

Agenda
Research Vessel Technical Enhancement Committee (RVTEC) Meeting
University of Miami, Rosenstiel School of Marine and Atmospheric Science
(RSMAS)
Miami, Florida
3-5 November 2015

Monday, 2 November 2015

6-7:00pm Pre-meeting Check-in at the Courtyard Marriott Lobby

Tuesday, 3 November 2015

Courtyard Marriott Coconut Grove, Ballroom A&B

8:00am Meeting Check-in and informal discussion (Ballroom A&B)

8:30am Meeting Called to Order

- Introductory Remarks - Scott Ferguson, RVTEC Chair
- Welcome Remarks - University of Miami, RSMAS, Dr. Peter Ortner
- Science Talk - Peter Ortner, University of Miami, RSMAS
- [Accept minutes of November 2014 RVTEC Meeting](#)

9:00am RVTEC Participant Introduction

9:15am Icebreaker Session - Tell us about this year's technical/operational crisis and how you resolved it. A representative 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. If you have a slide it must be sent to the UNOLS Office no later than October 28th.

Order of Presentations:

- University of Miami - *Walton Smith* - Denis Ilias
- University of Washington
 - *Clifford A. Barnes* - Darcy Balcarce & Jennifer Nomura
 - *Thomas G. Thompson* - Darcy Balcarce & Jennifer Nomura
- BIOS - *Atlantic Explorer* - Nick Matthews & Jeremiah Brower
- Woods Hole Oceanographic Institution - *Atlantis*
- University of Minnesota - *Blue Heron*
- University of Rhode Island - *Endeavor* - Bill Fanning
- University of Delaware - *Hugh R. Sharp* - Max Rekowski
- University of Hawaii - *Kilo Moana* - Trevor Young

10:00am Break

10:20am Icebreaker Session (continued)

- Scripps Institution of Oceanography
 - *Robert Gordon Sproul* - Tony Galecki
 - *Roger Revelle* - Tony Galecki

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- LUMCON – *Pelican* - Ross Turlington
 - Skidaway Institute of Oceanography – *Savannah*
 - Oregon State University – *Oceanus* - Johna Winters
 - L-DEO – *Marcus G. Langseth* – Alan Thompson
 - University of Alaska Fairbanks – *Sikuliaq*
 - NOAA Vessels – Don Jones
 - STARC/*Healy* – Croy Carlin
 - USCG – *Healy* - Bill Cullen
 - USAP Vessels
 - *Nathaniel B. Palmer* – Scott Walker & Bruce Felix
 - *Laurence M. Gould* – Scott Walker & Bruce Felix
 - Schmidt Ocean Institute – *Falkor* - Stian Alesandrini
 - Stony Brook University – *Seawolf* - Alex Sneddon
 - Sea Education Association (SEA) Vessels – Jason Clermont
- Others – Other vessel presentations are welcome, please notify the UNOLS Office in advance of the meeting if you wish to make a presentation.

- 11:25am RVTEC Chair Elect Call for Nominations – Scott Ferguson
- 11:30am Multidisciplinary Instrumentation in Support of Oceanography (MISO) Group Update – Dan Fornari, WHOI
- 11:45am Potential Fields Pool Equipment (PFPE) update – Dan Fornari, WHOI
- 12:00pm Introduction of Afternoon sessions
- 12:05pm Lunch and Bus to RSMAS Campus

| | SLAB Seminar Room (capacity 48) | Map & Chart Room (capacity 50) | Dean’s Conference Room (capacity 20) |
|-----------------|--|--|--|
| 1:30pm – 3:00pm | Basic Troubleshooting*: 1:30pm: Troubleshooting 101 – Dale Chayes, UNH 2:20pm: Ship’s Power 120 VAC 3-Phase – John Freitag | Underway Data: Best Practices and New Tools – R2R Program Team | Ocean Instrumentation Proposal Writing Seminar – Dan Fornari, WHOI |
| 3:00pm – 3:20pm | Break | | |
| 3:20pm – 4:50pm | Basic Troubleshooting*: 3:20 pm: Serial Communications – Tom Wilson, Stony Brook | Appendix B Q&A – Aaron Davis, WHOI | Ship/Shore Comms Subcommittee Meeting |

