


2020 Polar Technology Conference
10 – 12 March 2020
SEEC Building, C120 Auditorium
Boulder, Colorado, USA

DAY 1 Tuesday, 10 March 2020	
8:00 a.m. – 9:00 a.m.	Registration, continental light fare with coffee and tea
9:00 a.m.	Welcome and Opening Remarks <i>Nancy French, Co-chair, Michigan Technological University</i> <i>Satish Chetty, Co-chair, Beyond66 Solutions</i> <i>Mark Seefeldt, Co-chair, University of Colorado - Boulder</i> <i>Kate Ruck, QED Enterprises, Inc.</i> <p align="right">Day 1 livestream begins</p>
9:20 a.m.	National Science Foundation Arctic Program Perspectives <i>Kate Ruck, QED Enterprises, Inc.</i>
9:40 a.m.	National Science Foundation Antarctic Program Perspectives <i>Mike Jackson, National Science Foundation</i> <i>Wilson Sauthoff, National Science Foundation</i>
10:00 a.m.	A Look at Past Polar Technology Conferences <i>Satish Chetty, Beyond66 Solutions</i>
10:20 a.m.	Morning Break
THEME	SCIENCE DRIVERS <i>Moderator – Kate Ruck</i>
10:40 a.m.	Keynote - What Are the Causes and Consequences of Abrupt Ecosystem Shifts in Polar Regions and How Can We Better Detect and Assess Hot Spots of Change? <i>Merritt Turetsky, University of Colorado – Boulder, INSTAAR</i>
11:00 a.m.	Satellite Remote Sensing and Data Access in Relation to Studying Arctic Marine Mammal Sea Ice Habitat <i>Olivia Lee, University of Alaska Fairbanks, IARC</i>
11:20 a.m.	Understanding the Space Weather and Thermospheric Wind in the Polar Region <i>Qian Wu, HAO/NCAR</i>
11:40 a.m.	Science Drivers Q&A and Panel Discussion
12:00 p.m.	Lunch (catered)



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DAY 1		Tuesday, 10 March 2020	
THEME	POWER SYSTEMS	<i>Moderator – Paul Carpenter</i>	
1:00 p.m.	Keynote - The Human Face of Polar Power	<i>Piper Foster Wilder, 60Hertz Microgrids</i>	
1:20 p.m.	UNAVCO Continuous GNSS Station Updates	<i>Thomas Nylen, UNAVCO</i>	
1:40 p.m.	Microturbine Power Generation Demonstration at the Summit, Greenland Station	<i>Richard Armstrong, RSA Engineering, Inc.</i>	
2:00 p.m.	Power Systems Q&A and Panel Discussion		
2:20 p.m.	Afternoon Break		
2:40 p.m.	Re-envisioning the Polar Technology Conference	<i>Kate Ruck, QED Enterprises, Inc.</i>	
4:00 p.m.	Breakout Session – Polar Technology Challenges	<i>Small groups will use a peer-coaching approach to group problem solve. All will have the opportunity to briefly share their unique polar technology challenge and receive suggestions from their group.</i>	
		Day 1 livestream ends	
5:00 p.m.	End of Day 1		
5:30 p.m. – 7:00 p.m	Social Event – Cocktail Happy Hour	<i>Sponsored and Hosted by Applied Science Technology (AST)</i>	
			
		<i>Location: The Dark Horse Bar and Grill, 2922 Baseline Road, Boulder</i>	
		<i>**Pick up your wrist-band for admittance at the AST exhibit booth!</i>	

