ALASKA STATE LEGISLATURE
SENATE EDUCATION STANDING COMMITTEE
February 10, 2010
8:02 a.m.

MEMBERS PRESENT

Senator Kevin Meyer, Co-Chair
Senator Joe Thomas, Co-Chair
Senator Bettye Davis, Vice Chair
Senator Charlie Huggins
Senator Donald Olson
Senator Gary Stevens

MEMBERS ABSENT

All members present

COMMITTEE CALENDAR

SPONSOR SUBSTITUTE FOR SENATE BILL NO. 56
"An Act making a special appropriation for a life sciences innovation and learning facility at the University of Alaska Fairbanks; and providing for an effective date."

- MOVED SSSB 56 OUT OF COMMITTEE

SENATE BILL NO. 206
"An Act making special appropriations for new engineering buildings for the University of Alaska in Anchorage and Fairbanks."

- MOVED SB 206 OUT OF COMMITTEE

PREVIOUS COMMITTEE ACTION

BILL: SB 56
SHORT TITLE: APPROP: LIFE SCIENCES FACILITY AT UAF
SPONSOR(s): SENATOR(s) THOMAS

01/21/09	(S)	PREFILE RELEASED 1/16/09
01/21/09	(S)	READ THE FIRST TIME - REFERRALS
01/21/09	(S)	EDC, FIN
02/09/09	(S)	SPONSOR SUBSTITUTE INTRODUCED-REFERRALS
02/09/09	(S)	EDC, FIN

02/10/10 (S) EDC AT 8:00 AM BELTZ 105 (TSBldg)

BILL: SB 206
SHORT TITLE: APPROP UNIV ENGINEERING BUILDINGS
SPONSOR(s): SENATOR(s) ELLIS

01/19/10 (S) PREFILE RELEASED 1/8/10
01/19/10 (S) READ THE FIRST TIME - REFERRALS
01/19/10 (S) EDC, FIN
02/10/10 (S) EDC AT 8:00 AM BELTZ 105 (TSBldg)

WITNESS REGISTER

BRIAN ROGERS, Chancellor
University of Alaska Fairbanks
Fairbanks, Alaska
POSITION STATEMENT: Supported SB 56.

BRIAN BARNES, Director
Institute of Arctic Biology
Fairbanks, Alaska
POSITION STATEMENT: Supported SB 56.

BERT BOYER, Acting Director
The Center for Alaska Native Health Research
Fairbanks, Alaska
POSITION STATEMENT: Supported SB 56.

CORD BRUNDAGE, PHD Candidate
University of Alaska Fairbanks
Fairbanks, Alaska
POSITION STATEMENT: Supported SB 56.

WAYNE STEVENS, President/CEO
Alaska State Chamber of Commerce
Anchorage, Alaska
POSITION STATEMENT: Supported SB 56.

JACK WILBUR, President
Design Alaska
Fairbanks, Alaska
POSITION STATEMENT: Supported SB 206.

MS. ANN BROOKS P.E.
Brooks and Associates
Anchorage, Alaska
POSITION STATEMENT: Supported SB 56 and SB 206.

SENATOR JOHNNY ELLIS
Alaska State Legislature
Juneau, AK
POSITION STATEMENT: Sponsor of SB 206.

DR. GRANT BAKER, Chair
Mechanical and Electrical Engineering
University of Alaska Anchorage
Anchorage, Alaska
POSITION STATEMENT: Supported SB 206.

DR. DAN WHITE, Director
Institute of Northern Engineering
University of Alaska Fairbanks
Fairbanks, Alaska
POSITION STATEMENT: Supported SB 206.

ROB LANG, Dean
University of Alaska Anchorage
Anchorage, Alaska
POSITION STATEMENT: Supported SB 206.

FRAN ULMER, Chancellor
University of Alaska Anchorage
Anchorage, Alaska
POSITION STATEMENT: Supported SB 206.

