We take the title of this annual expanded chancellor’s report—“Ad Summum”—from the University of Alaska’s motto. “To the top” exemplifies the philosophy of UAF: working toward ever greater success for our students, our employees and our fellow citizens. Although I’ve only been on the job since August 2004, I take great pride in this university and am pleased to share our recent successes with you.

Because of my background as a forester and extension educator, I have a strong personal interest in fulfilling UAF’s mission as a Land, Sea and Space Grant institution to conduct teaching and research that benefit Alaskans, Americans and the world. I can think of no university better suited geographically or intellectually to take on the challenges of developing the minds, resources and economies of the Last Frontier. I hope you enjoy learning about what UAF has to offer, and that you are as proud of the accomplishments of our university as I am.

It’s great to be here!

Stephen B. Jones
New and Noteworthy

- Steve Jones became the university's fifth chancellor when he succeeded Marshall Lind in August 2004.
- The West Ridge Research Building opened in fall 2004, providing space for high-technology programs like biomedicine, bioinformatics, contaminants engineering, microsensor electronics, remote sensing and the Arctic Region Supercomputing Center.
- The Hutchison Institute of Technology reopened as part of a partnership between UAF's Tanana Valley Campus and the Fairbanks North Star Borough School District.
- UAF scientists and administrators joined more than 300 scientists worldwide in organizing and writing the groundbreaking Arctic Climate Impact Assessment.
- The Cooperative Extension Service gears up for its 75th anniversary, to be celebrated throughout 2005.

Awards and Accolades

- In August, the directors of the National Institutes of Health and the National Science Foundation were in Fairbanks to award, respectively, $17.5 million for INBRE (IDeA Network of Biomedical Research Excellence) and $13.5 million for EPSCoR (Experimental Programs to Stimulate Competitive Research).
- Institute of Arctic Biology Professor F. Stuart (Terry) Chapin III, one of the nation's leading ecologists and a pioneer in the field of terrestrial ecosystem ecology, was elected to the National Academy of Science, one of the highest honors bestowed on American scientists.
- The UAF chapter of the American Indian Science and Engineering Society received the 2004 distinguished chapter award at the 26th annual AISES national conference. The award marks the fourth time the UAF AISES chapter has received this nationally competitive award, having also won it in 1994, 1996 and 2000.
- A Fulbright Award went to psychology Professor James Allen to lecture at the Psychosocial Centre for Refugees at the University of Oslo in Norway through March 2004.

Milestones

- The Department of Alaska Native and Rural Development's rural development program celebrated its 20th year. Degree programs prepare students for community leadership, and teach them about effective community development skills and rural issues in the global economy.
- The number of students pursuing master's and doctoral degrees topped 1,000 this fall, largely due to UAF's ability to attract more than $112.4 million in research funding.

Building for the Future

The distinctive expansion of the University of Alaska Museum of the North takes shape on UAF's West Ridge. The facility will feature an Alaska art gallery, state-of-the-art research labs and expanded collection space.

Nanook Athletes

- The rifle team won its sixth consecutive national championship. Freshman Matt Rawlings won the NCAA individual smallbore title.
- 2003 alumnus Matt Emmons won the gold medal in men's prone rifle at the 2004 Summer Olympic Games.
- 2001 alumnus Dan Jordan won the silver medal in men's three-position rifle at the 2004 Summer Paralympics.
- Senior Sigrid Aas won two individual gold medals at the NCAA Skiing Championships.
- Junior Brad Oleson was named Player of the Year in the Great Northwest Athletic Conference after leading the men's basketball team to its most successful season in school history.
- Almost 60 percent of the 100 student athletes earned a GPA of 3.0 or higher for the fall 2004 semester. Students from each sport regularly volunteer for a wide range of community activities.
Nate Raymond wants to break big stories for a major newspaper but right now he's just working on his degree. Focusing on your studies is easier when you're not focusing on your bank balance, which is where each of his four scholarships come in handy: the Jimmy B. Bedford, Fred Beeler, and Marian and W.F. Thompson memorial scholarships, and the Usibelli tuition scholarship. The Bedford and Thompson journalism scholarships fit nicely with his journalism major (he has a second major in political science) but they all add up to helping Raymond, a sophomore, stay in school.

"Last year I had a tuition waiver that allowed me to try different classes, something I wouldn't have done if I was worried about my budget," Raymond says. "The scholarships made school more affordable."

