

# 2021 CEDAR Workshop Presentations

20-25 June 2021 | Virtual Meeting

## Sunday 20 June 2021

[View the recording of the student workshop](#)

09:00-09:10	<b>Welcome to CEDAR Student Day</b>	Meghan LeMay, Komal Kumari
09:10-09:20	<a href="#">What is CEDAR?</a>	Delores Knipp (CEDAR chair)
09:20-11:12	<b>L1: Instrumentation and Techniques (15 min talks)</b>	
	L1.1 Incoherent Scatter Radar (ISR)	Ashton Reimer (SRI)
	L1.2 Meteor Radars	Ryan Volz (MIT)
	L1.3 Lidars	Katrina Bossert (ASU)
	L1.4 Rockets	Rafael Mesquita (Clemson Uni.)
	L1.5 Optical Instruments	Asti Bhatt (SRI)
	L1.6 CubeSats	Brent Parham (MIT Lincoln Labs)
	L1.7 Global Navigation Satellite System (GNSS)	Seebany Datta-Barua (IIT)
11:12-11:30	Question & Answer	
11:30-11:40	Break	

11:40-12:25	Satellites: Past, Present, Future	Katelynn Greer (LASP/CU Boulder)
12:25-13:10	Hierarchy of Atmospheric Models	Xian Lu (Clemson Uni.)
13:10-13:40	Break	
13:40-13:50	<a href="#">Diversity, Equity and Inclusion (DEI): Call to Action</a>	Mack Jones Jr. (NRL, DEI task Force)
13:50-15:26	<b>L2: Back to the Basics (15 min talks)</b>	
	L2.1 Ion-neutral coupling	Toshi Nisimura (BU)
	L2.2 Irregularities and Instabilities	Titus Yuan (USU)
	L2.3 Joule heating	Lindsay Goodwin (NJIT)
	L2.4 Sudden Stratospheric Warming	Nick Pedatella (HAO/NCAR)
	L2.5 Acoustic Waves	Pavel Inchin (ERAU)
	L2.6 Scintillations	Sebastijan Mrak (BU)
15:26-15:40	Question & Answer	
15:40-15:50	Break	
15:50-16:30	<a href="#">Planetary Atmospheres</a>	Cheng Li (UM CLASP)
16:30-17:30	Wine and Whine	social event via_wonder.me

## Monday 6/21/2021

### [View the recording of the plenary session](#)

Chair: Delores Knipp

8:00-  
8:15

[Welcome](#)

Delores Knipp (CEDAR chair)

8:15-  
8:35

[SH 1: An important advance in understanding Instability breakdown using imagers, a lidar, modeling, and laboratory data. \(A CEDAR success story\)](#)

James Hecht (Aerospace Corporation)

8:35-  
8:50

[GC report: CONCERT](#)

Katelynn Greer (LASP/CU Boulder)

8:50-  
9:10

[ECSH 1: GOLD observations of the nighttime ionosphere responses to planetary wave forcing](#)

Quan Gan (LASP/CU Boulder)

9:10-  
9:30

[Space Weather Forecast with the Operational WAM-IPE](#)

Tzu-Wei Fang (CIRES/SWPC)

9:30-  
10:00

Break

Chair: Endawoke Yizengaw

10:00-  
10:45

[Grand Challenge tutorial: Understanding the Electromagnetic Energy Input to the Atmosphere](#)

Alex Chartier (JHU/APL)

10:45-  
11:00

[GC report: Multi-scale I-T System Dynamics](#)

Aaron Ridley (University of Michigan)

Toshi Nishimura (Boston University)

11:00-  
11:20

[ECSH 2: Investigating the formation, evolution, and properties of high-latitude irregularities and their relevance in magnetosphere-ionosphere-thermosphere coupling](#)

Lindsay Goodwin (NJIT)