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DAY 2 Wednesday, 11 March 2020	
8:00 a.m. – 8:50 a.m.	Registration, continental light fare with coffee and tea
8:50 a.m.	Welcome and Summary of Day 1 <i>Nancy French, Co-chair, Michigan Technological University</i> <i>Satish Chetty, Co-chair, Beyond66 Solutions</i> <i>Mark Seefeldt, Co-chair, University of Colorado - Boulder</i> <i>Kate Ruck, QED Enterprises, Inc.</i> <p style="text-align: right;">Day 2 livestream begins</p>
THEME	DATA ACCESS AND SHARING <i>Moderator – Nancy French</i>
9:00 a.m.	Keynote – Communication and Computation Infrastructure for Challenging Environments <i>Martin Swany, Indiana University</i>
9:20 a.m.	Using Big Data to Understand Arctic Surface Water Change <i>Erin Trochim, University of Alaska Fairbanks</i>
9:40 a.m.	Increasing High Resolution Data Coverage and New Possibilities in the Polar Regions <i>Cole Kelleher, Polar Geospatial Center, University of Minnesota</i>
10:00 a.m.	Data Access and Sharing Q&A and Panel Discussion
10:20 a.m.	Morning Break
THEME	COMMUNICATIONS <i>Moderator – Michael Prior-Jones</i>
10:40 a.m.	Keynote – An Overview of Satellite Communications for Polar Research and Operations <i>Michael Prior Jones, Cardiff University</i>
11:00 a.m.	Iridium Government Solutions <i>Charlie Lever, Iridium</i>
11:20 a.m.	MUOS Communication Coverage Beyond the Arctic Circle <i>Jonathon Cheah and Shelley Johnson, The MITRE Corporation</i>
11:40 a.m.	Communications Q&A and Panel Discussion
12:00 p.m.	Lunch (catered)



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DAY 2 Wednesday, 11 March 2020	
1:00 p.m. – 3:00 p.m.	Satellite Communications Special Session <i>Moderator, Patrick Smith, National Science Foundation – 30 min</i> <i>Kenneth Boda, NORAD/USNORTHCOM – 15 min</i> <i>Daniel Wagster, Leidos – 15 min</i> <i>Charlie Lever, Iridium – 15 min</i> <i>Jeff Osborne, Kepler – 15 min</i> <i>Robert Lorenzana, AST Americas – 15 min</i> <i>Discussion and Q&A – 15 min</i>
3:00 p.m. – 5:00 p.m.	Poster Session and Exhibits <i>Held in main auditorium, lightly catered</i> <div style="text-align: right;">Day 2 livestream ends</div>
5:00 p.m.	End of Day 2

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DAY 3 Thursday, 12 March 2020	
8:00 a.m. – 8:50 a.m.	Registration, continental light fare with coffee and tea
8:50 a.m.	Welcome and Summary of Day 1 and 2 <i>Nancy French, Co-chair, Michigan Technological University</i> <i>Satish Chetty, Co-chair, Beyond66 Solutions</i> <i>Mark Seefeldt, Co-chair, University of Colorado - Boulder</i> <i>Kate Ruck, QED Enterprises, Inc.</i> <p align="right">Day 3 livestream begins</p>
THEME	INSTRUMENTATION <i>Moderator – Mark Seefeldt</i>
9:00 a.m.	Keynote – Documenting High Latitude System Dynamics: New Technologies for Persistent Monitoring of Critical Parameters at Appropriate Time-Space Scales <i>Philip McGillivray, US Coast Guard</i>
9:20 a.m.	Instrumentation and Secondary Applications of Observations from the Transportable Array in Alaska and Canada <i>Jeremy Miner, IRIS</i>
9:40 a.m.	Using Unmanned Aerial Vehicles (UAVs) for Measuring Water Vapor Isotopes Above the Greenland Ice Sheet: Implications for Understanding Water Vapor Exchange <i>Bruce Vaughn, University of Colorado, INSTAAR</i>
10:00 a.m.	Instrumentation Q&A and Panel Discussion
10:20 a.m.	Morning Break
THEME	OVERARCHING AND INTEGRATIVE TECHNOLOGIES <i>Moderator – Karen Frey</i>
10:40 a.m.	Keynote – Integrated Technologies for Iceberg Surveying and Monitoring: A Comprehensive Data Collection Campaign in the Labrador Sea During the 2019 Iceberg Season <i>Robert Briggs, C-CORE</i>
11:00 a.m.	Using Science to Improve Winter Logistics <i>Sally Shoop, Cold Regions Research and Engineering Laboratory</i>
11:20 a.m.	Speaker Canceled <i>Replacement speaker TBD</i>
11:40 a.m.	Overarching and Integrative Technologies Q&A and Panel Discussion



