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Budget  
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November 28, 2012

Amanda Ryder  
Senior Fiscal Analyst/Operating Budget  
Alaska Legislative Finance Division  
P.O. Box 113200  
Juneau, AK 99811-3200

Dear Ms. Ryder:

Included below is the University of Alaska's actions in regard to the FY13 enacted legislative intent.

## **UNIVERSITY OF ALASKA**

### **Operating Budget (CCS HB 284)**

It is the intent of the legislature that the University of Alaska submits a FY14 budget in which requests for unrestricted general fund increments do not exceed the amount of additional University Receipts requested for that year. It is the intent of the legislature that future budget requests of the University of Alaska for unrestricted general funds move toward a long-term goal of 125 percent of actual University Receipts for the most recently closed fiscal year.

The University of Alaska believes the purpose of the intent language was to 1) stabilize the general fund level; 2) incent generation of non-general fund revenue; and 3) inform Regents of the true budget constraints that will exist in the future as they negotiate salaries and enter into other financial commitments.

The University of Alaska's FY14 budget request reflects the legislature's intent. The budget request for the University of Alaska exercises tight spending discipline while limiting growth, and yet preserving and when necessary, investing in essential infrastructure. UA's comprehensive plan for materially improving higher education in Alaska began in FY13, with the Strategic Direction Initiative (SDI). SDI will lead UA on the path that focuses on holding incremental expense increases down, reducing the tuition burden on students and families, leveraging only highly selected programs that represent inter-campus cooperation and internal reallocation of programmatic baseline dollars and placing primary emphasis on student attainment and graduation.

The University continues to look for cost savings and efficiencies as well as cost containment measures. Some examples include MAU program reviews, energy consumption reductions and increased sustainability efforts, increased partnership opportunities with K-12 and public and private industries, licensing reductions through renegotiation of contracts, implementation of new electronic processes, and expanded use of video conferencing in lieu of travel. The University is also trying to reduce the tuition burden on students and families and held the line on tuition rate increases to 2% for undergraduate resident tuition in FY14.

UA is also considering revenue enhancement opportunities. UA is working to create economic value from UA Intellectual property through the UAA and UAF Offices of Intellectual Property and Commercialization which may generate revenue over the long term.

The University of Alaska continues to believe the ratio funding approach may also have some unintended consequences. There is a disincentive to outsource services, even if the service could be provided at a reduced cost because it would result in a reduction in university receipts. Also, the University would need to reconsider its offerings of the more expensive high demand programs because these programs generate less tuition revenue due to the need to have smaller classes to meet strict accreditation limits and lab constraints. These programs also cost more to deliver because of costly equipment and the need for higher faculty wages.

The University of Alaska will continue to work with legislative finance to get a better understanding of the implications and unintended consequences of the ratio funding approach and examine funding models used by other states to see what has worked and hasn't worked to develop the best model.

<b>University of Alaska Anchorage</b>	<b>300,857,500</b>	<b>249,787,600</b>	<b>51,069,900</b>
Anchorage Campus	266,219,500		

It is the intent of the legislature that \$250,000 of this appropriation be used to evaluate Alaska's education system and make recommendations aimed at increasing student achievement. The evaluation should not focus on funding, except that it may recommend redirection of how a district is investing existing funding. The evaluation parameters should include instructional programs, including comprehensive curriculum, instructional materials, and effectiveness of professional development and instructional practices; evaluation of vocational and college preparedness tracks for education; district efficiency, including efficiency of district administration; instructional leadership, including instructional accountability; teacher retention and tenure; effectiveness and efficiency of remote-delivery of education; efficiency and effectiveness of state professional development; barriers to success that are within school district control, in particular with regard to fourth- and eighth-grade reading and mathematics scores on national examinations. It should also examine the length of the school year, length of school day, and instructional time per day. The evaluation will also provide a comparison of Alaska's districts' practices to national practices on each of these parameters, including a comparison of Alaskan standards and expectations to those of other states.

Attached is the 2012-2013 work plan for the ISER-Center for Alaska Education Policy Research (CAEPR).

**UNIVERSITY OF ALASKA**

**Capital Budget [HCS CSSB 160(FIN) am H] Page 151, line 17]**

Research and Development of Unmanned Aerial Systems	5,000,000	5,000,000
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It is the intent of the Legislature that the University of Alaska collaborate with the Federal Aviation Administration in establishing a research and development program and possible test facility for Unmanned Aerial Systems in Alaska. Unmanned Aerial Systems are already being utilized in Alaska in many ways and as the Arctic race progresses, they will become even more vital as a resource to the State and the Country.

