

State of Alaska FY2005 Governor's Operating Budget

University of Alaska Fairbanks Organized Research Component Budget Summary

Contents

Component: Fairbanks Organized Research.....3
Component Financial Summary.....14
Summary of Component Budget Changes.....15
Personal Services Information.....16

Component: Fairbanks Organized Research

Contribution to Department's Mission

The University of Alaska Fairbanks, as the nation's northernmost Land, Sea, And Space Grant university and international research center, advances and disseminates knowledge through creative teaching, research, and public service with an emphasis on Alaska, the North, and their diverse peoples.

University of Alaska Fairbanks Mission Statement
 Board of Regents' Policy 10.01.03
 Adopted 4/21/00

As a major center for research and scholarship, the University of Alaska Fairbanks is committed to the mutual enhancement of teaching, research, creative activity and public service. Scholarship which produces new knowledge instills a vigor into teaching, which in turn stimulates inquiry and the quest for further answers to the unknown. The university seeks to use its particular location in the North as a natural laboratory for the study of questions and issues whose solutions are not only applicable to Alaska problems but to a broader understanding of the global community. As part of a network of state research universities, UAF has an active program of basic and applied research resulting in a well-earned national and international reputation. Specific recognition has been achieved in space physics, marine science, high latitude biology, the environmental sciences, engineering and geophysics. The university has programs in the definition, exploration, development and management of Alaska's renewable and non-renewable resources. It is the state's center for study of Alaska Native cultures and languages.

Core Services

The University of Alaska Fairbanks Organized Research is among the top 100 National Science Foundation funded research institutions in the United States. University of Alaska Fairbanks is the research campus for the University of Alaska system and through the activities of its component research institutes, centers, laboratories and related research facilities makes significant contributions to basic and applied science and engineering on state, national and international levels. Extramural and state support funded \$109 million in total revenue as a result of research during the past fiscal year. That research assisted natural resource managers, allowed expansion of cultural knowledge, and contributed to developing safer, more economical construction practice guidelines.

FY2005 Resources Allocated to Achieve Results

FY2005 Component Budget: \$121,775,600	Personnel:	
	Full time	503
	Part time	23
	Total	526

Key Component Challenges

Unity in promoting communication and collaboration

Continue to monitor glacier movement and volume as indexes of sea level change, glacier surge, and possible impediments to fish migration. – Geophysical Institute, School of Fisheries and Ocean Sciences.

Expand and continue seismic monitoring in and around Alaska. – Geophysical Institute, School of Fisheries and Ocean Sciences.

Continue and expand strategic partnerships with other circum Arctic nations. – International Arctic Research Center, Institute of Arctic Biology, School of Fisheries and Ocean Sciences, School of Natural Resources and Agricultural Sciences, Geophysical Institute, Institute of Northern Engineering.

Strategically expand partnerships with U.S. research institutions.

Continue and expand research related to education and outreach programs to Alaskans.

Continue education and outreach regarding Alaska and its natural resources through connections with tourist organizations. – Institute of Arctic Biology, University of Alaska Museum, School of Natural Resources and Agricultural Sciences.

Where feasible, expand collaborations with other organizations to obtain observations about the arctic and Alaskan environments and collaborate with data networks related to the Alaskan environment and its natural resources. – International Arctic Research Center, University of Alaska Museum, Geophysical Institute, Arctic Region Supercomputing Center

Continue collaboration with the National Energy Technology Laboratory, Department of Energy to promote University of Alaska Fairbanks collaborative research related to fossil energy and renewable energy sources with industry, Native corporations, state agencies and other universities. – Institute of Northern Engineering

Continue collaboration in microelectronics and nanotechnology with several industrial partners and North Dakota State University using funding from the Department of Defense. - College of Science, Engineering and Mathematics/Center for Nanosensor Technology

Improve understanding of global climate variability and education outreach. – International Arctic Research Center, School of Natural Resources and Agricultural Sciences, Geophysical Institute, University of Alaska Museum

Analyze impact of natural resource development in Alaska. – Agricultural and Forestry Experiment Station

Study ecosystem integrity in interior Alaska's national parks. – Agricultural and Forestry Experiment Station

High-performance computing helps fisheries make decisions, including the best responses to oil spills in Prince William Sound and Shelikof Strait - Arctic Region Supercomputing Center

Satellite imaging and data processing allows state agencies and industry to better manage natural resources. – Geophysical Institute

Focus on Pacific salmon: the U.S. Global Ecosystem Dynamics Northeast Pacific Program examines oceanic survival of species as a function of coastal influences. – School of Fisheries and Ocean Sciences

Partner with British Petroleum, the U.S. Department of Energy and the School of Mineral Engineering developing new natural gas to liquids technology. - Petroleum Development Laboratory

Perform joint research with Japan on gas pipeline integrity in permafrost. – Petroleum Development Laboratory

Accountability to students, faculty, staff, alumni, and the diverse peoples of Alaska

Continue to develop science and engineering-based educational programs for distribution to the diverse peoples of Alaska.