BRIAN ROGERS, Chancellor
University of Alaska Fairbanks
Fairbanks, Alaska
POSITION STATEMENT: Supported SB 56 and SB 206.

ACTION NARRATIVE

8:02:04 AM

CO-CHAIR THOMAS called the Senate Education Standing Committee meeting to order at 8:02 a.m. Present at the call to order were Senators Davis, Stevens, Huggins and Thomas.

SB 56-APPROP: LIFE SCIENCES FACILITY AT UAF

8:02:52 AM
CO-CHAIR THOMAS announced consideration of SB 56.

8:03:36 AM
MURRAY RICHMOND, aide to Senator Thomas, said SB 56 is an Act to appropriate funds for a new life sciences building at the University of Alaska Fairbanks (UAF), which is Alaska's only Ph.D.-granting university and is well-known in the area of sciences, especially Arctic sciences. In a world where technology changes as fast as it does, he said, Alaska has to stay ahead of the curve. In order to do that, the state has to have the best resources, the best facilities, the best scholars, and put out some of the best graduates; this building is designed to help the University do that. In addition, because it is a research facility, every dollar invested in it will bring $5.80 of federal monies into Alaska's economy, and the McDowell Group estimates that the project will generate in the area of $20 million in port and construction activities for not only Fairbanks, but the Anchorage and Mat-Su areas.

He said the research that will be conducted in this facility will really affect a lot of Alaska. They will be researching infectious diseases, particularly the bird flu. They will be studying obesity and diabetes in bush Alaska, which is a major problem, and will have a wing for research on sudden infant death syndrome.

8:05:32 AM
SENATOR OLSON joined the meeting.

8:05:53 AM
CO-CHAIR THOMAS opened public testimony.

8:06:13 AM
BRIAN ROGERS, Chancellor University of Alaska Fairbanks, Fairbanks, Alaska, spoke in support of SB 56. He said the life sciences building has been a top priority to the Board of Regents for some years now in the Board's capital budget. The biology and wildlife program is the largest single degree program at UAF, and the facilities currently in use are spread out across the campus; some of the labs don't look much different than they did when he arrived in 1970. Modern biomedical science requires much more significant laboratory opportunities for graduates and undergraduates to participate in research activities.

He said the new building request originally came to the legislature in a Board priority. The Board was unsuccessful in gaining legislative support for that, so last year they

redesigned the facility somewhat and really focused on their top priority areas. If approved, the building will be located on the UAF campus West Ridge, across from the state virology lab; there is a connecting walkway under the street to allow cooperative research with the state.

CHANCELLOR ROGERS expanded on Mr. Richmond's comments about the interesting research being done at UAF. The Center for Alaska Native Health Research is working in southwest Alaska on issues of obesity and diabetes, and why there is not the same link between obesity and diabetes in southwest Alaska that is seen elsewhere. This research can potentially lead to treatments for the debilitating effects of diabetes. They are also trying to understand the cellular mechanisms of sudden infant death syndrome (SIDS), which might allow them to understand early which children are at risk for it. Regarding traumatic brain injury, they know that the hibernating brain is much more elastic and better able to handle trauma, and are studying what is going on at the cellular level that might make a difference in treatment.

8:08:52 AM
He said the instructional wing of the building will help the University to prepare students for some of the higher-demand jobs and, while people don't think of a biomedical industry in Alaska, the state has some potential there. Alaska also has the people needed for biological and wildlife careers that help with permitting for major Alaska projects, people who staff the Department of Fish and Game, the National Parks Service, the Department of Fish and Wildlife, and the Forest Service. These are high-paying, good jobs in Alaska. He stressed that UAF is severely space-limited on the research side compared to the national standards on square feet per faculty member, per student, which limits their ability to attract new funds. Despite that, the Institute of Arctic Biology (IAB) federal receipts are up from $6 million annually at the beginning of this decade, to about $19 million a year now. This building will provide additional lab space that will allow UAF to be successful in competing nationally for additional federal funds to support research in Alaska.

