Snuffing wildfires | Nanook legend Carl Benson | High-tech takes flight

aurora

Fall 2016

Celebrating a century

1917–2017

For alumni and friends of the University of Alaska Fairbanks

EDITOR'S NOTE

A centennial teaser

We're so excited to celebrate UAF's birthday in 2017. ONE HUNDRED years — wow! James Wickersham, just one guy, had such a vision for Alaska's future and the education of her people. All of us, all of you, have seen it through, and then some, with the same grit and determination he showed back then. I hope the people in 2117 will be as impressed with that vision, and our university today, as I am.

We want you to be part of our festivities. This issue includes information about some of our centennial activities next year plus some fun things for you to do that will help us spread the joy. On the inside back cover is a banner you can use to send us some birthday greetings and get time in the spotlight on our website. Just pull it out, fill it in (write big!), take a selfie photo or video (or have someone take it for you) and post it (publicly) on social media with #uaf100, or email it to **uaf-alumni@alaska.edu**. We'll capture it in our social feed at **www.uaf.edu/centennial/**.

We'd also like you to share your memories of UAF with us. Go to **www.uaf.edu/uaf100/memories/** and fill in the form. You can even upload an old photo of yourself on campus if you have one. We'll post them on the website and print a selection in the next issue of Aurora. Following our centennial year, your story will become a permanent part of the university archives.

Speaking of the next issue, we're going to publish just one in 2017, in July. We are fully aware of the difficult budget times we're facing in Alaska, and we know there are some who'd like us to cancel a print version altogether. However, I've also heard from many of you how much you love receiving Aurora — how much it reminds you of "home," how much you love seeing what your old classmates are up to, and even more how much you love keeping up with all the things we do at UAF.

We're caught in a budget versus return-on-investment predicament here. We're mindful of our limited resources, but we also know how important it is to connect with you — our alumni and friends — in a warm, friendly, interesting way on a somewhat regular basis. How much value should we place on sending compelling stories about UAF's people, their ideas and accomplishments, and even their failures, to 20,000 mailboxes around the world? How many more people see the magazine as it's passed around? All for less than 75 cents each.

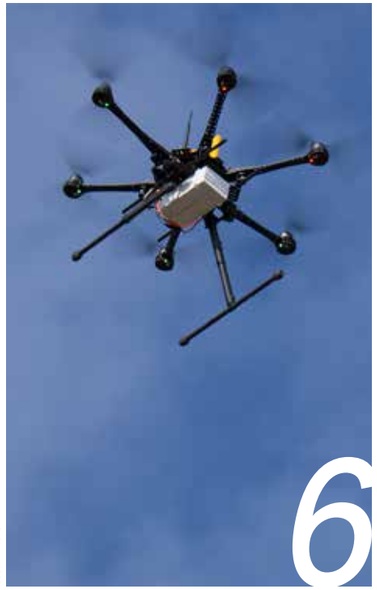
You can't get that sort of connection by going exclusively online. Trust me, I've seen our online viewing stats.

So we'll publish just one issue in 2017, a special commemorative edition. After that, we'll see if the university's budget has recovered enough to increase production to two per year again or whether there is some other way we can stay top-of-mind with all of you.

In the meantime, we hope you will join the fun and wish UAF a happy 100th birthday!

Kim Davis
Managing editor

aurora


Susan Mitchell


Scott Rupp


University Archives, Rasmuson Library, UAF

Departments

Volume 9 No. 1
Published twice a year for alumni and friends of the University of Alaska Fairbanks

BRIEFLY

Next steps toward UAF's future

UAF has a brilliant future, but we're figuring out how best to make it shine during a period of decreased funding. University of Alaska President Jim Johnsen is considering a number of options that may affect what and how the university delivers through its mission of teaching, research and public service.

Johnsen's review process, called Strategic Pathways, is assessing how the university system operates and how it can best meet the state's higher education needs by focusing on strengths at UAA, UAF and UAS. Teams from throughout the system focused on these specific areas this past summer: engineering, management, teacher education, athletics, IT, research administration and procurement. The president will present recommendations on those areas to the UA Board of Regents in September.

