The University of Alaska Fairbanks clearly is America’s arctic university.

As we head into our 90th year, we have positioned ourselves as a premier, international research university focused on issues of the circumpolar North. That’s our unique brand, defining our special niche and focusing our research, education and service.

The term research “university” means far more than the West Ridge of the Fairbanks campus. “University” should imply to all of us an emphasis on teaching and learning; scholarship across disciplines; research and discovery; and outreach and service. All such elements at a university are undergirded by a liberal education, rooted in the arts, humanities and social sciences. This rich mix and catalytic environment make us a university. Whether they study engineering, music or accounting in Fairbanks, Dillingham, Bethel, Kotzebue or Nome, our students—guided by our outstanding faculty—are preparing for work, life and citizenship.

Steve Jones, UAF Chancellor

UAF’s Six Pathways to Success

- Student success
- Emphasis on quality
- Research
- Economic development
- Philanthropy
- Enrollment
Year in Review

Laying a foundation today for success tomorrow

UAF developed Strategic Plan 2010, which, along with a revised mission statement, new vision and core values statements, will help guide the university over the next few years.

Drawing upon the expertise of its many friends and supporters from throughout the state and country, UAF has formed a Vision Task Force. These 55 leaders and thinkers will first meet in March 2007 to help begin charting a 10-year path for the university.

UAF awarded 1,065 degrees, certificates and licenses during the 84th commencement in May 2006.

The completion of Kotzebue’s Chukchi Campus nursing and science addition was celebrated with a formal ribbon cutting in January 2006.

The Cold Climate Housing Research Center facility opened on the Fairbanks campus. CCHRC will collaborate with UAF’s Cooperative Extension Service to develop energy-efficient and cost-effective building technologies for the world’s cold climate regions.

The University of Alaska Museum of the North opened its new addition and remodeled areas during FY06, including laboratories, exhibit spaces and a museum cafe.

Learning and discovery

The Tanana Valley Campus initiated Project RAVE—Rural Alaska Vocational Exploration—which introduces rural Interior high school students to TVC’s career, technical and allied health certificate programs.

The psychology department instituted the Rural Behavioral Health Training Academy for rural mental health professionals.

UAF hosted Creating Alaska, which celebrated 50 years of Alaska’s statehood with a series of commemorative events attended by the surviving constitutional delegates. The Conference of Young Alaskans echoed the original state constitutional debates and delegation.

Scientists from the School of Fisheries and Ocean Sciences discovered seven new species of marine life in the Arctic Ocean.

Mammals curator Link Olson, of the UA Museum of the North and the Institute of Arctic Biology, and undergraduate wildlife biology student Kyndall Hildebrandt conducted the DNA analysis that led to the documentation of a new genus of monkey discovered in Tanzania. The results were published in Science in May 2006.

Awards and accolades

KUAC won an Emmy Award for promotional advertising of its documentary, The 49th Star: Creating Alaska, which tells the story of Alaska’s struggle for statehood. The station was also nominated for its four-part travel series, Anywhere, Alaska.

Judith Kleinfeld, northern studies, was invited by the White House to deliver a paper on Five Strategies to Engage Boys in School.

Katey Walter, a 2006 graduate, was one of only two doctoral candidates to receive the nation’s most prestigious honor for doctoral dissertations by the Council of Graduate Schools for her Ph.D. dissertation, “Methane Emissions and Biogeochemistry of North Siberian Thermokarst Lakes.” Walter will continue her work as a UA International Polar Year postdoctoral fellow in biogeochemistry at UAF’s Institute of Arctic Biology.

The rifle team won the 2006 NCAA national championship, its eighth national title, and will host the 2007 national championship in March.
Kat Keith searches for tomorrow’s energy in Alaska’s natural resources.

Keith studies alternative energy, which usually refers to geothermal, solar, wind, biomass and hydrogen sources, but she could add herself to that list.

When she’s not studying for her engineering degree, the Honors Program student tutors calculus and differential equations for the Alaska Native Science and Engineering Program and the American Indian Science and Engineering Society. Or she’s at Chena Hot Springs Resort, monitoring geothermal wells as part of a nascent geothermal project there. In her spare time she volunteers as an EMT at a local fire station.

It’s just all in a day’s work.

Keith and her young daughter moved to Fairbanks from their homestead outside Kotzebue three years ago.

