

**State Committee for Research Meeting Notes  
September 18, 2019**

1. Review and approve 2/20/19 meeting summary – Paul, 5 min. (*attachment*)  
No objections or corrections.
2. Action item update from 2/20/19 meeting – Paul, 5 min. (*attachment*)
3. Update SCoR bylaws – Paul, 10 min. (*attachment*)  
SCoR bylaws – Reviewed at the meeting in February. There was no feedback or comments. Will get those signed off and ratified. Will post the updated bylaws on the website. Review of Membership

4. National update - Paul, 5 minutes  
It looks like with regard to a lot of our programs, there is movement within the administration to put some more money into NIH. That would help us with our research programs. In general, there is still the EPSCoR program that will be funded, along with other programs that are of interest to Alaska. There are some things we are looking at with regard to the Federal Initiative process. It's a great time for Arctic science with a lot of opportunities for us. There is interest in diversity in the economy, which is a great advantage for us with innovation. We're, doing well with respect to NSF and NIH.

On follow up of the One Health Initiative, March 11-14, 2020, UAA will be hosting a One Health Symposium. There will be international participation in that program. The symposium will be looking at integrations of environmental human and animal health in our system and in Alaska and then the Arctic.

Another event coming up November 13-15, 2019, UAF is hosting an Arctic Symposium with the Alaska Command, looking at orienting and advancing the network of senior level defense and security minded professionals to discuss and discern the current and emerging array of challenges, and protecting and defending the US national interest in the Arctic region. This is a joint effort between the University and Church Kee from UAA and Activated Awareness Center is helping to put this together. It will be a here in Fairbanks in about two months.

There are a couple of new proposals that have gone out. Recently funded efforts include a \$3 million proposal to Skip Walker to continue the Arctic vegetation research, looking at ecological change. There were at least two other Navigating the New Arctic proposals that received funding. The Board of Regents, in its last meeting, approved our request for a One Health master's program with two separate tracks. One is on the policy side and the other one is on the practicing One Health side. This is very exciting because it gives an opportunity for a greater integration of academics and research going forward in One Health.

We will continue more trainings on safety and security, especially as related to working with foreign nationals and with export controls, including sensitive research that has the capacity to be commercialized or patented. That's something that SCoR needs to be cognizant about on a greater awareness and the need to be aware of that. To the NOAA initiative, Jen Schmitz was funded, the multi-hazards project. Dustin Bryant is helping us work with the delegation on some of our research initiatives and issues. The administration is looking at in terms of research priorities, or areas of focus that would be of interest to the SCoR committee.

The governor has appointed the Lt. Governor to be the representative for the state of Alaska on Arctic issues. For a while there was no one representing the state on Arctic issues, which caused a problem in

dealing with our delegation back in DC, because they didn't know who was representing the state. There has been a lot of interest in in the Arctic over the last couple years, generated by other nations, such as Russia and China. They are moving quickly on Arctic development and their interest dealing with the energy science and shipping lanes infrastructure, tourism, military, and climate change. We can use that to our advantage and now have access to more areas when it comes to shipping and military that we haven't had in the past. The governor is working with our DC delegation who wants to have more access to some of the strategic minerals that we have up here, which are needed to make batteries. Currently, many of these types of Rare Earth type minerals are imported from other countries. If we have this here in the state of Alaska, we need to be going after that. In terms of climate change, there are more opportunities now as they refer to agriculture, tourism, minerals and energy development. The question is how do we do this, and how do we expand these areas of opportunity in a safe and environmentally sound manner?

There has been a lot of talk about drones, especially recently in the Middle East. The oil companies, the pipeline and the military are all using them already. They are also used for cargo. We're expanding our cargo here in Anchorage. The broadband capabilities are also expanding statewide, which gives us more opportunities as well. The three areas of interest to the governor:

- a) Make the State of Alaska a leader in the Arctic, working with other Arctic universities and sharing best practices.
- b) How can take advantage of the climate change?
- c) Continuing innovation and diversifying our economy.

The University of Alaska has a very strong partnership with the state, especially on the strategic mineral initiative. There's a lot of mapping effort that is going on in both exploration and exploitation. We have agreements in place with student support and partnership with the state agency so that we can provide the academic base and they can provide us the support for logistics and fieldwork in this area. We also have airborne resources that we can deploy with hyper spectral for mineral exploration.