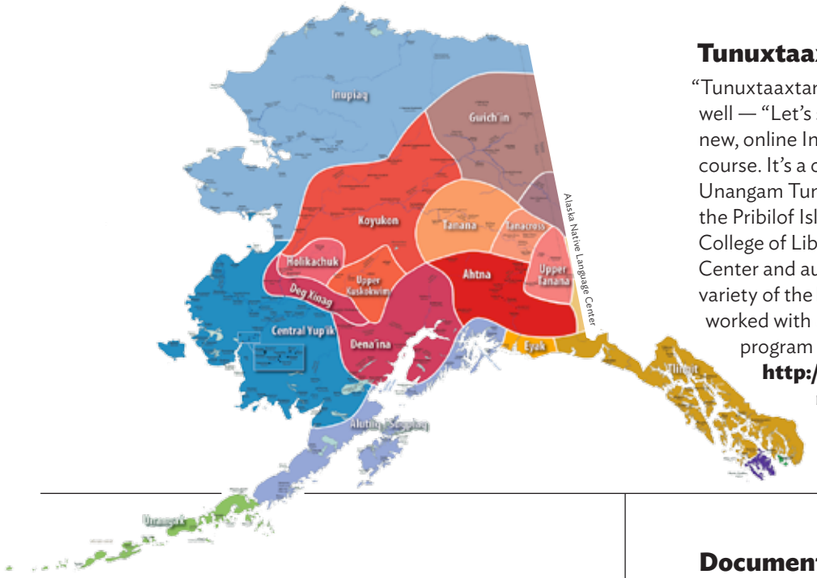
Johnsen also asked for an assessment of the costs and benefits of a single, UA-only accreditation. (Accreditation is an independent stamp of approval confirming that a university's academic programs are sufficiently rigorous.) Currently, UAA, UAF and UAS have their own accreditations. Johnsen commissioned Professor Emeritus Dana Thomas '74 to study the question; his report, released in early August, is available at **http://bit.ly/singleUA**.

Thomas was also named interim chancellor in June, after Johnsen suspended the search for a permanent chancellor pending the single-accreditation analysis. Thomas has a long association with UAF. He was born and raised in Fairbanks and taught in the Department of Mathematics and Statistics. He was UAF's vice provost and accreditation liaison officer from 2006-2012. He then served as UA's vice president of academic affairs and research from 2012-2014.

Thomas replaces Mike Powers, who ended his one-year term as interim chancellor in August.

Paraplegic sit-ski

Four senior engineering students — Eric Bookless, Neil Gotschall, Isaac Lammers and Daniel Sandstrom — developed a ski bike that paraplegic users can take out on winter trails. The team's design won an award in the 2015 Arctic Innovation Competition, sponsored by the School of Management. Listen to the students talk about the process at **http://bit.ly/AuroraSitSkiVideo**.



Tunuxtaaxtan — let's speak

"Tunuxtaaxtan Unangam ilan." To learn to say that well — "Let's speak Unangam" — you can take the new, online Introduction to Unangan Language course. It's a one-credit introduction to Eastern Unangam Tunuu, specifically the dialect spoken on the Pribilof Islands. Anna Berge, a linguist with the College of Liberal Arts' Alaska Native Language Center and author of a new textbook about this variety of the language spoken in the Aleutian Islands, worked with UAF's eLearning & Distance Education program to develop the new curriculum. Visit **http://unangan.community.uaf.edu** or read more in CLA's Clarity magazine at **http://bit.ly/2ahZDxh**.

Better bilingual education

"Emergent bilinguals" is a term for children who can speak two languages but lack fluency in one or both, which complicates how teachers teach and students learn. The College of Liberal Arts' linguistics program and the School of Education are modifying two graduate programs for rural educators focusing on literacy. The work, part of a grant from the U.S. Department of Education's Alaska Native Education Equity Program, will merge the programs and work toward a nationally accredited post-certificate endorsement. Read the full story in CLA's Clarity magazine at **http://bit.ly/2ahZDxh**.

