ALASKA STATE LEGISLATURE
HOUSE SPECIAL COMMITTEE ON ECONOMIC DEVELOPMENT, TRADE, AND TOURISM
February 18, 2014

MEMBERS PRESENT

Representative Shelley Hughes, Chair
Representative Bob Herron
Representative Harriet Drummond
Representative Geran Tarr
Representative Pete Higgins

MEMBERS ABSENT

Representative Lynn Gattis
Representative Craig Johnson
Representative Kurt Olson
Representative Lance Pruitt

COMMITTEE CALENDAR

PRESENTATION(S): UNIVERSITY OF ALASKA

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

HELENA WISNIEWSKI, PhD
Vice Provost for Research and Graduate Studies
University of Alaska Anchorage (UAA)
Anchorage, Alaska
POSITION STATEMENT: Provided a presentation on clustering economic development with universities and commercialization efforts at the University of Alaska Anchorage.

DAN WHITE, PhD
Associate Vice Chancellor for Research;
Director, Institute for Northern Engineering
University of Alaska Fairbanks (UAF)
Fairbanks, Alaska
POSITION STATEMENT: Provided a presentation on commercializing innovation at the University of Alaska Fairbanks.

ACTION NARRATIVE

11:18:38 AM

CHAIR SHELLEY HUGHES called the House Special Committee on Economic Development, Trade, and Tourism meeting to order at 11:18 a.m. Representatives Higgins, Tarr, Drummond, and Hughes were present at the call to order. Representative Herron arrived as the meeting was in progress.

PRESENTATION(S): UNIVERSITY OF ALASKA

11:19:10 AM

CHAIR HUGHES announced that the only order of business would be presentations by the University of Alaska Anchorage (UAA) and the University of Alaska Fairbanks (UAF).

11:20:35 AM

HELENA WISNIEWSKI, PhD, Vice Provost for Research and Graduate Studies, UAA, provided a brief history of her background.

11:21:54 AM

DAN WHITE, PhD, Associate Vice Chancellor for Research and Director, Institute for Northern Engineering, UAF, provided a brief history of his background and said he is in charge of the intellectual property portfolio for UAF.

11:22:32 AM

DR. WISNIEWSKI referred to a national report on "clustering" to build economic development, and said she would discuss the lessons that have been learned and how research and technology at universities play a part. The [unidentified] report has been circulated amongst industry to facilitate decision-making on where to locate. Some of the top states that attract industry are Massachusetts, New York, New Jersey, and Texas; Dr. Wisniewski said she would provide overviews on four states. The top-ranked states that are successful in economic development and that attract industry, attract investment, grow their universities, and increase jobs, have the following in common: state funding for research and development programs; a state fund to expedite commercialization and attract companies in focused areas; innovation zones that provide infrastructure;

incubators; tax incentives; and state research funding to their universities. The first example is Boston University (BU), which receives 7 percent of its research and development funding from the state and has $1 billion in venture capital funding. In 2008, the state funded and established the Massachusetts Life Sciences Center (MLSC) investment initiative to focus commercialization, co-locate businesses with universities, provide matching funds for grants to universities and industry, and provide a workforce development program. The result is that companies are attracted to innovation zones and the infrastructure that is in place. In New Jersey, the New Jersey Commission on Science and Technology promotes economic development by funding collaborative efforts between universities and industry with a focus on life sciences, nanotechnology, and alternative energy. Also, it established innovation zones that revitalize areas and allow for co-location with nearby universities. Similarly, in Massachusetts graduates are funded to work at companies in the state. These policies foster a good return on investment. Texas leads the nation in job creation which is motivated by economic development; in 2003 the Texas legislature authorized $295 million to the Texas Enterprise Fund with a focus of attracting companies by providing relocation packages and ensuring buildings are appropriate and located near universities and startup companies. The fund also expedites commercialization of new technologies. One difference in the Texas fund is that the state holds equity in the startup companies and gets a direct return if the company is sold or pays dividends; the Texas fund also provides research superiority awards to universities. Texas is home to the highest number of Fortune 500 companies in the nation, has grown "thousands of jobs and billions of dollars," and is experiencing a surge in high-tech companies.