5. Discuss Alaska Research Priorities – Lt. Gov/Rep, 10 min

Energy development is of strong interest to the governor. Other than oil, gas and some mining, we haven't really tapped that area. We have a strong consortium going with the national labs, the Sandia National Labs with Los Alamos National Laboratory, and then some collaboration Idaho National Laboratory. The Deputy Secretary of Energy and the head of the Office of Science was in Alaska last week, Chris Fallen. Through the university's efforts and working with the Department of Energy, it looks like there's a lot of exploration of alternate energy, but also energy exploration. There were certain projects that came to the University through those partnerships and agreements. At UAF, the Alaska Center for Energy and Power was a research unit within the Institute of Northern Engineering, but its been made a separate research institute, which gives us the capacity to expand energy research. We are also able to show there is academic integration within that research institute.

From the university's perspective, is there some information in a succinct form that you would need from the governor's office that might that would be helpful as you advocate for some of the Arctic programs and Arctic issues? UA can provide a list of all funded Arctic grants that are currently active within the university system. This would show the range of Arctic research that is going on. The governor's office is definitely interested in all forms of alternative energy, as well as the more traditional energy. Showing whatever UA is doing in that area would be extremely useful and helpful, and would perhaps avoid the duplication of effort. Areas of interest include trying to diversify our economy and to show the importance of tourism to the state of Alaska. Also, in climate change, we are the only Arctic state. We have some areas have to offer that no other state does. We just need to highlight that market and promote it.

The Lt. Governor feels we are kind of behind the rest of the Arctic nations. Getting Washington DC to acknowledge that we need more ice cutters and other things that deal with the Arctic. The only reason why all of a sudden now they're interested is because they see China and Russia being so aggressive in that area. From an academic standpoint, perhaps we are more advanced in Arctic Research than other countries. We don't know what Greenland, Iceland and Canada, and some of the other Arctic countries are doing from an academic standpoint. University of Alaska Fairbanks actually leads in Arctic publications over any of the Arctic nations. There is a very nice graphic representation of the impact of our research in the circle Arctic globally and the impact of that. Just the volume of research that comes out from our university system here is phenomenal, both in quantity and quality and its long-term impact.

The University of Alaska is recognized worldwide as a leader in that types of research. How do we build those bridges is a challenge. We're becoming increasingly supported by Asian nations who were interested in funding basic science. We're building scientific ships and inviting researchers from the UK in Alaska to train other researchers to do basic science. The point behind that is that they understand that basic science, understanding the Arctic system, and how it's changing is really fundamental to all economic development and all sustainable economic development. In the future, that's a message we need to really own.

Mark: On the federal side, state side, and University side, one of the things is United States is only an Arctic nation because of Alaska. It's very significant and the University of Alaska is the recognized leader. A lot of money goes to outside of the University. Very good Universities outside of the US, and they do Arctic Research as well. You can look at publications and the research is really good. We need to take that research and make effective policy with it as a country. Given all the other policy issues, Alaska's remoteness and small population, are sometimes lacking political influence and structure. Since most of the actionable work has to occur in Alaska, the research that's done in Alaska and understood by Alaskans is actually better for an operation standpoint than would be information that might be gathered from other universities and not well integrated. The research continuity is better and relevant.

6. Update Alaska Science & Technology plan – Paul, 10 min

At the February meeting, Paul asked everyone to look at the plan and at our website to see if it needed updating. Community resilience and sustainability, resource extraction, energy solutions, renewable resources, environmental monitoring and management, human health, and transfer communications and information. The plan that we have is still relevant in terms of what we want to do. There was no major feedback on the plan. Paul proposes some structural updates to it. Fix the membership of the score committee list and put it in the back. This will be an updated version and just simply continue this forward. Keep the document as one solid document with the score membership as an additional appendix to the document so that whenever there's a score membership change we only need to change the membership page and we don't have to retouch the formatting of the whole document.

A couple minor observations - the sentence that starts with Alaska's economy is based on knowledge... Not sure that that is our goal. Not sure that it's a fair reflection of what Alaska's economy is based on and would argue that we need to be more based on knowledge.

One of the issues that we had within the budget at the University and some of the discussions was the state's investment into basic research at the University and the return on investment that that produces. We have not done a very good job of demonstrating how that research directly benefits the state.

Where's that application into the economy going? What are those opportunities to build businesses? And then to build those linkages within the state.

We see an increasing focus not just on things like adaptation, but also on how to transition to adaptation and increasing the research on that. That is also something communities really want to know, how do we adapt or how do we transition. We're using drones to monitor and gather data on a place called Suicide Basin by the glacier, which fills up and causes floods that do significant damage in Juneau. For us, doing the basic science means using drones, so students get trained on how to use drones in a field course, building a model to better understand when that basins going to flood and how it might affect residents of Juneau.

