



Arctic Circle panel discussion featuring UAA/ADAC leaders and partners

Arctic Circle Assembly Team and Partners in Iceland

In October, ADAC's leaders joined other UAA faculty and staff, along with agency partners, in the annual Arctic Circle Assembly in Reykjavík, Iceland. Arctic Circle brings together governments, organizations, corporations, universities, think tanks, environmental associations, indigenous communities, and concerned citizens in international dialogue on the future of the Arctic and planet as a whole. These are key stakeholders for the Center as well, and the goals align with ADAC's own mission to develop and transition technology solutions, innovative products, and educational programs to improve situational awareness and crisis response capabilities related to emerging maritime challenges in the dynamic Arctic environment.

(continued on pg. 4)



UAA Leaders at Arctic Circle Assembly

Scientific Leadership Award Fellowship Opportunity

Apply Now!



ADAC's new fellowship, **Alaska Program for Arctic Research, Training and Education (PARTE)** is poised to accept its first round of students in 2024. ADAC, together with its UAA partner, the Applied Environmental Research Center (AERC), will be selecting Scientific Leadership Award winners to become part of this new cohort of fellows. This opportunity is funded by the US Department of Homeland Security (DHS), Science and Technology Directorate, Office of University Programs. Full-time undergraduate degree-seeking students in STEM-related disciplines are encouraged to apply.

Projects should engage students and faculty in research relevant to the Homeland Security Enterprise. See the ADAC website's education section for more information and to apply.

Letter from the Director

Greetings,

Happy holidays and happy new year! This season is always busy, yet it gives me great joy to reflect on the past year, and anticipate the one to come. ADAC has continued to thrive, reproducing successful internships, diving into new ones, expanding our team, and exploring new opportunities.

It is always a highlight to bring students from across the country to learn about and explore the Arctic firsthand. This year our Arctic Summer Internship Program celebrated its seventh year, with students from UAA, University of Texas at El Paso, Harvard Kennedy School, the US Naval Academy, and as far away as Queensland, Australia. Together we learned about the unique experiences and challenges our region holds for daily life, travel, food storage, research, cultural preservation, homeland security, environmental changes, and more.

This year we also continued to solidify relationships with our partners, in particular the US Coast Guard. We hosted Billy Lemos, Petty Officer First Class Marine Science Technician, USCG for six months, as he dove into the academic and industry aspects of waterways management, particularly the Port of Nome expansion project. ADAC also continued to provide meeting support and design work for the USCG in its organization of oil and chemical spill response across the state.

ADAC was able to expand its team in 2023. We are honored to welcome Leanne Lusk, CAPT, USCG (Ret) to our ranks, as well as a collaborative communications team that serves both ADAC and the Applied Environmental Research Center (AERC) at UAA. They are helping to reanimate our web, social media, and email presence, as demonstrated by the latest editions of our ADAC newsletter. Finally, we have also added several project managers to our joint teams, who will be helping out across a broad variety of UAA needs.

Looking forward, ADAC has some exciting possibilities on the horizon. We are eagerly awaiting news from DHS about the awarding of a new Center of Excellence for Homeland Security in the Arctic. Currently, we are accepting applications through ADAC/AERC for a new fellowship made possible through the DHS Science and Technology Directorate, Office of University Programs. Fellowships will begin in 2024, and we're excited to support the next generation of researchers in the Arctic and their impactful work.

As always, I would like to thank all of you for your continued support of our Center, whether as an active partner, a former colleague, or an aspiring participant in an ADAC program. Thank you also to the ADAC team, new and old. We have made enormous strides this year, and are continuing on, full speed ahead. Thank you for all you do. I wish everyone a merry holiday season. May you have rest and restoration as we transition into another exciting year.

Warm regards,

Jeff Libby, Executive Director, UAA Arctic Domain Awareness Center



Jeff Libby at Arctic Circle

Introducing Leanne Lusk: UAA's New Director of Federal Research Projects

Leanne Lusk, CAPT, USCG (Ret), has joined UAA as the new Director of Federal Research Projects. In this role, she will be working with both ADAC and the Applied Environmental Research Center (AERC) teams. Lusk brings to the table 25 years of experience with DHS and the U.S. Coast Guard. ADAC will benefit



Leanne Lusk

from building new partnerships with her network and starting new projects and initiatives. In addition to seeking out new collaborations for the Center, Lusk will maintain oversight of federal projects, grants, and collaborative agreements. She will also be instrumental in the launch and development of the Scientific Leadership Awards (SLA), awarded to AERC and ADAC to offer STEM fellowships through UAA.