11:29:20 AM

CHAIR HUGHES recalled the Anchorage Economic Development Corporation concluded the best policy is to foster the growth of existing businesses rather than to encourage the relocation of new industry. She asked whether relocation is best for Alaska, and if the Texas Enterprise Fund kept its focus on new companies.

DR. WISNIEWSKI responded that there is a mix of existing and new; for example, the life sciences industry already had medical facilities in Texas, but areas for aerospace were newly built. Texas is a good example of a multifaceted approach. In further

response to Chair Hughes, she encouraged the use of both approaches.

DR. WHITE supported the need to do both; in fact, UAF and UAA have examples of both to present.

11:33:48 AM

DR. WISNIEWSKI turned attention to activities at UAA and described ongoing research related to missing genes and stem cells; much of the research at UAA seeks to improve the lives and health of Alaskans by pharmaceutical research. Dr. Wisniewski described the commercialization structure she put in place in August, 2012, to leverage the research by UAA faculty and to establish startup companies domiciled in Alaska. Seawolf Holdings, LLC, acts as the interface between UAA and other elements in the commercialization structure by providing licensing and the use of patents. In turn, Seawolf Holdings receives an equity position in the startup company. Seawolf Venture Fund, LP, provides cash to startup companies and also maintains an equity position. Seawolf Holdings board members provide mentoring and insight to commercialization, and she named the board. The focus of the venture fund is to provide investment in newly staged companies, especially in biomedical devices, biometrics, therapeutic pharmaceuticals, and sensing devices, and ideas come from UAA Academic Innovations & eLearning, and from other universities and companies in Alaska. The venture fund is seeking $10 million in investments and a fundraising strategy is in place. The fund is professionally managed by an experienced firm.

11:39:50 AM

DR. WISNIEWSKI related that in fiscal year 2011 (FY 11) UAA had three invention disclosures and now has thirty-two, twelve with patents pending and four with patents awarded. Two startup companies have been formed, and 43 percent of the invention disclosures have evolved into patents, which can be monetized by licensing or by forming startups. One of the startup companies uses carbon fiber tape (CFT) to heat a surface and keep it snow- and ice-free. The company has potential customers and the product has been installed on the UAA campus. Another company - Zensor, LLC, - provides solar powered sensor technology, and this market is growing into a multi-billion industry. She said some considerations for starting new companies are that they have a market, create jobs, attract investment, and grow.

11:44:07 AM

CHAIR HUGHES questioned whether the Alaska inventor community is directed to defined target areas.

DR. WISNIEWSKI answered that UAA has a strategic research plan that identifies certain focuses such as health and biomedical sciences, which led the Alaska Native Tribal Health Consortium (ANTHC) to approach UAA with its specific needs.

CHAIR HUGHES observed that medical sciences in Texas are well-established, but not in Alaska.

DR. WISNIEWSKI pointed out UAA is also conducting research into Traumatic Brain Injury (TBI), and with three hospitals and the blood bank, the health industry and pharmaceuticals are growth areas for Alaska. In further response to Chair Hughes, Dr. Wisniewski affirmed that with enough resources and focus, commercializing research in an area can bring a leadership role in that area to the state; however, she cautioned against foregoing other areas because with research and technology new areas cannot be predicted in advance.

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DR. WHITE added that unmanned aerial vehicles were a classic case where UAF - with decades of research on remote sensing data by its geophysical institute - and Alaska were well-positioned for cluster development of a viable new technology. In this instance, opportunity followed previous research. Furthermore, all of the researchers are Alaskans, who are solving Alaska's problems to help Alaskans and Alaska businesses.

REPRESENTATIVE HIGGINS acknowledged that Alaska is unique; for instance, shipping costs hinder manufacturing. He opined that research in the biomedical field can be done in Alaska, but manufacturing devices likely will not. He encouraged UAA and UAF to assess Alaska's assets and bring in other industry, similar to remote-controlled aircraft, which can be manufactured here in spite of the challenges.

DR. WHITE suggested that Alaska is leading the country in energy because it is the location of the only Cold Climate Housing Research Center (CCHRC) energy test facility designed to look at technology for remote environments for the military and industry. Additionally, at the Alaska Center for Energy and

Power (ACEP), energy grids are being tested for use in third world countries.