One of the things that the SCoR program has helped to support and other states is a Research Day at the Capitol. All of our legislators come up to us to see the research that's being done on campus. Maybe SCoR could think about doing a re-order leading a Research Day at the Capitol where we're bringing research to the capital and inviting some of our economic development partners to join us in that. There's nothing like a face-to-face meeting where we're bringing ideas together and instead of doing distributed meetings across the state. Maybe we can focus on Juneau for one of those meetings.

One thing other towns that have a strong state university is a strong research mission and a research park or research parks associated with the university, but really private sector businesses that are actually active in a cluster around the university, such as Madison, Wisconsin or Texas A&M. There is an amazing integration of knowledge being transformed out there into businesses and into the new economy. We in Alaska really haven't been able to turn that corner where we can do that on a regular basis and connect it back to the university research. We've certainly come a long way with intellectual property and commercialization, encouraging professors to commercialize, patent, generate revenue, both for the university and for the businesses. We haven't gotten to that next stage where there's actually a strong business community clustered around university research capacities. Around the country these centers are just amazing and vibrant and are economic dynamos for these facilities associated with them.

Establishment of SCoR Outreach and Communications – Paul, 10 min.

What is the role of SCoR in carrying some of this forward, making both inside the university aware of what our technology plan looks like, but also how do we get the research that we are doing in the state better known and better maybe valued. Some of the points brought up are very important. How do we empower those faculty to be better engaged?

The more education that we can give our legislators and the governor and executive branch, the better. As far as going forward, as far as funding goes and support that both of us need, that's pretty easy to set up. Each the House and the Senate both has an Education Committee, and so the chairman of that committee would be more than happy to set something up, either over the lunch hour so we could have all the legislators there, or if something can be worked out then certainly the two education committees. The oil companies, to some extent, have used the research there at the university, but that's an area that does need to be expanded on. We need to bring the community and the local businesses more into the works of the university.

It may not just simply be the Education Committee, but we may want to think about the Resource Committee, or some of the other ones in terms of the kinds of research that we are doing. How do we then talk about the research and how does that extend to what the other agencies are working on, whether it's DNR or whether it's some of the other, and talking about those partnerships and those collaborations. We'll have that as a major agenda item at our next meeting.

**ACTION:** Place “Establishment of SCoR Outreach and Communications” on the December agenda.

7. JEDC update – Brian Holst, 10 min.

The Innovation Summit in February - the overarching theme is going to be an exploration of climate change and the effects on Alaska's economy, the threats and opportunities. We are in complete alignment with the Lieutenant Governor office, even though it wasn't known that he would identify that as a priority, and yet we want to do an exploration of that. A really fascinating fact that you all probably know that I wasn't aware of, as he described about a 1000 mile dislocation of a major segment of the biomass in the Gulf of Alaska towards the Bering Sea, just that alone and the implications of that and how long it's going to last. What it means, and it's fascinating. It is a huge impact on our economy.

If we want to help organize something and during the legislative session either maybe a day earlier before the innovation summit, or anytime in Juneau, you know that we'd be happy to collaborate in any way we can be located there. This year it's February 26 and 27, the last week of February.

Innovators Hall of Fame overview – John Bitner, 10 min. (*attachment*)

Brian has done a lot of work on this. A large list of potential applicants was created that we're going to reach out to. The nomination period will be launched soon. The press release either goes out soon, or has gone out. There's two ideas for indigenous innovations that we didn't get around to last year. We're going to work with a couple of organizations, the Alaska Native Heritage Center and a few others, to come to an agreement on one for this year. The nominations are going to close on November 15, after we announced it, and then the awards will be at the JEDC Innovation Summit, which is on the 26th and 27th. Last year he was able to stand up and talk to the organization and announce the winners, but none of the winners were there, which makes it kind of anti-climactic if we don't have them there. If we have another Indigenous Recognition of an Indigenous innovation to have representation there. When we did the halibut hook, it was exciting because there was really true celebration about that. At the December meeting, we will be able to discuss where we are in that process and the nominations will have closed.

8. NSF EPSCoR update – Pips Veazey, 10 min.

We've had a really busy summer in the fields. Pips would like to remind people NSF SCoR is a capacity-building program for the state of Alaska, focused on research themes. This year, which is a five year project, we're looking at boreal wildfires, thinking about the sub seasonal to seasonal fire risk and modeling fire spread and working with fire managers to provide information that they can find useful. We're also looking at coastal margins in Kachemak Bay and along the Lynn Canal, looking at the ocean circulation patterns and the runoff from glaciers that is shifting over time, looking at how those things are impacting the near shore ecosystem. We have several scientists working across the state and many students. We have a team of about 70 people now looking at climate change and really focused on Arctic and sub Arctic our research.