* [Trouble Shooting Session descriptions are provided at the bottom of the agenda](#)

- 5:00pm RVTEC Reception hosted by U. Miami/RSMAS Dean Roni Avissar (The Commons)
- 7:00pm Buses back to the Courtyard Marriott, Coconut Grove

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Wednesday, 4 November 2015

Courtyard Marriott Coconut Grove, Ballroom A&B

- 8:00am Coffee and informal discussion (Ballroom A&B)
- 8:30am Meeting Called to Order
- 8:35am Agency Reports -
 - NSF – Jim Holik, NSF
 - ONR – Tim Schnoor, ONR
 - NOAA – Douglas Perry
 - USCG – David Forcucci
- 9:05am Summary of Tuesday afternoon sessions
- 9:20am MATE update – Nandita Sarkar, MATE Program
- 9:35am Tech Pool – Jim Holik, NSF
- 10:00am Break
- 10:20am Ship/Shore Comms
 - HiSeasNet (HSN) Update status and directions
 - Fleet Broadband/ Global Express updates
 - Bandwidth Management experience
- 10:50am Winch Pool Updates – Aaron Davis, SIO and Brian Guest, WHOI
- 11:05am OSU Marine Sediment Sampling (MARSSAM) Group (formerly NORCOR) – Mitch Lyle, OSU
- 11:20 am Sikuliaq Automated Windows Print Driver Installer - Scott Lonergan, UAF/*Sikuliaq*
- 11:40am Intro of afternoon sessions
- 11:50am Bus to RSMAS Campus for Lunch

| | SLAB 2 nd Floor Conference Room | Map & Chart Room (capacity 50) | CIMAS Conference Room (cap 22) | Dean's Conference Room (DCR)(capacity 20) and R/V <i>Walton Smith</i> (WS) |
|-----------------------|--|--|--------------------------------|---|
| 1:00pm – 2:15pm | Cyberroam & Peplink - Bandwidth Management Tools for ships of all sizes – Tony Galecki, SIO <i>Sikuliaq</i> Cyberoam Deployment and Network Usage Data Collection - John Haverlack, UAF | Techniques for Evaluating Wire Condition At Sea - Rick Trask Discussion of recent .681 cable failure in use with the Jason ROV - Jason ROV - Andy Bowen | MOCNESS Renewal | Basic Troubleshooting*: 1:00pm: HiSeasNet – Steve Foley (DCR) 1:20pm: Diagramming – Lee Ellett, SIO (DCR) 1:40pm: Networking: Pick-up Sticks – Toby Martin, UH (DCR) 1:55pm: Troubleshooting Gallery, round 1 |

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|------------------|--|---|-------------------------------|--|
| 2:15 – 2:30pm | Break | | | |
| 2:30 – 3:30pm | Winch Pool Q&A – Josh Eaton, WHOI & Aaron Davis, SIO | Multibeam Advisory Committee (MAC) – Vicki Ferrini (LDEO) & Paul Johnson (UNH) | MOCNESS Renewal (cont.) | Basic Troubleshooting*: 1:55pm: Troubleshooting Gallery, rounds 2, 3, 4 |

* Trouble Shooting Session descriptions are provided at the bottom of the agenda

- 3:30pm RSMAS Tours
- *R/V Walton Smith*
 - SUSTAIN Building/Hurricane Simulator
 - Atlantic Oceanographic and Meteorological Laboratory (AOML) – The tour will include the Hurricane Research Division and GOOS (ARGOS, Drifter Array, XBT lines etc.)*
 - Southeast Fisheries Science Center (SEFSC)*
- ***Please Note:** Advance clearance is required for all non-US citizens who wish to tour AOML and SEFSC. Please contact the UNOLS Office no later than 10/23 for details office@unols.org. Thank you.

