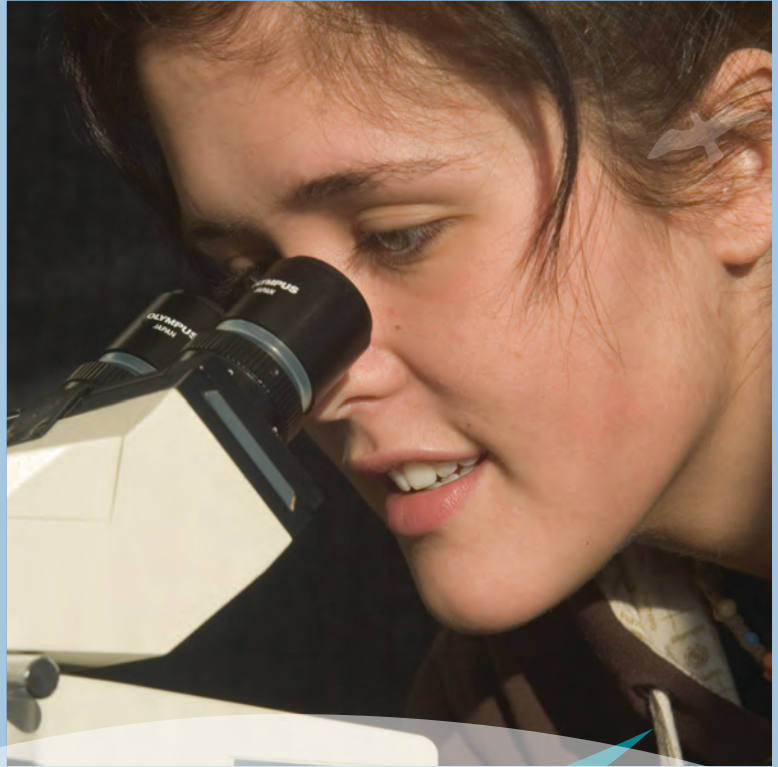


UNIVERSITY OF ALASKA FAIRBANKS

LIFE SCIENCES



■ **Life Sciences**

Classroom and Lab Facility

An integrated research
and teaching facility
for all of Alaska



Alaska's First University

BY THE NUMBERS

UAF ranks in the **top 100** of the nearly 700 U.S. universities that conduct research, in the **top 70** among public universities, and in the **top 20** among public universities without medical schools.



A recent McDowell Group study shows that **for every \$1 million invested** by the state in university research, **149 jobs** are created with **\$4.8 million in payroll** and another **\$1.5 to \$2 million in purchases**. Since **UAF accounts for 90 percent of all UA research**, we are the primary contributor to those jobs and purchases.

INTRODUCTION

The University of Alaska's Life Sciences Classroom and Lab Facility will replace cramped and antiquated research and teaching space at UAF. The building will integrate teaching and research in biological, wildlife and biomedical sciences; improve the university's competitive research position; strengthen Alaska's economy; improve undergraduate and graduate training for necessary careers in the biological sciences; and support research relevant to Alaskans and the nation.

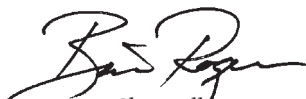
Life sciences includes research on obesity, diabetes, sudden infant death syndrome, avian flu, food safety and nutrition, heart-attack and brain-injury treatments, and suicide and substance abuse prevention; and undergraduate and graduate programs covering a broad range of the biological sciences, including human biology, cell and molecular biology, genetics, mammalogy, and wildlife biology and conservation.

Life sciences trains biologists who improve the quality of life for all Alaskans. Graduates include doctors, nurses, dentists and physical therapists; veterinarians; teachers; and biologists in all of the state and federal agencies in Alaska (e.g. U.S. Fish and Wildlife Service, Alaska Department of Fish and Game, National Park Service) which manage our natural resources for their scenic value and hunting and fishing. Many life sciences graduates remain in Alaska and continue to contribute to the state's economy and way of life.