We've had a very busy sea field season with people out monitoring stream gauges, looking at drifters, talking with people in communities. We've had our first hyper spectral flights. One of our researchers is taking the lead on the hyper spectral imaging for the project, taking images over both the fire areas and the coastal areas. We will be spending the winter analyzing that information. The data that we're collecting is coming in fast and furiously right now. We are just about to launch our new data management plan, a partnership with Axiom Data Science and Anchorage, Alaska. We will be partnering with our research computing systems here at the Geophysical Institute, our Office of Information Technology, as well as Axiom Data to grapple with the amount of data and be able to have people on our team access it easily. We have a very interdisciplinary team spread across the state. We're a good example of collaboration across the three different universities and with some of our rural partners. Keeping all of that going and having people get good access to the data that's being collected

and being able to work on it together in a team is really important. Axiom and Research Computing Services are both helping us with that.

We have received notice recently that we not only received our year two funding, but we also received our year three funding, which is a very good sign. It shows that the National Science Foundation is confident in the work that we're doing and is confident in the university to support that work and that the state partnership is working well. We do have, in addition to our research, have some education activities going on. We have launched our first girls on water project, which is focused on high school girls and looking at identities and science. That project was successful. We took about a dozen high school girls out on a kayak trip for a couple of weeks and talked about science and some of the research that we're doing down around Homer and Kachemak Bay. We also have an economic development effort going on. We're supporting Startup Weekend and the Technology Research and Development Center with some phase zero grants. We are also working with our Office of Intellectual Property and Commercialization who will be attending our all hands meeting, October 3<sup>rd</sup> and 4<sup>th</sup>. Anybody from the SCoR committee is welcome to join.

NSF SCoR has co-funded a number of projects, one of which is a career grant that went to Chris Mayo. There are other grants in addition to the Track 2. There are other grants, like the Track 2 grant that is also bringing funding to the university, so SCoR's NSF EPA score is doing a great job supporting research in Alaska and these big capacity-building projects.

We're also hosting our mentoring workshop now and that's coming up next week. Provost Prakash will be leading the mentoring workshop on the last day of the All Hands meeting. Making sure that student postdocs and junior faculty have the tools that they need to be successful and really focused on how we're supporting this new group of scientists.

9. NASA EPSCoR update – Denise Thorsen, 10 min.

So this last summer, we were awarded the NASA EPSCoR CAN that was proposed last year. Dr. Mao received a proposal that places him in the NASA Pandora global network. It partners UAF with the NASA network, which provides an avenue of funding beyond this next grant. His particular grant was on remote sensing of formaldehyde at northern high latitudes probing the chemical impact of Arctic greening. It's typically the case that satellite data does not cover the Arctic very well. This is a strong proposal that helps fill in those gaps. We have three faculty attending the technical interchange meeting at JPL this summer from UAF and one from UAA. We are in the process of going through the white paper process. The pre proposal process for the current 2020 research CAN. This year we have the smallest number of applicants we've ever had for the pre proposal process. There are two applications from UAA and there is supposed to be one from UAS. The budget crisis may be a factor. We did not get a lot of pre proposals because these require a certain level of match, which was uncertain at the time.

In the last meeting, there was a lot of discussion on economic diversification. Larry happened to mention that many of the students that work through the NASA program frequently find jobs outside of the state, because that's where the high tech jobs are. The Alaska space grant has for years now supported internships at Alaska aerospace in an attempt to develop the aerospace economy by sponsoring students to do interns at companies in the hopes that they would potentially get a job, but also in the hopes to expand what those companies can do.

Jerry Johnson was in the innovators Hall of Fame. Our students have been helping him with beta testing his software and doing consulting services for modeling. He's got a physics based software tool. This year, we have been supporting a couple of interns for a former space grant student that did his degree up here at UAF, but now has a couple of new companies down towards UAA, down in the anchorage area. We sponsored an intern for his drone company. He's also started a new aerospace startup company and hired one of the interns this last year. That is a pathway from the university to actual employment that

has worked in a couple of cases. We Collaborate with Denali Scientific, which is a one-man shop of a former NASA engineer. He comes in and mentors students on satellite payloads. He's actually working on a couple of larger satellite projects with some faculty up at the physical institution. We're about to submit our next four year grant. The big change this year is that previously the Space grant was designated a non-designated Division. We were in the non-designated status, which meant we get less money than everybody else did. There were a handful of states that were non-designated, but now we are all at the same level, which increases the budget, but the designated states have a decreased budget. The budget has gone up for both the NASA SCoR in the space grant programs. In the past we've engaged with University of Alaska SE, which has not been active in the program for a while. We're happy to see them back and are also now engaging with Prince William Sound college. In fact, Donald Connor went to the western region meeting recently to see how spacecraft could support educational activities at Prince William Sound.