Attached is the Unmanned Aircraft Systems (UAS) funding objectives and next steps.

Please let me know if you have any questions regarding the information provided.

Sincerely,

Michelle Rizk



### **2012-2013 Work Plan for Legislative Appropriation**

The following is UAA's Center for Alaska Education Policy Research (CAEPR) work plan for the funding received from the Alaska Legislature for FY 2013. We intend to start with the work laid out below, and then assess where we are and what we have learned in order to move forward with issues that are more difficult to address. For example, we want to complete the "State of the State" report described below before we start tackling the issue of barriers to success. We also want to flip that topic around to look instead at what is working in districts, and to identify promising practices that other districts and schools might adopt. We want to look at the question of achievement on national tests from a slightly different perspective, not only looking at how students do on the National Assessment of Educational Progress (NAEP) tests in fourth and eighth grade, but also asking how best to assess how our students are doing from a more complete perspective.

This work plan does not include CAEPR projects funded through contracts and grants from other state, federal and private sources.

- 1) Produce a "State of the State in Education" report in time for the 2013 legislative session.  
*Timeline : Research in progress, report expected in February or March 2013*

This report will address the current state of education in Alaska and place Alaska within the national context. We will look at a number of issues including:

- a) Student achievement and education outcomes on standardized measures (e.g., standardized test scores, graduation and dropout rates) at the state level, for subgroups and for different regions. We also will compare this data with national averages.
  - b) Policies and requirements at the state and district level around graduation requirements, including what is required for the Alaska Performance Scholarship, passing the High School Graduation Qualifying Exam, etc.
  - c) Policies and practices around the school calendar, exploring the length of the school day, year, and when students are in school and related issues such as student learning loss in the summer
  - d) Policies and regulations around professional development at the state and district level
- 2) Conduct a statewide survey of teachers  
*Timeline: Survey under development, to be launched in March 2013*

This survey will be the first comprehensive look at the factors influencing teachers' decisions to stay in their schools/districts or to leave. We will develop the instrument with input from key individuals and organizations including faculty in the schools and colleges of education in Alaska (UA and APU), NEA- Alaska, the Alaska Teacher Placement advisory board, mentors in the Alaska Statewide Mentoring Project, and so on.

Teachers will be asked about issues such as:

- a) Their perceptions of leadership in their school
- b) Their relationships with parents and community
- c) Salary, benefits and financial incentives to stay in their school
- d) Mentoring and professional development

In fall 2013, CAEPR will match data on teacher employment to see which teachers who participated in the survey continued to teach in Alaska and in their same school, and which did not, and analyze the relationship between teacher survey responses and work outcomes.

- 3) Prepare a comprehensive educator supply & demand report.

*Timeline: Research in progress. Report to be produced in spring 2013*

This will be a comprehensive update of data on teacher and administrator supply, demand and turnover, including:

- a) A comprehensive literature review on factors influencing teacher retention and turnover
- b) Data on the number of teachers and administrators prepared by institutions in-state versus coming in from outside Alaska
- c) Teacher and administrator turnover rates by district
- d) A look specifically at the numbers and career pathways of Alaska Native teachers and administrators

- 4) Prepare a University of Alaska K-12 education preparation report (a biennial report to the Alaska Legislature).

*Timeline: The report is currently in working draft form.*

This report is prepared for the legislature in accordance with AS 14.40.190(b), which requires the University of Alaska Board of Regents to deliver a report titled "Alaska's University for Alaska's Schools" no later than the 30th legislative day of each regular session of the legislature that "describes the efforts of the university to attract, train, and retain qualified public school teachers. The report must include an outline of the university's current and future plans to close the gap between known teacher employment vacancies in the state and the number of state residents who complete teacher training." In the upcoming report, we will:

- a) Present data on the number of certificated educators prepared in University of Alaska programs, as well as retention and turnover rates for UA-prepared teachers and administrators and compare these to turnover rates for educators prepared outside of the UA system;
- b) Profile UA efforts to recruit and graduate more certificated educators; and
- c) Address challenges around placing and retaining UA graduates.