Raymond likes what he's found at UAF. "I came here because UAA was too close to Homer, where I'm from. I'd only been to Fairbanks once and I wanted to try something different. I really like my professors here—they're one of the reasons I wanted to come back."

Another reason was the chance to work at the student newspaper, the Sun Star, where he covers student government and university affairs. University finances are complex enough but at least one thing just got easier: the scholarship application process.

"It's a wonderful way to honor Jimmy and reflect his commitment to students and journalism."

Virginia Bedford is proud to know that students benefit from the legacy of her late uncle, Alaska newshound legend Jimmy Bedford. Originally from the East Coast, Virginia immediately understood Jimmy's passion for Alaska when she visited him 15 years ago and fell in love with the state. That same passion inspired her and another uncle, Emmett Bedford, to establish a scholarship in Jimmy's name after his death in 1990.

The scholarship is for journalism students like Nate Raymond. "It's a wonderful way to honor Jimmy and reflect his commitment to students and journalism," she says. "My uncle was very committed to students. He had high standards because he wanted them to become great professionals."

That commitment, and Jimmy's forceful presence both in and out of the classroom, had a lasting effect on many Alaska writers, among them JoAnn Wold, Edna Wilder and Emily Ivanoff Brown.

Virginia is the technical services director for UAF's Arctic Region Supercomputing Center, and she expects to earn her M.B.A. from UAF this spring. Though not a professional writer herself, she fully appreciates the scholarship's tangible and intangible benefits.

"The whole point is to continue the thread of named scholarships. They affect people positively financially but also through the spirit of the person," she says. "Jimmy was a Fulbright professor in Afghanistan in the 1960s and 1970s. He traveled and took pictures constantly. It's important to remember him not just for who he was but for the amazing career he had, the amazing life he led."
Shirish Patil: Exploring New Resources

Beneath the Prudhoe Bay, Kuparuk River and Milne Point fields of Alaska’s North Slope lie some 44 trillion cubic feet of natural gas. “The gas is untapped potential because we haven’t yet found a way to get it out of the ground,” says Associate Professor Shirish Patil. UAF’s research potential is well known, making the university’s petroleum engineering department and Petroleum Development Laboratory a natural fit for a $19 million, four-year U.S. Department of Energy grant. The goal of the grant, shared by UAF, the University of Arizona, BP Exploration (Alaska) and the U.S. Geological Survey, is to determine the best way to extract the most gas.

Patil is leading a group of UAF faculty and students on the petroleum and reservoir engineering portion of the project. The team knows a sizeable amount of gas is sitting right underneath the infrastructure already in place for conventional oil drilling, making it a much more attractive site than trying to recover gas scattered across the North Slope. And because they’re able to use confidential field research from BP, they can create more accurate predictions for gas recovery rates and economic analyses.

“Gas like that on the North Slope is considered an unconventional resource,” says Patil, but there’s nothing unconventional about UAF helping business in Alaska. The program could one day help fill the projected gap in U.S. domestic gas production.

OEM: Small Size Means Big Business

UAF has big expectations for a lot of tiny devices. In April 2004, the Office of Electronic Miniaturization opened its lab, including a state-of-the-art microelectronics packaging line. A special clean room provides sustainable prototyping and low-volume capacity for miniaturizing electronic components and component systems for government and commercial needs. These components can be used in everyday items like cell phones and personal computers as well as even more complex equipment.

The multimillion-dollar clean room is unique in Alaska. Along with the OEM’s research counterpart, the Center for Nanosensor Technology, the clean room will help diversify the state’s economy by creating new educational opportunities, and developing experts for high-tech jobs in Alaska.

OEM has already produced and tested its first four lots of prototype microelectronic devices, which must pass rigorous tests of function, reliability and lifespan to be acceptable.

“Ninety percent of the first lots passed the required tests, which is a very good indication of our capability,” says David Bunzow, OEM’s deputy director of facilities and operations.

There are now 11 lots in the prototyping line. “We learned a lot during the process, and we expect later lots will have a significantly higher yield than the first ones,” says Lawrence Bowman, OEM’s senior technologist.