Documentaries explore Tanzania, Alaska's wild plants

UAF documentarians are crossing the globe, time and cultures in recently released works. Leonard Kamerling '99, film curator at the UA Museum of the North, co-produced "Changa Revisited," which explores the lives of a Tanzanian Maasai family through 30 years of tumultuous cultural change.

The museum's herbarium curator, Steffi Ickert-Bond, worked with filmmaker Sarah Betcher '13 on a series of ethnobotany films that explores traditional Alaska indigenous uses of wild plants.

Get more on "Changa Revisited" at **http://bit.ly/uaf031722**. For the series on Alaska's wild plants, visit **http://bit.ly/AKplantfilms**.

Chukchi plankton like it warm

Zooplankton, the tiny animals at the bottom of the food chain, are thriving in the Chukchi Sea. This is likely due to warming ocean temperatures and longer ice-free seasons.

Elizaveta Ershova '16 and Russell Hopcroft, a biological oceanography professor with the School of Fisheries and Ocean Sciences, are studying zooplankton communities in the Chukchi Sea.

Zooplankton are an important source of food for animals higher up in the food chain, including fish, birds and marine mammals. The research helps scientists understand how the ecosystem is responding to change. As zooplankton biomass changes, it will likely have ripple effects all the way up the food chain.

"We're seeing a system change," said Ershova. "It's in the process of changing right now, and it is critical that we continue to study it." Learn more at **http://bit.ly/uaf041330**.

BRIEFLY

Alaska scientist receives $1.6 million award for vaccine research

Dr. Andrea Ferrante, an immunologist at the Institute of Arctic Biology and College of Natural Science and Mathematics, received a $1.6 million award from the National Institutes of Health to study how vaccines work. After some 200 years of use, those details are still unclear.

Ferrante hopes to change that.

When germs such as bacteria or viruses enter a body and multiply, they cause an infection. To fight the infection, the body uses white blood cells called dendritic cells, which "swallow" and digest germs.

Bits of protein from the digested germ are pushed to the outer surface of the dendritic cell and attach to "docking stations," where they attract another kind of white blood cells called T-cells.

It is the attraction between those bits of germ proteins and the special T-cells that triggers a person's immune system response. And it is the body's "memory" of that response that enables the immune system to act faster and more robustly to specific germs in future infections.

Ferrante, two doctoral candidates and two undergraduate students are designing experiments in which they change the cellular environment of dendritic cells to answer their questions.

"We want to be able to identify whether it is pH or enzymes or something else that controls which bits of digested protein are exposed and therefore whether there's an immune response," said Ferrante. "A significant number of infections like those from Ebola and Zika viruses have yet to be restrained by immunization, and understanding this mechanism may enable more targeted and effective vaccine preparations for such illnesses." Get the full story at **http://bit.ly/uaf053120**.

KUDOS

Gordon Knue

Almandmoss, Nahshon

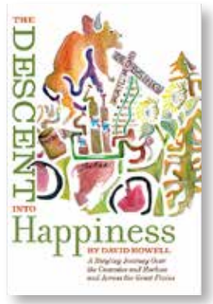
New way to detect volcanic explosions

Alaska is a volcanically active state, but it can be difficult to monitor that activity in remote regions. Methods developed by David Fee of the Geophysical Institute's Alaska Volcano Observatory and Wilson Alaska Technical Center and his colleagues use ground-coupled airwaves, or GCAs, to detect explosions on distant seismic networks.

GCAs occur when an acoustic wave in the atmosphere hits the Earth's surface, producing a ground wave that can be detected by seismometers. Volcanic explosions can produce these low-frequency acoustic waves, as can events such as meteors entering the Earth's atmosphere, and even chemical or nuclear explosions.

"Volcanic explosions can sometimes be difficult to detect seismically, but the GCA can provide unambiguous evidence that a volcano is erupting," Fee said. Learn more at **http://bit.ly/uaf040423**.

