State Committee for Research

Monday, September 27, 2021
2:00 p.m. to 4:00 p.m.

Recording: SCoR 9/27/21 Passcode: S%1*hvz9

Notes:

1. Congratulations to Mark Myers for a recent appointment to the Arctic Commission, and congratulations to others, including Mike Sfraga and others with UA ties. It is very important for Alaska to have representation.

2. Review and approve June meeting notes – Paul Layer, 5 min.

    a. Meeting notes approved

3. Review SCoR Membership – Paul Layer, 5 min.

    a. Review of the list of members - who we have and who we need to have on the list.

    b. Anupma would like to see the membership reduced in order to be able to make decisions more efficiently - primarily reducing the UA members. Ex-Officios are required by EPSCoR. There are currently 17 members plus ex-officios at the moment. Each university has more than one representative, which could be reduced.

        i. **ACTION:** Paul will work with Nettie and Anupma on the UA membership

        ii. Add Aaron Dotson, Vice Chancellor for Research at UAA

    c. Consideration of having a cycle of rotation, 2-4 year with an option to renew - recording the induction date and having a commitment length. A rotation would allow for different perspectives and represents the breadth of areas in research that the university covers for the state.

    d. Discussion on whether the members of the committee meet the needs outlined in the bylaws. Bylaws state that the responsibilities for SCoR include oversight and guidance for the SCoR and SCoR-like programs in Alaska as competitively funded by the National Science Foundation and other agencies, and promoting research and development as an entrepreneur, as an enterprise, and as an engine for economic development in Alaska. We want to have a team that is going to help facilitate those two main purposes and have input in EPSCoR and develop linkages within and outside of Alaska to promote economic development. The people we want to represent that have to include a wide range of university, state, federal and private sectors to achieve the goal.

e. Consider adding a NOAA position to represent the oceanic side of the state. Current EPSCoR grant is very mariculture oriented.

f. We also have a DOE EPSCoR and NSF EPSCoR, as well with the Dept. of Energy - Maren Haavig may be the best person right now to be on the list.

g. Augment membership in the ASRC area to replace Richard Glenn. There is a question of whether any native corporation or economic programs may be something we are missing.

4. Innovators Hall of Fame 2022– Paul Layer, 5 min.

    a. Hoping for a more face-to-face program this year with the Juneau Economic Development Summit.

    b. We need to consider ways to be more deliberately diverse in the nominations this year

        i. Better marketing of the announcement, and include diversity within the nomination verbiage

        ii. The language on the website is very generic and can be updated

            1. Kelly will work with Diversity dept to update the language

        iii. Publish deadlines and send reminders at frequent intervals in the nomination process. Mead suggested publicizing in a column that is about the startup community in Alaska as an area of outreach.

        iv. Create a listserv of previous award winners to ask them to nominate future nominees

        v. Book on the recipients - consider doing an update to the book, or another book from scratch on Alaska Innovators

        vi. Mead suggested that Jack Dangerman would be a good honorary degree candidate

        vii. March 16/17 for JEDC this year

            1. Nominations open - soon

            2. Nominations close - 12/15/2021

            3. Review date by - 1/15/2021

        viii. IHOF Committee

            1. Jon Bitner

2. Brian Holst
3. Mead Treadwell
4. Paul Layer

ix. Update the website - create nomination form - Kelly

c. Where do we publicize the announcement

i. Society for Women Engineers

d. Include IHOF in the *Did You Know* monthly series

e. Ask Ned Rozel to do the write-ups on each nominee, possibly make a collection for a book

5. Discuss Alaska Research Priorities – Paul Layer/Kevin Meyer, 10 min.

a. Congratulations to Mark Myer on his appointment and to thank him for representing us on the Arctic Research Commission. Lt. Governor Meyer was also appointed by the governor to represent the state of Alaska on this committee, so our voice will be well-heard.

b. Arctic Research proposal

i. The governor has appointed Lt. Governor Meyer to represent the State of Alaska on the Arctic Research committee. The US is an Arctic nation because of Alaska, so we should be included in the planning. UAF has done tremendous work on Arctic issues, which did get the attention of Dave Kennedy, a member of the Commission, who assured us that Alaska would be involved.. Several of our commissioners provided input to the IARPC pertaining to a draft arctic research proposal. They wouldn't implement anything without working with Alaska first, which was encouraging.