Says Bunzow, “I believe that, within the next five years, OEM will attract business and educational opportunities from throughout the world, establishing Fairbanks as an incubator for future economic growth outside the traditional industries.”
Brenda Konar and Katrin Iken: Lucky Find

Some scientific discoveries happen by accident. Without a slippery strainer, UAF marine scientists Brenda Konar and Katrin Iken wouldn't have made an important discovery.

Last summer, the researchers and a team of graduate students were in Prince William Sound surveying marine life as part of a global study of ocean biodiversity.

Sorting through buckets of collected marine creatures, Iken accidentally dropped overboard a sieve that separates different-sized organisms.

“We dove in and found the sieve right under the boat,” Konar says. “Looking around, I saw all these little tumbleweeds. I thought, that’s a rhodolith bed, and as far as I know, rhodoliths have never been described before in Alaska. We were shocked at how many there were.”

Rhodoliths are a type of coralline red algae that deposits calcium carbonate within their cell walls to form hard structures that resemble coral. One of the Alaska rhodoliths is a type found in the Atlantic Ocean; the other appears to be an entirely new species.

“Most of them were the size of pingpong balls,” Konar says, “with lots of branches that come out from a centerpiece, like pink jacks.”

Rhodoliths fill an important niche in marine ecosystems around the world as a transition habitat between rocky and sandy areas, but after more than 15 years of diving in Alaska, Konar had never seen them here.

“It’s important to find out how many of these beds there are, where they are and what organisms associate with them because they could be an important nursery for species in our waters.”

Health Issues: Rural Needs, Real Needs

With five rural community campuses, UAF is well aware of its role beyond urban Alaska. UAF works closely with other universities and institutions to address pressing needs in rural and Native health. Among its programs:

• The Center for Alaska Native Health Research, established through a grant from the National Institutes of Health, investigates Alaska Natives’ weight, nutrition and health from genetic, dietary and cultural-behavioral perspectives. CANHR also has offices at UAA and collaborates with the Yukon-Kuskokwim Health Corp., Alaska Native Tribal Health Consortium and the Southcentral Foundation.
• UAF researchers studying how the brain protects itself from damage benefit from the Alaska Specialized Neuroscience Research Program, funded jointly by NIH and the National Institute for Neurological Diseases and Stroke. SNRP researchers capitalize on IAB’s access to unique animals that survive freezing temperatures and stroke-like reductions in blood flow to study natural protective processes that may one day help treat stroke patients.
• The psychology department works with the Fairbanks Native Association and the Tanana Chiefs Conference to provide mental health services to Interior Alaska Native children. The department is also investigating trauma experienced by rural Athabascan children, made possible by funding from the National Institute of Mental Health.

The pressure of meeting the health needs of Alaskans can seem overwhelming, but UAF is leveraging its northern latitude, premier research capabilities and cooperative agreements to help meet those needs.
Lee DeWilde: A Degree of Difference

“I’ve earned my living a lot of different ways, and as a young man I remember stressing out about what I should be when I grow up,” Lee DeWilde says. “But I’ve found that most folks have more than one career, and some people just make up their minds as they go along. I wanted to try something different, and I wasn’t going to be afraid to try to reach my goal.”

DeWilde reached that goal—a bachelor of science degree in mechanical engineering—in May 2004, putting a capstone on the education he began at the Huslia homestead where he grew up.

When he went back to school in 1999, DeWilde already had a certificate in aviation maintenance from the University of Alaska Anchorage. He had worked as an aircraft mechanic for 10 years when, consulting a mechanical engineering textbook, he found he lacked the background to apply the book’s equations. DeWilde wanted a better understanding of the aircraft he was maintaining, and the engineering textbook inspired him to head back to school—no small decision for a husband and father of four small children.

The sacrifice, he says, was worth it. He now works for Alyeska Pipeline Service Co. as an engineer and liaison between manufacturers and Alyeska technicians. He loves his job, but what’s even more important is the example he’s set for his children: You’re never too old to learn, and it’s never too late to follow a dream.

Danielle Ryder: Inspired Leadership

“College is about making an impact on your life and on others.” Danielle Ryder observes. “You learn how to think. You learn who you are.” Ryder is enthusiastic about UAF’s student leadership program. She worked as a leadership assistant during the spring 2004 semester, helping create and market programs that develop student leadership skills.

“There are so many ways to get involved,” she says. “The program teaches you not about having all the answers but asking the right questions. It’s an art to lead people. You don’t have to be a politician to be a leader—you can affect your friends or community by caring about something and working to change or improve it.”