Further develop compliance and oversight programs to support research at UAF.

Leadership for Alaska's people and institutions

Support archival work and cataloging for Alaska Native languages and cultures. – University of Alaska Museum, Alaska Native Language Center

Continue to promote, develop and support biomedical research at University of Alaska Fairbanks. – Institute of Arctic Biology, College of Science, Engineering and Mathematics

Continue to develop leadership training and develop for faculty, students and the Fairbanks community.

Continue to provide the expertise of faculty and staff to industry and the state and federal governments.

Further develop and expand undergraduate education to better tie University of Alaska Fairbanks research strengths to undergraduate students.

Expand funding opportunities for undergraduate research experience during the academic year and the summer.

Continue regional economic modeling for rural Alaska. – Agricultural and Forestry Experiment Station

Continue to support reindeer production on the Seward Peninsula. – Agricultural and Forestry Experiment Station

Continue to monitor, evaluate, and model wild salmon populations. – School of Fisheries and Ocean Sciences, Agricultural and Forestry Experiment Station

Complete fuel load analyses of the Anchorage Bowl. - Agricultural and Forestry Experiment Station

Train students, scholars, policymakers, and managers to address issues of resource sustainability. – College of Science, Engineering and Mathematics, College of Language Arts, School of Natural Resources and Agricultural Sciences, School of Fisheries and Ocean Sciences, Institute of Arctic Biology

Determine patterns of Steller sea lion populations in Alaska to help determine commercial fishing quotas. - School of Fisheries and Ocean Sciences

Collaborate with Alaska and federal agencies to provide early warning for potential reactor accidents from Russian nuclear powers plants. – School of Fisheries and Ocean Sciences, Geophysical Institute

Evaluate trace metals and hydrocarbons in the inner shelf sediments of the Beaufort Sea as they relate to petroleum development in the area. – School of Mineral Engineering, School of Fisheries of Oceanic Sciences

Excellence in programs and services

Continue to pursue funding for necessary facilities to support program growth in biomedical, microelectronics, energy development, high level computation data processing and imaging, and informatics.

Continue to support the participation of UAF students in national and international competitions.

Promote communications among and between disciplines using UAF's advanced computing and imaging.

Support existing monitoring and tracking programs through collaborations between geophysical and biology and wildlife programs and developing engineering expertise and manufacturing capacity in electronics.

Create aviation safety program using digital elevation data to show the Alaska terrain and flight path restrictions. – Geophysical Institute and Arctic Region Supercomputing Center

Provide support for international, national and campus global climate models to evaluate long-term changes in permafrost, climate and habitability. – Arctic Region Supercomputing Center, International Arctic Research Center

Atmospheric scientists are developing an in-flight icing simulation for real-time data for Alaska's aviators and forecasters. – Geophysical Institute

Established the UAF Office of Research Integrity to facilitate the responsible and ethical conduct of research.

Publish the UAF Researcher's Guide Book.

Accessibility for all Alaskans

Continue community and K-12 outreach programs as exemplified by the Alaska Native Science and Engineering Program, the UAF Alaska Summer Research Academy, Science Potpourri, UAF On the Road; Science Education outreach in Nome and Kotzebue and the Annual Engineering Week Community Open House.

Develop an interactive, educational multimedia program designed for underserved minority children regarding the likely impacts of climate change in the Arctic and Alaska. IARC and GI are producing this program entitled: "What is the Future of the Arctic: Climate Change in Alaska".

Extend rural outreach to bring digital video camera and editing technology to rural museums, cultural centers and public schools to help document the lifestyles and settings of Alaska's rural communities. – University of Alaska Museum

Arctic Region Supercomputing Center is exploring new ways for humans to interact with computers – Arctic Region Supercomputing Center

Dedication to serving community needs

Supercomputers aid in the simulation of tsunami-caused inundation of Alaska coasts. – Arctic Region Supercomputing Center

Continue to develop horticultural plant production in Alaska. – Agricultural and Forestry Experiment Station

Develop alternative agronomic crops for the sub arctic – Agricultural and Forestry Experiment Station

Explore new crops and markets for Alaska. - Agricultural and Forestry Experiment Station

Evaluate various opportunities for flaked products from pink salmon. – Fishery Industrial Technology Center

Co-develop, with industry, engineered fish protein powder. – Fishery Industrial Technology

Aid in safety and quality determinations for salmon caviar products. – Fishery Industrial Technology Center

Alaska Earthquake Information Center and the U.S. Geological Survey have enlarged the strong-motion seismic network in Anchorage, Fairbanks and other towns. – Geophysical Institute

Evaluate mercury and methylmercury in Bering Sea fish to demonstrate they are safe for consumption. – The Institute of Marine Science

Evaluate the presence and effects of metals contaminants in arctic food chains. – The Institute of Marine Science

Stewardship of Alaska's resources

Evaluate nearshore fish as a limiting factor for young sea lions to provide information to managers on nearshore fish assemblages and habitat around Kodiak Island. – School of Fisheries and Ocean Sciences