AGENDA

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DAY 3 Thursday, 12 March 2020	
12:00 p.m.	Lunch (catered)
1:00 p.m.	Next Steps for the Polar Technology Community <i>Kate Ruck, QED Enterprises, Inc.</i>
2:00 p.m.	Closing Remarks <i>Nancy French, Co-chair, Michigan Technological University</i> <i>Satish Chetty, Co-chair, Beyond66 Solutions</i> <i>Mark Seefeldt, Co-chair, University of Colorado - Boulder</i> <i>Kate Ruck, QED Enterprises, Inc.</i>
3:00 p.m.	End of Conference Day 3 livestream ends

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POSTERS

View abstracts and full author information for all posters at:
www.arcus.org/logistics/2020-polar-technology/posters

THEME: SCIENCE DRIVERS		PRESENTING AUTHOR
1	Exchange Processes in the Ross Gyre, Southern Ocean	Yana Bebieva
2	Light Transmittance and Potential Solar Heating of the Ocean Water Column Following Record Low Sea Ice Extents Across the Distributed Biological Observatory in the Pacific Arctic Region	Karen Frey
3	Principles for Conducting Research in the Arctic: Connecting Scientists and Communities through Accountable and Respectful Research Practices	Meredith LaValley
THEME: DATA ACCESS AND SHARING		
4	Arctic HF Network Planning Tool	Shelley Johnson
5	Data at the Edge: Providing Data Resources and Analytic Capabilities in Communication-Limited Environments	Nancy French
THEME: COMMUNICATIONS		
6	Iridium for the Polar Environment: Exploration of Current and Future Technology	Mitchell MacInnis
7	Long Range VHF Data Communications with Wize	Michael Prior-Jones
THEME: INSTRUMENTATION		
8	Acoustic Source Tracking in the Arctic with Acoustic Vector Sensors	Miles Penhale
9	An Automated Station for Polar Ice-ocean Interaction Monitoring - AMIGOS-III	Ted Scambos
10	Automatic Weather Station Network University of Wisconsin-Madison	Lee Welhouse
11	Cryoegg: Development and Field Trials of a Wireless Subglacial Probe for Deep, Fast-moving Ice	Michael Prior-Jones
12	First Observations from a Video In-situ Snowfall Sensor (VISSS) Deployed During the MOSAiC Campaign	Maximilian Maahn
13	Ice911- Restoring Arctic Albedo Through Rebuilding Ice Reflectivity in the Arctic	Leslie Field
14	POLENET-ANET: Ongoing Development of Autonomous GNSS Systems in Antarctica	David Saddler



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THEME: INSTRUMENTATION (Continued)		PRESENTING AUTHOR
15	Recent Emergence of Unmanned Aerial Vehicles for Cryosphere Research	Clare Gaffey
16	Remote and Autonomous Measurements of Precipitation in Antarctica	Mark Seefeldt
17	Soil Moisture Retrievals by Ecosystem Type Using In-situ Logger Networks and Satellite Data in High Northern Latitudes	Liza Jenkins
18	The Development of the Polar Climate Weather Station (PCWS) System	Joshua Thorsland
19	USCGC Healy	Daniel Yang
THEME: OVERARCHING AND INTEGRATIVE TECHNOLOGY		
20	Development of a Decision Support Tool to Aid Iceberg Management Operations	Jonathon Bruce
21	Erebus Backbone Network Overview: Geophysical Stations Fortified for a High-Altitude Polar Volcanic Environment	Kirsten Arnell
22	NSF Iridium Program Overview with Focus on Satellite Data-transmission	Daniel Wagster
23	Operational River Ice Monitoring: From Earth-observation Satellite Imagery to In-situ Measurements	Robert Briggs
24	Using Science to Improve Winter Logistics	Sally Shoop

