DRAFT Agenda
Research Vessel Technical Enhancement Committee (RVTEC) Meeting

Wood Center
University of Alaska, Fairbanks (UAF)
1731 S. Chandalar Drive, Fairbanks, AK 99775
October 22-24th, 2019

Webex Login Information

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Meeting number: 804 875 268

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Monday October 21, 2019

1800 - 1900 | **Pre-Meeting Check**
Pikes Lodge 1850 Hoselton Rd., Fairbanks, AK 09970

Tuesday October 22, 2019

Wood Center Ballroom

0800 | **Meeting Check-in**, **coffee and informal discussion**

0830 | **Meeting Call to Order – Lee Ellett, RVTEC Chair**
- Introductory Remarks
- Accept Minutes from 2018
- Welcome Remarks – Daniel White, UAF Chancellor (10min)

0845 | **Science Talk: "Last Frontier Oceanography in the 21st Century" –** Seth Danielson Physical Oceanographer, College of Fisheries and Ocean Sciences, University of Alaska. Fairbanks (40min)

0925 | **RVTEC Participant Introductions**

0940 | **Icebreaker Session** – Tell us about this year's technical/operational crisis and how you resolved it. A representation from each of the following vessels is requested to make a presentation. Presentations should be limited to 5 min with 1 slide per ship. Please consider having a junior member of your group make the presentation. Acceptable slide formats are PPT and PDF
- University of Rhode Island:
  - *R/V Endeavor* – Gabe Matthias
- University of Miami:
  - *R/V Walton* Smith – TBA
- University of Washington:
  - *R/V Thomas G. Thompson* – Croy Carlin

- o *R/V Rachel Carson* – Sonia Brugger
- Woods Hole Oceanographic Institution:
  - o *R/V Atlantis* – Emily Shimada
  - o *R/V Neil Armstrong* – Rebeccca Hudak
- University of Minnesota
  - o *R/V Blue Heron* – Jason Agnich
- University of Hawaii
  - o *R/V Kilo Moana* – Julianna Diehl
- Skidaway Institute of Oceanography
  - o *R/V Savannah* – Morgan Hudgins

1015 | *Break*

1025 | **Icebreaker Session** (cont.)
- University of Delaware
  - o *R/V Hugh R. Sharp* – TBA
- Scripps Institution of Oceanography, UCSD
  - o *R/V Robert Gordon Sproul* – TBA
  - o *R/V Sally Ride* – TBA
  - o *R/V Roger Revelle* – TBA
- LUMCON
  - o *R/V Pelican* – TBA
- Oregon State University
  - o *R/V Oceanus* – Kate Kouba
- University of Alaska, Fairbanks
  - o *R/V Sikuliaq* – Ethan Roth
- NOAA Vessels – TBA
- STARC
  - o *USCGC Healy* – Brett Hembrough
- USAP
  - o *Nathaniel B. Palmer*
  - o *Laurence M. Gould*
- Schmidt Ocean Institute
  - o *R/V Falkor* – TBA
- Stony Brook University
  - o *R/V Seawolf* – TBA
- University of New Hampshire
  - o *R/V Gulf Surveyor* – TBA

1120 | **Agency Reports**
- NSF – Jim Holik
- ONR – Rob Sparrock

1135 | **UNOLS Cruise Planning Application** – Erich Gruebel, URI

1150 | **Cyberinfrastructure for large facilities/CICoE Workshop report and an Introduction of Trusted CI Engagement** - Lee Ellett, SIO and Mark Krenz, Trusted CI

1210 | **Introduction of afternoon breakout sessions**

1215 | *Lunch*

Tuesday Afternoon breakout sessions		
See Break-out Session abstracts below for descriptions		
Ballroom	*Rooms C&D*	*Rooms E&F*
1330 CyberSecurity	Sensors and More Part I	Shipboard USBL Systems
1510	*Break*	
1520 SatNAG	GPS	Winches

1715 Buses from Wood Center to Reception at UAF Museum of the North

1730 RVTEC Reception
UAF Museum of the North
1962 Yukon Dr. Fairbanks, AK
Cash Bar

Wednesday, October 23, 2019

Wood Center Ballroom

0800 **Coffee and informal discussion**

0830 **Meeting Day-2 Call to Order –** Lee Ellett, SIO RVTEC Chair
- Review meeting agenda

0835 **Summary of Tuesday Sessions**

0845 **MATE update** – Maria Osiadacz, Marine Advanced Technology Education

0900 **Ship/Shore Communications**
- HiSeasNet and Secondary Satellite System – Jon Meyer, SIO

0920 **SATNAG report** – Laura Stolp

0940 **Winch Pool Updates**
- East Coast Winch Pool – Josh Eaton, WHOI
- West Coast Winch Pool – Aaron Davis, SIO