Collaborate with British Petroleum in Alaska to determine the commerciality of North Slope gas hydrate resources. – School of Mineral Engineering

Support research in plant genetics, collections, and production practices. Through a partnership with the U.S. Department of Agriculture new "Alaska Grown" products are now emerging. – School of Natural Resources and Agricultural Sciences

Through ocean circulation studies in the Beaufort Sea, help guide oil-spill mitigation response plans and offshore oil development. – School of Fisheries and Ocean Sciences

Continue to develop a DNA-based system to predict when or if shellfish will become contaminated with toxins before harvests. – School of Fisheries and Ocean Sciences

Describe the life history of eulachon, an important subsistence fishery in coastal Alaska. – School of Fisheries and Ocean Sciences

Evaluate the methylmercury concentration in pike from the lower Yukon River region. – School of Fisheries and Ocean Sciences

Monitor re-vegetation on abandoned mine lands. – Agricultural and Forestry Experiment Station

Identify, monitor and manage forest biodiversity in Alaska – Agricultural and Forestry Experiment Station

Determine growth and yield of northern species. – Agricultural and Forestry Experiment Station

Develop greater value from the byproducts of seafood processing in Alaska. – Fishery Industrial Technology Center

Evaluate surveys for establishing biological escapement goals for salmon. – Institute of Arctic Biology

Provide information on the environmental cues for spawning herring and in-season fisher management. – School of Fisheries and Ocean Sciences

Obtain preliminary findings on the influence of environmental factors on fish growth variability in the southeastern Bering Sea. – School of Fisheries and Ocean Sciences

Evaluate hydrocarbon sources in Kachemak Bay sediments to provide baselines for identification of sources and predictions of decomposition rates. – The Institute of Marine Science

Research supported by industry aids in forecasting the abundance of Pacific salmon. – The Institute of Marine Science

Develop necessary information to guide the sustainable development of offshore gold placers in the Nome district. – School of Mineral Engineering

Significant Changes in Results to be Delivered in FY2005

Maintaining a solid foundation

The development of new research facilities on the Fairbanks campus (the West Ridge Research Building for near-term occupation, and providing the basis for a future biology/information/computation building) will provide essential laboratory, office and teaching space for strategic growth in areas of biotechnology, biomedicine, information, and computational sciences.

Further development of the Office of Research Integrity will include a compliance officer to aid in coordinating environmental health and safety with research and its compliance to federal regulations. Newly developed educational modules related to the ethical conduct of research will aid faculty, staff and students in their research pursuits.

Growing programs responsive to state needs

The Geographic Information Network for Alaska (GINA) will integrate geospatial information and satellite imagery into the university's service, education, and research missions. This project offers the capacity to aid in monitoring and management of the State's natural resource basis as well as provide for disaster prevention and management (e.g., ice damming of rivers during spring breakup, fire hazard prediction), and education.

The sea-air-land modeling and observing network is evolving to provide real-time forecasts of marine circulation and weather as it relates to maritime and aviation safety, hazard response, and ecosystem predictions. It will include assessment of current and future variability of the coastal terrestrial and marine ecosystems and the geophysical environment and will be linked with K-12, undergraduate, and graduate programs, as well as outreach educational programs.

Serving a growing number of Alaskans

The development of meaningful UAF biomedical research programs (including EPSCoR, BRIN, COBRE, and SNRP) has provided needed infrastructure and capacity to expand health and medical research that will be meaningful to the residents of Alaska. The sea-air-land modeling and observing network will provide classical education as well as continuing science education and outreach programs to Alaska communities with an emphasis on Alaska Native communities.

- EPSCoR – Experimental Programs to Stimulate Competitive Research
- BRIN – Biomedical Research Infrastructure Network
- COBRE – Center of Biomedical Research Excellence
- SNRP – Special Neuroscience Research Program

Major Component Accomplishments in 2003

Unity in promoting communication and collaboration

UAF glaciologists garnered national and international attention following their published report in the journal *Science*. Keith Echelmeyer and co-researchers used a laser measuring device to reveal that many Alaska glaciers are melting dramatically. – Geophysical Institute

With critical assistance from the U.S. Army's Fort Wainwright 4-123rd Aviation B Company, Roland Gangloff led a pair of expeditions to remote sites in northern Alaska to excavate remarkable specimens including an intact ichthyosaur from the Howard Pass area in the Brooks Range, and a pachyrhinosaur skull from along the Colville River. – University of Alaska Museum

The 7.9 Alaska earthquake of November 3, 2002 caused people from around the world to seek information about the quake. UAF website traffic dramatically increased in the days following. The University of Alaska Fairbanks Alaska Earthquake Information Center website offered up-to-date information, as well as links to sites that provide safety and preparedness tips. Visits to the website increased from fewer than 20,000 hits the day before the quake to nearly 480,000 hits on November 3 and 800,000 hits the day after. – Geophysical Institute