11:20-11:40	<a href="#">Workshop Report: Strategic Vision for Incoherent Scatter Radar</a>	Phil Erickson (MIT Haystack)
11:40-12:00	<a href="#">SH 2: Assimilative Mapping of Geospace Observations (AMGeO): Building Community for Collaborative CEDAR Data Science</a>	Tomoko Matsuo (CU Boulder)
12:00-13:00	Break / Meet for lunch via wonder.me	
	<b>Individual Workshops</b>	
13:00-15:00	<a href="#">GC-A CONCERT</a>	Katelynn Greer (LASP/CU Boulder)
13:00-15:00	<a href="#">Python for Space Science</a>	Alexa Halford (NASA)
13:00-15:00	<a href="#">Space Weather at Midlatitudes</a>	Sebastijan Mrak (Boston University)
13:00-15:00	<a href="#">Lidar Science and Engineering</a>	Jintai Li (UoA Fairbanks)
15:00-15:30	Break	
15:30-16:30	Student event/ Panel (Student office hour support)	
<b>Tuesday 6/22/2021</b>		
	<a href="#">View the recording of the plenary session</a>	
	Chair: Asti Bhatt,	
8:00-8:25	<a href="#">Agency update - NSF</a>	Alan Liu & Lisa Winter (NSF-GEO)
8:25-8:40	<a href="#">Agency update - AFOSR</a>	Julie Moses (AFOSR)

8:40-9:05	<a href="#">Agency update - NASA</a>	John McCormack (NASA)
9:05-9:30	Heliophysics 2050 report	Shasha Zou (University of Michigan)
9:30-10:00	Break	
<b>Individual Workshops</b>		
10:00-12:00	<a href="#">AIM Coupling at Midlatitudes</a>	Xinzhao Chu (CU Boulder)
10:00-12:00	<a href="#">Dynamic Coupling of IT During Storms</a>	Wenbin Wang (HAO/NCAR)
10:00-12:00	<a href="#">Grand Challenge Initiative MLT</a>	Kolbjørn Blix (Andøya Space)
10:00-12:00	<a href="#">DASI Networks</a>	Cesar Valladares (UT Dallas)
12:00-13:00	Break / Student Event: Lunch with a Scientist	
13:00-15:00	<a href="#">Commercial Suborbital Applications</a>	Todd Smith (JHU/APL)
13:00-15:00	<a href="#">Reproducibility in Geospace Science</a>	InGeO team (Asti Bhatt, Ashton Reimer, Leslie Lamarche, Todd Valentic, Pablo Reyes)
13:00-15:00	<a href="#">Decadal Survey Prep</a>	Doug Rowland (NASA)
13:00-15:00	<a href="#">GC-B CONCERT</a>	Katelynn Greer (LASP/CU Boulder)
15:00-15:30	Break	
15:30-17:00	<b><a href="#">Poster session</a></b>	

## Wednesday 6/23/2021

### [View the recording of the plenary session](#)

Chair: Shasha Zhou

8:00-8:20	<a href="#">SH 3: Simulated Trends in Ionosphere-Thermosphere Climate Due to Predicted Main Magnetic Field Changes From 2015 to 2065</a>	Ingrid Cnossen (British Antarctic Survey)
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8:20-9:05	<a href="#">CEDAR Prize lecture: Energy Balance and Long-Term Change in the Upper Mesosphere and Lower Thermosphere</a>	Marty Mlynczak (NASA)
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9:05-9:30	<a href="#">Education and diversity programs at NSF</a>	Brandon Jones (NSF-GEO/OAD)
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9:30-10:00	Break	
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### Individual Workshops

10:00-12:00	<a href="#">Gravity Waves</a>	Sharon Vadas (NWRA)
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10:00-12:00	<a href="#">GC-A Multi scale IT system System Dynamics</a>	Toshi Nishimura (BU), Aaron Ridley (UoM)
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10:00-12:00	<a href="#">Terrestrial Hydrogen</a>	Edwin Mierkiewicz (Embry-Riddle Aeronautical University)
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10:00-12:00	<a href="#">IT Storms Near Solar Minimum</a>	Thomas Immel (UoC Berkeley)
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12:00-13:00	Break / Meet for lunch via wonder.me	
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13:00-15:00	<a href="#">TAD TIDs and MSTIDs</a>	Pedrina Terra dos Santos (U. Central Florida)
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13:00-15:00	<a href="#">CEDAR and Climate Change</a>	Susan Nossal (UW Madison)
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13:00-15:00	<a href="#">Vertical coupling</a>	Yen-Jung Wu (UoC Berkeley)
13:00-15:00	<a href="#">GC-B Multi Scale IT System System Dynamics</a>	Toshi Nishimura (BU), Aaron Ridley (UoM)
15:00-15:30	Break	
15:30-17:00	<a href="#">Poster session</a>	

