

**ALASKA STATE LEGISLATURE
HOUSE RESOURCES STANDING COMMITTEE**

March 13, 2019

1:23 p.m.

MEMBERS PRESENT

Representative John Lincoln, Co-Chair
Representative Geran Tarr, Co-Chair
Representative Grier Hopkins, Vice Chair
Representative Sara Hannan
Representative Ivy Spohnholz
Representative Chris Tuck
Representative Dave Talerico
Representative George Rauscher
Representative Sara Rasmussen

MEMBERS ABSENT

All members present

COMMITTEE CALENDAR

PRESENTATION(S): OIL AND MINING SOLUTIONS AT THE UNIVERSITY OF ALASKA

- HEARD

CONFIRMATION HEARING(S)

Fishermen's Fund Advisory and Appeals Council

Marilyn Charles - Emmonak
Moses Toyukak Sr. - Manokotak

CONFIRMATION(S) ADVANCED

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

WILLIAM SCHABEL, PE, PhD, Dean
College of Engineering and Mines
University of Alaska Fairbanks
Fairbanks, Alaska

POSITION STATEMENT: Provided a PowerPoint presentation entitled, "Oil and Mining Solutions at the University of Alaska," dated 3/13/19, and answered questions.

MARILYN CHARLES, Appointee
Fishermen's Fund Advisory and Appeals Council
Central Office
Division of Workers' Compensation
Department of Labor & Workforce Development
Juneau, Alaska

POSITION STATEMENT: Testified as appointee to the Fishermen's Fund Advisory and Appeals Council.

MOSES TOYUKAK SR., Appointee
Fishermen's Fund Advisory and Appeals Council
Central Office
Division of Workers' Compensation
Department of Labor & Workforce Development
Juneau, Alaska

POSITION STATEMENT: Testified as appointee to the Fishermen's Fund Advisory and Appeals Council.

ACTION NARRATIVE

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CO-CHAIR GERAN TARR called the House Resources Standing Committee meeting to order at 1:23 p.m. Representatives Tuck, Hannan, Talerico, Rauscher, Rasmussen, Hopkins, Lincoln, and Tarr were present at the call to order. Representative Spohnholz arrived as the meeting was in progress.

PRESENTATION(S): Oil and Mining Solutions at the University of Alaska

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CO-CHAIR TARR announced the first order of business would be a presentation by the University of Alaska Fairbanks.

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WILLIAM SCHABEL, PE, PhD, Dean, College of Engineering and Mines, University of Alaska (UA), University of Alaska Fairbanks (UAF), provided a PowerPoint presentation entitled, "Oil and Mining Solutions at the University of Alaska." Dr. Schnabel informed the committee UA - on a statewide basis - and UAF

support resource development. Resource development, especially when related to engineering and engineering-related activities, is critical to economic development in Alaska; in fact, UA has incorporated engineering programs for over 100 years and will continue to develop an engineering and engineering-related workforce at bachelor, graduate, associate, and endorsement [degree] levels (slide 2). In the past 10 years, the combined programs at the College of Engineering, UA Anchorage (UAA), and the College of Engineering and Mines, UAF, have graduated over 2,700 students in engineering and computer sciences; however, the Department of Labor & Workforce Development (DLWD) reported from 2016-2026 Alaska will need approximately 500-600 engineers, computer scientists, or computer-related technicians per year, which is twice the number of UA graduates per year [document not provided] (slide 3). Although not all graduates stay to work in Alaska, UA graduates are best trained to work in the state because they receive an experience in the Alaska environment and develop an understanding of specific conditions, such as permafrost and remote logistics (slides 4 and 5).

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REPRESENTATIVE RAUSCHER asked for the reason industry in Alaska hires workers from Outside.

DR. SCHNABEL was unsure how many engineers from Outside are hired and pointed out international companies may bring their own employees; however, [UA] may not produce enough graduates to fill vacancies.

CO-CHAIR TARR recalled UAF and UAA have expanded their facilities and questioned whether both campuses are operating at enrollment capacity.

DR. SCHNABEL said UA has facilities capacity for additional students, although additional students would probably require additional professors.

CO-CHAIR TARR asked for information related to Alaska's workforce and how to advance educational opportunities for Alaskans.

DR. SCHNABEL offered to provide additional information to the committee in this regard.

REPRESENTATIVE HANNAN gave an example of a highly trained and specialist engineer who graduated from UAF but is now employed in other parts of the world.

DR. SCHNABEL returned attention to UA's focus on Alaska-specific challenges such as the Sagavanirktok River flood on North Slope in 2015, which closed the Dalton Highway for three weeks. He said since the flood, UA students have been working with the Department of Transportation and Public Facilities (DOTPF) and the Alyeska Pipeline Service Company studying the conditions of the flood and how to mitigate its affects (slide 5).

REPRESENTATIVE HOPKINS asked about other engineering department partnerships with DOTPF.