ON THE SHELF

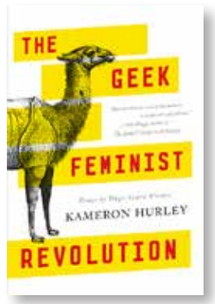


The Descent Into Happiness: A Bicycling Journey Over the Cascades and Rockies and Across the Great Plains

David Howell '91

2016, Blue Ear Books

Howell takes us on a cross-country, solo, self-supported bicycle ride from Seattle to Milwaukee … But while he tells the story of the journey — and of the characters he meets along the way — Howell also confronts a series of conundrums he had been pondering for years: Is it OK to spend so much time alone, to give in to introversion? How can one embrace introversion and solitude while also being a father and husband? By the end of the journey, he resolves that solitude can enhance one's time with others, just as time with others can enhance solitude.



The Geek Feminist Revolution

Kameron Hurley '01

2016, Tor Books

"The Geek Feminist Revolution" is a collection of essays by double Hugo Award-winning essayist and fantasy novelist Kameron Hurley.

The book collects dozens of Hurley's essays on feminism, geek culture, and her experiences and insights as a genre writer, including "We Have Always Fought," which won the 2014 Hugo for Best Related Work. "The Geek Feminist Revolution" will also feature several entirely new essays written specifically for this volume.

Unapologetically outspoken, Hurley has contributed essays to The Atlantic, Locus, Tor.com, and elsewhere on the rise of women in genre, her passion for science fiction and fantasy, and the diversification of publishing.

Rough Waters: Our North Pacific Small Fishermen's Battle

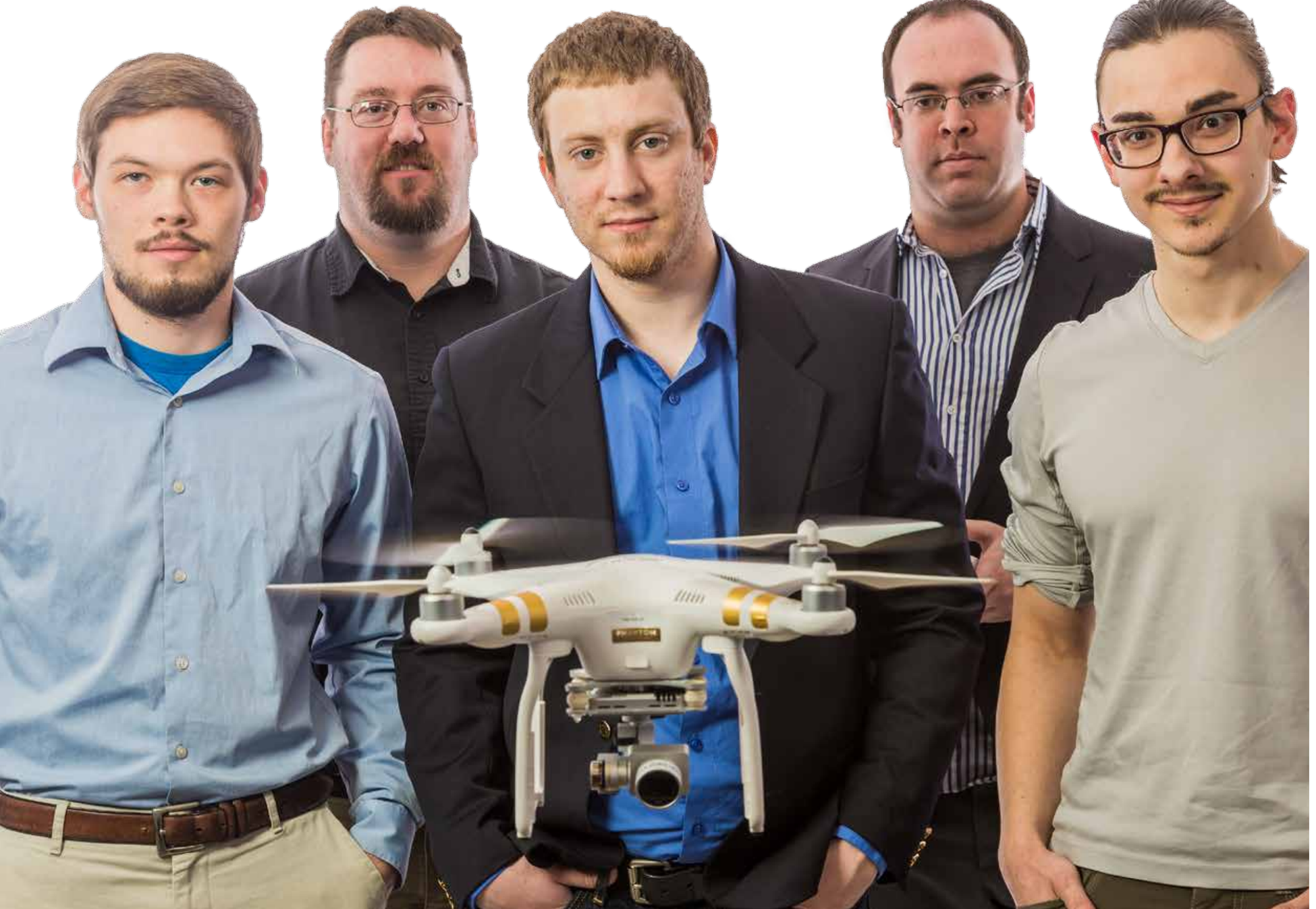
Nancy Mendenhall, Northwest Campus director 1987–1996