CHANCELLOR ROGERS noted that because it is already designed, construction on this facility could actually start this summer, and they could have a foundation in by fall if they get the appropriation this legislative session. That means an immediate job impact that will last about three and a half years.

8:11:13 AM
SENATOR STEVENS said he went to Fairbanks during the summer to see the site, and was amazed at how crowded the existing buildings are. He asked whether they will reconfigure those buildings for use when the new life sciences building is completed.

CHANCELLOR ROGERS confirmed that the old buildings will be reconfigured. The [Charles] Bunnell Building will provide additional classroom space on the main campus. In the Arctic Health Research building, it will allow them to back-fill with some of the research labs that were originally slated to go into the larger bios building.

8:11:59 AM
CO-CHAIR THOMAS asked the age of the Arctic Health building.

CHANCELLOR ROGERS answered that it was built in 1962; it has undergone some significant renovation as federal labs have moved into the virology building, but the majority of the building is still 1962 to 1964 vintage.

8:12:28 AM
BRIAN BARNES, Director, Institute of Arctic Biology, University of Alaska Fairbanks, Fairbanks, Alaska, said the proposed building will greatly enhance teaching in biology, wildlife, biomedical, and health sciences at UAF. Biology and Wildlife is UAF's largest major and is growing. They have over 600 majors this year, and their graduate programs in life science have the most PHD and Masters students in the UA system. Their programs in life sciences make UAF a target destination to students both inside and outside the state, but they are limited to teaching in classrooms that were built in the 1960's, as Chancellor Rogers said. To find classrooms and teaching laboratories big enough for their sections, they have to schedule biology students all over campus at classrooms that can be literally a mile apart. This is an inefficiency that will be decreased with the construction of this new life sciences building.

He stated that UAF has excellent teachers, a modern curriculum with more and more offerings in molecular biology, biomedical sciences, and wildlife biology management, and UAF graduates fill good jobs across Alaska. The University needs the excellent facilities they deserve to keep going. The life sciences building is also necessary to support the continued growth and competitiveness of their research programs in the life sciences, including those in health, biomedical research, climate change,

wildlife, and social-ecological linkages, which is the role of people in environmental change. The number of grants in federal dollars coming into the state and the number of jobs created have tripled over the last eight years, but without additional modern space to do the research, this growth cannot continue. There is a huge need for knowledge, discovery and intervention in these topics and a huge opportunity to do in-state research on special problems in Alaska such as health-disparity research, which is research into diseases that occur more frequently than average in certain ethnic, economic, cultural and even geographical groups.

MR. BARNES closed by saying that as director, it is his job to recruit faculty who are excellent teachers and the most competitive researchers and to provide them an environment is keeping them at UAF once they succeed. These faculty are operating in a national market; they can often go anywhere and get competitive offers. His job will be made much easier by this new life sciences building.

8:16:56 AM
BERT BOYER, Acting Director, Center for Alaska Native Health Research, Fairbanks, Alaska, said they are researching health disparities in the Yukon-Kuskokwim Delta with over 1500 Yupik Eskimos. They are looking at obesity and the co-morbidities of obesity, which include diabetes, stroke, and cancer. One note of interest is that the obesity prevalence among Yupiks is about equal to the U.S. average, but the diabetes prevalence is less than half. They are trying to find out what the genetic, dietary, or environmental factors are that contribute to this protection from type-two diabetes. They are also beginning studies in stroke, which has three times the prevalence of the U.S., and finally, colo-rectal cancer, which is twice the prevalence in the U.S. They look at various factors, from physical activity, to genetics, to diet. However, they are space-limited; they have opportunities for growth, hiring new faculty, bringing in new researcher associates and post-docs, but have nowhere to put them. The benefit of this new facility is that it will create opportunities for other faculty to move into the new building and open up much-needed space in the Arctic Health Research building where they are located.