The space systems engineering program here at in Fairbanks is working on small satellites and received an Air Force project to work on a small satellite. It's a two year project working collaboratively with Goddard. We are now part of three large satellite project proposals through the GI, one of which made it to the concept design phase last year and we're repurposing that, and another one that's just been repurposed for this year. Satellites are becoming a big thing for the state, or at least for the researchers at the Geophysical Institute and the fact that we're capable of participating in that game makes us more desirable as well.

We do put out an annual newsletter, which will be going out in the next month. Contact Denise Thorsen if you want to be put on the distribution list.

#### 10. INBRE Update – Brian Barnes, 10 min.

INBRE is sponsored by the National Institutes of Health and it is a program similar to EPSCoR, but building competitiveness amongst researchers in Alaska for Winning NIH grants to do biomedical health research. Our network concludes the three UA campuses and South Central labs. Our funding goes to the undergraduates to give them experiences and laboratories of UA and South Central labs for graduate student research, assistantships, travel support, etc. The bulk of our funds go to researchers around the state in what we call pilot awards. We had nine of them this year. We are renewed for five years, beginning August 1 for about \$20 million dollars, but we've been awarded \$725,000 and pilot grants this August. Some are still pending NIH review. We're funding one award to a neuroscientist here at UAF who is looking at mutations and nicotinic receptors in the brain that may lead to epilepsy. Another one looks at an animal model on how changing day length affects sleep and waking people. At UAA, we are looking at animals in the environment and includes understanding the risk of ticks and tick borne pathologies and changes with climate change in Alaska. Another looking at cold region environmental use of rotenone, which is a poison used in lakes in south central to rid them of invasive northern pike that no one really knows how are cold winters and lack with 10 light affect the turnover and half-life of rotenone, which is a poison for both invertebrates. Another study on the affects certain energetic state and infectious agents and migration of sockeye salmon.

We organize an annual summit for biomedical research, which will take place this Friday in Talkeetna. We'll have about 25-30 leaders of medical and health research programs in the State of Alaska PI grants, but also deans and some provosts from our UAA and reps from South Central. We will look at how we're coordinating amongst these programs, what other programs are there by the NIH, who recommended for a \$3 billion increase this year, including what other awards we might attract to Alaska, particularly in training of graduate students and postdocs. Summit will be followed by our retreat on Saturday and Sunday that this weekend. We have about 100 participants from undergrads or grad students, postdocs and faculty representatives of our external

advisory committee will be there. It's preceded by a career workshop for undergrads on how to develop a career plan. We have reps from the Howling Institute and Seattle Nature Communications and associate editor from that. Alaska State Biology Lab, USGS, and the Alaska Science Center are all working with our students on how to get careers in biomedical and health research, science research, in general in Alaska.

11. Future topics/Roundtable - All, time remaining

Alex: Glad to hear the discussion about entrepreneurship and diversifying the economy. For the Innovators Hall of Fame, we may want to consider that in connection to scheduling a meeting before the event in Juneau, to allow enough time for the people to be notified and make their travel arrangements to Juneau.

Anupma: Would like to request an agenda item – Enhancing and Communicating Economic Impacts of the University. Discuss how we can enhance it and what we might be doing that we just are not communicating well enough.

Paul: Would like to discuss with Jon how to engage the SCoR committee a bit more in the decision making process and to make sure they are aware of the nominations.

Jon: The last couple years we were having trouble soliciting nominations. The process was pushed back a little.

Tom: Questioned the Science and Technology Plan. Paul – We have received a few comments. Would like to try to finish it up in December. We will work on getting information to the Lieutenant Governor's office on the active projects and grants. We will also get the SCoR bylaws posted. We will also review the membership and make sure it is up to date on the website. We will get the word out on the Innovators Hall of Fame nomination and have the discussion on the nominees at the December meeting.

**ACTION:** Place “Enhancing and Communicating Economic Impacts of the University” on the December agenda.

12. Next meeting – December – Paul, 5 min.