“I saw I could do an interdisciplinary program in renewable energy,” Keith explains of her decision to enroll at UAF. “Some classes I can’t take here, so I supplement from other universities, including one in Australia.”

Keith reports seeing widespread interest in renewable energy.

“There are a lot of people in the state who would like to see the university take that on as a focus. Pretty soon we’re going to see renewable energy as a mandate. Just for job security alone it would be good for us to have that for students, because the jobs are going to be there.”

Dominic Hondolero waited to get a little life experience before getting his lab experience. For him, the dual education is paying off.

When Hondolero returned to UAF in 2004 after an eight-year hiatus, his advisor introduced him to the American Indian Science and Engineering Society and the Alaska Native Science and Engineering Program. Through those groups he started working with researchers Katrin Iken and Brenda Konar at the Institute of Marine Science under the sponsorship of the Experimental Program to Stimulate Competitive Research, conducting research on marine ecology.

“Native cultures and the field of ecology have a lot of views in common,” he says, “especially the idea that people aren’t separate from the environment.”

Last spring Hondolero received a National Oceanic and Atmospheric Administration Ernest Hollings Undergraduate Scholarship. In fall 2006, he presented a paper on his research with Iken and Konar at a conference in Japan. After graduation in 2008 he is planning to go to graduate school in marine biology.

“When I started at UAF in 1994 I wasn’t sure what I wanted to do,” Hondolero says. “After a couple of years I wanted to get out and see the world. When I decided to go back to school, the least expensive option was to return to UAF, and the science programs here were strong.”

Since he was still keenly interested in science, it was a natural move. Hondolero’s break from college helped him focus his interests, and UAF helped him find his calling.
For Kelly Drew, discovering a student’s scientific aptitude is as exciting as making a scientific breakthrough.

Drew’s passion is making new discoveries, and she finds them everywhere, from under her microscope to in her classroom. In some ways, in fact, the classroom finds may be the most compelling for her. “Teaching is an opportunity to enrich my life by learning from my students and to convey to them an understanding and appreciation of science,” she says. “What I like most about teaching is discovering intellect and creativity in students otherwise overlooked by traditional observers.”

A UAF psychology graduate, Drew is now an associate professor with the Department of Chemistry and Biochemistry and the Institute of Arctic Biology. She teaches introductory chemistry and an upper-level neurochemistry class.

She also supervises undergraduate and graduate students in her lab, where she studies the effects of hibernation on the brain.

Twin passions for teaching and research have earned her accolades, among them UAF’s Outstanding Advisor Award, the Dennis Demmert Award for supporting Native and rural students, the Emil Usibelli Distinguished Award for Teaching and the Sven O.E. Ebbesson Neuroscience Award. She has also received grants from the National Science Foundation and National Institutes of Health, some designed to help increase diversity in the sciences.

“We need cultural diversity in science,” Drew says. “It facilitates scientific progress by providing new ideas, questions and approaches to problems.”

Jaunelle Celaire turns teaching into a fine art.

“I love teaching,” Celaire says. “I like being involved in the learning process. When something clicks—that’s the joyous part.”

That combination of intellect and emotion is what draws music lovers to Celaire, an assistant professor in the Department of Music. She also conducts the University Chorus, a mix of university and community singers which, she proudly notes, has nearly doubled in its membership since she began leading the group in 2003, her first year at UAF.

Celaire’s enthusiasm for her art and profession is evident in the satisfaction she takes in her students’ success.

“One of my students just won a concerto competition,” she says. “She had just started singing when I got here, and now three years later she’s winning prizes. When she won I was so excited it was almost like I’d won myself!”

Celaire admits she was hesitant about moving away from her family Outside, but after a visit to Fairbanks she knew where she wanted to be.

“The students were very outgoing, coming up and talking to me, and the faculty was very accessible, which you can’t say about every university. And I can still go out and perform so I feel I have the best of both worlds.

“I never want to stop teaching.”
GUIDO GROSSE is interested in cold dirt, the permanently frozen kind.

Permafrost all over the Arctic is melting. “My project is to quantify this degradation,” says the German researcher, an International Polar Year postdoctoral fellow. “I wanted to come to UAF because it is famous for remote sensing and polar research, and especially the combination of both.”