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DR. SCHNABEL recalled there were plans to build roads on North Slope east and west that required information on the water flow of rivers flowing north and south for bridge design; as many of the rivers in Alaska are remote and are not gauged, UA measured and modeled the rivers north and south of the Brooks Range to determine water flow. For another example, he said UAF produced the design for the best culvert that allows for the passage of salmon. Dr. Schnabel continued the presentation and restated UA provides workforce development throughout the university system at the community and technical colleges at UAA, UAF, and UA Southeast (UAS) (slide 6). He turned to the Mining and Geological Engineering program that provides workforce development, trains students on Alaska issues, and has been a mining school for over 100 years; in fact, UAF conduct projects at the UAF mine and at commercial mines. Commercial mines bring problems to be researched by students at the UAF laboratory; for example, a project with the Red Dog Mine will study bacteria from the mine that would transform sulfate to sulfide, raise the pH of the water, and produce an ion to treat the water prior to its discharge from the water treatment plant. Dr. Schnabel concluded the study will perform the preliminary steps to develop a biological treatment process to help clean [mine] tailings (slide 8).

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CO-CHAIR TARR questioned whether a skimming process would remove metals [from water].

DR. SCHNABEL advised a sediment collection basin is normally used.

REPRESENTATIVE HOPKINS asked if UAF and UAA have Careers in Mining classes.

DR. SCHNABEL stated UAF and UAA have programs through their community and technical colleges. Another study with Red Dog Mine is working to increase flotation yield after ore is mixed with water, which is dependent on the chemistry of the ore. Experiments are best conducted in the UAF lab by students who are working to optimize flotation yield (slide 9).

CO-CHAIR LINCOLN asked whether Red Dog Mine funds any of the aforementioned research.

DR. SCHNABEL advised Red Dog Mine funds all of the research done at its request. He directed attention to slide 10 and related about five years ago, occupations were identified as priorities by the Alaska Miners Association, so UAF submitted a proposal to the U.S. Department of Labor for a grant to fund a workforce development project - in addition to research. The grant facilitated a mill process operators endorsement program with thirty students - who were subsequently hired by five mines in the state; some funds went to underground and surface miner training programs, and some funds were used to develop MIRLSim, a mining mill process simulator available at no cost through the UAF Mineral Industry Research Laboratory (MIRL) website (slide 11).

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DR. SCHNABEL turned attention to the Petroleum Engineering program that has about 65 students; students go on to work for the industry in Alaska and elsewhere, and some alumni have worked advising legislators (slide 12). All undergraduate students of engineering programs at UAF finish with an [independent research] Capstone Project, many of which are state-specific and are designed to solve problems in rural Alaska or for industry; for example, one petroleum engineering Capstone Project - in partnership with the Alaska Gasline Development Corporation - developed a virtual data room which has collected all the information related to North Slope gas resources for potential investors' perusal (slide 13). The university also began a study with Hilcorp on core flooding to determine the best way to extract oil. After initial positive results, UAF and Hilcorp submitted a proposal to the National

Energy Technology Laboratory, U.S. Department of Energy (DOE), related to the use of polymer flooding to extract heavy or viscous oil; the response to the proposal was a \$9.6 million project that is in the first year of a four-year study of a process that is very important to Alaska (slides 14 and 15). Dr. Schnabel further explained UAF and Hilcorp are developing a current proposal: the process of advanced oil recovery by polymer-alternating-solvent injection (slide 16). He pointed out UAF uses state funds to write proposals, which take a lot of work.

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REPRESENTATIVE SPOHNHOLZ questioned whether the solvent injection technology is used elsewhere.

DR. SCHNABEL said solvent injection is used, as is solvent injection alternating with water flooding; however, adding polymer to solvent is a new technology.

CO-CHAIR TARR inquired as to which entity - Hilcorp, DOE, or UAF - would hold the patent on the new technology.

DR. SCHNABEL stressed UAF seeks to patent the technologies it develops, but he was unsure of the specific patent situation for the aforementioned project.

REPRESENTATIVE RASMUSSEN asked what specific portion of the university budget is used to write proposals.

DR. SCHNABEL offered to provide the requested information.

REPRESENTATIVE HANNAN asked whether Dr. Schnabel knows how the university's budgets [proposed within HB 39] would impact UAF.

DR. SCHNABEL characterized the proposed budgets for the university as devastating; however, he was unsure of how budget "cuts" to the university system would be distributed, and thus declined to speculate on the impacts to specific programs.

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REPRESENTATIVE HANNAN questioned the cost analysis of certain state monies. She observed state money is used to write proposals for a company, in partnership with UAF, that may be interested in a specific project; however, UAF seeks long-term

projects and development for industry-wide benefits. She remarked:

... much of the work I hear you talking about is ... we gave you ten dollars and we were able to make a thousand now, but it might make us a million over its lifespan. ... What could you do and where do you see the programs growing?