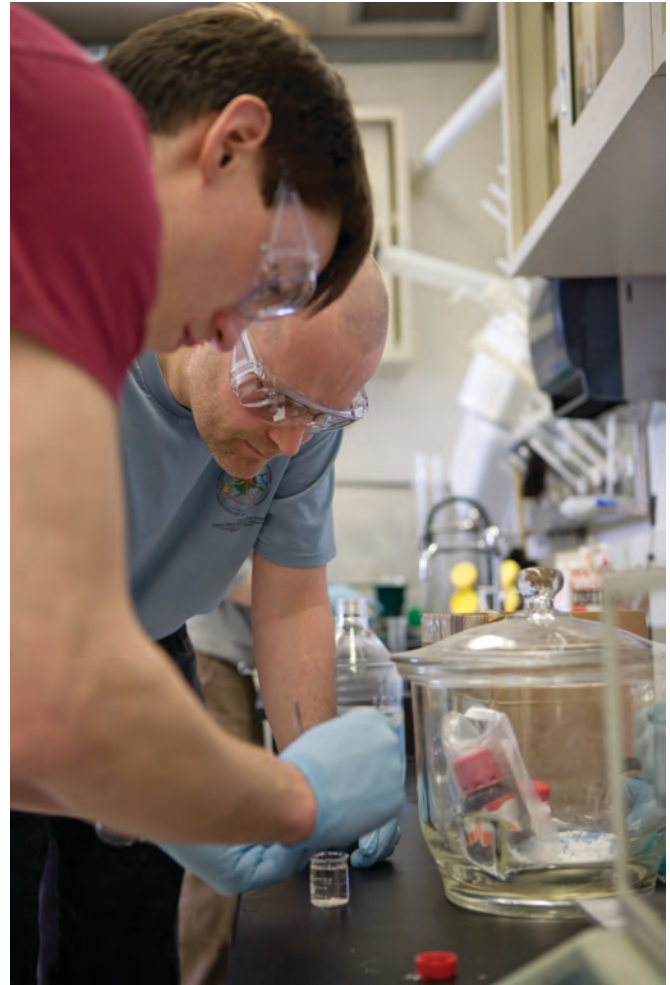
The facility is UA's top priority for new construction, and understandably so when you consider the statewide impact of the teaching and research that will take place within its walls.

Enrollment and research in this area has been surging, but we've packed too many people into too-small classrooms and laboratories for too long already.

The Life Sciences Classroom and Lab Facility is needed now — for all of Alaska.



Brian Rogers, Chancellor, University of Alaska Fairbanks



Undergraduate student Sargent Shriver (red shirt) works with Professor Abel Bult-Ito mixing drugs to feed mice as part of his neuroscience research in the Arctic Health Research Building. Below: Exchange student Zachary Brown collects spawning salmon from the Salcha River during a fisheries health study.



= Teaching for Alaska

UAF's biological sciences program prepares students for high-demand careers and advanced degrees in all areas of biological sciences including animal and human health, wildlife management, physiology, ecosystems studies and others. As the state's only doctoral degree-granting institution, UAF's expertise in basic biological research provides an exceptional opportunity for students to learn in an environment that integrates teaching with cutting edge research. Increasing numbers of undergraduate students are combining coursework with a faculty-guided research experience.

All of UAF's biology teaching facilities date from the 1970s or earlier. Although there have been some renovations, they have not been adequate to accommodate the 25 percent growth in enrollment over the past decade, or to ensure the employment competitiveness and competency of Alaska graduates in biological disciplines that are undergoing dramatic changes.



Since 1999, enrollments in biology and wildlife have increased by 25 percent while there has only been a 5.5 percent increase in teaching space, which was achieved through reassigning existing space.

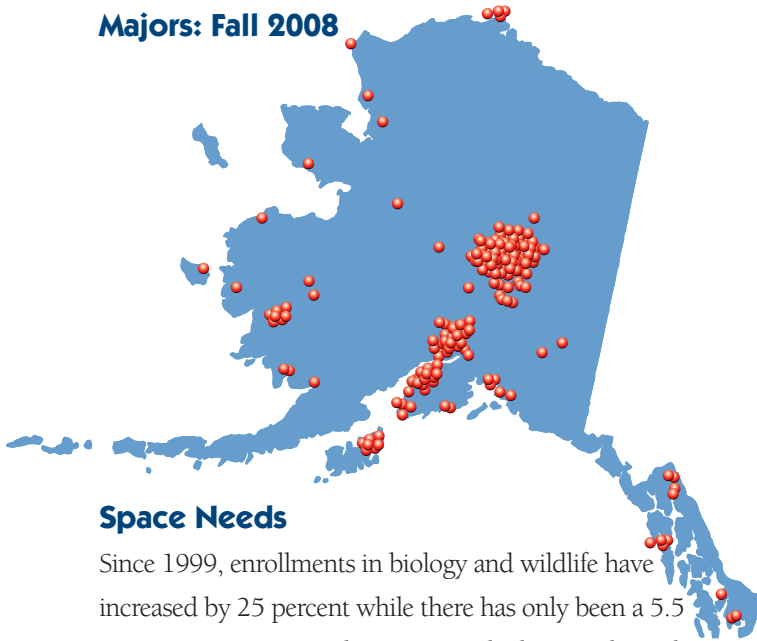
The Life Sciences Classroom and Lab Facility will provide versatile state-of-the-art laboratories to support research and teaching in cell and molecular biology, physiology, infectious diseases and neurobiology; several classrooms, including a 150-seat auditorium; and a centralized instructional and administrative home for the Biology and Wildlife Department. The facility will allow continued growth of life sciences research and academic programs. Growth in the life sciences research and graduate programs (grants and student numbers) is nearly capped now because of space limitations.