5) Conduct a study of recent graduates of UA programs

*Timeline: Research underway, will be completed by end of December 2012.*

CAEPR is working with Donna Gail Shaw, Professor Emerita, UAA College of Education, to survey 2011 and 2012 teacher preparation graduates from all of the UA campuses on their perceptions of how well they were prepared for teaching. We then will talk with graduates who are not in the classroom to find out why they are not teaching. This will allow us to explore the prevalence of the reasons that have been hypothesized (such as a lack of jobs in their community, inability to relocate, decided decision to pursue a different career path) and to identify other factors affecting graduate employment. Most of this research will be supported by other sources, but some of the work on the University of Alaska K-12 Education Preparation Report will support this study as well.

6) Identify faculty across the colleges and schools of education in Alaska to conduct studies on specific questions raised by the legislature including:

*Timeline: AY 2013-2014*

- a) How are curriculum decisions made at the state and district level; are there comprehensive curriculum plans; and to what extent does student achievement data feed into these decisions?
- b) What is the state of distance delivered education in Alaska? What evidence is there of quality, effectiveness and efficiency?

Other work CAEPR is doing alone or in collaboration with other organizations will address some of the issues listed in the priorities. For example, CAEPR is now part of the Alaska State Policy Research Alliance (ASPRA), along with the Alaska Department of Education and Early Development (EED), superintendents and Senate Education Committee leadership. ASPRA is a federally funded initiative of REL Northwest (the regional education lab) to increase the capacity of CAEPR and EED to conduct education policy research in Alaska as well as the capacity of policymakers to access and use it in their decision-making. The first project of ASPRA is a trajectory study looking at how students move from secondary into post-secondary education, training or work opportunities. This will help us begin evaluating vocational/college preparation tracks, and we plan to build on this work further down the road.

## **Unmanned Aircraft Systems (UAS) Capital Budget Funding Objectives & Next Steps**

November 2012 - Narrative provided by Geophysical Institute Director R. McCoy & Poker Flat Manager G. Walker

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Alaska has become an aviation-centric state with six times more pilots per capita than the rest of the nation. For the past two decades the Department of Defense has driven the extremely rapid expansion and deployment of unmanned aircraft systems (UAS) for military applications. The race to transition these systems for civil commercial and scientific applications provides an enormous opportunity for Alaska to develop and exploit the benefits of this new technology; and Alaska is the best place in the country to work out the issues of separating and integrating the emerging UAS airspace from the existing National Airspace System (NAS).

Anticipating the importance of these unmanned systems for Alaska, the Geophysical Institute of the University of Alaska Fairbanks (UAF-GI) began aggressively experimenting with these technologies several years ago and is rapidly becoming a world leader in UASs. UAF is currently working with eight distinct types unmanned aerial systems and has personnel trained on two additional types for partnering opportunities. Fifteen UAS units are fully operational and in use. An additional 169 airframes (shells) are in hand but are lacking avionics (electrical systems); UAF is working on the avionics. Most of the UAS development work has been carried out at the UAF-GI's Poker Flat Research Range (PFRR), the nation's largest land-based rocket range and the only one in the country owned by a university. The UAF-GI has flown a variety of in-situ and remote sensing instruments on several types and sizes of unmanned aircraft at multiple locations in Alaska (and around the globe) for applications including: resource mapping; monitoring marine mammals; fighting forest fires; mapping glaciers and sea ice; and many more. The use of UAS eliminates the need for pilots in the cockpit and UAS are especially well suited to applications that are dirty, dull or dangerous.

The 2012 Federal Aviation Administration Modernization and Reform Act addresses the issue of creating a UAS airspace and integrating it into the NAS and provides for the establishment of six separate UAS Test Ranges around the country aimed at safe implementation of these new technologies for commercial and scientific applications.

### **Purpose**

Recognizing the important future benefits of UASs for Alaska, in 2012, the State of Alaska appropriated \$5M in the Capital Budget for the UAF-GI for "Research and Development of Unmanned Aerial Systems" and to help position to the UAF-GI to compete for one of the new UAS Test Ranges with the following intent:

*It is the intent of the Legislature that the University of Alaska collaborate with the Federal Aviation Administration in establishing a research and development program and possible test facility for Unmanned Aerial Systems in Alaska. Unmanned Aerial Systems are already being utilized in Alaska in many ways and as the Arctic race progresses; they will become even more vital as a resource to the State and the Country."*

The capital budget supports:

1. Establishing, marketing, operating, and maintaining a Test Range (50% of budget)  
Purpose: Process development, conduct safety studies, develop and maintain agreements, including specifically meeting the FAA mandate for airspace integration.
2. Technology Development (30% of budget)  
Purpose: Develop and test airspace integration hardware and hardware designed for exploiting opportunities in the Arctic.
3. Education (20% of budget)  
Purpose: Develop outreach, vocational, and professional training by providing opportunities for graduate studies, undergraduate opportunities, and K12 education outreach.