Lusk was first introduced to ADAC via the Coast Guard, and was emphatic about the Center's opportunities. She noted that ADAC's expansive network and real-world technology advances were some of the reasons she wanted to join the UAA team and contribute to ADAC's mission. Of particular interest, Lusk highlighted the Arctic Infrastructure Environmental Risk Index, a decision-making tool utilized by the Coast Guard and Alaska Department of Environmental Conservation (ADEC) to prioritize facility inspections during the summer's short operational window in the Arctic region. ADAC also designed and developed a web-based geospatial tool in ArcGIS that provides comprehensive domain awareness for Arctic Operators, which was furthered to create an easily accessible site for emergency responders in the field. The tool obtains area-specific geographic response strategies to protect critical resources in the event of an environmental disaster.

Contrasting ADAC's continuity in partnerships with the short length of Coast Guard assignments, Lusk is impressed with ADAC's fully established relationships at all levels throughout Alaska and beyond, including entities like the Pacific Northwest and Sandia National Laboratories, the Ted Stevens Center for Arctic Security Studies, and the Wilson Polar Institute. "That ADAC has created and maintained such a vast and enduring network of collaborators continues to impress and appeal to me, and I am honored to join its ranks," Lusk enthused.

Lusk's familiarity with ADAC makes her a natural fit for the Center, along with AERC, and the larger UAA team. We look forward to the expertise and leadership she brings, and welcome her to the team!

ADAC Eagerly Awaits News on Funding

Earlier this year, ADAC and UAA submitted a proposal to the Department of Homeland Security's (DHS) Science and Technology Directorate, Office of University Programs to establish a new DHS Center of Excellence for Homeland Security in the Arctic. While based in Anchorage, the proposal incorporates UAF and UAS researchers, as well as numerous partnering universities, national labs, business and industry members, and other DHS Centers of Excellence.

DHS representatives traveled to the UAA campus in September for a site visit and ADAC was honored to receive support from its partners and collaborators from around the country. This national lineup, together with UAA leaders including Chancellor Sean Parnell and Provost Denise Runge, showcased the exceptional networking and partner development that ADAC has secured over its programmatic years as a Center of Excellence. Should ADAC be awarded this funding, it would build on this history



to create a new, revitalized Arctic Domain Awareness Center (ADAC) Addressing Rapid Changes through Technology, Innovation, and Collaboration (ARCTIC). In partnership with DHS, ADAC^{ARCTIC} would address the most complex challenges facing our nation and the Arctic region.

UAA and ADAC were able to secure 41 project proposals that would address some of the research and operational challenges specifically noted by DHS, such as maintaining situational awareness across immense, remote spaces to increase the efficacy of disaster response and recovery, maritime and border security, critical infrastructure protection and resilience, and other operations in and around the Arctic. Other initiatives aim to study and improve the emergence of new and improved technologies, such as internet infrastructure, and the impacts for remote villages and their resilience and commercial/economic growth.

A special thanks to ADAC's exceptional network of researchers, partners and stakeholders for their continued support and contributions. UAA and ADAC look forward to the potential this new and exciting COE for Homeland Security in the Arctic could bring to the UA system, Alaska, and beyond.

Spotlight: Billy Lemos ADAC Intern

For the past six months, ADAC has been privileged to host Billy Lemos, Petty Officer First Class Marine Science Technician, US Coast Guard (USCG), as he gains academic and industry training outside of the Coast Guard.

Lemos spent his time at ADAC researching the new Port of Nome expansion project, reviewing 33 sources for his final report and literature review. As he highlights, "The expanded port is poised to enhance economic prospects, enabling more efficient goods transportation and accommodating larger cruise ships, which in turn stands to boost tourism, cultural exchange, and regional exposure. These developments enrich the Arctic's cultural diversity and economic potential." Lemos warns that these advantages don't come without concerns such as maintaining supplies so as not to deplete stores, resources, and services from the city of Nome, and that additional infrastructure and warehouses might be necessary.

ADAC Executive Director Jeff Libby traveled with Lemos to Juneau to introduce him to partners at the USCG District 17 as well as long-time collaborators at Marine Exchange of Alaska. They discussed Lemos's project on the Port of Nome expansion, as well as increased cruise ship traffic and the Alaskan Arctic Coast Port Access Study (Arctic PARS). The study outcomes and recommendations may lead to future rulemaking or international agreements regarding vessel traffic management tools in the Arctic. Additionally, they visited University of Alaska Southeast (UAS) and met with faculty and staff at UAS's Maritime Training program which is certified by the US Coast Guard.

In Anchorage, Lemos was able to strengthen ADAC's

connections by meeting with various nonprofit organizations that contribute to essential services such as oil spill prevention and cleanup, including Alaska Chadux Network, Resolve Marine, and Cook Inlet Tug and Barge. Meeting with ADAC's close partner, the Ted Stevens Center for Arctic Security Studies, provided Lemos the opportunity to meet with their first class of fellows participating in the new Arctic Security Studies program which was specially designed by ADAC and UAA to help educate the next generation of enlisted Arctic specialists.