A cooperative agreement was established between University of Alaska Fairbanks and Russia's Saint Petersburg State University. The agreement includes plans for exchanging faculty, scientific personnel, undergraduate and graduate students and administrative personnel; and for organizing conferences, seminars, workshops and other academic activities of mutual interest. – Institute of Arctic Biology

The Subsurface Science Graduate program provided funding to the Graduate School for two new, three-year graduate fellowships; this program will fund additional Ph.D. students in 2003. The program is a long-term collaborative effort by the universities of the Inland Northwest Research Alliance, funded by the U.S. Department of Energy, to enhance research and education in the sciences investigating the uppermost few hundred meters of the Earth's crust. Participants conduct research supervised by University of Alaska Fairbanks faculty members and take courses via distance delivery with faculty and students located in Alaska, Idaho, Montana, Washington, and Utah. - Institute of Northern Engineering, College of Science, Engineering and Mathematics, Graduate School

Children from 70 Alaska schools in the Global Learning and Observations to Benefit the Environment program benefit from learning about science and natural resources as they participate in actual research projects. The program incorporates Native ways of knowing into western science. – School of Natural Resources and Agricultural Sciences

Holland America Westours, the Alaska Bird Observatory and the UA Museum's 2003 joint partnership provided special daily summer tours at the Large Animal Research Station. Walkway and observation area construction was underwritten in part by a grant from Holland America Westours Foundation. – Institute of Arctic Biology

International research involves University of Alaska Fairbanks, Russia and Japan, using the ice-breakers, the *Kapitan Dranitsyn*, for observational data. Japan's Earth Simulator and Japanese university researchers have established a strong consortium for many joint projects conducted at Institutional Arctic Research Centers. - Institutional Arctic Research Centers

Institutional Arctic Research Centers and the Japan Aerospace Exploration Agency established the International Observatory of the North, which analyzes data from polar-orbiting satellites. - Institutional Arctic Research Centers

This National Science Foundation has funded the Mammal Network Information System to give researchers access to 17 museum specimen databases through one Internet site. – University of Alaska Museum

Several organized research units collectively and independently provide information to improve the understanding of global climate variability and education outreach. – Institutional Arctic Research Center, Agricultural and Forestry Experiment Station, Geophysical Institute

The Arctic Region Supercomputing Center and the Geographic Information Network for Alaska are exploring new ways to display massive data sets and visualizations of natural phenomena in large-scale/virtual reality venues. – Arctic Region Supercomputing Center, Geophysical Institute

Focus on Pacific salmon: in the U.S. Global Ecosystem Dynamics Northeast Pacific Program examines oceanic survival of species as a function of coastal influences. – School of Fisheries and Ocean Sciences

Accountability to students, faculty, staff, alumni, and the diverse peoples of Alaska.

Many records were broken during the 2002-2003 academic year: 36 Ph.D. degrees and 163 master's degrees were awarded. Doctoral student enrollment for fall 2002 reached 200 for the first time. Collaborative Ph.D. enrollment of students based at University of Alaska Anchorage is growing, with nine students for fall 2002. Overall, graduate student enrollment in fall 2002 was 918, up 10 percent from 2001. University of Alaska Fairbanks graduate enrollment has increased 30 percent during the last five years.

Production of the Aurora Alive CD contributes to middle school multimedia science curriculum. – Geophysical Institute

Leadership for Alaska's people and institutions

Syun-Ichi Akasofu was awarded the Order of the Sacred Treasure, Gold, and Silver Star, by the Emperor of Japan in recognition of his contributions toward promoting friendly relations between Japan and the U.S. – International Arctic Research Center

Thomas Marr, professor of bioinformatics and computational biology, is newest of four President's Professors at University Alaska Fairbanks. Marr joins John Walsh in global climate change, Gordon Kruse in fisheries and oceanography and Buck Sharpton in remote sensing. The President's Professors program is funded through a settlement with major North Slope oil producers. – Institute of Arctic Biology/Arctic Region Supercomputing Center

New grants from the National Endowment for the Humanities supported archival work and cataloging for the Alaska Native Language Center and UA Museum. – Alaska Native Language Center /University of Alaska Museum

The Center for Alaska Native Health Research, under the direction of Psychology Professor Gerald Mohatt, is engaged in a major new biomedical initiative funded by the Department of Health and Human Services to address the needs of Alaska Native peoples through research in genetics, epidemiology and bioinformatics, and culture and behavior. – Psychology

A very successful new seminar series on "Leadership in Action" drew enthusiastic participants from both the university and the Fairbanks community. - Graduate School

President George W. Bush appointed Susan Sugai to the United States Arctic Research Commission, which recommends national arctic research policy. – School of Fisheries and Ocean Sciences

University of Alaska Fairbanks, the National Oceanic and Atmospheric Administration, the National Marine Fisheries Service, the Alaska Department of Fish and Game and the Moss Landing Marine Lab are collaborating to assess deep coral and sponge habitat in the central Aleutians as possible commercial fish habitat. – School of Fisheries and Ocean Sciences

Douglas Reynolds, associate professor of economics, took unpaid leave to work with the Alaska Legislature researching issues surrounding the proposed natural gas pipeline. Other School of Management faculty also worked as outside consultants on the project. The final report was presented to Senator John Torgerson, Chair of Joint Natural Gas Pipeline Committee, in August 2002. – School of Management

The Provost's Office further developed and expanded its undergraduate research competition.