## Thursday 6/24/2021

<a href="#">View the recording of the plenary session</a>		
Chair: Julio Urbina_		
8:00-9:00	<a href="#">CEDAR Distinguished Lecture, "Modeling, Specifying and Forecasting Space Weather"</a>	Introduction by Rod Heelis (UT Dallas) Bob Schunk (Utah State)
9:00-9:10	<a href="#">Remembering Stan Sazykin</a>	Bela Fejer (Utah State University)
9:10-9:30	<a href="#">The Flare Irradiance Spectral Model - Version 2 (FISM2), an improved model of the solar spectral irradiance at ultraviolet wavelengths</a>	Phil Chamberlin (LASP/CU Boulder)
9:30-10:00	Break	
<b>Individual Workshops</b>		
10:00-12:00	<a href="#">AIM Coupling at High Latitudes</a>	Xinzhao Chu (CU Boulder)
10:00-12:00	<a href="#">IT asymmetries</a>	Astrid Maute (HAO/NCAR)
10:00-12:00	<a href="#">Data Science in CEDAR</a>	Ryan McGranaghan (ASTRA)

10:00-12:00	<a href="#">GC-A Poynting Flux</a>	Alex Chartier (JHU/APL)
12:00-13:00	Break / Meet for lunch via_wonder.me	
13:00-15:00	<a href="#">2021 Eclipses</a>	Shunrong Zhang (MIT)
13:00-15:00	<a href="#">Equatorial Space Physics and Space Wx</a>	Dave Hysell (Cornell)
13:00-15:00	<a href="#">CEDAR DEI</a>	DEI taskforce (chairs Mack Jones, Julio Urbina)
13:00-15:00	<a href="#">Model Software Engineering</a>	Michael Hirsch (BU)
15:00-15:30	Break	
15:30-17:00	<a href="#">Poster session</a>	

## Friday 6/25/2021

	<a href="#">View the recording of the plenary session</a>	
	Chair: Larisa Goncharenko	
8:00-8:20	<a href="#">SH 4: Whole atmosphere coupling by the quasi-6-day wave during the September 2019 Antarctic sudden stratospheric warming</a>	Yosuke Yamazaki (GFZ Potsdam)
8:20-8:40	<a href="#">ECSH 3: New Findings of the response of thermospheric composition to low-moderate geomagnetic activity</a>	Xuguang Cai (NCAR)
8:40-8:55	<a href="#">Poster prize announcement</a>	Poster Committee chairs



8:55-9:15	<a href="#">ECSH 4: Collective Science: Magnetosphere-Ionosphere-Atmosphere Coupling and the Building of an Amateur Radio Citizen Science Community</a>	Nathaniel Frissell (U.of Scranton)
9:15-9:30	<a href="#">Using HAARP to build a Subauroral Geophysical Observatory in Gakona, AK</a>	Robert McCoy (UoA Fairbanks)
9:30-10:00	Break	
	<b>Individual Workshops</b>	
10:00-12:00	<a href="#">GC-B Poynting Flux</a>	Alex Chartier (JHU/APL)
10:00-12:00	<a href="#">Synergy of Models</a>	Doğacan Öztürk (UoA Fairbanks)
10:00-12:00	<a href="#">Instrumentation and Calibration</a>	Jeff Baumgardner (BU)
10:00-12:00	<a href="#">Meteoroids and Space Debris</a>	Julio Urbina (PSU)
12:00-13:00	Break / Meet for lunch	
13:00-15:00	<a href="#">Non Storm Time IT Variations</a>	Yongliang Zhang (JHU/APL)
13:00-15:00	<a href="#">AMGeO</a>	Tomoko Matsuo (CU Boulder)
13:00-15:00	<a href="#">Thermospheric Dynamics Measurements</a>	Sovit Khadka (NJIT)
13:00-15:00	<a href="#">Remembering Stan Sazykin: New Results In Subauroral Science</a>	Phil Erickson (MIT)