Students have been turned away from classes and labs because of inadequate space.

Alaskan Student Needs

- Of the 444 undergraduates majoring in biology and wildlife programs in FY08, close to 75 percent are from Alaska.
- More than 40 percent of all Alaska biology and wildlife students are from outside the Fairbanks North Star Borough.
- Biology courses support students in associated fields such as chemistry, biochemistry and psychology. Biology courses are popular with students in all majors who take them to fulfill the science core curriculum requirement.

Community of Origin of Biology and Wildlife Majors: Fall 2008



Space Needs

Since 1999, enrollments in biology and wildlife have increased by 25 percent while there has only been a 5.5 percent increase in teaching space, which was achieved through reassigning existing space. UAF's biological sciences program requires more adequate space for this burgeoning area of studies. Students have been turned away from classes and labs because of inadequate space. **For example, BIOL 342 (Microbiology), a course required for pre-med and other related degrees, turns away students due to the small room size for teaching the lab.**

Personnel with the Alaska Bird Observatory measure and band migratory birds at the Creamer's Field Migratory Waterfowl Refuge. Pictured is a slate-colored junco.

Positive Outcomes

Graduates of the UAF biology and wildlife program go on to careers across the state — and beyond — in jobs that affect all Alaskans. Our graduates have become physicians, dentists, nurses, physical therapists, physician's assistants and veterinarians.

We have produced scientists such as David R. Klein and George Schaller who have received national and international recognition for their work in wildlife biology. Our program has trained commissioners for wildlife (Jim Brooks, Ronald Skoog) and natural resources (Bob LeResche) as well as more than 40 other positions in research and management for the state of Alaska, including the Department of Fish and Game, the Department of Natural Resources, the Department of Environmental Conservation, and the Department of Transportation and Public Facilities.

Our graduates hold positions at the U.S. Department of the Interior (National Park Service, U.S. Fish and Wildlife Service, U.S. Geological Survey) and in private-sector organizations (Audubon, Ducks Unlimited, Defenders of Wildlife, World Wildlife Fund, and ABR, Inc. Environmental Research and Services).



LIFE SCIENCES

= Research for Alaska and Alaskans

Lack of sufficient research space continues to hamper UAF life sciences research programs. After growing rapidly between 2000 and 2006, research funding has been flat since 2007. Since UAF researchers secure 90 percent of all UA system research grants, and many research projects are collaborations between UAF and UAA, this single project has a great financial impact on the entire state of Alaska.

Founded in 1963, the Institute of Arctic Biology advances basic and applied knowledge of high-latitude biological systems through the integration of research, student education and service to the state of Alaska and beyond. IAB supports research and graduate education in wildlife, physiology, genetics and evolutionary biology, ecology and ecosystems, biomedicine, and bioinformatics and computational biology.

UAF's future research success will be determined by the construction of this important facility.

Life Sciences = Life Saving

Alaskans are front-line recipients of assaults from environmental agents causing disease. The health impacts of global climate change stem in part from the spread of infectious agents including new and emerging diseases, mobilization of contaminants, and shifting availability and quality of subsistence foods. Alaska is subject to extreme seasonality, which can be challenging to humans and animals alike. Nowhere else is the concept of "One Health" more relevant than Alaska, where the health of people, animals and the environment are inextricably linked.

UAF life sciences research includes studies on environmental agents and diseases, with a focus on diseases of public health importance to the state, such as the avian influenza virus and diabetes.