EXHIBITORS

ORGANIZATION	PRESENTER
AST Americas – www.ast-systems.us.com	Robert Lorenzana, Matthew Kerr
APRS World, LLC – www.aprsworld.com	James Jefferson Jarvis
C-CORE – www.c-core.ca	Robert Briggs
Kepler Communications – www.keplercommunications.com	Jeffrey Osborne
Nanometrics – www.nanometrics.ca	Tim Parker
Powell Electronics – www.powell.com	Charlene Hasse, Steve Boysen
Xeos Technologies – www.xeostech.com	Mitchell MacInnis
60hertz Microgrids – www.60hertzenergy.com	Piper Foster Wilder



ATTENDEES

**Organizing Committee *Early Career

Hans Addleman Indiana University	John Adler Battelle
Dick Armstrong RSA Engineering, Inc	Joshua Arndt SRI International
Kirsten Arnell IRIS/PASSCAL	Forest Banks Battelle
Yana Bebieva* Florida State University	Brian Beverly Leidos ASC
Roger Blalock NIST Public Safety Communications Research	Kenneth Boda NORAD and USNORTHCOM
Robert Briggs C-CORE	Steve Boysen Powell Electronics
Jeff Casper SRI International	Jon Bruce C-CORE
Satish Chetty** Beyond66 Solutions	Paul Carpenter** IRIS / PASSCAL
Steve Dunbar Leidos, Antarctic Support Contract	Jonathon Cheah The MITRE Corporation
Ken Flowers Iridium	Leslie Field Ice911 Research
Nancy H. French** Michigan Technological University	Piper Foster Wilder 60Hertz Microgrids
Clare Gaffey* Clark University	Karen Frey** Clark University
Kuba Grzeda ARCUS	Peter Griffith** NASA GSFC
Joe Harrigan Leidos, Antarctic Support Contract	Charlene Haase Powell Electronics



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James Jefferson Jarvis APRS World, LLC	Michael Jackson NSF
Jessy Jenkins Polar Field Services	Liza Jenkins* Michigan Tech Research Institute
Cole Kelleher Polar Geospatial Center University of Minnesota	Shelley Johnson The MITRE Corp
Andy Kurth P.E. Madison College	Matthew Kerr AST Americas
Charlie Lever Iridium	Olivia Lee University of Alaska Fairbanks
Maximilian Maahn CU Boulder	Robert Lorenzana AST Americas
Mitchell MacInnis Xeos Technologies Inc.	Mike MacFerrin University of Colorado, CIRES
Brendon Mendenhall Scripps Institution of Oceanography	Phil McGillivray US Coast Guard PACAREA & Icebreaker Operations
John Meyers IRIS/PASSCAL	Jeremy Miner IRIS
Robb Moore NSF	Valerie Morris INSTAAR, University of Colorado, Boulder
Matthew Murray The MITRE Corporation	Spencer Niebuhr UNAVCO
Thomas Nysten UNAVCO	Randy Olsen QED
Jeffrey Osborne Kepler Communications	Shaugn Ostrowski Defense Threat Reduction Agency
Tim Parker Nanometrics	Joseph Pettit UNAVCO
Miles Penhale* Michigan Tech Research Institute	Mike Prior-Jones Cardiff University
Zeb Polly ARCUS	Kevin Rozmiarek INSTAAR-SIL
Kate Ruck** QED Enterprises Inc.	David M. Saddler* Ohio State University



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Wilson Sauthoff** NSF Office of Polar Programs	Ted Scambos Earth Sciences and Observation Center, CIRES, University of Colorado-Boulder
Neal Scheibe CH2M Polar Services (CPS)	Chris Schmidt The MITRE Corporation
Christy Schultz NOAA Global Monitoring Division	Mark Seefeldt** University of Colorado – Boulder
Lisa Sheffield Guy** ARCUS	Sally Shoop Cold Region Research and Engineering Laboratory
Patrick D Smith National Science Foundation	Bill Spindler South Pole Station
Martin Swany Indiana University	Kevin Thompson National Science Foundation
Joshua Thorsland* Madison College	Adam Timmons CH2M Polar Services (CPS)
Merritt Turetsky University of Colorado Boulder	Erin Trochim* University of Alaska Fairbanks
Brian Vasel NOAA OAR Global Monitoring Division	William Vandiver Naval Information Warfare Center – Atlantic
Bob Vehorn NIWC Polar Programs	Bruce Vaughn INSTAAR - Univ. of Colorado
Daniel Wagster Leidos, Antarctic Support Contract	Chet Waggoner Leidos
Daniel Yang Scripps Institution of Oceanography	Bruce Wallin National Snow and Ice Data Center / CIRES; University of Colorado Boulder
Qian Wu HAO/NCAR	Lee Welhouse Space Science Engineering Center Antarctic Meteorological Research Center



