

DHS Science and Technology Showcase



Dr. Matt Clark, U.S. Department of Homeland Security, Science and Technology, Office of University Programs, ADAC Executive Director Randy "Church" Kee, and Vice Commandant of the US Coast Guard Admiral Charles Michel

The DHS Science and Technology Directorate (S&T) Office of University Programs and Stevens Institute of Technology hosted the Spring 2016 DHS Centers of Excellence (COE) Technology Showcase in Washington DC to discuss pressing challenges and to develop new collaborations in support of DHS missions. On 19 May 2016, COEs gathered to demonstrate their center's tools and technologies to operators and industry leaders. The showcase also offered COEs an opportunity to share knowledge and research while providing a chance to build relations with fellow COEs and future partners and collaborators. Reinforced connections and technological advancements presented in the showcase was advantageous for ADAC's development and overall technology research opportunities. Dr. Lil Alessa, Mr. Leo Naboyshchikov, and Mr. Brian Conroy joined Executive Director Kee to provide information about ADAC projects and initiatives, to include the center's "flagship" project, Arctic Information Fusion Capability, they demonstrated the hand-held Field Information Support Tool (FIST) that promotes situational awareness in Alaskan communities.

ADAC Mission

The Arctic Domain Awareness Center, led by the University of Alaska, develops and transitions technology solutions, innovative products, and educational programs to improve situational awareness and crisis response capabilities related to emerging maritime challenges posed by the dynamic Arctic environment.

Contact Information

CenterNews is presented quarterly by the Arctic Domain Awareness Center. Please provide feedback or questions via any of the following contact points:

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CenterNews

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Dear Colleagues,

This past quarter has been a remarkable period of activity and accomplishment for the Arctic Domain Awareness Center (ADAC). Research efforts in projects for modeling, sensors, community based observers, underwater platform, and fusion have been proceeding at a surge rate as we prepare to close ADAC Program Year 2. For the work accomplished by our project research leads and their teams, please accept my and the center leadership's most profound and sincere thanks and deep appreciation. We are thankful and appreciative as well for the forward advancement of efforts in student professional development.

Over the course of this past quarter, we have worked our "Year 3" plan (that runs from 1 July 2016 to 30 June 2017) that has just been approved by U.S. Department of Homeland Security Office of University Programs and Headquarters U.S. Coast Guard. The "Year 3" plan is a comprehensive program of research activities, guided by a substantially revised management approach, along with a revitalized effort in education outreach and workforce development oriented to the DHS enterprise. In sum, the Year 3 plan is poised to substantially advance ADAC's efforts in Arctic domain research and development in support of U.S. Coast Guard and other Arctic operators...and also to support the Public Good.

Our ADAC Fellows student researcher program has continued to gain energy, as we have two Fellows attending the Maritime Security Summer Seminar at Stevens Institute and we have been very appreciative of the work provided by ADAC Fellows in their comprehensive support of the Arctic-related Incidents of National Significance (Arctic IoNS) workshop. In fact, this workshop literally "hinged" on the research provided by the ADAC Fellows as they brought to bear relevant research and queued the center to the right researchers that we were able to bring to Anchorage for the recent (21-22 June) workshop that resulted in 67 in person and another 12 remote participating researchers and operators from across Canada and the U.S.

A few other highlights of this past quarter has been the opportunity to participate in the annual DHS Center of Excellence Director's meeting in April and the DHS Science and Technology Showcase in May. These events in Washington DC allowed the Center to inform DHS program leadership better as well as connect ADAC efforts with the greater DHS enterprise.

Over the past several months, ADAC has been fortunate as well in hosting visits from the Interagency Arctic Research Policy Committee, US Coast Guard District 17 (including the new D-17 commander), along with several other research enterprises based in Anchorage and Washington DC.

As ADAC looks to this new quarter and this new academic year, we are fortunate to have a very promising plan of research. We have assembled a comprehensive team now coined as the "ADAC Research Network" and are advancing in forming enduring partnerships with U.S. Federal departments, including the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration, along with collaboration with Canada Research organizations, and seeking yet more opportunities within the U.S. Department of Defense.

We have formed a new long-range calendar that will help inform our team, partners, and collaborators, and have outlined our approach to be ready to support DHS evaluation of our program and research projects at the coming Biennial Review, slated for this coming winter. Particular highlights over the coming months will be the establishment of bi-monthly "Customers and Partners" Roundtables, Student presentations, and Quarterly ADAC Review Groups.

In closing, please know how much we in the ADAC leadership team, prize the hard work by our researchers, and seek to gain as much synergy as possible as we look to advance capabilities in support of U.S. Coast Guard and other Arctic-oriented operators.

Warmest wishes and v/r Church
Randy "Church" Kee, Maj Gen, USAF (Ret)
ADAC Executive Director



RADM Mike McAllister, USCG D-17, Mr. Don Moore, NOAA, and Mr. Mike O'Hare, State of Alaska Emergency Manager, at the Arctic IoNS Workshop June 21, 2016

Student Spotlight

James Matthews and Kyle Alvarado are ADAC Fellows with glowing enthusiasm for Arctic domain awareness. Their contributions to ADAC include collecting Arctic maritime research and providing its information for practical use in operator-driven workshops lead by ADAC. They received an exclusive experience joining Executive Director Kee in the NORTHWEST PASSAGE Tabletop Exercise, concerning search and rescue operations, in April 2016.