2015, Far Eastern Press

"Rough Waters" is an insider's view of the crisis our North Pacific small commercial and subsistence fishermen face from a changing ocean, weak or underfunded management, power politics, and in some cases a government management strategy to favor industrialized fleets. Alaskan Nancy Danielson Mendenhall draws on regional history, her own and others' fishing experiences and scientists' observations to paint a different picture than one draws from public government reports and the general media. Today ordinary families lose the chance for economic independence through a traditional way of life that has been the base of our coastal communities. Although Mendenhall's concentration is on the Northwest and Alaska, one hears of the same effects along all of our coasts.

Excerpts from the publishers' descriptions. Book cover images courtesy of the publishers.

HIGH-LATITUDE HIGH-TECH



BY LJ EVANS

A drone whirred overhead as sea otters splashed around scenic Kachemak Bay near Homer, Alaska, in summer 2015.

The unmanned aircraft, outfitted by a startup high-tech company in Fairbanks, aimed to document whether its own buzzing would put the otters off their feed.

It didn't.

"The otters for the most part didn't pay any attention to the drones," said Brenda Konar, a professor at the School of Fisheries and Ocean Sciences and the lead researcher on the otter project. "A couple times they looked up, but that was all."

That revelation could help researchers feel more comfortable using such technology in future wildlife studies.

The project was the latest success for Northern Embedded Solutions, a company started by several UAF engineering students in 2011.

Tossing around ideas

"We were all grad students," said Steven Kibler '08, '12, one of NES's founding partners and the firm's lead electrical engineer. "That first year we were a company in name only. We were tossing around ideas."

They built a smart plug-in for cars enduring Fairbanks winters. They created a system to control grow lights for specific plant species. Production and marketing hurdles proved too daunting, though.

Instead, Kibler, Andrew Hauer '10 and Scott Otterbacher '11 got involved with UAF's Poker Flat Research Range, a scientific rocket-launching facility north of Fairbanks. Sam Vanderwaal '10 joined them a few months later and eventually became a partner.

The range had hired Otterbacher as a student. Later, it contracted with NES to design and fabricate electronics to fly unmanned aircraft and develop payloads such as cameras, sensors and sampling devices.

> "THAT FIRST YEAR WE WERE A COMPANY IN NAME ONLY. WE WERE TOSSING AROUND IDEAS."

"We went from a business trying to market products to a business contracting work for custom devices," Kibler said.