UAF life science research includes neuroscience studies that are important to Alaskans, such as understanding and

preventing sudden infant death syndrome and protecting against brain injury following heart attack or stroke.

UAF life science research includes ecological and wildlife research in areas such as understanding climate change effects on Alaska and other northern ecosystems, and the occurrence and risk of contaminants in wildlife and in subsistence foods.

Additionally, the co-location of research with the teaching component of life sciences allows for better collaboration between the two areas.

UAF life science research is real and relevant to the people and the state of Alaska.

The Life Sciences Classroom and Lab Facility is the final structure of a trio of interconnected buildings on the UAF campus to house and support the university's developing programs in life science research, specifically the study of disease-causing agents.

The **Biological Research and Diagnostic (BiRD) building**, completed in early 2007, provides the animal research support infrastructure to work with animal models of human disease.

UAF's research success
depends on
immediate funding
for the Life Sciences
Classroom and Lab
Facility.

Since 2001 IAB has shown more growth in research expenditures than any other research unit in the UA system.

The new state virology laboratory is a key part of this effort. Connectivity to both BiRD and the new life sciences facility is integral to the new collaborative research effort between the state and the university in areas such as state health and environmental safety.

This trio of buildings is an example of what can be done when the university and the state work together. Fostering and promoting an integrated working relationship between the university's life sciences program and the state's public health laboratories will significantly benefit human health in Alaska.

“Life” Partners

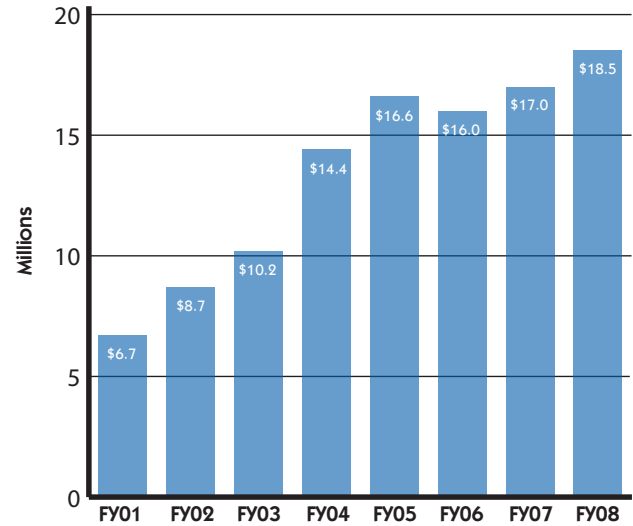
Life sciences research at UAF is conducted in partnership with many local, state and national agencies, which have included the following over the years:

- Alaska Department of Environmental Conservation
- Alaska Department of Fish and Game
- Alaska Department of Health and Social Services
- BP Exploration Alaska Inc.
- Bureau of Indian Affairs
- Bureau of Land Management
- Kenai Peninsula Borough
- National Institutes of Health
- National Park Service
- National Oceanic and Atmospheric Administration
- National Science Foundation
- North Slope Borough
- U.S. Geological Survey
- U.S. Fish and Wildlife Service
- U.S. Department of Agriculture
- U.S. Department of Health and Human Services

Life Sciences Research Expenditures

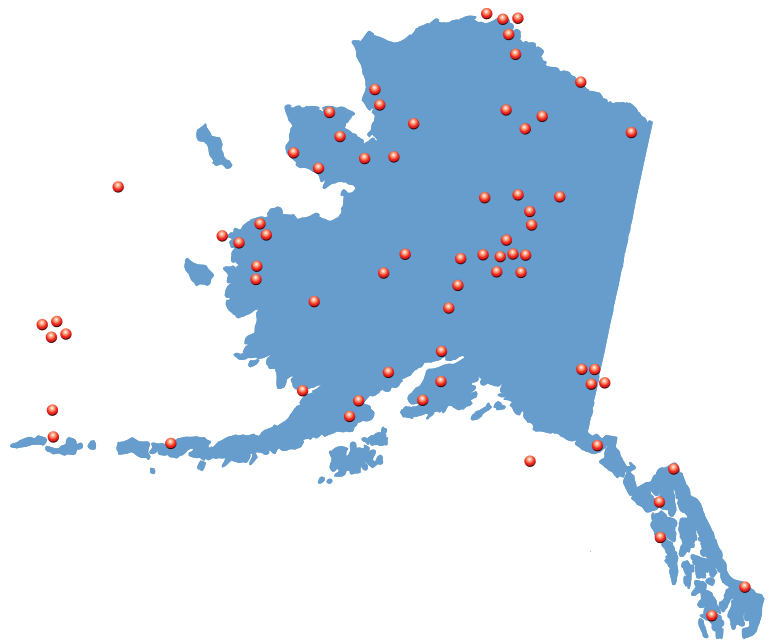
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IAB Research Expenditures