The Office of Sponsored Programs hired staff to forge better links between research and undergraduate education and community outreach.

Excellence in programs and services

The passage of Proposition C on the November general election ballot served as a vote of confidence from the citizens of Alaska. With the support of Alaskans, University of Alaska Fairbanks can proceed with planning and constructing badly needed facilities on West Ridge. With growing enrollments and increases in federal research dollars, the bond package allows University of Alaska Fairbanks to build upon its strengths and unique features as a world-class teaching, research and public service institution.

The FY03 construction season started with initiation of University of Alaska Fairbanks's construction on the \$16 million West Ridge Research Building and the \$7.5 million West Ridge Utilidor Extension. University of Alaska Fairbanks's FY03 construction activity also included the University of Alaska Museum expansion, the U.S. Department of Agriculture Subarctic Research Facility and the Rasmuson Library revitalization.

The University of Alaska Fairbanks student steel bridge team took first place in regional competitions, and placed sixth nationally. The 104-pound bridge assembles in less than two minutes and holds a weight of one ton. – Institute of Northern Engineering, College of Science, Engineering and Mathematics

Mechanical Engineering Professor Hong Liang was selected to receive a CAREER award from the National Science Foundation. She will receive \$450,000 over the next five years to fund research activities at University of Alaska Fairbanks. – Institute of Northern Engineering/College of Science, Engineering and Mathematics

Five School of Management students were selected for the highly competitive Permanent Fund internships in the U.S. and Europe. Of 48 applicants from eight schools, University of Alaska Fairbanks students received five out of the 13 available internships. – School of Management

Arctic Region Supercomputing Center, Associate Director Barbara Horner-Miller was elected chair of the 2006 International High Performance Supercomputing and Networking Conference. – Arctic Region Supercomputing Center

Hans Nielsen used a special camera that records at a rate of 1,000 frames per second to capture the Leonid meteor showers on film. The unique images show the formation of a parabolic, shock-like structure around a meteor that had never been seen before. – Geophysical Institute

Arctic Region Supercomputing Center received a Next-Generation Internet grant to install a computer-assisted virtual environment in the Rasmuson Library as part of the new virtual reality Discovery Laboratory. Users can explore virtual environments and conduct research in areas such as computer-user interfaces, tsunami inundation and the aurora borealis. – Arctic Region Supercomputing Center

Donald (Skip) Walker, Institute of Arctic Biology professor and director of the Alaska Geobotany Center, served on the National Academies National Research Council Committee on Cumulative Environmental Effects of Alaska North Slope Oil and Gas Activities. He is also heading a \$2.8 million project funded by the National Science Foundation to study frost-boil ecosystem biocomplexity. – Institute of Arctic Biology

International Arctic Research Center researchers published five comprehensive lead articles in the American Geophysical Union's weekly publication *EOS*, widely read by geophysicists around the world. This is an extraordinary achievement for an institution that was established only three years ago. – International Arctic Research Center

With the addition of more than 800 dinosaur bone and teeth specimens recovered from two sites on the Colville River, the museum now holds the single largest collection of polar dinosaurs in the world. – University of Alaska Museum

Accessibility for all Alaskans

College of Science, Engineering and Mathematics was active in community and K-12 outreach programs administering the Alaska Native Science and Engineering Program, the University of Alaska Fairbanks Alaska Summer Research Academy, Science Potpourri, University of Alaska Fairbanks on the Road: Science Education Outreach in Nome and Kotzebue, and the Annual Engineering Week Community Open House. College of Science, Engineering and Mathematics also supports activities such as the Alaska Statewide High School Science Symposium, Fairbanks District Science Fair, Howard Luke Science Camp, Interior Alaska Native Science and Engineering Fair and year-round K-12 class tours of College of Science Engineering and Mathematics laboratory facilities. – College of Science, Engineering and Mathematics

Together with the Geophysical Institute, International Arctic Research Center produced "What is the Future of the Arctic: Climate Change in Alaska," an interactive, educational, multimedia program designed for underserved minority children. – International Arctic Research Center/Geophysical Institute

With funding from the U.S. Department of Commerce Technology Opportunities Program, the museum extended its rural outreach initiative to include bringing digital video cameras and editing technology to rural museums, cultural centers and public schools to help document the lifestyles and settings of Alaska's rural communities. – University of Alaska Museum

Dedication to serving community needs

University of Alaska Fairbanks for Youth received a \$22,000 grant to sponsor legislation dealing with an animal dumping bill. Some of the money will also be used on the Kenai Peninsula to sponsor an after-school program. – Cooperative Extension Service