6:30 pm Dinner at Monty's – 2550 S. Bayshore Drive, Miami, FL 33133

Thursday, 5 November 2015

- 8:00am Coffee and informal discussion, Ballroom A&B
- 8:30am Meeting Called to Order
- 8:35am Operation SWAB – Jim Happell, RSMAS
- 8:50am Summary of Wednesday afternoon sessions
- 9:00am UNOLS Reports
- UNOLS office – Annette DeSilva, UNOLS
 - FIC – Woody Sutherland, SIO
 - RVOC and Safety Committee – Bill Fanning, URI
 - AICC - Steven Hartz, University of Alaska, Fairbanks
 - SCOAR – David Fisichella, WHOI
 - Ship Design/Construction updates
 - *R/V Neil Armstrong & R/V Sally Ride* - Tim Schnoor, ONR
 - RCRV Project Update – Jim Holik, NSF
- 9:45am ADCP/UHDAS report – Julia Hummon, UH
- 10:00am Break
- 10:20am MAC Update – Paul Johnson, UNH/Vicki Ferrini, L-DEO

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- 10:35am JMS Inspection Report – Ted Colburn, Jamestown Marine
- 10:55am R2R Update – Bob Arko, L-DEO
- 11:10am AIS Applications – Kurt Schwehr, UNH (remotely)
- 11:25am Safety Programs for Technicians and Scientists – Lee Ellet, SIO
- 11:45am RVTEC Chair-Elect Elections
- 11:50am INMARTECH 2016 Announcement (<http://www.irso.info/inmartech/>) – Scott Ferguson, UH
- 11:55pm Intro of afternoon sessions
- 12:00pm Lunch at the hotel

| | Ballroom A&B | Ballroom C | Coconut Grove Room |
|-----------------|--|---|--------------------|
| 1:00pm – 2:30pm | Basic Troubleshooting*: 1:00pm: Troubleshooting 101 – Dale Chayes 2:00pm: Serial Communications – Tom Wilson, Stony Brook | HiSeasNet (HSN) Education – Review of 2015 System Upgrades | Manager’s Meeting |
| 2:30pm – 2:50pm | Break | | |
| 2:50pm – 4:30pm | Basic Troubleshooting*: 2:50pm: Serial Communications – Tom Wilson, Stony Brook 3:50pm: Open Forum – the Good, the Bad, and the Ugly | HiSeasNet II – Review of 2015 System Upgrades | |

* Trouble Shooting Session descriptions are provided at the bottom of the agenda

4:45pm - Meeting Adjourned

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Friday, 6 November 2015

A training session will be offered on Friday, November 6th:

Friday morning (9:00 am - noon):

Location: Shoreside on RSMAS campus (CIMAS Meeting Room)

- Theory, installation and setup of a POS/MV 320 - Applanix Rep

Lunch - RSMAS Cafe (everyone on their own)

Friday afternoon (1:00 - 4:00 pm):

Location: Aboard R/V *F.G. Walton Smith*

- Use of a POS/MV with an Acoustic Doppler Current Profiler (ADCP) - Hands on - Applanix Rep
- ADCP Tutorial - Jules Hummon

Please note, space is limited for the afternoon session aboard R/V *Walton Smith*. Please RSVP the UNOLS Office (office@unols.org) by October 15th if you wish to attend. Selection will be based on first-come/first-serve; however consideration also will be given to institutional diversity.

NOTE: For those staying on Friday, there will be no bus service to RSMAS available

Troubleshooting Sessions & Descriptions:

Tuesday, November 3 - SLAB Seminar Room (capacity, 44 people)

- | | |
|--------|--|
| 1:30pm | Dale Chayes: Troubleshooting 101 Introduction to Troubleshooting |
| 2:20pm | John Freitag: Ship's Power - 120 VAC 3-phase A short standup overview of shipboard power systems and history |
| 3:00pm | <i>Break</i> |
| 3:20pm | Tom Wilson: Serial Communications A. Introduction and theory (20 minutes). <ol style="list-style-type: none">1. Asynchronous communications.2. Bits, bytes, baud.3. Start, stop, data, and parity bits.4. UARTS hard and soft.5. CMOS/TTL level.6. RS232: the mother of it all.7. DB25 and DB9 pinouts.8. Hardware and software handshaking9. RS422 (is your friend)10. RS485 (is not your friend). |

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B. Adapters and hardware (20 minutes).