Using remote sensing and spatial modeling tools, Grosse will attempt to predict how—and how quickly—permafrost will degrade on a circum-Arctic scale.

Melting permafrost will affect the planet in two ways. Collapse of the soil will result in fractures in roads and the destruction of buildings. Another outcome is release of organic material.

“We don’t know how this organic material will behave as it melts—where it will go and how much of it will there be? Will it decompose and produce carbon dioxide? Will it be released as methane, which is actually a much more volatile greenhouse gas? Will it be stored in peat? Will the coastal areas release a huge load of sediment to the oceans?”

The answers to these questions will affect many lives, and Grosse is one of scores of researchers at UAF seeking the answers.
LESLIE ALMBERG has aspired to work in science education ever since high school.

Almberg is completing a Ph.D. in geology at UAF and will be a bona fide volcanologist when she's done. But her career goal is to develop curriculum materials and help set policy for science education.

Last year she received a National Science Foundation fellowship in the Teaching Alaska, Sharing Knowledge program. TASK fellows spend time in local schools as scientists in residence. She was at Hunter Elementary School in Fairbanks.

“It was an incredible experience,” Almberg says. “Being there a couple days a week for the whole school year let me develop relationships with the students.

“I saw first-hand the challenges teachers face in the classroom. Lots of scientists who are helping develop science curriculum don't know what a teacher deals with on a day-to-day basis. We need to give the teacher sharp, relevant curriculum tools.”

“There’s not a job title for what I want to do,” Almberg says. “I want to use my science training to work with teachers, not necessarily teach myself. It’s a challenge to explain that to people.”

The traditional path for scientists to get involved in K-12 education is to be an established scientist first and get interested in teaching as part of compliance with grant requirements. But that model is changing, and Almberg is among those leading the way.

Make no bones about it, Kyle SCHUMANN’S research is more than just a fishing expedition.

It’s just a tiny bone in a fish’s head, but the junior fisheries student has lofty goals for it.

“We joke in the lab that otoliths will solve the world's problems,” he laughs.

A slight overstatement, perhaps, but it indicates how Schumann's research involves far more than undergraduate grunt work. For more than two years, Schumann has worked in the field and lab, collecting, processing and analyzing otoliths, which reveal much about an individual fish’s life history, including its age, where it was born and where it’s been swimming around since.

Among other things, the information has practical applications for state and federal wildlife agencies, he says. “We can calculate growth rates and determine age at maturity, which helps game management boards set size regulations.”

This kind of hands-on work was what Schumann was looking for after graduating from high school in California. “Pretty much anything someone can do in the lab, I've done, from fish processing to data analysis,” he says. “I've done some proposal writing, and I'm working on a paper right now comparing different aging techniques for salmon.

“I don't know where else I would have gotten this kind of experience, and I never would have dreamed I could have done it as an undergrad.”
New technology will give Doug Chichester a new career and new opportunities.

In 2005 Chichester was at a major crossroads in his life as a 21-year career as a hydrologist was ending.

“I wanted to challenge myself with something entirely different, not just change surroundings but find a new profession,” Chichester says.

A friend invited him to check out Alaska so he moved from Harrisburg, Penn., to Fairbanks.

“I saw a UAF class schedule and got interested in going back to school,” Chichester says.
He learned about the Fast Track programs at the Tanana Valley Campus and realized a certificate in instrumentation would complement an associate degree in process technology, so he decided to go for both.

TVC developed Fast Track programs that are relevant, up-to-date and address real needs in industry.

“Several of the instructors for my classes are experts and leaders in the very industries that want to hire us,” Chichester says.

“There are lots of places to use these skills. You could be working at pump stations on the pipeline, in the gold mining industry monitoring crushers or at power generation facilities making sure all the systems are functioning at optimum levels.

“This program is teaching us things on the leading edge of a worldwide technological expansion,” Chichester says. “TVC’s Fast Track program is a great opportunity that fell at my feet.”

Kelly Lyons wants to get the most out of Alaska’s oilfields.

The East Coast native didn’t take the most direct route to Alaska. For awhile she made sails in Maryland, was a live-in nanny, then drove a flatbed truck. She hit all 48 contiguous states but not Alaska, and since she wanted to go back to school anyway (she has a bachelor of arts degree from St. John’s College in Annapolis) she figured she’d check out UAF.

“I’m definitely here to stay,” she says. “I actually like 50 below.”