8:18:51 AM
CORD BRUNDAGE, PHD Candidate, University of Alaska Fairbanks, Fairbanks, Alaska, said many graduate students are drawn to UAF for the phenomenal wilderness life science research opportunities. He was drawn to UAF for the biomedical life

sciences program; he studies the consequences of nicotine and alcohol exposure on the developing brain. He added that exposure to either nicotine or alcohol during pregnancy has been linked to sudden infant death syndrome, or SIDS. His research is part of a collaboration including two University of Alaska Fairbanks laboratories focused on the cause of SIDS and the high prevalence of SIDS in Alaska. Research in UAF's lab is highly sought after by students interested in careers in either biomedical research or medicine. During the four years he has been a graduate student at UAF, he said he had mentored eight undergraduate students and four high school research projects. Most of those students have wanted to be doctors, pharmacists, dentists, or in a veterinary medical career, as he is. The limited number of vet schools has made veterinary medicine one of the most competitive professional programs to get into. He was accepted last December and will complete his PHD and start school at one of the top veterinary programs in the world, and attributes his success to the education and experience he has gained at UAF. Unfortunately, the facilities and space conditions at UAF make conducting research very difficult at times; their SIDS research is spread over multiple floors and three different buildings. Biology faculty, facilities and equipment lack any central location. The UAF biology department has the largest graduate program and number of graduate students in the state, and it is frustrating that their personnel and resources are so decentralized. Amazing discoveries are being made every day; innovations in research are developing at an incredible rate. In order to remain competitive in this rapidly changing technological world, they need to provide facilities for tomorrow's students today.

MR. BRUNDAGE said he is grateful for the skill and training he received at UAF; it has made his dreams possible. In order to continue making Alaska students competitive for professional careers and allow them to achieve their dreams, he strongly advocates for the funding of the University of Alaska life sciences and laboratory facility.

8:21:31 AM
SENATOR OLSON congratulated Mr. Brundage on his acceptance into veterinary school and asked what school he will be attending.

MR. BRUNDAGE answered Colorado State.

SENATOR OLSON asked where he is from originally.

MR. BRUNDAGE said he grew up in Boulder, Colorado.

SENATOR OLSON asked where he intends to practice when he finishes school.

MR. BRUNDAGE replied that he will return to Fairbanks.

8:22:02 AM
WAYNE STEVENS, President/CEO, Alaska State Chamber of Commerce, Anchorage, Alaska, said the Chamber endorses the University of Alaska, Board of Regents' FY11 capital funding request for the life sciences classroom and lab facility. This will be the only new construction project on the Board of Regents' request. The Alaska State Chamber of Commerce recognizes the importance of research, as well as the economic impact and educational opportunities this life sciences project will bring to all Alaskans, and urges the Alaska Legislature to fully support funding of this vital facility.

8:23:43 AM
CO-CHAIR MEYER joined the meeting.

CO-CHAIR THOMAS closed the hearing on SB 56 but did not close public testimony.

SB 206-APPROP UNIV ENGINEERING BUILDINGS

8:24:03 AM
CO-CHAIR THOMAS announced consideration of SB 206.

8:24:34 AM
SENATOR ELLIS introduced SB 206. He said he worked with his constituent Grant Baker, Chair of the mechanical and electrical engineering programs at University of Alaska Anchorage (UAA), to understand the shortage of engineers in Alaska and the scale of industry demand for Alaska-grown engineers, as well as the important resources required by University of Alaska engineering programs to meet this demand. The University of Alaska Anchorage and Fairbanks campuses are working together to increase the supply of Alaska engineers. He ventured that many of the members have heard stories about construction and development projects being staffed by out-of-state workers; what has received less attention is that Alaska is facing a severe shortage of engineers at this time. Some companies are resorting to sending Alaska's engineering design work outside, which is a very troubling trend. Outside engineering firms don't always have the technical knowledge or foundation in arctic or northern

engineering that is so critical to the work the state is hoping to have done in Alaska.