1000 *Break*

1015 **TBA**

1025 **R2R Report** – TBA

1040 **JMS Inspection Report** – Ted Colburn, JMS

1055 **Synthetic Rope Update** – Rick Trask, UNOLS Wire Pool

1110 **Tech Pool update** – Piers Chapman, TAMU

1125 **Training Subcommittee: A moderated discussion** – Nick Mathews, Tech Pool

1205 **Introduction of afternoon breakout sessions**

1215 *Lunch*

Wednesday Afternoon breakout sessions
See Break-out Session abstracts below for descriptions

	Ballroom	*Rooms C&D*	*Rooms E&F*	*Gruenig Building Room 307*
1330	Sensors and More Part II	Data	Rigging (Part 1)	Manager's Meeting
1510	*Break*			
1520	MAC	R2R	Rigging (Part 2)	

1715 | **Buses from Wood Center to Pikes Lodge**

1830 | **RVTEC Dinner**
Pikes Lodge – 1850 Hoselton Rd., Fairbanks, AK 99709
Pre-registration required, cash bar

Thursday October 24, 2019

Wood Center Ballroom

0800 | **Coffee and informal discussion**

0830 | **Meeting Day 3 Call to order**

0835 | **Telepresence over FX** – Dwight Coleman

0855 | **UNOLS Committee Reports**
- UNOLS – Alice Doyle, UNOLS
- Safety Committee – Matt Durham, SIO
- AICC – Steven Hartz, UAF
- FIC – Ethan Roth, UAF
- SCOAR – David Fisichella, WHOI
- MSROC – Lee Ellett, SIO
- MERAS – Emily Shimada, WHOI / Brandi Murphy, UNOLS

0940 | **RCRV** – Daryl Swensen, OSU

0950 | **Roger Revelle Refit report** – Lee Ellett, SIO (10min)

1000 | **Break**

1015 | **Cruise planning considerations for successful dredges** – Brandi Murphy, UNOLS (10min)

1025 | **ADCP Update** – Jules Hummon, UH

1045 | **pCO2** – Lee Ellett, SIO (5-10min)

1100 | **MISO and PFPE** – Dan Fornari, WHOI – via Webex

1120 | **Coriolix, RCRV Datapresence –** Chris Romsos, OSU (5-10min)

1130 | **Wire Testing and Documentation** – Barbara Callahan

1145 | **Introduction of tours**

1155 | **Meeting Adjourn**

1200 | *Lunch*

1300 | **Bus to West Ridge for Tours (see tour schedule below)**

Friday October 25, 2019

Wood Center, Ballroom

0830 – 1230 | **Networking & Telecommunication Fundamentals – Jeff Whiteside, Senior Network Communication Specialist, UAF**
- Network concepts 101 – Local area networks, Wide area networks, Virtual Private Networks
- Network hardware fundamentals – Switches, routers, load balancers, firewalls, access points, and wireless controllers
- Network infrastructure fundamentals – Ethernet, fiber, wireless communications
- IP addressing fundamentals – Subnets, networks, VLAN's, private/public networks, DHCP
- Traffic routing fundamentals – Gateways, traffic routing, dynamic routing
- Internet access fundamentals – Network Address Translation, DNS, congestion avoidance
- Wireless communications – SSID's, channels, 2.4GHz/5GHz, point to point/outdoor, security models
- Essential network diagnostics – Ping, traceroute, IP verification, NSLOOKUP, firewall logs
- Future of Internet at Sea? – Geosynchronous, low earth orbit satellites, OneWeb/SpaceX/Regional LEO

Thursday Tour Schedule

For more information on the tours visit the UAF RVTEC website
Space for tours is limited.   Pre-registration may be required.

Time	CFOS Research (O'Neill/Irving II Bldg)		Geophysical Institute (GI Elvey Bldg)			Vis Space + Dev Space (WRRB Bldg)		Globe Room/ Map Room
13:30	Ocean Acidification Research Center (OARC) (15 Max)	Operations Oceanography Lab (20 Max)	Alaska Center for Unmanned Aircraft Systems Integration (ACUASI) (15 Max)	Alaska Satellite Facility (ASF) (15 Max)	Alaska Earthquake Center (AEC) (15 Max)	Near Real Time Vessel Demonstration (30 Max)	VR Demonstration (15 Max)	
14:10	Tour Rotation							
14:20	Ocean Acidification Research Center (OARC) (15 Max)	Operations Oceanography Lab (20 Max)	Alaska Center for Unmanned Aircraft Systems Integration (ACUASI) (15 Max)	Alaska Satellite Facility (ASF) (15 Max)	Alaska Earthquake Center (AEC) (15 Max)	Near Real Time Vessel Demonstration (30 Max)	VR Demonstration (15 Max)	Available for hangout between tours
15:00	Tour Rotation							
15:10	Ocean Acidification Research Center (OARC) (15 Max)	Operations Oceanography Lab (20 Max)	Alaska Center for Unmanned Aircraft Systems Integration (ACUASI) (15 Max)	Alaska Satellite Facility (ASF) (15 Max)	Alaska Earthquake Center (AEC) (15 Max)	Near Real Time Vessel Demonstration (30 Max)	VR Demonstration (15 Max)	
15:50	Tour Rotation							
16:00	Ocean Acidification Research Center (OARC) (15 Max)	Operations Oceanography Lab (20 Max)	Alaska Center for Unmanned Aircraft Systems Integration (ACUASI) (15 Max)	Alaska Satellite Facility (ASF) (15 Max)	Alaska Earthquake Center (AEC) (15 Max)	Near Real Time Vessel Demonstration (30 Max)	VR Demonstration (15 Max)	
17:00	Buses from West Ridge to Pikes Lodge							