In subsequent years, Hauer and Otterbacher moved on, Corey Upton joined the firm as a partner and Carl France '14 started the company's first subsidiary. NES has continued to thrive, working out of basement space in a downtown Fairbanks office building. It now

Left to right, NES partners Corey Upton, Steve Kibler and Sam Vanderwaal; Aquilo CEO Carl France; and NES student employee Adam Levy.

Northern Embedded Solutions

Brenda Konar of the School of Fisheries and Ocean Sciences confers with Sam Vanderwaal of NES while collecting data on sea otters in Kachemak Bay.

Steve Kibler inspects a mylar balloon with Henry Haas, 13, during the 2015 Alaska Summer Research Academy.

Northern Embedded Solutions

◀ A Ptarmigan UAS drone flies at Fort Greely's Cold Regions Test Center.

seems poised to succeed as a homegrown technology firm.

The sea otter project, just one example of its work, began when Professor Konar and her colleagues asked the Geophysical Institute's Alaska Center for Unmanned Aircraft Systems Integration for help. They wanted to see if unmanned aircraft equipped with high-resolution video cameras could reveal what the otters were eating, even when far from shore, without disturbing them.

Scientists usually must observe otters with spotting telescopes. If the otters are too far offshore, it's not possible. Watching from a rocking vessel doesn't work well. Researchers thought unmanned aircraft might solve those problems.

So ACUASI contracted with NES to provide the scientific and technical system engineering for the field tests. Staff from NES designed the camera payload and provided support for two rotary-wing aircraft during the tests. The otters played along.

Excited about science

Kibler was inspired to pursue engineering by his dad, an electronics technician for the U.S. Geological Survey.

"He was constantly working on sensors and things," Kibler said. "I got involved in it with him. There is something to be said about genetics influencing aptitude."

Raised near Golden, Colorado, Kibler was originally interested in becoming a commercial pilot. After finding that many pilots felt like glorified bus drivers, he decided to pursue electrical engineering instead. He chose UAF because of its reputation and because he wanted to get away from Denver's big-city environment.

At 24, Kibler was a little older than the traditional college student.

"I had a lot of classes under my belt, and I'd had jobs and gotten training in a couple directions, like the grocery store business and getting a commercial pilot's license," he said. "I finally decided to just buckle down and do this."

Kibler completed a bachelor's degree in 2009 and a master's in 2012, both in electrical engineering. He's enrolled at UAF as an engineering doctoral student but is on leave to work on NES and other business opportunities.

Since 2011, NES has hired three UAF students and one graduate.

"If I'm hiring a UAF engineering graduate, I trust if they don't already know it, they can learn," Kibler said. UAF students' success in national engineering competitions has confirmed the program's excellence, he said. Students have built steel bridges, electric snowmachines, mining robots and concrete canoes.

"We don't always win, but we always place very well," he said.

Kibler believes in bringing different people into science-related fields, so he has helped UAF's Alaska Summer Research Academy during the past three summers. He teaches high school students to build unmanned aerial blimps and program the flight controls.

"We're teaching them stuff that they want to learn, and they're having fun," he said. "I hope that there's always some program like this, and I'm hoping that I'll always do that."

Kibler and his partners plan to stay in Alaska, even though more opportunities might lie elsewhere.

> "ALASKA HISTORICALLY HAS NOT BEEN A HOTBED OF NEW TECHNOLOGY, BUT A MARKET DOES EXIST."

"Fairbanks is an interesting place. It has a small-city feel," he said. "I have built a network of people here I can rely on to help me with technical problems. Having that network has made the difference between success and failure for NES."

Alaska roots

Sam Vanderwaal was born in Fairbanks and, except for an eight-year stint when his family lived in Kuala Lumpur, Malaysia, he's been here ever since.

One of Vanderwaal's earliest influences was his grandfather, Robert Hunsucker, an electrical engineer and physics professor who conducted research at the Geophysical Institute.

"I have memories from when I was much younger, spending time with him and his ham radio," Vanderwaal said.