Today she’s a senior in petroleum engineering.

“I had no idea I wanted to do engineering, but I thought, well, they have a lot of oil, and I’m good at math and science, so I thought I’d try it.”

Lyons is president of the UAF chapters of a national engineering honor society and the international Society of Petroleum Engineers, and she’s on the advisory and development council for the College of Engineering and Mines.

It’s a good thing she’s making her home in Alaska, because the state needs her expertise. As an intern with ConocoPhillips, Lyons got hooked by the challenge of enhanced oil recovery. Now that ConocoPhillips has offered her a job after graduation, she can be added to the list of Alaska’s natural resources.
Philanthropist BILL STROECKER believes investing in today’s students will pay dividends in tomorrow’s leaders.

Despite its far-flung location and challenging winters, Fairbanks boasts a band of citizens dedicated to championing their town and promoting its virtues. Native Fairbanksan William G. “Bill” Stroecker is among the most devoted of these citizens, tirelessly contributing to the community through wide-ranging philanthropic efforts that include the University of Alaska Fairbanks.

In June 2006, he endowed a UAF journalism scholarship in memory of a longtime friend and one-time Fairbanksan, author Helen Van Campen. The first recipient of that scholarship, Lacie Grosvold, is a double major in both journalism and economics.

This dual degree pleases the ever-practical Stroecker, who notes that one “should always have a back-up” in case one career doesn’t work out. The former banker, a 1942 University of Alaska graduate in business, sees no contradiction in funding a scholarship outside his own profession.

“Because of my personal relationship with Helen, I wanted to perpetuate her memory,” he says. “I knew I wanted to do something but I didn’t know what.” After some brainstorming, Stroecker determined a scholarship was the best fit for both him and the university.

Stroecker wants the scholarship to help fund excellence, which in turn will reflect upon the university and the town he loves. “The more success we have on a national level—that’s what’s important to me.”

An ROTC scholarship is helping ANTHONY APONTE become a leader.

Acquiring leadership skills will be a critical part of Aponte's college education. After graduation from UAF, his scholarship will lead to a commission as a second lieutenant in the U.S. Army. Aponte is majoring in psychology because by studying behavior he will learn even more about himself.

“I need to learn about myself before I can lead people,” he says.

Aponte's family arrived in Alaska via a circuitous route involving two states and three countries, starting with Colombia, where he was born. He got interested in ROTC while at Anchorage’s Chugiak High School.

He received an ROTC scholarship offer from a university Outside but turned it down in favor of the same scholarship at UAF, which is closer to his family in Anchorage. He’d also already established a good rapport with the UAF military science department. The scholarship is competitive—more than 10,000 applications were received last year and only 1,000 were awarded nationwide.

Aponte likes being in the ROTC program because in four years he’s not going to wonder what to do next, and he won’t be searching for a job like some of his classmates.

“Other students are still trying to figure out what they’re going to be, but our jobs are already set,” Aponte said. “I’m going to have a whole nation behind me.”
Kristin Shake is mapping out a future for herself and for her state.

Shake received scholarship offers from other colleges, but after visiting the UAF campus in Fairbanks and seeing its science facilities, she knew this was where she wanted to go to school.

“The International Arctic Research Center is what sold me, the building and what's going on inside,” Shake says. “I couldn't see myself going anywhere else. The potential to do something great goes up by a huge factor here at UAF.”

A third-generation West High School graduate from Anchorage, Shake says she knows she made the right decision.

“Sixteen kids from my high school class who went Outside to go to school have come back to go to UAF or UAA,” Shake says.

Shake's father is a banker and her mother an artist, so she was influenced by a combination of financial and creative interests. She thought she might pursue a business career, but once she got interested in science in high school she has never looked back.

“Geography is my passion, specifically Alaska geography,” Shake says. “I'm also passionate about maps. My grandmother had a lighted globe of the world which I thought was the coolest thing I'd ever seen. Now we use geographic information system data to make maps. Cartography and GIS is a perfect marriage for me.”

Full-time employee and part-time student JD Cross is a master at balancing work and studies.

Cross knows the more education she gets, the more opportunities she'll have. That's why the Bristol Bay Campus student decided to pursue accounting. She'll earn her associate of applied science degree in applied accounting in 2008, and is eyeing a bachelor's degree after that.