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Posters

Posters will be available for viewing in the meeting rooms of the Wood Center for the duration of the meeting.

An updated best practices field manual for repeat hydrography post-WOCE
- John Ballard, UCSD

Freely available open source software for reference grade CTD calibration
- John Ballard, UCSD

Open RVDAS
- Pablo (David) Cohn

R2R Elog – Laura Stolp – WHOI
Ship to Data Re-Use: Providing Clues to your Data Inconsistencies.
When the R2R Science Eventlogger is used during a cruise, it makes documentation easier by recording sampling events and associated metadata such as location, time, relative sequence, and related details. The details recorded can be invaluable when the cruise data is made available to the science community. It is a window into the data collected during a cruise and clarifies questions prompted with the re-use of data.

Cyberoam End-of-Life: Moving Forward - SatNAG
The intent of the poster is to provide a matrix of the different Next Generation Appliances SatNAG has researched, showing similarities and differences.

The UNOLS Cruise Planning Application
- Erich Gruebal, URI

RV ENDEAVOR Bandwidth Expansion 2019
- Erich Gruebal, URI

Break-out Sessions

Tuesday Breakouts:

1330-1500	
Ballroom	**Cybersecurity and the Trusted CI engagement**
Rooms C&D	**Sensors and More**
	13:30-14:00 - Transmissometers Best Practices – Shawn Smith, FSU
	14:00-14:30 – General Oceanic pCO2 Systems – John Ballard, SIO
	14:30-15:00 – Stefan Raimund
Rooms E&F	**Shipboard USBL Systems**
	13:30-14:15 - Uses, set-up, care and maintenance, calibration, and open discussion – Sean Kelley
	14:15-15:00 - Calibrating USBL aboard the Sally Ride – Matt Durham, SIO
1520-1700	
Ballroom	**Satellite Comms**
	15:20-16:20 - Next Generation Firewalls – SatNAG
	Discussion of Next Generation Firewall with an in-depth look at SDWAN options, LAN topology, Deep Packet Inspection (DPI), and other considerations taken into account.
	16:20-16:40 - Satellite Antenna Overview to Aide in Troubleshooting – Comm Systems, Karl Kapusta
	16:40-17:00 - HiSeasNet Satellite Changeover Procedures – Kevin Walsh, SIO

Rooms C&D	**GPS** 15:20-15:55 - Setting Up ABXTWO – Overview and Hints - Kate Kouba, OSU 15:55-16:05 - GPS timestamps on UNOLS and NOAA ships – Julia Hummon, UH 16:05-16:35 – Antenna placement, raw RTCM/rinex and Seapath – Brett Hembrough, SIO 16:35-17:00 - Using Raw Navigation Data for Precise Point Positioning– Ethan Roth, UAF
Rooms E&F	**Winches** 13:30-15:00 - AHC Systems: Principles, implementation, purpose, and discussion – Josh Eaton, WHOI

Wednesday Breakouts:	
1330-1500	
Ballroom	**Sensors and More** 13:30-14:15 - MOCNESS Next Steps – Carl Mattson, SIO 14:15-15:00 - Incorporating a drone into the tech tool kit – Andrew Woogen, OSU
Rooms C&D	**Data** 15:20-15:55 - OpenRVDAS – David Cohn 15:55-16:25 - SAMOS: A Picture is Worth a Thousand Words – Kristen Briggs, FSU 16:25-17:00 - ODF CTD Manual – John Ballard, SIO
Rooms E&F	**Advanced Rigging – Peter Cooke, National Rigging and Crane Training** • Estimation of load weights • Sling tension calculations • Center of gravity determination • Share of load weight calculations • Hitch reductions • Inspection
1520–1700	
Ballroom	**MAC** – Paul Johnson and Kevin Jerram • Sound Speed Manager • SmartMap • Open Source Multibeam • transition to ".kmall" format • Sonar Synchronization – Shannon Hoy
Rooms C&D	**From Operator to R2R: Improving the Flow Together** Suzanne O'hara, Dru Clark and Chris Olson • Best practices for underway data • Ship to shore data flow • Keeping device and cruise metadata current • New R2R tools to help operators • Discussion of challenges and opportunities
Rooms E&F	**Rigging training continued**