DR. SCHNABEL advised in 2018, the research unit received \$1.5 million in state funds, \$1.5 million in indirect cost recovery (ICR) overhead costs based on external grants, and approximately \$11 million in external grants. He surmised university funding is beneficial to the state; however, he was unsure what proportion of those funds supported proposals because of their grant management costs. Turning attention to slide 17, Dr. Schnabel said the university has formed the Energy Research Consortium of Alaska (ERCA), to provide answers to common problems faced by the energy industry. During ERCA's first three meetings, participants identified the following scopes of work: coastal and offshore issues, changing permafrost and oil production, and subsurface imaging; currently, ERCA, on behalf of industry, is studying permafrost science and engineering related to gravel pads and gravel roads on permafrost (slide 18). Dr. Schnabel described another study underway that relates to synthetic gas (syngas), made from coal, to power a reciprocating generator when energy from wind turbines is unavailable. He noted the study is in the front end engineering design (FEED) phase and is an example of how UAF is looking to the future (slide 19).

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CO-CHAIR LINCOLN asked for the generator's fuel source.

DR. SCHNABEL further explained the generator is an existing diesel generator on campus that would be converted to a gas generator; the study will determine the efficiency of the generator after scaling down to "a megawatt scale."

DR. SCHNABEL informed the committee UA statewide administration manages the Mining and Petroleum Training Service which provides workforce development statewide; he described an industry-funded program called herder burner that would spray a herder agent around an oil spill to contain the oil, and then the oil would be ignited, both by aerial application. The program was developed only at UAF, because of its value to the offshore oil

industry in the Arctic, and demonstrates the importance of the university to Alaska (slides 20 and 21).

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REPRESENTATIVE HOPKINS recalled a recent news report credited advances in technology for the increased oil production and development on North Slope and elsewhere.

REPRESENTATIVE RASMUSSEN expressed her support for the Resource Industry Training Programs and inquired as to amount budgeted for the programs.

DR. SCHNABEL offered to provide the [budget] figures for the workforce development programs.

REPRESENTATIVE TALERICO noted the development of energy from coal resources could be beneficial throughout the state, including rural areas.

DR. SCHNABEL agreed.

CONFIRMATION HEARING(S)
FISHERMEN'S FUND ADVISORY AND APPEALS COUNCIL

[2:13:47 PM](#)

CO-CHAIR TARR announced the final order of business would be confirmation hearings for appointees to the Fishermen's Fund Advisory and Appeals Council and read the following statement [original punctuation provided]:

The board consists of six members, five appointed by the governor from five specific districts listed in statute and the commissioner of the Department of Labor or the commissioner's designee, who serves as chair. The council consults with the commissioner (or designee) regarding negative decisions on appeals filed in relation to care of sick and disabled fisherman; Advises the department on administration of the fund. They meet 2 times per year for 10 days maximum.

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MARILYN CHARLES, Appointee, Fishermen's Fund Advisory and Appeals Council, Central Office, Division of Workers'

Compensation, Department of Labor and Workforce Development (DLWD), informed the committee she is a lifelong resident of Emmonak and gave a short description of her educational background and experience working in the fishery industry. She said her service as a compliance officer for Kwikpak Fisheries provided experience related to workers' compensation and protection and indemnity (P&I) insurance, and with the local insurance carriers. Her interest in the council stems from her desire to help her community and all of the fishermen living in Emmonak. Ms. Charles pointed out at her current employer she processes workers' compensation and P&I claims, and thus she can assist and teach fisherman about the [Workers' Compensation Fishermen's Fund] program.

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MOSES TOYUKAK SR., Appointee, Fishermen's Fund Advisory and Appeals Council, Central Office, Division of Workers' Compensation, DLWD, informed the committee he is a lifelong resident of Manokotak and speaks his Native language fluently. He provided a history of his education through college and his work experience beginning in Valdez on the Trans-Alaska Pipeline System. In 1971, he began fishing in Manokotak, and has also worked at the power plant as an electrician for 42 years. Mr. Toyukak is also a commercial pilot and serves on the city council, the village council, the Bristol Bay Economic Development Corporation, and other fisheries-related committees, and attends meetings of the Board of Game and the fisherman's association. He is interested because he is a fisherman, is willing to learn, and wants to help his community and fellow fishermen as his relatives have done.

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CO-CHAIR TARR opened public testimony on the confirmation hearings of Marilyn Charles and Moses Toyukak Sr. to the Fishermen's Fund Advisory and Appeals Council. After ascertaining no one wished to testify, Co-Chair Tarr closed public testimony.

REPRESENTATIVE HOPKINS paraphrased from the following statement:

The House Resources Standing Committee has reviewed the qualifications for the governor's appointees to the Fishermen's Fund Advisory and Appeals Council, Marilyn Charles and Moses Toyukak Sr., and recommends that the names be forwarded to a joint session for

consideration. This does not reflect the intent by any member to vote for or against these individuals during any further sessions for the purpose of confirmation.

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ADJOURNMENT

There being no further business before the committee, the House Resources Standing Committee meeting was adjourned at 2:24 p.m.