Reaching Across the State

Areas in Alaska where life science research is conducted:



LIFE SCIENCES

= Alaska

An integrated research and teaching facility for all of Alaska

The Life Sciences Classroom and Lab Facility will allow UAF to:

- address a critical shortage of instructional classrooms and research lab space for life sciences programs, UAF's most popular degree programs.
- meet the goals of the UAF Strategic Plan 2010 by providing required infrastructure for research and academic programs.
- provide space to attract and retain talented research investigators to secure competitive research grants.

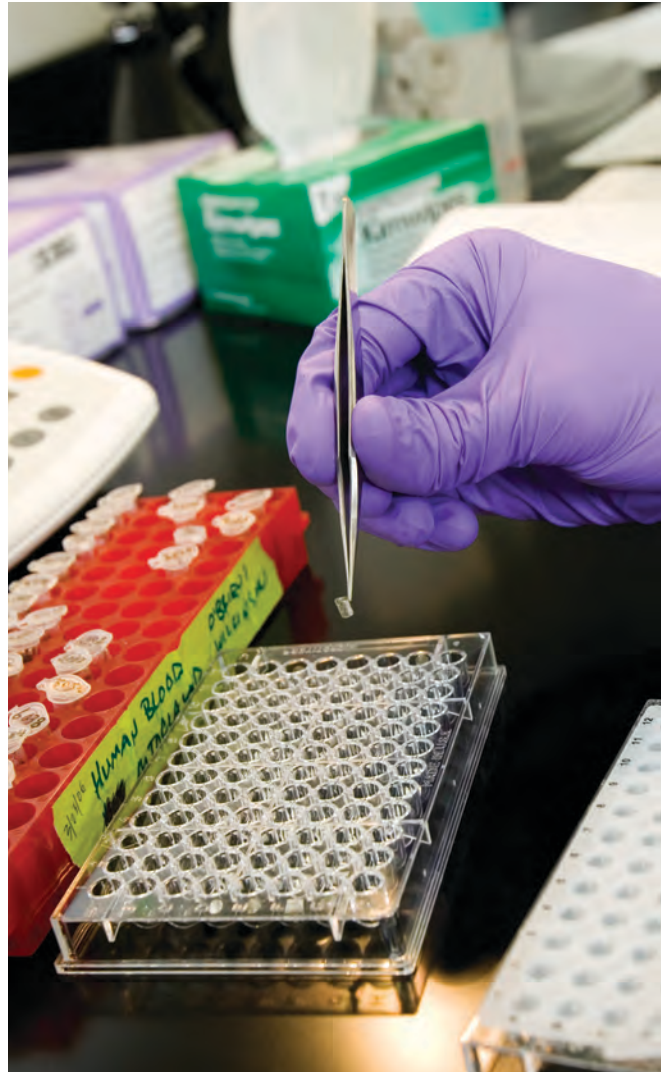
The Life Sciences Classroom and Lab Facility is needed for Alaska to maintain high standards of instruction, training and research.

Project Scope

The Life Sciences Classroom and Lab Facility will feature modern academic space for more than 600 biology and wildlife degree students and more than 1,200 students who take biology courses each year.

Research space will feature a series of labs for as many as 12 lead researchers who will also employ seven to 10 scientists each.

The facility will connect 40,000 square feet of academic space with 57,700 square feet of research space. Once complete, space in other buildings will become available for renovation and reassignment for other programs, creating a domino effect that will benefit all students, staff and faculty at UAF.



FY11 Capital Budget Request

New construction	\$88 million general fund
New construction ...	\$20.6 million nongeneral fund
Capital request	\$108.6 million

BY THE NUMBERS

Compared to the mid-1990s, UAF now conducts **four times** the level of **research** activity with only **25 percent** more space.



Investment in **life sciences research** provides a high return; **every \$1** in state funds leverages an average of **\$6** in federal **research funding**.

LIFE SCIENCES Classroom and Lab Facility



Alaska's First University

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