James Matthews
Civil Engineering

James Matthews has completed three years of his Civil Engineering degree at UAA and is looking to specialize in Water Resources Engineering. He is working for ARCTEC and the Alaska Radar System over the summer. During the school year, James is a Resident Advisor for On-Campus living and the President of the Orthodox Christian Fellowship. In his free time, he likes to hike, play sports, explore, go on adventures, and attend church.



UNIVERSITY of ALASKA
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Kyle Alvarado
Mechanical Engineering

As an undergrad at UAA, Kyle Alvarado spends his time studying Mechanical Engineering, aspiring to find a career in research & development as an Aerospace Engineer. Kyle enjoys Alaska's many outdoor activities, including fishing out of a canoe with friends. An Arctic Engineering course has given him a unique insight into the challenges and solutions of cold regions' engineering. Kyle is eager to gain experience looking at the international cooperation of Arctic domain awareness.

Arctic Education — Maine Maritime Academy

The new Polar Code includes requirements for mariners to obtain training in basic and advanced ice navigation and ship operations in polar waters. Maine Maritime Academy, with the guidance of the US Coast Guard, has completed a course that meets the requirements for a Basic Polar Waters Certificate of Proficiency and has provided that course in a classroom setting to over 20 students. Blended and online versions of the class have also been developed. These classes are projected to be available to mariners needing this certificate by the time the new Polar Code becomes effective in 2017. A course is also in development for mariners needing the Advanced Polar Waters Certificate of Proficiency that will include more in-depth information aimed at the Master and First Mate of vessels operating in polar waters. This class will also be offered in two versions and will include bridge simulations for navigating ice-covered waters. Once the classes have been completed, the Academy will offer an ice navigation symposium in May 2017, to inform stakeholders and interested parties about the new courses as well as advances in ice navigation and changes under the new Polar Code.



CAPT Ralph Pundt navigating the simulator ship at Maine Maritime Academy

Calendar

- July 25
First ADAC Customers and Partners Roundtable
- August 22-26
USCG Arctic Chinook Exercise
- August 23
Arctic Chinook Observers and DV Day
- September 22
ADAC Student Poster Presentation
- September 28-29
CASP Waterways Workshop
- October 13-14
ADAC Partners Meeting, ADAC Advisors Forum, and Bi-Monthly Customers and Partners Roundtable
- November 14-15
Coastal Resilience Center Conference
- December 2016
Dec 8 - ADAC Customers and Partners Roundtable
Dec TBD - ADAC Letters Review
- January 2017
- Recruitment of ADAC Fellows for incoming year
- ADAC Biennial Review
- February 2017
ADAC Arctic Related Incidents of National Significance or Arctic-focused Medium-Long-Term Environment Workshop
- April 2017
ADAC Fellows Recognition

Maritime Technology — Field Information Support Tool (FIST)

NOVA Corporation and Kestrel Technology Group LLC (Kestrel) has teamed to create the FIST (Field Information Support Tool) Team with one focus, one mission. NOVA brings its extensive DoD and DHS experience in the Information Technology Services arena to complement the cutting edge innovation of Kestrel Technology Group LLC.



Arctic Information Fusion Capability (AIFC) Project PI Dr. Kenrick Mock, NOVA Supporting Researcher Mr. Brian J. Conroy, Kestrel Supporting Researcher Mr. Leo Naboyshchikov, and USCG D-17 Arctic Planning Coordination Liaison Mr. James Robinson at the AIFC Working Meeting on June 23, 2016

The FIST Technology has a long standing proven capability that integrates data, sensor feeds, analytical processes, intelligence, operations, and support. These solutions provide the capability to collect, analyze, visualize, and share geo-referenced information using mobile devices and an internet portal. Every user is empowered with current information, incisive analysis, and shared situational awareness in support of effective, timely decision-making. The system was designed to operate across a broad mission space to enable and accelerate information-driven operations. Since FIST leverages existing agency assets and systems, it is an agile, cost-effective force multiplier.

NOVA Corporation is 100% tribally-owned by the Navajo Nation. NOVA Corporation has a presence at Defense Information Services Agency (DISA), US Army, US Air Force, USPACOM, US Navy, and Office of the Secretary of Defense. NOVA's solutions offer an interrelated set of services: data center optimization, cyber security, network and enterprise services, and managed services. Core Businesses include Program Management, Enterprise Network Operations, Enterprise Services Support, Cyber Security, Managed Services, and Data Center Optimization.

IONS Workshop

21-22 June 2016

Arctic-related Incidents of National Significance

ADAC's first Arctic-related Incidents of National Significance (IoNS) workshop gathered select Arctic skilled experts from U.S. and Canada as operators and researchers to address the operational challenges faced in conducting an Arctic region major rescue operation (MRO). The two-day workshop was held at UAA in late June and is intended to be the first of many accomplished on an approximate annual event cycle. The focus of this workshop was confronting the potential rescue and recovery of an adventure class cruise ship experiencing an emergency in Arctic waters while in remote and austere conditions.



Mr. Theo Gemelas, U.S. Department of Homeland Security, Science and Technology, Office of University Programs and Dr. Paul Hubbard, Defence R&D Canada



ADAC PI Dr. Doug Causey and Commander Susan Pickrell, Canada Coast Guard

Day one of the workshop was composed of five panel presentations on the current body of research aligned to areas identified by the Arctic IoNS operator work group. On day two, the team was divided into four work groups, varying in MRO themes, to advocate appropriate research questions. The IoNS workshop enabled groups to reinforce collaboration between the U.S. and Canada and determine gaps in research and technology concerning a major response event. It was brought up in discussion that the success of an MRO is founded on the partnership of nations and organizations. The workshops offer a chance to build relationships and, in the process, develop potential research opportunities to help first responders save lives.