DR. WISNIEWSKI explained one way to continue innovation is to increase the awards given to UAA faculty. In 2012, there was a 3:1 investment for every dollar spent; in 2013, awards are projected to be a 10:1 return on investment. In addition, she established the Patent Wall of Fame to encourage the faculty to create intellectual property in patents. She concluded that the university is a resource for energy and talent.

11:56:31 AM

REPRESENTATIVE TARR informed the committee she teaches at the university and urged for an increase in public private partnerships related to medical research.

DR. WISNIEWSKI offered to provide Representative Tarr with additional information on UAA's interaction with ANTHC.

REPRESENTATIVE TARR asked whether research is underway on the use of natural gas in commercial vehicles, or other applications.

DR. WHITE said ACEP is designed for industry to test their products. The first step is to direct companies that are interested in marketing to Alaska, to use the facility for developing products. The university has a very business-friendly environment that allows companies to keep their intellectual property with no competition. There is no research underway on gas-powered vehicles.

DR. WHITE directed attention to the PowerPoint presentation entitled, "Commercializing UAF Innovation: A Win-Win for Alaska." He informed the committee his work at UAF complements that of Dr. Wisniewski at UAA. Universities are in the business of technology transfer by publishing data and research, and educating students; however, in 2010, UAF and UAA were reorganized to get technologies into the private sector and create wealth in the community. Both of the universities sought to restructure in order to focus on technology that can make money out in the community [slide 1]. He said this mission is good for the university and its students, and for the local and state economies. Dr. White said some feel there are insufficient venture capital, angel funding, and entrepreneurs in Alaska but he disagreed, saying what is missing are fundable opportunities.

REPRESENTATIVE TARR asked whether Anchorage has the only [U.S. Department of the Treasury's State Small Business Credit Initiative (SSBCI)] fund in Alaska.

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DR. WHITE said the SSBCI 49th State Angel Fund is in Anchorage, but there are individual and groups of angel investors in Fairbanks and elsewhere in Alaska; as a matter of fact, UAF's fund is managed by WBTangels. He returned to the key change in structure at UAF, which was how to get technologies out of the university quickly so they could start making money [slide 2]. The new structure, transforming research into technology, begins with the Office of Intellectual Property and Commercialization (OIPC), of which Dr. Smith is the director. As soon as a property is identified it is turned over to Nanook Innovation Corporation (NIC), where the property is licensed [slide 3]. The role of OIPC is to engage with inventors - some of whom are faculty solving problems presented during their research - to perform the initial due diligence, and to protect intellectual property. Although OIPC doesn't necessarily get patents, it looks for properties with commercial value that have patents or derive from trade secrets. An agreement to protect trade secrets saves the money and time spent to get a patent [slide 4]. The university facilitates Inventor's Forums to bring faculty innovations before business leaders, investors, and entrepreneurs to help researchers focus their innovations on commercial opportunities [slides 5-7].

CHAIR HUGHES asked whether Inventor's Forums include investors from across the state or primarily from the Fairbanks area.

DR. WHITE said entrepreneurs come from Fairbanks and Anchorage. He advised UAF faculty members are good at research, but they need guidance from business and investors; a loop of feedback from investors, and further research from faculty, leads to success.

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CHAIR HUGHES surmised it is rare for one person to have the skills of an inventor and those of an entrepreneur. She asked whether UAF pairs inventors, entrepreneurs, and investors.

DR. WHITE confirmed that UAF works with each inventor to find researchers and whatever the inventor needs, or vice versa. The

University of Alaska (UA) has the most favorable agreements with its faculty in sharing revenues; in fact, if a faculty member invents something, the state owns the intellectual property, OIPC licenses the property, and the faculty member gets 50 percent of the royalties. This structure has increased the number of inventions being disclosed by providing an avenue to commercialization [slide 8].

CHAIR HUGHES inquired as to the percentage at other universities.