Vanderwaal completed a bachelor's in electrical engineering in 2010 and a master's in electrical engineering this May. He joined NES in 2011 and became a partner in 2013.

"Alaska historically has not been a hotbed of new technology," Vanderwaal said, but a market does exist.

NES's primary business for several years has been designing and building payloads, then integrating them into unmanned aircraft for ACUASI.

ACUASI supports research using unmanned aircraft in such fields as Arctic biology, search and rescue, and wildland firefighting, said Mike Hatfield '99, assistant professor of electrical engineering and the center's

associate director for science and education.

"It's hard for me to imagine a successful ACUASI research program without NES," Hatfield said. "They have been a vital component."

The company also designs and builds electronic devices useful in other industries, Vanderwaal noted. The company is developing software for a lithium ion battery manufacturer and is putting payloads in unmanned aircraft for a major aerospace corporation.

Still, their Alaska roots and presence give them an advantage in the state.

"Our backgrounds foster an immediate rapport with potential Alaskan customers that companies from Outside wouldn't have," he said.

Solve the problem

Corey Upton was also born in Fairbanks. His dad, a civil engineer for the Alaska Department of Transportation and Public Facilities, sometimes took his son to worksites in remote locations such as Chandalar Lake and Nome Creek.

Upton attended Hutchison High School in Fairbanks, where he focused on automotive engineering and drafting. He came to UAF as a mechanical engineering major. His student group was asked to build an unmanned aircraft for Poker Flat. He led that project and landed a student job there.

Upton joined NES as a partner in fall 2013. He stopped attending UAF at the end of his sophomore year but planned to return this fall to finish.

At NES, Upton said, he has learned effective decision-making processes.

"Are you hired to build the gadget or solve the problem? While it's more difficult to solve the problem, it's more valuable to think in those terms," Upton said.

He had a lot of responsibility early in his career with NES.

"I've been involved with big-scale operations, sending up expensive new payloads. I've participated in meetings where I've been able to transmit my ideas, offer technical support for decisions, had the opportunity to be heard. It's been a big deal to do adult stuff at such an early age," he said.

Northern Embedded Solutions

Corey Upton takes a break in the winter sun next to a Ptarmigan UAS during flight testing at the Cold Regions Test Center at Fort Greely, Alaska.

> "AT UAF, IF YOU'RE SMART AND YOU WORK HARD, YOU WILL GET THE OPPORTUNITIES."

The most interesting place

Carl France came to Alaska in 2010 from Huntington Beach, California, to enter the commercial pilot program at the University of Alaska Anchorage. He had narrowed his choices to three universities.

"Alaska seemed like the most interesting place," he said.

France quickly found himself more interested in engineering, so after a year he transferred to UAF. He was worried, though, because math scared him.

The hardest math needed in the commercial pilot program was less complex than the first level required of an engineer. He had to take Calculus I four times.

"I never had another problem with math after that," he said.

Between the stints at UAA and UAF, it took six years to complete a bachelor's in mechanical engineering with an aerospace concentration.

"I do not regret the extra time it took to get my degree," France said, because at UAF he got to work at Poker Flat, for ACUASI and in the Space Grant Program.

The Space Grant connection led to a summer internship at the Kodiak Launch Complex, a commercial rocket launch facility on Kodiak Island, Alaska. Other colleges just don't offer such access, France said.

"Maybe there are the same number of slots, but there are many more applicants. A lot of talent goes unused in the Lower 48 just because of that," he said. "At UAF, if you're smart and you work hard, you will get the opportunities."

ACUASI

Sam Vanderwaal, left, and Corey Upton determine how to install a camera and a video transmitter in a drone payload extension module. The black drone with an orange top on the table is a Ptarmigan UAS designed by NES staff; the yellow drone is an H20Copter.

Last year, France transitioned from a student employee at NES to become the CEO of the first NES subsidiary, named Aquilo.

The company formed Aquilo after the Federal Aviation Administration in April 2015 released interim regulations that allowed unmanned aircraft to fly commercially. The FAA some years earlier had authorized hobbyists and recreational users to fly drones, as long as they stayed away from airports and flight paths. Institutions such as universities and public agencies also have had clearance to fly for some time. Aquilo is one of the first firms in Alaska with permits to fly drones and get paid for it.