1. USB to RS232.
2. RS232 to RS422.
3. RS232 to RS485.
4. USB to TTL.
5. Serial interface chips and homebrew boards.
6. Serial to Ethernet.
7. Serial to Bluetooth.

C. Tools (10 minutes).

1. Hardware tools.
 - a. Serial monitors and breakout boxes.
 - b. 9-25 and null modem adapters.
 - c. Homebrew adapters: eavesdropping adapter and the ever popular clips to DB9.
2. Software tools: software, shareware, freeware to see what in blazes is happening.

D. Demonstrations/hands on (30 minutes).

1. Arduino on a breadboard: CMOS to USB, CMOS to RS232, maybe CMOS to RS485.
2. RS422
3. RS485 to pressure sensor.
4. Serial to Ethernet
5. Serial to Bluetooth.
6. Stuff you shouldn't do that usually works but not always.
7. The curse of non-standard RS232 interfaces: how to recognize them and what to do.

10 minutes extra.

Powerpoint handout - will include reference charts, vendors, schematics, buy lists.

Wednesday, November 4

- 1:00pm **Steve Foley: HiSeasNet** (Dean's Conference Room)
- HiSeasNet Overview
 - A block diagram of a typical HiSeasNet link
 - The layers of connectivity involved
 - The key places to look for evidence that a problem is in one subsystem or another.
- 1:20pm **Lee Ellett: Diagramming** (Dean's Conference Room)
- What software is being used in the community
 - Learn about other's approaches to documenting otherwise undocumented systems
- 1:40pm **Toby Martin: Networking - pick-up-sticks** (Dean's Conference Room)
- What is the topology?
 - Where can I stand?
 - Is there spark (are there bits)?

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- Tools
 - Software
 - * Using IP addresses versus domain names
 - * Ping (-R)
 - * Route (what's the gateway?)
 - * Traceroute
 - * Equipment interfaces (web pages)
 - * Known 99.9% up addresses (8.8.8.8 Google DNS)
 - Hardware
 - * Blinky lights on equipment (go into the blinky lights)
 - * Cabling (the Tech's prayer, "Please be labeled".)
 - * Crossover adapter
 - * RJ45 crimper and supplies (crimps, pin-outs)
 - * Cable tester
 - * Multimeter

1:55pm **Troubleshooting Gallery, round 1**

The Gallery is envisioned as a series of troublesome booths / tables.

- Small groups of people wander from booth to booth, attempting to solve the troubles.
- Every 20 minutes the booths will reset, hopefully to a different trouble.
- Each trouble should hopefully be solvable within the 20-minute allotment.

The current Trouble Galleries are:

- ADCP: hosted by Jules Hummon, on the Walton Smith
- Power AC, DC, 120V 3-phase AC: John Freitag, on the Walton Smith
- CTD: hosted by Marc Willis, on the Walton Smith
- Serial: hosted Tom Wilson and Alex Sneddon (Dean's Conf Room)
- Weird acquisition/serial/network: hosted by Toby Martin (Dean's Conf Room)

2:15pm *Break*

2:30pm **Troubleshooting Gallery, rounds: 2, 3 4** (see 1:55pm topic above)

Thursday, November 5 – Ballroom A

The Troubleshooting 101 and Serial Communications are being run a second time at the request of RVTEC members. Please see session descriptions listed above.

1:00pm **Dale Chayes: Troubleshooting 101**

2:00pm **Tom Wilson: Serial Communications**

2:30pm *Break*

2:50pm **Tom Wilson: Serial Communications**

3:50pm **Open Forum: The Good, the Bad, and the Ugly**