SENATOR ELLIS continued; Alaska is second to last in the number of engineering graduates it produces per year, per capita. Only 18 percent of the engineers in Alaska have degrees from the University of Alaska system, and up to 35 percent of the engineers working in Alaska are not residents. According to the Department of Labor and Workforce Development (DOLWD), the shortage of engineers is expected to grow, exacerbated by annual turnover and retirements. Many new outside engineering recruits to Alaska will move here just long enough to gain valuable professional experience before eventually moving away to be closer to their homes and families in the Lower 48. Alaska industry and recruiters prefer to hire Alaska graduates, as they are more likely to stay in Alaska over time, and the amount of trouble and expense in recruiting people outside or internationally to come help us with our development projects is something we should take note of and try to reverse.

To respond to the state's need, he said, in 2006 President Hamilton and the Alaska Board of Regents set a priority to double the number of annual engineering graduates by 2014. The legislature needs to take the steps necessary to reach that worthy goal, and that is what the bill is all about. Since 2006, the number of students in UAF's engineering program has doubled; since 2000, enrollment in UAA's School of Engineering has more than tripled. While the University of Alaska's programs are ready, willing, and able to train the next generation of Alaska engineers, they require investment to complete their mission. Current facilities cannot even accommodate current enrollment; enrollment growth has resulted in significant space challenges, leading to overflowing classrooms and crowded labs. The engineering programs must have adequate instructional and specialized lab space to double the number of engineering graduates. The University of Alaska has completed concept planning for facilities at both UAA and UAF. The appropriations included in this bill are intended to facilitate design and construction of the facilities to meet current engineering demand and to provide the foundation and resources to grow our own Alaska engineers.

8:28:38 AM
In conclusion, Senator Ellis said engineers are an essential economic resource, and growing our own Alaska engineers offers the state an opportunity to invest in Alaska's development. The

University of Alaska's engineering programs are doing what they need to do, but need the legislature's assistance.

8:29:13 AM
JACK WILBUR, President, Design Alaska, Fairbanks, Alaska, said Design Alaska is a professional services firm that employs 65 architects, engineers, and surveyors in Fairbanks. They prefer to hire entry-level engineers from the University of Alaska Fairbanks, because they graduate with the skills they need, and have already adjusted to the climate and community, so they are more likely to stay with the company. In the last 25 years, Design Alaska has tripled in size and needs an ever-increasing pool of entry-level engineers to accommodate that growth. They support continued investment in the UAF engineering program in order to ensure that UAF will continue to meet their needs. Another important benefit of investment in UAF's engineering program through expansion of their facilities is the increase in research grant dollars that will be attracted to the community. This is true economic development, resulting in high-paying jobs for Alaska residents. He urged the legislature to support funding and expansion of UAF's engineering training and research facilities.

8:31:06 AM
SENATOR STEVENS said he appreciates Mr. Wilbur's preference to hire Alaskans who are adjusted to Alaska and have the skills. He asked if Design Alaska ever brings in students before graduation.

MR. WILBUR said they traditionally have four to five engineering interns working for them; they are almost always from the University of Alaska Fairbanks.

8:31:41 AM
SENATOR OLSON asked what kind of engineers he employs.

MR. WILBUR answered that they employ the full range of engineers: civil, structural, mechanical, electrical and environmental. The University of Alaska Fairbanks is able to provide them with entry-level engineers for all of those disciplines.

8:32:22 AM
ANN BROOKS P.E., Brooks and Associates, Anchorage, Alaska, said she graduated from the UAA civil engineering program in 1988 and currently serves on the UAA School of Engineering Advisory Board. She urged support for both SB 56 and SB 206. Life science

is part of the engineering education, so she cannot fail to support SB 56 as well. She said Mr. Wilbur brought up some very important points, but one thing she wants to hammer home is the cost of recruiting and bringing in engineers from out of state. Her colleagues at the Corps of Engineers, who employ about 700 engineers, say it costs them about $70,000 per engineer to recruit and move them to Alaska. Typically, they get a three-year commitment from them, but because they may not be familiar with the climate here, they often don't stay much longer than that.