CODE OF CONDUCT

POLAR TECHNOLOGY CONFERENCE COMMITMENT

The Polar Technology Conference (PTC) is committed to maintaining a safe, welcoming, and trusted conference environment capable of supporting meaningful community dialogue and the professional exchange of information and ideas. To help promote these conditions, all conference participants are expected to adhere to the Polar Technology Conference Code of Conduct. The purpose of this Code of Conduct is to communicate that sexual harassment, other forms of harassment, and sexual assault will not be tolerated, and every conference participant is expected to conduct themselves in a professional, respectful, and responsible manner at all times. This Code of Conduct applies to all affiliated people and events relating to the 2020 Polar Technology Conference, including those sponsored by other organizations.

WHAT IS HARASSMENT?

Harassment includes speech or behavior that is not welcome or is personally offensive, whether it is based on ethnicity, gender, religion, age, body size, disability, veteran status, marital status, sexual orientation, gender identity, or any other reason not related to scientific merit. It includes stalking, unnecessary touching, and unwelcome attention. Behavior that is acceptable to one person may not be acceptable to another, so use discretion to be sure that respect is communicated. Harassment conveyed in a joking manner still constitutes unacceptable behavior. Retaliation for reporting harassment is also a violation of this policy, as is reporting an incident in bad faith.

EXPECTED BEHAVIOR

- Treat all conference participants, staff, and vendors with respect and consideration, valuing a diversity of views and opinions.
- Communicate openly and thoughtfully with others, being considerate of viewpoints different from your own and critiquing ideas rather than individuals.
- Avoid personal attacks directed toward other attendees, participants, staff, and vendors.
- Be mindful of your surroundings and of your fellow participants. Alert staff if you notice a dangerous situation or someone in distress.
- Respect the rules and policies of the meeting venue, hotels, or any other venue.
- Alert hotel/venue security if you notice a dangerous situation or someone in distress.

PROHIBITED CONDUCT

- Harassment and intimidation, including any verbal, written (including via texts or on social media), or physical conduct designed to threaten, intimidate, humiliate, or coerce another participant.
- Discrimination or other actions based on race, ethnicity, gender, gender identity or expression, sexual orientation, physical ability, nationality, age, socioeconomic status, or belief.
- Stalking or unwelcome or surreptitious photography or recording.
- Disruption of talks at oral or poster sessions or at other events organized at the meeting venue, hotel, or other conference facilities.

Unwelcome sexual attention, including but not limited to sexualized comments or jokes, displaying sexually explicit material, inappropriate touching, groping, or sexual advances.



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REPORTING BAD BEHAVIOR

If you are the subject of unacceptable behavior or have witnessed any such behavior during conference events, please contact an ARCUS staff member on-site or share your concern with Lisa Sheffield Guy, ARCUS (lisa@arcus.org).

Anyone who feels unsafe or threatened should immediately contact venue security staff or contact the appropriate public authorities. To report a serious crime such as sexual assault to law enforcement, please call 911.

CONSEQUENCES

- Anyone requested to stop unacceptable behavior is expected to comply immediately.
- Conference officials will consult with the individual filing the complaint prior to taking any action.
- Conference officials may take any action deemed necessary and appropriate, including verbal warnings, immediate removal from the conference, and the notification of appropriate authorities (e.g. employers or police).
- Retaliation toward complainants of inappropriate conduct will not be tolerated.

For any questions about this Code of Conduct policy, please contact Lisa Sheffield Guy, ARCUS, lisa@arcus.org.