The Integrated Pest Management program answered over 10,000 inquiries on garden, tree and household pests in FY03 from clients throughout the state. The University of Alaska Fairbanks Cooperative Extension Service Publications and Distribution Center distributed 133,339 publications throughout Alaska or 1,562,312 printed pages. Cooperative Extension Service also produced a 300-page domestic water use guide to give every extension office in Alaska, Washington, Oregon and Idaho a reference book for common questions about water quality. A CD version is planned. – Cooperative Extension Service

As part of the Alaska Department of Environmental Conservation Village Safe Water program, Cooperative Extension Service initiated a pilot program in the rural villages of Eek, Shishmaref, Tanana and other rural communities to test a new hand pump application for drawing drinking water in private residences. The pump will eliminate unsafe water-drawing practices that increase water contamination and community exposure to infectious diseases. – Cooperative Extension Service

Cooperative Extension Service began manufacturing and testing spruce/plastic composite landscaping boards. This USDA-funded project uses harvested spruce bark beetle-killed trees to produce a wood/plastic composite board that can be used in landscaping and gardening. A similar composite board is already used for park benches and picnic tables. – Cooperative Extension Service

The Center for Nanosensor Technology completed phase one of a multi-year project to develop microsensors and microsensor arrays for university, government and commercial applications. This program is providing state-of-the-art facilities for research and applications at University of Alaska Fairbanks. Government funding will also develop a Product Design and Development Center that will facilitate Alaskan business development and collaboration with University of Alaska Anchorage's College of Business.

Professor Geoff Wheat is working with the University of Hawaii to examine the chemistry of mud volcanoes to help predict the magnitude of potential earthquakes allowing governments to mitigate possible disasters. Wheat is also involved in studies to determine underwater slope stability to help scientists predict tsunamis. – School of Fisheries and Ocean Sciences

Advanced technology meshes with traditional cultures in reindeer production thanks to University of Alaska Fairbanks Reindeer Research program's efforts in radio collaring and satellite telemetry. Herders can now track their animals electronically – "the best thing to happen since the advent of the snow machine," say the herders. – School of Natural Resources and Agricultural Sciences

Salmon prices and harvests are volatile in Bristol Bay. School of Natural Resources and Agricultural Sciences analyzed the feasibility of an agricultural crop insurance program for a commercial fishery. For the first time, a risk insurance program has been implemented for Bristol Bay fishers. – School of Natural Resources and Agricultural Sciences

Work with the Anchorage Municipality in relation to beetle-damaged spruce laid the base for successful fire reduction in Tok this year. School of Natural Resources and Agricultural Sciences models depict fuel load and prioritize fire risk reduction. – School of Natural Resources and Agricultural Sciences

The Alaska Earthquake Information Center determined the location and magnitude of the 2002 earthquake and its aftershocks, used Global Positioning System measurements to track movements along geologic faults, and installed 26

new seismic stations to complement their existing network. With the reinforced coverage, Alaska Earthquake Information Center recorded more than 8,000 earthquakes in the first month after the 7.9 event. Based on historical Global Positioning System measurements, Geophysical Institute researchers estimated that strain has been building on the fault for about 1,000 years. – Geophysical Institute

Michael B. Harris, Institute of Arctic Biology and Department of Biology and Wildlife, is collaborating with Dartmouth College, Harvard University, Boston Children's Hospital and Yale University to investigate Sudden Infant Death Syndrome, a condition afflicting a disproportionately high percentage of Alaska infants. – Institution of Arctic Biology

Stewardship of Alaska's resources

School of Fisheries and Ocean Sciences researchers examined the availability of nearshore fish to young Steller sea lions around Kodiak Island to learn more about the decline of the western population of Steller sea lions. The study will help to evaluate nearshore fish as a limiting factor for young sea lions, and will provide information to managers on nearshore fish assemblages and habitat. – School of Fisheries and Ocean Sciences

Researchers at the School of Mineral Engineering, with British Petroleum in Alaska (BPXA), worked to determine the commerciality of North Slope gas hydrate resources. Technical advances suggest that production of natural gas from North Slope gas hydrate may be feasible. – School of Mineral Engineering

Thanks to a partnership with the U.S. Department of Agriculture, new laboratories in Fairbanks and Palmer will support research in plant genetics, collections and production practices; new "Alaska Grown" products are now emerging. – School of Natural Resources and Agricultural Sciences

The Geophysical Institute's glaciology group performed bathymetry and water temperature measurements on Hubbard Glacier, which closed off Russell Fjord from the ocean for 24 days before an outburst flooded the ice dam in summer 2002. Continuing research will be performed on the glacier, which is expected to eventually seal off the fjord, impacting fisheries in the Situk River near Yakutat. – Geophysical Institute

Studies of ocean circulation in the nearshore Beaufort Sea were conducted to guide oil-spill mitigation response plans and offshore oil development. – School of Fisheries and Ocean Sciences

A DNA-based system is being developed that could predict when or if shellfish will become contaminated with toxins before harvests. – School of Fisheries and Ocean Sciences

Studies will provide the life history of eulachon, an important subsistence fishery in coastal Alaska. – School of Fisheries and Ocean Sciences

Studies are focused on the elevated concentrations of methylmercury in pike from the lower Yukon River region. – School of Fisheries and Ocean Sciences

Studies are proceeding on the feeding biology of Steller sea lions and harbor seals at the Alaska SeaLife Center as part of the Marine Mammal Protection Act and the Endangered Species Act for Alaska sea lions. – School of Fisheries and Ocean Sciences

The museum continued partnerships with the National Park Service and the Bureau of Land Management to conduct biological inventories of lands managed in Alaska by those federal agencies. – University of Alaska Museum

Statutory and Regulatory Authority

No statutes and regulations.