Of his time at ADAC, Lemos said that it was an eye-opening experience. He remarked on ADAC's great variety of research and partners, and hopes to promote this program and encourage people to partner with academic institutions like ADAC, "because of the wealth of knowledge and expansive network provided through UAA ADAC, the Center provides pathways for making a significant impact on Arctic challenges."

Well wishes to Billy Lemos in the next step of his professional career as he transitions to USCG Sector Anchorage!



Billy Lemos

Arctic Circle Assembly

(continued from pg. 1)

To further that mission, ADAC and UAA hosted a feature panel discussion addressing the theme of Arctic Coastal Infrastructure: Mitigating Environmental Impacts. By hosting this conversation, ADAC Executive Director Jeff Libby was able to speak, as well as spotlight some of the Center's premier partners from the US Coast Guard, including Shannon Jenkins, Senior Arctic Policy Advisor; Jerome Altendorf, CDR, USCG; and Leanne Lusk, CAPT, USCG (Ret.). (See page 2 for an exciting update on Lusk's career.) Another ADAC partner, Leslie Canavera, CEO of PolArctic LLC, also offered insight. The session was moderated by UAA's Director for Research Operations Heather Paulsen.

The conversation encompassed unique challenges posed by Alaska's 35,000 miles of coastline, limited infrastructure, and rapidly changing environmental factors. Panelists shared lessons learned, emphasized the power of building relationships, and discussed topics from AI-assisted modeling to response preparedness. Visit ADAC's YouTube channel for the full video.

Throughout the conference, UAA professors and leaders also gave salient presentations on their topics of expertise: Indigenous Health and Well-Being, Indigenizing Arctic Research, Arctic Higher Education, Next Generation Nuclear Power in the Arctic, Deciding Arctic Research Priorities for the Next Decade, Unity in Pursuit of Iñupiaq Self-Determination, Opening New Arctic Frontiers in Low-Carbon Economic Development, and After Typhoon Merbok: An Arctic Anomaly?

A special highlight from the journey to Iceland was the celebration and signing of a new collaboration between UAA and Nord University, in Norway. Aaron Dotson, UAA's Vice Chancellor for Research, signed the cooperative agreement alongside Frode Mellemvik, Nord University's Business School Professor and Director of its High North Center. As the world and Arctic become more globalized, these connections will be essential to the continuation of Arctic research with worldwide effects.

After her return, Paulsen summarized the experience, noting that it was an unparalleled platform uniting global leaders, researchers, and policymakers in addressing critical Arctic issues. The team, she said, was able to "engage in dynamic discussions, forge impactful connections, and drive collaborative solutions for the future of this vital region."

Center Highlights and Upcoming Events:

- On September 14, 2023, ADAC hosted and provided support for the **Alaska Regional Response Team** meeting on the UAA campus.
- ADAC was honored by a site visit from the **Department of Homeland Security (DHS)** on September 19, 2023, as a top contender to become a new Center of Excellence for Homeland Security in the Arctic.
- On October 25, 2023, ADAC also hosted the biannual meeting of the **Arctic and Western Alaska Area Committee**, which is managed by a joint partnership between the US Coast Guard and Alaska Department of Environmental Conservation.
- ADAC, with UAA Vice Chancellor for Research Dr. Aaron Dotson, has been awarded a fiscal year 2023 federal legislative earmark to work with the **Environmental Protection Agency** to perform a feasibility and assessment study of a hazardous solid waste processing and disposal facility in Alaska. Currently, waste such as PFAS-contaminated soils must be shipped out of state, at approximately \$500 per ton. The study expects to show that a local option could be less expensive, decrease environmental risk during transportation, reduce time between generation and disposal, and ensure that cost is spent on disposal, rather than transportation. The study will also identify challenges, such as location, construction, initial investment, environmental concerns, and social and political factors. This study will also rely on Cameron Wilson (Project Manager for ADAC and UAA's Applied Environmental Research Center) and partner with a future graduate student at **University of Alaska Fairbanks**. The project will engage engineers, economists, and social scientists, collaborating to address impactful issues to the state of Alaska.
- ADAC will be selecting **Scientific Leadership Award** winners to become part of its new Alaska Program for Arctic Research, Training and Education (PARTE). The first awardees are anticipated to begin in the 2024 spring semester.

Aaron Dotson and Frode Mellemvik show the new cooperative agreement



**ARCTIC DOMAIN
AWARENESS CENTER**
A DEPARTMENT OF HOMELAND SECURITY CENTER OF EXCELLENCE

ADAC's 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

1901 Bragaw St
Anchorage, AK 99508

Website: ArcticDomainAwarenessCenter.org
Email: uaa.adac@alaska.edu



@ADACAlaska



@ADACAlaska



YouTube
Arctic Domain
Awareness Center