1. Positives happening in the arctic right now include extended tourism, extended agriculture, access to rare earth minerals that will be needed in the renewable energy projects that this administration is very interested in. We need to promote the positives and deal with the challenges of the negatives with climate change. Need more contact directly with the commissioners who are dealing with the arctic issues, questions and concerns. They are considering coming up to Alaska in October to meet in Fairbanks, but it hasn't been finalized yet.

2. Some feedback he received from the last SCoR meeting was that we needed to have more contact directly with the Commissioners

that are dealing with the Arctic issues and they're dealing with the research questions and concerns. There

ii. Lt. Governor Meyer has invited our commissioners to join us today - Commissioner Jason Brunie, Commissioner of the Department of Environmental Conservation, Dani Evenson with the Department of Fish and Game.

Commissioner Jason Brunie has been collaborating under the leadership of Lt. Governor Meyer. ADF&G has taken the lead on this with the DNR and DEC. A lot of the research efforts that are needed are focusing on our fish and game resources and the opportunities that present, as well as the challenges that come with endangered species. From a DC perspective, the opportunities are new shipping lanes that provide an opportunity for oil spills. Changing Arctic conditions have impacts to water, wastewater systems in rural Alaskan villages and the need to have research from that perspective.

There is always a focus on clean air, clean water and when conditions are changing, dirt roads cause more air quality issues. In developing critical minerals we need to have new shipping channels to be able to bring the minerals to market to meet the renewable energy needs. Also, increasing tourism opportunities and making sure that ships that are visiting are discharging appropriately and treating the waters appropriately.

iii. Dani Evenson, a Fisheries Scientist and Policy Advisor for Fish and Game. The State believes that a scenario planning exercise reflecting a plausible range of potential future conditions in the Arctic region would help us inform and identify future research and monitoring priorities. A similar scenario planning was done by the North Slope Science Initiative in 2013, which can be updated. Scenarios for energy, fisheries and resource development can help us to envision the potential future state of the socio ecological systems of the Arctic and the long term information that will be needed to inform future management decisions. It is considered a high priority on applied research.

1. Endangered Species Act - The listing of species as threatened under the ESA are associated with critical habitat designations effect and alter subsistence hunting practices, industry activities and infrastructure development. More information is needed on population structure and abundance, as well as den disturbing for polar bears and marine mammal response to changing conditions. Supporting subsistence hunting and sustainable research development in the Arctic are their high priorities. There are concerns and challenges with the fish and wildlife service's approach to polar bear management. Their service is not living up

to their stated goal in their polar bear conservation plan to not unnecessarily constrain other activities, including development. Their analyses overestimate take of polar bears, which is really doing two things. One, it constrains activities, which is problematic because that includes oil and gas exploration and development. The overestimates are being treated as reality, which is leading to the incorrect perception that activities are far more impactful than they are for the polar bear. Funding has been secured for someone that will work collaboratively with the legislature and the North Slope Borough and ____, to try and make fish and wildlife services analyses more accurate. The basis of this effort is research to address the inaccurate assumptions that finlate the predicted incidental data.

2. Marine Research - The marine mammal response to changing conditions, subsistence based sampling of the four species, including ice seals, to monitor responses to changes in their diet, body condition, reproductive rate, decreasing sea ice and changing conditions recently. They submitted a Notice of Intent to File a challenge under the ESA and its denial of our petition to delist the seals. The data collected as part of the Marine Mammal response to changing conditions was instrumental in helping us understand that there is no indication of declines of the ice seals.

   Community structuring fish species are predicted to change, as we know from warming ocean waters declining and a breakdown of the Bering Sea cold pool in the summer. Many of the challenges in advancing Arctic fisheries and research lay in capacity and infrastructure, getting appropriate vessels to conduct fisheries were it can be hard to come by. When they are available, they are expensive to charter and our ability to conduct applied fisheries and marine mammal work important in decision making is limited. They have been partnering with NOAA on certain research surveys, and would like to see those expanded. In this category, the area of most interest would be changes in abundance and distribution of fish to support current subsistence fisheries and future developing commercial fisheries, obtaining baseline information needed on abundance distribution and life history. Having the information would make us more responsive fishery managers. They would also like more information on changes in migration patterns and habitat use of marine mammals, including bowhead whales, orcas, walruses and ice fields to determine migration patterns and habitat use.