MS. BROOKS said she believes the facilities that the University of Alaska is using today are the same as those she attended classes in before graduating in 1988. With the exception of the Alaska Native Science and Engineering Program (ANSEP™) building, the laboratories are the same. She said she can't urge the legislature strongly enough to consider improving these facilities. Industry needs those graduates, and the students deserve it. Everything Alaskans do every day is touched by engineering. As Alaska's infrastructure ages, as the workforce retires, Alaska needs engineers to replace them; frankly, she said, she does not think they can afford to bring engineers from the Lower 48 to fill those positions. If we grow our own, we will have a committed, consistent and stable workforce. Given some of the challenges facing the state as the infrastructure ages, and the state's desire to get the pipeline project going, she said she does not believe that waiting is an option.

8:35:28 AM
SENATOR STEVENS said she hit on an interesting point; most of the engineers he knows are about his age. He asked if she thinks the issue of an aging workforce is going to really be a problem if the state does not move ahead.

MS. BROOKS said she spoke with Commissioner von Sheben from the Department of Transportation and Public Facilities (DOTPF), who said that one third of his workforce is at retirement age. Some of those people will continue to work because of the economy, but when they retire, the state will be in a world of hurt.

8:36:25 AM
GRANT BAKER, Chair, Mechanical, Electrical and Computer Engineering Program, University of Alaska Anchorage, Anchorage, Alaska, said he has lived in Alaska for 30 years and has taught for about 22 of those years. He is here to support SB 206. If there is a theme to go with this, he said, it is indeed "Grow Our Own." A new building in Anchorage is a great project that

will be applauded by industry and the community because there is a severe lack of facilities in Anchorage. Anchorage has about one third the space per student that the rest of the states have for engineering programs. It isn't just about crowded class rooms; it is about labs that are completely missing, laboratories that are fundamental to most engineering programs such as heat-transfer labs, electrical engineering labs, and material science labs. Those don't exist.

MR. BAKER said over 300 engineering students signed a petition in March, asking the legislature to support the engineering program and the new building in Anchorage. Industry supports the programs at UA because it is in their best interests to hire engineers trained in Alaska; they stay in Alaska. There are about 100 companies that hire engineers within four miles of the Anchorage campus. This is a situation unique within the United States, and it is important because UAA's students can intern with the companies all year around, and they do. They get experience with the companies and build relationships; the companies like that because they can get to know the students before hiring them full-time. The students match up with the companies they like, and the companies get the employees they want. The strong support of the industry is one reason that the University of Alaska School of Engineering Advisory Board, which is made up of CEOs and presidents of engineering firms and those that hire engineers, wrote a unanimous resolution in August 2008 supporting a new engineering building in Anchorage.

8:40:10 AM
He said the community also supports new facilities. Recently, a Memorandum of Understanding was written between the state of Alaska through the Department of Education and Early Development (DEED) and was signed by the Department of Labor and Workforce Development, the chancellors of all three University of Alaska campuses, and Alaska Process Industry Career Consortium (APIC); it supports establishing engineering academies inside the K-12 schools. The reason this is so popular is that it works, not just for increasing the number of engineers, but by attracting students into other areas of science, technology, and mathematics. A prototype engineering academy started up in Diamond High School in Anchorage last year with about 115 students; it is at 220 students this year and still growing. A Memorandum of Understanding has also been signed between the University of Alaska School of Engineering and the College of Education in Anchorage. The idea is that the facilities that are used for teaching and outreach to K-12 are the same as those needed for university classes and can also be used for teacher

professional development in stem areas. The University sees a strong and beneficial collaboration between the School of Engineering and the College of Education, to help provide the preparation teachers need. He has heard from Bethel, that teachers come for a day to do a demonstration and leave; that doesn't really help. They need teachers to come in from the bush and get trained to go back and teach there.