12:09:26 PM

DR. WHITE stated some universities start with a higher percentage that drops off, for example, the University of Florida makes a high percentage on Gatorade, but the inventor makes a very low percentage. In further response to Chair Hughes, he said this structure is starting to be a draw for recruiting faculty, and he provided one example. Returning to slide 8, he pointed out UAF has seventy-three invention possibilities from which to choose the best investable opportunities; this is an increase from one invention in 2004. Some patents filed for upcoming technologies are: therapeutic hypothermia; a sampling method to search for viruses; decision-making support tools; and sensors sought by the Department of Defense and security companies [slides 10-12]. Returning to UAF's new structure, he reviewed the NIC board of directors [slide 14]. An example of a NIC company is SwathViewer, an existing business that asked UAF to develop visualization software, which was then sold to them [slide 15]. Nanook Innovation Corporation also licenses proprietary data and he provided an example [slide 17]. Dr. White explained that "intra-preneurship" is inventions that can help UAF such as software to manage the university's research projects [slide 18], and he told the story of volcanic tracking capabilities at UAF that could have saved hundreds of millions of dollars in lost revenue when air traffic was closed due to a volcanic eruption. At this time, NIC is in the process of licensing a company that will track volcanic ash [slide 19]. Slide 20 illustrated the structure for commercializing technology, and he noted that NIC is a non-profit supporting UAF that commercializes its intellectual property, but which does not hold equity, thus there is a separate tax C corporation, Nanook Tech Ventures (NTV), which can hold equity. He characterized this as a "lean startup model" which addresses the specific question of investment capital. This entity can take an equity share from a company, license the technology, and enable the

company to take its next step without a lot of money [slide 21]. The first NTV startup company is V-ADAPT, INC. [slide 23], and he described some other companies.

12:18:22 PM

DR. WHITE informed the committee Alaska is last in the country in obtaining U.S. Small Business Administration (SBA) Small Business Innovation Research (SBIR) program and Small Business Technology Transfer (STTR) program grants. Federal agencies have funds earmarked for innovative research which are designed to support companies to develop and sell new products, but the money has to go directly to the small business and not to UAF. He opined the grants are easy to get and UAF is going to work with small businesses to help them apply for these grants; in fact, like other universities, UAF has several startups using these grants to build technology.

DR. WISNIEWSKI added that UAA is more focused on having NTV and private investors fund opportunities; however, UAA will be looking at SBIR and STTR grants as well.

DR. WHITE described two more startup companies [slides 28 and 29]. In summary: OIPC has received over one hundred thirty invention disclosures in the past two and one-half years; NIC has licensed more than thirty-seven pieces of technology, thirty-six of which are to companies doing business in Alaska; NTV worked with two startups that are licensing technology and four startups working under SBIR or STTR grants [slide 31]. He expressed his belief that the way to transform the culture at UAF is more through success, and less through the direction taken by its administrators. Many of UAF's inventors are students and staff, in addition to faculty [slide 32]. Also, through economic impact, UAF is giving companies in Alaska an advantage, helping consumers, attracting talent, and keeping money in the state [slide 32].

CHAIR HUGHES asked whether there are barriers to opportunity that the state can remove. In addition, she requested a comparison of UAF's commercialization office budget to that of other state universities.

DR. WHITE said the UAF budget is similar to that of Montana State University. Some universities expect commercialization offices to be self-supporting; in fact, a few are highly revenue-generating. He stated that UAF is comparable and assured the committee that UA "is really focused on this right

now." Dr. White expressed his support for research and development tax credits.

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DR. WISNIEWSKI remarked that on the research side, funding is related to commercialization and provides a way to get matching funds and collaborate with corporations. Also, the state can invest in university funds and achieve a return on its investment. The University of Alaska has not asked the state for a specific research or commercialization budget thus the needs have not been defined, and she recommended a review of her earlier presentation. In further response to Chair Hughes, she said her office at UAA does not receive any direct research funding from the state, but the state provides $4 million to UAA with a percentage to the Institute for Social and Economic Research (ISER).

12:31:03 PM

REPRESENTATIVE TARR recalled the Alaska Science and Technology Foundation that was eliminated in the late '90s was a statewide research fund.

DR. WISNIEWSKI clarified that the 49th State Angel fund is federal funding.

REPRESENTATIVE TARR observed that UAA and UAF are in competition for research dollars but there are a lot of opportunities.

CHAIR HUGHES concluded that research funding requests need to be tied to commercialization to be successful.

12:32:44 PM

ADJOURNMENT

There being no further business before the committee, the House Special Committee on Economic Development, Trade, and Tourism meeting was adjourned at 12:32 p.m.