CODE OF CONDUCT Workshops, Conferences, Field Projects

Our Pledge

UCAR is committed to providing a safe, productive, and welcoming environment for all participants in any conference, workshop, field project or project hosted or managed by UCAR, no matter what role they play or their background. This includes respectful treatment of everyone regardless of gender, gender identity or expression, sexual orientation, disability, physical appearance, age, body size, race, religion, national origin, ethnicity, level of experience, political affiliation, veteran status, pregnancy, genetic information, as well as any other characteristic protected under state or federal law.

All participants (and guests) are required to abide by this Code of Conduct. This Code of Conduct applies to all UCAR related events, including those sponsored by organizations other than UCAR but held in conjunction with UCAR events, in any location throughout the world.

Expected Behavior

- All participants are treated with respect and consideration, valuing a diversity of views and opinions
- Be considerate, respectful, and collaborative
- Communicate openly with respect for others, critiquing ideas rather than individuals and gracefully accepting criticism
- Acknowledging the contributions of others
- Avoid personal attacks directed toward other participants
- Be mindful of your surroundings and of your fellow participants
- Alert UCAR staff and suppliers/vendors if you notice a dangerous situation or someone in distress
- Respect the rules and policies of the project and venue

Unacceptable Behavior includes, but is not limited to:

- Harassment, intimidation, or discrimination in any form
- Physical or verbal abuse by anyone to anyone, including repeated use of pronouns other than those requested
- Unwelcome sexual attention or advances
- Personal attacks directed at other guests, members, participants, etc.
- Publishing others' private information, such as a physical or electronic address, without explicit permission
- Alarming, intimidating, threatening, or hostile comments or conduct
- Inappropriate use of nudity and/or sexual images
- Threatening or stalking anyone, including a participant
- Other conduct which could reasonably be considered inappropriate in a professional setting

Consequences

- Anyone requested to stop unacceptable behavior is expected to comply immediately.
- UCAR staff (or their designee) or security/local police may take action deemed necessary and appropriate, including immediate removal from the event, conference, workshop, field project, facility without warning or refund.
- UCAR reserves the right to prohibit attendance at a future event, conference, workshop or field project.
- Notification of an infraction to a Home Institution. In cases where there has been a potentially serious policy or code of conduct violation UCAR will notify the offender's home institution.

Reporting Unacceptable Behavior

If you or someone you know is subject to unacceptable and/or unwelcome behavior, or have any other concerns, please contact the on-duty points of contact for this conference, workshop, field project as identified below and who will be on-site and available by email.

- on-duty point of contact
Maggie Payeur
(email: mcostley@ucar.edu)

Please note that a report to the on-duty point of contact, who is not a UCAR manager or supervisor, is NOT considered filing an official report/complaint with UCAR.

Making a report to any UCAR manager or supervisor is considered an official report to UCAR regardless of whether the manager or supervisor is located on-site or off-site.

If you wish to file a complaint or report with UCAR, please contact:

- The Chief Human Resources Officer (chro@ucar.edu), Renee Sneed, who serves as UCAR's Section 504, Title VI, VII and IX Coordinator;
- Employee Relations (employeerelations@ucar.edu) in UCAR's Human Resources Department; or
- Bob Wiley (rwiley@ucar.edu; w: 303-497-8554) in UCAR's Health, Environment and Safety & Security Office.

Participants may also make an anonymous complaint through the [UCAR EthicsPoint Hotline](#) or by calling **844-678-2671**, toll-free within the United States, Guam, Puerto Rico and Canada. A translator will be made available if needed.

As an Equal Employment Opportunity Employer and recipient of federal funds, UCAR complies with Title VI, Title VII, and Title IX of the Civil Rights Act; the Rehabilitation Act of 1973, as amended, and the Age Discrimination in Employment Act of 1975, as amended. See UCAR's [Nondiscrimination Statement](#)



GEM Code of Conduct



The Geospace Environment Modeling (GEM) program is committed to providing a safe, free from harassment, productive and welcoming environment for all.

This policy applies to all attendees at all GEM activities including scientists, students, guests, staff, and contractors participating in scientific sessions, auxiliary meetings, and social events associated with any GEM gathering or other activity.

Full code with definitions here: <https://gemworkshop.org/code-of-conduct>

What to do if you are recipient of or witness inappropriate behavior:

Report cases to UNH: [UNH Civil Rights and Equity Office \(CREO\)](#). Please report the incident using the [Incident Report Form](#) or via email to **UNH.CivilRights@unh.edu** or phone to **(603) 862-2930**. You have the option to submit anonymously.

If immediate action is needed (harassment at an on-going meeting), recommendation is to immediately go to the Meeting Organizer to file a report. (Go to Registration Desk.)

If the situation involves a possible crime, contact the relevant authorities first and then GEM Meeting Organizers/SC members. You can contact SC members with questions at any time.



CEDAR & GEM 2026 Workshops



- The CEDAR and GEM Steering Committees are both committed to organizing their respective 2026 workshops.
- GEM and CEDAR are too vital to building our communities and to furthering our science to let the workshop lapse.
- We have each released a survey and petition to provide NSF community feedback and support for the workshop. Scan QR code here or go to the registration desk for more info.





Enjoy the Meeting!!!



- Organizing this meeting took over a year of focused effort.
- **Huge thanks to:**
 - The meeting organizers at CPAESS and UNH
 - The GEM and CEDAR steering committees
 - The joint meeting task force
 - Venue and hotel staff
 - NSF
- We have a great program, a magnificent venue, an incredible gathering of expertise, and some of science's most fun, exciting and important topics to discuss.

How good is that??? Enjoy the meeting!