8:44:20 AM
CO-CHAIR MEYER commented that they seem to be having great success with the Alaska Native Students; he believes that over 100 have graduated from the program so far. He asked if the demand now is such that UAA has to turn students away.

MR. BAKER said that, because it is an open-enrollment campus, there is no way to restrict enrollment, and they wouldn't want to. They aren't turning students away, but that adds to the overcrowding. He repeated that the lack of labs is a serious deficiency. It is not about what other schools are able to do; it is about what industry needs. It is very difficult to turn out students with the skills industry needs when they don't have the labs to do it.

8:46:23 AM
CO-CHAIR MEYER asked him to comment on the Alaska Native engineering program and the figures Senator Ellis provided regarding square feet of space per student. He also asked if, between the Fairbanks and Anchorage campuses, all of the engineering disciplines are covered.

MR. BAKER said that there are a few that are not completely covered, like chemical and biomedical engineering, but the University of Alaska Anchorage does offer all of the major disciplines needed in Alaska including civil, mechanical, electrical, computer, and geomatics or surveying. Anchorage does not have petroleum engineering, but that is offered in Fairbanks. The ANSEP and outreach programs have been wildly successful in getting out to the difficult-to-reach areas surrounding Anchorage.

8:48:50 AM
CO-CHAIR MEYER said one requirements of the governor's scholarship program is for four years of math, which some people feel may be too much for students who are not going into engineering or the sciences. He asked Dr. Baker if he finds students from Alaska high schools are ready for engineering courses when they reach college.

MR. BAKER said many are prepared, but there are a large number of students who still require remedial math before they can start an engineering program. The first level of math that is counted toward an engineering degree is calculus; requirements before that are college algebra and trigonometry. Many students haven't had the opportunity to take the calculus and trigonometry that are required prior to starting an engineering degree. Even in Anchorage and the Mat-Su, many students don't get to trigonometry, but the engineering academies are already helping with that.

8:50:54 AM
SENATOR HUGGINS asked Dr. Baker how many of his students are from the Alaska Scholars program.

MR. BAKER said he can give an estimate. He has about 1000 students, with about 60 new scholars coming in this year. They expect many more, but haven't had the opportunity to do any real recruitment due to the space shortages.

SENATOR HUGGINS asked Dr. Baker what the difference is between industry demand and the University's ability to graduate new engineers.

MR. BAKER said the entire University system is graduating about 94 engineers per year right now, and the need is for 200 to 400 per year according to industry sources. Some companies are even hiring interns out of Russia.

8:52:51 AM
SENATOR HUGGINS said the legislature is working on legislation that offers tax credits to donors and contributors to educational institutions. He asked if Dr. Baker thinks that will help.

MR. BAKER answered that they have strong industry support and there would be many donors, but not enough of the magnitude that could actually construct a new building. He observed that if the industry knew a building was being built, they would be more likely to contribute than they would if it were just speculative.

8:54:08 AM
DAN WHITE, Director, Institute of Northern Engineering, University of Alaska Fairbanks, Fairbanks, Alaska, said he is testifying on behalf of himself and the Dean of the College of

Engineering and Mines, Dr. Doug Goering. The University of Alaska has been graduating engineers since 1926. Engineers are instrumental to the development of the state's resources, creating jobs, and increasing Alaska's quality of life. UAF is one of the only universities in the country that offers mining and geological engineering as well as petroleum engineering, engineering areas that are extremely important to the development of this state.

In 2004, he said, the three engineering units at the University of Alaska Fairbanks, the College of Science, Engineering, and Math; the Institute of Northern Engineering; and the School of Mineral Engineering were combined. These three programs were consolidated from four buildings into one, the Duckering Building, which was built in 1964. It was already the home of roughly half of the engineering on campus and was at capacity at the time. Since the merger in 2004, applied research and technology development have grown 300 percent.