3. Subsistence - Alaskans are increasingly challenged in their subsistence pursuits by access issues caused by changing sea ice,

weather conditions, and landscape level change. They would like to see comprehensive subsistence monitoring, comprehensive subsistence harvest surveys to update subsistence studies in Arctic communities, and more traditional knowledge documentation, specifically regarding marine mammal harvesting patterns and challenges and travel issues resulting from landscape change.

iv. Sara, in for Commissioner Cori Figie. They are in the department that handles oil and gas leases. There is outline activity across the North Slope and also in type land leases out to three nautical miles. They are always interested in research being conducted and transformed into applied science to inform future OCS oil and gas leases. The current federal administration has been making policy changes in that regard, but they do partner consistently with our colleagues at OEM and would hope that science is staying up to date. It is not directly in the DNR purview, but it is important to mention because it's important for the Lt. Governor and the commissioners, as well as the residents of Alaska as land planning exercises are conducted and offer public comment opportunities. There is a constant demand for infrastructure development that research priorities could help pave the way for that work. The communities are asking for infrastructure development for transportation opportunities, building roads to enhance community prosperity and address public safety. Infrastructure and roads are limited on the North Slope and pose challenges for emergency preparedness and response.

v. Jason Brunie - Would like to see more participation on SCoR by representatives from Fish and Game and DNR.

vi. Mead Treadwell - There has been a huge amount of interest in our industry work on the polar bear issue. Also, ship noise is going ot be a major concern with Arctic shipping. He has been working with DAC and there is a lot of work that needs to be done and can be done with the university.

vii. Mark Myers - Based on what we are hearing from the DNR, Fish and Game and DEC, there is a spatial planning issue and a lot of different uses for the resources that are coming into conflict. Balancing ecological protection and resource development and community issues at the same time is really difficult to do. The balancing has to be done by the resource management agencies and science should inform those decisions. The university is good at and can look at the observational size and remote sensing with the ability to use unmanned vehicles and remote sensing satellite based data, as well as the social and traditional knowledge pieces of the component. Spatial planning can be based on good baseline data, social, economic, scientific, biological or physical science data. Building

better baseline data lets us find a way to integrate it at different scales and then be able to back-cast the modeling.

viii. Sara - Former scenarios planning effort done by the Slope Science Initiative (SSI) was one of the best. Parts of that effort was largely community led with representatives from state, federal and local governments, as well as the university. Hearing from the residents who are most engaged and most passionate about the challenges and opportunities we are facing is always a wise thing to do. Another area we struggle with is duplicative efforts in data management systems. A ton of money and resources could be saved in centralizing data. This was a primary goal of SSI, and their data management includes a ton of data, in addition to derivatives from the local communities, which intrinsically captures traditional and local knowledge.

ix. Dani - There has been a rise in policy driven models, designed to achieve a certain outcome. We need good baseline data and integrate those ground truths. Current models have some very large assumptions and the conclusions are unsupported by the work they've done.

x. Mark - This reinforces the need for the type of science that's been traditionally done within the university system. And there is the need for the baseline data for improved models.

xi. Jason - When the federal agencies don't publish their data it is because it is not in line with the agenda that they want.

xii. Anupma - We are not only trying to look at the research side, but also from the academic side, making sure that we are bringing undergrad students into research and giving them the training on research integrity and the importance of open data access. There is a need for greater access and usability of data and bringing data into a format with good metadata that is made available for us and the broader community.

6. AK Science & Technology Plan - update and ratify - Paul Layer, 15 min.

    a. How does our plan align with the IARPC plan? While we are considering our plan, try incorporating the state and national goals.

    b. Create a template for the added section and add some language to look at and edit. Someone may need to take the lead on reviewing the document to update content and terminology.

    c. This is a requirement for the EPSCoR proposal and it needs to be signed off by SCoR by the time of the submission of the new proposal.

    d. The membership should go into the appendix so it can be updated as needed.