“I wanted to open doors for myself, create more opportunities, have choices,” she says. Although Cross was eligible for free tuition as a BBC full-time employee, she still struggled to cover the remaining costs. In stepped the Bristol Bay Economic Development Corp. “The corporation has been really good to me. Without their financial help I wouldn't be going to school. I just wouldn't be able to afford it,” she says.

Cross applies her course work to her job duties in the BBC business office. Because most of her courses are in the afternoons or evenings, they don't interfere greatly with her work schedule, though she notes that going to school while working full time is a stern exercise in time management.

“I once did nine credits a semester two semesters in a row and it just about killed me,” she laughs. “I won't be doing that again.” She may have adjusted her schedule, but she's still up for the next new challenge, one opportunity at a time.
Basic research at UAF helps foster a better understanding of public health problems that affect us all: avian influenza, Alzheimer’s disease, stroke, Parkinson’s disease and sudden infant death syndrome.

UAF has launched a major initiative to fund the much-needed Biosciences Facility, or BIOS. BIOS will provide the teaching and research labs science students expect to find at Alaska’s premier university, a research leader that ranks fifth in the nation among small research universities.

The proposed 110,000-square-foot, $105 million building will provide modern facilities to integrate teaching and research in UAF’s fastest-growing programs—the biological sciences. BIOS will address critical research and teaching needs in biomedicine, wildlife biology, physiology, evolutionary biology, population genetics, and ecosystem and global change science.

Teaching  Most of UAF’s existing biology teaching labs were built before 1960. BIOS will provide modern labs and enhance opportunities for students to participate in research alongside UAF’s top researchers, which will help attract and retain students.

Research  Research and teaching are part of a continuum. Multidisciplinary science teams work with students in genomics, Alaska Native health, toxicology, environmental physiology, virology, bioinformatics and neurosciences.

Advancing Alaska  A strong biosciences and biomedicine program is critical to Alaska’s future. The new generation of scientists must be well prepared to tackle the state’s top challenges: invasive species, a changing ecology and emerging diseases. Construction of the facility will inject $74 million into Alaska’s economy.

University research is a sound investment.
In FY06, UAF leveraged $6.30 for every dollar of state-funded research, and grant awards in biology and arctic sciences have totaled nearly $50 million since FY02. This investment has led to an extraordinary increase in research activity, the hiring of new faculty and the expansion of programs. BIOS will free up space to further expand important research programs at UAF.

International Polar Year
The International Polar Year—a major, global scientific undertaking—demonstrates UAF’s role as an education and research leader. IPY is a two-year international effort (March 2007–March 2009) to draw attention to the social and scientific challenges of the polar regions. In addition to serving as IPY’s education center, UAF is also home to nine of 13 postdoctoral fellows sponsored by the University of Alaska statewide system. Other recent IPY-related events have included a lecture by explorer Helen Thayer, the Helge Ingstad Memorial Symposium on Arctic Change and hands-on science activities with high school students. For more information about IPY, visit www.uaf.edu/ipy.
Alumni demonstrate the best of UAF. They’ve graduated, established careers and are prime evidence of the university’s excellence.

**Jyotsna “Jo” Heckman**

CEO, Denali State Bank  
Fairbanks, Alaska  
B.B.A ’79, M.B.A. ’85  
“My undergraduate years definitely were an eye-opener. Academic culture is very different in the USA than in India. The experience allowed me to learn a new culture and assimilate while preserving my heritage, values and individuality.”

**Christian Wood**

Senior project engineer,  
Nabors International  
Houston, Texas  
B.S. in petroleum engineering ’95  
“UAF offered great educational opportunities to me. I don’t believe that any other school would have better prepared me for my career.”

**Tom DeLong**

Office/contracts manager, ABR Inc.  
Environmental Research & Services  
Fairbanks, Alaska  
B.S. in geology ’84  
“I’ve become convinced that education in science, math and the arts is the most important thing we can give our kids, and we’ve got all of that at UAF.”

**Carolyn Rosner**

Assistant program manager,  
North Pacific Research Board  
Anchorage, Alaska  
M.S. in natural resources management ’04  
“There aren’t many places to study trees that can be 100 years old and only eight feet high. My graduate fieldwork took me to vast forests that survive the deepest freezes and blazing fires. My education went far beyond the academic.”