MR. WHITE said that applied research and development in engineering has a direct impact on Alaska's economy; it has developed more efficient ways of doing such things as extracting gold from ore, building roads, building buildings, running vehicles, and finding and developing energy resources. Applied engineering research and technology development is growing Alaska's economy. A recent McDowell Group report found that, for every $1 million in investment by the state in university research, 149 jobs were created with an estimated $4.8 million in payroll, and another $1.5 to $2 million in purchases. The University needs space to do the research, to grow the opportunity, and to contribute to building Alaska's economy. Since 2006 the College of Engineering and Mines student enrollment has increased 40 percent. First-time freshman enrollment has increased by almost twice that, and they are on track to meet the president's commitment to double the number of engineering graduates by 2012. UAF operates with 80 square feet of space per student, which a recent comparison revealed is lower than almost all of UAF's peer institutions. The Oregon system operates with about 170 square feet per engineering student. There is presently only one class room in the UAF engineering building that can even accommodate more than 40 students, and that is creating problems as the classes grow.

MR. WHITE concluded that they strongly support the Board of Regents' budget request and the priorities laid out therein, and hope that the budget, as well as the efforts of legislation like

SB 206, can contribute to the specialized engineering needs for engineering programs at UAF and UAA.

8:58:13 AM
ROB LANG, Dean, University of Alaska Anchorage, Anchorage, Alaska, said he has only a couple of things to add to the previous testimony. The facilities at UAA, when compared to facilities at other universities around the country and around the world, are really in bad shape. He stressed that he has been at facilities in third-world countries that are significantly better than the ones the University has. Nevertheless, he is extremely proud of what the faculty and students are able to do. UAA's programs are all accredited, which is wonderful, and the students and faculty make do with what they have. In terms of nationally-normed exams like the Fundamentals of Engineering exam, UAA students consistently perform above the national average, even with the lack of facilities.

8:59:45 AM
FRAN ULMER, Chancellor, University of Alaska Anchorage, Anchorage, Alaska, said she agrees with Chancellor Rogers that they are desperate for space. Alaska is a natural resources state, and if it is to develop the oil and gas and mining and all of the other resources it has, it needs home-grown engineers. That is an essential building block for Alaska's economy and its future. The number of square feet per engineering student was expanded from 44 to a whopping 58 when they added trailers and a portable warehouse for lab space, but that is not enough. The University needs the legislature's help.

9:01:12 AM
BRIAN ROGERS, Chancellor, University of Alaska Fairbanks, Fairbanks, Alaska, wanted to answer a couple of questions that were asked earlier in the meeting. The number of Alaska Scholars in engineering as of Fall 2008 was 103 at UAA and 125 at UAF. On the GPS, national statistics show that one sixth of U.S. high school students graduate with enough math to even consider engineering as a discipline. Anything the state can do to improve that pathway will make a difference in their ability to meet their goals in engineering. He said they are competitive nationally; BP says that the University of Alaska is its first choice in the nation for hiring engineers. University of Alaska students regularly win competitions such as the bridge competition and the electric snow machine endurance competition. The University has excellence in both the Anchorage and Fairbanks programs and needs the legislature's help to continue to provide that excellence.

9:02:37 AM
CO-CHAIR THOMAS closed public testimony and said he would take motions on both SB 56 and SB 206.

SB 56-APPROP: LIFE SCIENCES FACILITY AT UAF

9:03:08 AM
CO-CHAIR MEYER moved to report SB 56, labeled 26-LS0237\R, out of committee with individual recommendations and attached fiscal note(s). There being no objection, the motion carried and SSSB 56 was moved from committee.

SB 206-APPROP UNIV ENGINEERING BUILDINGS

9:03:46 AM
CO-CHAIR MEYER moved to report SB 206, labeled 26-LS1184\R, out of committee with individual recommendations and attached fiscal note(s). There being no objection the motion carried and SB 206 was moved from committee.

9:04:11 AM
There being no further business to come before the committee, Co-Chair Thomas adjourned the meeting at 9:04 a.m.