



Updated: 22Oct21

UNOLS 2021 Annual Meeting

25 October 21

Pre-meeting Read Ahead

All times are in Eastern Standard Time

Monday, 25 October 2021

Outreach & SatComms

1600 Welcome - Dennis Hansell

1605 STEMSEAS Update

STEMSEAS, funded by NSF GEOPATHS, aims to provide ship-based, 6-10 day exploratory experiences for undergraduates from diverse backgrounds aboard NSF-funded research vessels. Students sail with experienced faculty mentors and graduate students and engage in geoscience and oceanography activities. The program makes good use of US ARF transit cruises where there is available berthing. The program has had big impacts on its participants, with an emphasis on career trajectories and knowledge. After running since 2016, the 2020 season was canceled due to the COVID-19 pandemic. Their [presentation at the 2020 summer Council meeting](#) outlines their program and the complications with COVID-19. Since then, STEMSEAS has been working with PIs to connect with cruises via Telepresence, and to plan for seagoing experiences for students who can accommodate the current COVID protocols. Planning for the latter has included an innovative recruiting strategy that focuses on community colleges near the originating port call. Today the PIs will give an update of their program and their endeavors.

See article about STEMSEAS here:

https://mlp.ideo.columbia.edu/wp-content/uploads/2016/05/30-4_cooper.pdf

The STEMSEAS's 2020 presentation, which provides details of their facility can be found here:

[STEMSEAS 2020 Presentation](#)

A recording of the presentation can be found here: [2020 Recording](#)

1615 MATE Update

The MATE internship program, funded by the NSF, aims to help prepare students to be competitive and prepared for employment upon graduation. Interns work as marine technicians aboard sea-going research vessels of the US ARF and the United States Coast Guard HEALY. A brief overview of their program can be found in the [2019 presentation at the RVTEC meeting](#). Several MATE Interns have been hired as Marine Technicians in the US ARF. Like STEMSEAS, the sea-going internships have been put on hold due to COVID-19.

The MATE's 2020 presentation, which provides details of their facility can be found here: [MATE's 2020 Presentation](#)

A recording of the presentation can be found here: [2020 Recording](#)





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1625 Cyber Infrastructure(CI) Working Group Update

In response to both the [Trusted CI](#) recommendations and the requirement for compliance to International Maritime Organization (IMO) regulations to reduce vessels-at-sea vulnerability to cyber threats, NSF identified the need for a Pilot Program to address cybersecurity for the vessels of the U.S. Academic Research Fleet (ARF). An external contractor was hired to aid the 14 Operators and the 18-vessel fleet in this effort. The contractor evaluated each vessel and helped Operators meet the 2021 IMO Cybersecurity requirements.

Recognizing the growing importance of Cyberinfrastructure and Cybersecurity, and the complexity of the problem, in 2020, the UNOLS Council asked the RVTEC and RVOC committees to create a Cyberinfrastructure Working Group (CIWG) tasked to evaluate the Cyberinfrastructure issues within the fleet and devise a plan to begin tackling these issues.

The CS Pilot Program's 2020 presentation, which provides details of the CS program, is here. A recording of the presentation can be found here: [2020 Recording](#)

1650 SatNAG Update

In the summer of 2016, the Satellite Network Advisory Group (SatNAG) was brought together to provide guidance on how to develop a plan for a more consistently managed Internet experience across ARF vessels. As part of this, SatNAG has been charged with assessment, definition of project scope, and development of common tools, resources, and solutions for the fleet. Their mission is "To steward the objective, effective and efficient use of ship to shore network resources and optimize positive customer experiences for the UNOLS fleet."

The SatNAG's 2020 presentation, which provides details of their facility can be found here: [SatNAG 2020 Presentation](#). A recording of the presentation can be found here: [2020 Recording](#)

1700 HiSeasNet Update

In operation since 2002, as of 2020, Scripps Institution of Oceanography's HiSeasNet project is managing the primary and secondary satellite communications (satcom) systems for the ARF as well as supporting two USAP research vessels. HiSeasNet leverages various technologies to provide a holistic solution for the ARF. Per ship, HiSeasNet attempts to ensure that critical communication paths are highly available through the use of top-of-ship radomes or dual radomes where needed. A key advantage of the dual radome approach also prepares the fleet to leverage Low Earth Orbit (LEO) networks as systems become widely available for maritime use. Marlink is HiSeasNet's current airtime provider for primary as well as secondary satellite services, and is able to lease key satcom equipment, instead of purchasing. All together, these approaches bring better





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service to the vessels, a stable equipment replacement plan and more financial efficiency. Despite a global pandemic, the HiSeasNet team has largely worked through the challenge of modernizing most of the fleet's satcom installs and will complete the remaining ships in the fleet in 2022-2023 at a much slower pace than 2020-2021. The COVID-19 pandemic has also highlighted the need for faster and more stable communications and 2021 has seen the most bandwidth expansions in the history of the project, leading to some changes to HiSeasNet's plans for 2022. Please see <https://hiseasnet.ucsd.edu/> for details about our project.