Contact Information
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Fairbanks Organized Research Component Financial Summary

All dollars shown in thousands

	FY2003 Actuals	FY2004 Authorized	FY2005 Governor
Non-Formula Program:			
Component Expenditures:			
71000 Personal Services	53,033.5	51,147.2	54,384.4
72000 Travel	4,685.5	4,084.6	4,113.5
73000 Contractual	29,619.5	33,210.9	47,183.4
74000 Supplies	7,019.0	5,948.2	6,906.5
75000 Equipment	6,160.7	2,902.3	4,809.5
76000 Land/Buildings	1,126.5	0.0	0.0
77000 Grants, Claims	1,686.8	963.1	2,153.4
78000 Miscellaneous	1,024.5	14,279.8	2,224.9
Expenditure Totals	104,356.0	112,536.1	121,775.6
Funding Sources:			
1002 Federal Receipts	53,872.2	55,974.0	59,474.0
1003 General Fund Match	1,271.7	1,271.7	1,271.7
1004 General Fund Receipts	11,369.2	11,066.9	13,636.7
1007 Inter-Agency Receipts	1,791.9	3,000.0	3,000.0
1010 University of Alaska Interest Income	4.9	0.0	0.0
1039 U/A Indirect Cost Recovery	9,374.6	10,006.7	0.0
1048 University Restricted Receipts	18,742.5	25,267.1	37,943.5
1174 UA Intra-Agency Transfers	5,614.0	5,949.7	6,449.7
1176 Science and Technology Endowment Fund	2,315.0	0.0	0.0
Funding Totals	104,356.0	112,536.1	121,775.6

**Summary of Component Budget Changes
From FY2004 Authorized to FY2005 Governor**

All dollars shown in thousands

	<u>General Funds</u>	<u>Federal Funds</u>	<u>Other Funds</u>	<u>Total Funds</u>
FY2004 Authorized	12,338.6	55,974.0	44,223.5	112,536.1
Adjustments which will continue current level of service:				
-Transfer GF from SYSBRA for continuation of SALRM (45-4-008)	2,315.0	0.0	0.0	2,315.0
-UA FY04 Base Allocation Transfers (45-4-009)	0.0	3,500.0	774.5	4,274.5
-UA FY04 Base Allocation Transfers (45-4-009)	-6.7	0.0	0.0	-6.7
-UA Transfer Incremental Funding to Allocations (ADN 45-4-005)	261.5	0.0	0.0	261.5
-UA FY04 Transfer NGF to Allocations (45-4-013)	0.0	0.0	2,395.2	2,395.2
FY2005 Governor	14,908.4	59,474.0	47,393.2	121,775.6

**Fairbanks Organized Research
Personal Services Information**

Authorized Positions		Personal Services Costs		
	<u>FY2004</u>	<u>FY2005</u>		
	<u>Authorized</u>	<u>Governor</u>		
Full-time	503	503	Annual Salaries	32,086,790
Part-time	23	23	Premium Pay	0
Nonpermanent	0	0	Annual Benefits	12,513,004
			Labor Pool(s)	12,084,150
			<i>Less 4.06% Vacancy Factor</i>	<i>(2,299,544)</i>
Totals	526	526	Total Personal Services	54,384,400

Position Classification Summary

Job Class Title	Anchorage	Fairbanks	Juneau	Others	Total
Able Seaperson	0	3	0	0	3
Administrative Assistant	0	16	0	1	17
Administrative Clerk	0	0	0	2	2
Administrative Secretary	0	1	0	0	1
Analyst	0	0	0	1	1
Applications Specialist	0	1	0	0	1
Assistant Director	0	1	0	0	1
Assistant Director(Admin)	0	1	0	0	1
Assistant Manager	0	1	0	0	1
Assistant Professor	0	41	1	4	46
Assistant To	0	3	0	0	3
Assistant To (Nonexempt)	0	1	0	0	1
Associate Director (Admin)	0	2	0	0	2
Associate Professor	1	17	1	3	22
Chief Scientist	0	1	0	0	1
Compositer	0	1	0	0	1
Contracting Officer	0	1	0	0	1
Coordinator (Exempt)	0	8	0	0	8
Coordinator (Nonexempt)	0	9	0	0	9
Crafts & Trades I (CT1)	0	4	0	3	7
Crafts & Trades II (CT2)	0	3	0	0	3
Crafts & Trades II(CT2)	0	1	0	0	1
Crafts & Trades III (CT3)	0	5	0	1	6
Crafts & Trades III(CT3)	0	1	0	0	1
Custodian (Cust)	0	5	0	0	5
Data Base Specialist (Exempt)	0	2	0	0	2
Data Control Clerk	0	1	0	0	1
Data Specialist	0	1	0	0	1
Director (Academic)	0	4	0	0	4
Director (Admin)	0	7	0	0	7
Director (Admin/Non Executive)	0	1	0	0	1
Drafter	0	1	0	0	1
Engineer	0	1	0	1	2
Executive Officer	0	5	0	0	5
Executive Secretary	0	1	0	0	1
Facilitator	0	2	0	0	2
Field Operations Supervisor	0	1	0	0	1
First Mate	0	0	0	1	1
Fiscal Manager 3	0	1	0	0	1
Fiscal Officer	0	2	0	0	2