The Juneau native has no doubts about who she is or where she’s going. Now a sophomore, she spent last year adjusting to college before joining the Nanook volleyball team. Her discipline as an athlete and her leadership skills will come into play as she pursues her major in civil engineering.

“College is about making an impact on your life and on others.” Not one to slow down, Ryder is already planning ahead to the end of her academic career. “I want to go on exchange to Australia or New Zealand. Once I graduate I want to travel, maybe with the Semester at Sea program. But I’ll come back to Alaska to work, probably to Juneau. I miss the water and mountains. It’s home.”
James Ruppert: Cultures of Change

James Ruppert provides insight about the North’s social and cultural aspects. A president’s professor, he is chair of the Department of Alaska Native Studies and a professor in the English and northern studies departments.

“ANS lets Alaska Natives and non-Natives meet and discuss problems, questions and concerns that sit between cultures,” Ruppert explains. “We provide a place to compare policies among other countries, the Lower 48 and Alaska Native cultures. It’s a meeting ground for discussing traditionalism, cultural changes, colonialism and the continuity of culture.”

The interdisciplinary department collaborates with other academic units—like education, art and political science—to incorporate Native ideas and ways of thinking into their own structures. ANS creates an intellectual forum to discuss cultural ideas and expression and prepares students to continue and advance cultural knowledge.

The department is also creating ties with other institutions around the world, due in part to Ruppert’s experiences as a three-time Fulbright scholar. ANS hosts international graduate students, assisting them in their research, and is currently planning a field school for Canadian Native studies undergraduates to visit UAF to discuss common cultural concerns and social questions.

“ANS has a direct impact on Alaska. We’re at the crossroads of ideas and culture, history and tradition that inform the students who then go off and participate in the state, professionally and as citizens.”

John Walsh: Leading Climate Change Research

John Walsh celebrated his 2001 retirement from the University of Illinois (Urbana) by moving north to join some of the world’s leading arctic researchers at UAF. He now wears several hats: president’s professor of global change, chief scientist of the International Arctic Research Center and director of the Cooperative Institute for Arctic Research and the Center for Global Change.

“WeAF has a broader view of the Arctic as opposed to other places,” Walsh says. “The expertise UAF offers in arctic research plus the obvious setting—the National Weather Service is right in our own building, the access to field research—that’s what brought me here in the first place.”

UAF is at the forefront of major scientific discoveries. “UAF participates in international assessments of arctic climate change,” Walsh points out. “We bring the perspective of Alaskans to high-visibility, international efforts, helping bridge the science community with the political community and the general public, and alerting the world to what’s going on.”

As interest in global warming grows, UAF continues to research everything from physical phenomena like greenhouse gases and glacial melt to social science, anthropology and economics.

“We have experts in virtually every field in arctic science. No one else can say that.”

“We’re at the crossroads of ideas and culture, history and tradition ...”

The University of Alaska’s president’s professor program is made possible by the commitment of BP and ConocoPhillips Alaska to higher education in Alaska. The program helps support the university’s ability to assist the state with its most important challenges by funding up to eight senior faculty positions in areas like ocean sciences, bioinformatics, educational technology, and satellite data retrieval and analysis.

www.uaf.edu
UAF’s FY05 Authorized Budget

Sustaining the great success and resurgent growth in recent years continues to be a primary focus of the university even as it addresses increased enrollment and growing interest in programs like nursing and behavioral health. Investing in the university shows a commitment to the long-term health of the state, but it also shows an immediate, bottom-line return: For every $1 of state funds UAF spends on research, an additional $6.80 is leveraged from federal and private sources, a 3 percent increase from last year.

Funding Sources for UAF

Academic Profile, Fall 2004

- UAF offered 162 degrees and 21 certificates in 111 disciplines.
- Eighty-six percent of respondents to the UAF 2003 Graduation Report survey report being employed in Alaska.
- The Honors Program had 250 participants.
- Twelve National Merit Scholars attended UAF.
- Enrollment ........................................ 9,683
  - Female ............................................. 60%
  - Male ................................................. 40%
- AK Native/American Indian ......................... 20%
- Undergraduate/other ................................ 88%
- Graduate............................................. 12%

Degrees Conferred, Spring 2004

- 740 certificates, associate or baccalaureate degrees
- 203 master’s and doctoral degrees

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