7. EPSCoR/IDEA Coalition and Foundation Update - Paul Layer/Nettie La Belle-Hamer, 15 min.

    a. The EPSCoR funding and some of the other funding is in the Innovation and Competitive Act that sets aside money for these types of programs. The coalition sent a letter to the House and Senate leadership, signed by all three of our delegates in support for EPSCoR and IDEA and received Sullivan, Murkowski and Young's endorsement. It is a bipartisan supported initiative. EPSCoR states are some of the smaller states in terms of research, so it is important for us to maintain that. Funding for the programs are increasing in the budgets that are moving forward. There is strong support for expanding the funding for these types of programs.

8. NSF EPSCoR update – Brenda Konar, 10 min.

    a. Brenda was unable to join us. Paul provided information on the grant. We are in year three of the five year EPSCoR grant, so that will be coming up fairly soon and they are working on general ideas to extend the research of the current EPSCoR grant on terrestrial-marine linkages and coastal processes. The emphasis of the next EPSCoR and NSF program is to really build on those, the capacity and some of the hires that we have done in that area to grow. All three UAs are looking at coastal processes so we can build on our strengths. An RFP is out internally to look at ideas of what that proposal will be. We did our NSF three year site visit virtually in August and that went well. Brenda transitioned to being the PI and that seems to be going very well.

9. INBRE Update – Brian Barnes, 10 min.

10. NASA EPSCoR update – Denise Thorsen (unable to attend - below is her update)

    a. NASA EPSCoR Research CAN ($750,000k, 3 year) was awarded to Sveta Stueffer, title "Data assimilation and modeling to improve snow water equivalent assessment in Alaska."

    b. Alaska NASA EPSCoR Program is currently soliciting

        i. pre-proposals for the next NASA EPSCoR Research CAN

        ii. seed grant proposals for the next Alaska NASA EPSCoR RID grant – note that we have opened up this opportunity to Post-Docs as well as research and academic faculty and increased the amount of the seed grant. Additionally, we successfully lobbied for NASA to reduce match on the RID grant. This reduction will allow us to provide the seed grants without any required match.

c. You've probably heard that the National EPSCoR meeting in November will be virtual. The Associate Administrator for NASA's office of STEM Engagement, Mike Kincaid, will speak at that meeting about NASA EPSCoR.

11. Future topics/Roundtable – All, time remaining

a. Alex - Carnegie Mellon - doing some work on low-orbiting satellites and using them to deliver broadband for rural Alaska. Has been working with Denise Thorsen and her colleagues at the UAF Satellite Systems Engineering Center, hoping it will lead to some collaboration.

b. Brian - Changing the date of the IHOF so the university can host a conference on mariculture. Alaska is an important player in research and use it to advance the important industry of mariculture. We are making a sizeable investment with this conference to bring in lot of expertise from outside to help encourage the growth of the industry. The research can really leverage potential investments.

c. Jon - Anyone interested in joining the IHOF subcommittee would be welcome.

d. Mark - To Build a Fire - One area that is getting a lot of attention is mitigating carbon and methane abatement. Alaska has some opportunities in terms of methane abatement in the oil fields in terms of underground sequestration. Recognizing the effects on the atmosphere, as well as our feedback loop in terms of how much methane and carbon is coming out of the arctic as it warms. The university has a lot of capacity to think on those items, doing more work on the modeling. This is one area that we could highlight more than we did in 2012 and 2016.

e. Mead - It would be good to go through the recommendations for the To Build a Fire areas and the current IARPC recommendations and figure out very specifically where we made a goal and the research happening and then fill the gaps. The 2016 report was from the 2013 report and we have made a lot of progress since then.

i. Symposium on decarbonisation strategies - Recently the governments of Japan and Russia made a study on what Russia could do besides fossil fuels in helping the energy economies of Asia with ammonia and hydrogen, with the carbonization strategies. Understanding where Alaska can play a role in this is very important for both research and industry. There is an electrification conference in Cordova coming up at the end of October, but we should still consider a general symposium.

1. The Japanese are looking at what CO2 could be returned to a place like Alaska for injection in oil fields, from carbon sequestration projects that they have pending there.

2. If we're going to test ways to decarbonize gas, oil, or coal, we are burning close to 400 million feet a day on the North Slope. The gas has no specific costs because there is no other market for it. There is no better place in America to study some of the decarbonization options and do pilot projects.

f. Paul - Would like a meeting in December to discuss the IHOF nominees