Position Classification Summary						
Job Class Title	Anchorage	Fairbanks	Juneau	Others	Total	
Fiscal Professional 1	0	1	0	0	1	
Fiscal Professional 2	0	3	0	0	3	
Fiscal Technician 1	0	1	0	0	1	
Fiscal Technician 2	0	8	0	1	9	
Fiscal Technician 3	0	3	0	1	4	
Fiscal Technician 4	0	1	0	0	1	
Human Resource Generalist	0	2	0	0	2	
Information Officer	0	1	0	0	1	
Instructor	0	1	0	0	1	
IS Manager 1	0	1	0	0	1	
IS Manager 2	0	0	0	1	1	
IS Manager 3	0	3	0	0	3	
IS Manager 4	0	2	0	0	2	
IS Net Technician 6	0	3	0	0	3	
IS Net Technician 7	0	1	0	0	1	
IS Ops Technician 3	0	9	0	1	10	
IS Ops Technician 4	0	2	0	0	2	
IS Professional 1	0	3	0	0	3	
IS Professional 2	0	6	0	0	6	
IS Professional 3	0	37	0	1	38	
IS Professional 4	0	20	0	0	20	
IS Professional 5	0	3	0	0	3	
Lab Assistant	0	1	0	0	1	
Launch Officer	0	1	0	0	1	
Library Asst	0	3	0	0	3	
Library Technician	0	1	0	0	1	
Maint Service Worker IV (MSW4)	0	2	0	0	2	
Maint Service Workr III (MSW3)	0	1	0	2	3	
Maint Service Workr III (MSW4)	0	0	0	1	1	
Maintenance Serv Worker (MSW1)	0	0	0	1	1	
Manager	0	16	0	1	17	
Marine Chief Engineer	1	0	0	1	2	
Marine Engineer First Asst	0	0	0	1	1	
Master (Ship)	0	0	0	1	1	
Office Manager	0	3	0	0	3	
Personnel/Payroll Technician	0	1	0	0	1	
Post Doctoral Fellow	0	6	0	0	6	
Professor	0	33	4	5	42	
Professosr	0	1	0	0	1	
Program Developemnt Spec	0	1	0	0	1	
Program Director	0	1	0	0	1	
Programmer	0	2	0	0	2	
Project Engineer	0	1	0	0	1	
Property Officer	0	1	0	0	1	
Public Relations Coordinator	0	0	1	0	1	
Publication Info Specialist	0	2	0	0	2	
Purchasing Clerk	0	1	0	0	1	
Research Analyst	0	3	0	0	3	
Research Assoc Professor	0	5	0	0	5	
Research Associate	0	6	0	0	6	
Research Asst Professor	0	4	0	0	4	
Research Faculty	0	2	0	0	2	
Research Professional 1	0	2	0	0	2	
Research Professional 2	0	14	0	1	15	
Research Professional 3	0	7	0	0	7	

Position Classification Summary						
Job Class Title	Anchorage	Fairbanks	Juneau	Others	Total	
Research Professional 4	0	5	0	0	5	
Research Professional 5	0	1	0	0	1	
Research Professor	0	8	0	0	8	
Research Technician	0	7	0	0	7	
Research Technician 1	0	2	0	0	2	
Research Technician 2	0	9	0	1	10	
Research Technician 3	0	12	0	6	18	
Research Technician 4	0	10	0	1	11	
Steward	0	0	0	1	1	
Supervisor (Exempt)	0	4	0	1	5	
Supervisor (Nonexempt)	0	2	0	0	2	
Supervisor(Nonexempt)	0	1	0	0	1	
Support Svcs Specialist(Expt)	0	1	0	0	1	
System Analyst	0	1	0	0	1	
Systems Programmer	0	2	0	0	2	
Systems/Software Engineer	0	9	0	0	9	
Technical Secretary	0	2	0	0	2	
Technician	0	5	0	0	5	
Writer/Developer (Nonexempt)	0	1	0	0	1	
Totals	2	471	7	46	526	