## **Discussion**

The white paper prepared by the University in March 2012 that was shared with the State Legislature during their budget discussions highlighted opportunities offered by the 2012 FAA Reauthorization Act and described how the University could lead at state and national levels. Given the current intense interest in unmanned aircraft applications and the expanding focus on the Arctic, a great opportunity exists to continue Alaska's tradition as an aviation pioneer following the model of the CAPSTONE project for unmanned aircraft. By leading the State of Alaska, including a test range proposal effort and subsequent range setup, the University can advance the cause of integrating unmanned systems into the national airspace while simultaneously enabling state agencies, industries, entrepreneurs, technology developers, and scientists to learn to use these systems to better accomplish their disparate goals. To that end, partnerships have been established with multiple state and federal agencies, state economic development corporations, and both small and large businesses such as Alaska Aerospace Corporation and oil companies. The University is also actively seeking further relationships to expand this connectivity. UAF will lead a FAA test range development effort within Alaska and manage the range after award.

On the educational side, the unmanned aircraft program will: 1) help develop training programs and educational disciplines that involve unmanned aircraft; 2) support hands-on engineering to develop new capabilities; and 3) directly fund students and faculty engaged in unmanned system research projects. The nature of applied science and engineering within the program ensures the projects will reach into science, technology, engineering, vocational programs, and even technical high school.

## **Program Update as of November 2012**

The University of Alaska Unmanned Aircraft team is currently deployed on two different funded operations, one in Idaho and one in Florida. The Idaho operations are for the Idaho Power Company and the team is mapping salmon nests in the Snake and Clearwater River below the Hells Canyon dam. The Florida operations, at Eglin AFB, are in support of a wildfire science study involving the USAF, NASA and U.S. Forestry Service. The Florida mission features two manned and four unmanned aircraft, including the UAF ScanEagle and Aeryon Scout systems, flying at the same time in restricted airspace.

There are some opportunities currently in discussion with Eielson AFB and there is growth of a UAS industry in Fairbanks. Atkinson Aeronautics (a Virginia based company) plans to locate staff in Fairbanks to grow commercial applications and Concurrent Technology Corporation (a Pennsylvania based company) plans to recruit staff in Fairbanks in order to co-locate with Poker Flat. Agreements between industry leaders and the FAA are expected, specifically with the oil industry. The University of Alaska is poised to support the efforts for on and off-shore work with oil companies/oil exploration as a result of expansion in these areas.

The UA Board of Regents action at the September meeting to establish the UA Research Foundation has encouraged the team to investigate how a for-profit company that conducts UAS flight services based in Alaska, with operations worldwide, could exist as a subsidiary of the Foundation. The idea is that the flight operators would go where the need exists, but the data processing would be on the UAF campus. There is an established market identified and UAF can attract these types of aerial mapping projects in a competitive market. The team is developing the business model now for these services and will be looking for private investors in this partnership, with assistance of the UAF Office of Intellectual Property and Commercialization (OIPC).

The accomplishments and growing stature of the UAF-GI UAS program have made apparent the need for a more formal structure in order to support the next levels of program expansion and accomplishment. An Alaska Center for Unmanned Aircraft Systems Research, Test and Evaluation (A-CARTE), organized within the Geophysical Institute at UAF, will provide the needed structure, visibility, focus, and support for the program's much greater leadership role in the University, in the State of Alaska, and beyond, both nationally and internationally. A-CARTE will become a natural hub of educational work and outreach, linking research to course development, curriculum and research to outreach, drawing Alaska's youth into science and engineering while advancing understanding in a host of other scientific endeavors. The Center will become a draw for technology firms both to provide needed talent and as an incubator for entrepreneurial spinoffs. Workforce development coupled with significant expansion of technical job opportunities in Alaska, ranging from skilled, certified maintainers and operators to top notch researchers and engineers, will likely start in Fairbanks and expand quickly to the rest of the state. The proposal to establish a Center, will be presented to the UA Board of Regents for approval in December 2012.