Stringent regulations still govern where, how high and how far commercial operators can fly their aircraft. The pilot in charge must have a regular pilot's license, France said. Final FAA regulations are due this year.

> "OUR BACKGROUNDS FOSTER AN IMMEDIATE RAPPORT WITH POTENTIAL ALASKAN CUSTOMERS THAT COMPANIES FROM OUTSIDE WOULDN'T HAVE."

One of Aquilo's first projects used drones to conduct salmon surveys. Every summer, Alaska Department of Fish and Game biologists or their contractors count salmon in streams all over the state. They survey on foot or by air, via either fixed-wing aircraft or helicopters, flying low and slow to count fish and shoot video.

Wildlife biologists around the world collect data this way, and it can be hazardous.

"Every couple years a pilot is lost, or a biologist, or both, in an aircraft accident," France said. Last summer, Aquilo shot high-definition video of salmon streams from a drone as a test project for ADFG. The scientists were impressed, he said.

"Saves time and money, and it's much safer," France said.

This year, Aquilo added a geotagging feature to its videos. A biologist reviewing the footage back in the office can click on each fish, setting a GPS tag on the spot. The biologist can also tag such features as the gravel nests where females lay eggs. The researcher then can create a report that precisely tallies fish and nests, and gives locations.

"You can't do that with an aerial survey or on foot," France pointed out. "And it's documented forever, so you can compare changes year to year, decade to decade."

Good-news story

Such high-tech work benefits not only NES customers but also a broader community.

Through volunteer activities and student jobs, the company has provided engineering expertise and technical oversight for many UAF students, ACUASI's Hatfield said.

"NES is a good-news story about how our students can take their hard work, the knowledge they've acquired, the late nights they've put in, and turn that around to provide something that's beneficial right here in Fairbanks and to Alaska," he said.

LJ Evans retired from UAF in 2013 after a career as a writer and editor. She is amused to observe that she has seldom been so busy.

NANOOK LEGENDS

CARL BENSON

By Jeff Richardson

Carl Benson still chuckles when he recalls a nearly half-century-old incident while serving as chairman of the Geology Department at the University of Alaska.

It was about 1970, and Benson was working to convince a promising student from Chicago that he could study geology in Fairbanks. But during the process, the student had received some troubling news from an advisor — he was certain there was actually no such place as the University of Alaska.

"We insisted there was," Benson said with an amused smile, "and he came here."

The story isn't particularly out of step with much of Benson's career. The 89-year-old professor emeritus at UAF's Geophysical Institute has spent much of his career educating people about conditions in less-traveled parts of the world.

Benson's research took him on expeditions to remote parts of the North Slope, Arctic Canada and Greenland, where he gathered data that's still fueling research today.

But his contributions at the Geophysical Institute, where he arrived a year after statehood to teach and do research, have left an equally significant mark, colleagues say.

In 2012, Benson was the first recipient of the Roger Smith Lifetime Achievement Award, which is given annually to a faculty member who shows "sustained commitment" to the Geophysical Institute.

"He has encouraged and befriended so many people up here," said Matthew Sturm '83, '89, a UAF geophysicist who studied under Benson. "What he's done for the sciences and people in the sciences, it's amazing."

Camping trip of a lifetime

Benson started preparing for his career as a glaciologist when he still was in elementary school.

He spent the winters playing in freshly fallen powder during his Minnesota childhood. But his interest went a bit beyond making snow angels and catching flakes on his tongue.

Benson remembers being fascinated by snow itself. He knew how the drifts would pile up, the right conditions for digging out a cave and when the weather was right for good snowballs.

That interest never went away. After serving in the Navy during World War II, Benson enrolled in the University of Minnesota to study geology.

He was a glaciologist before the field was recognized as a window into the Earth's future. Arctic ice and snow conditions are now widely considered a key to understanding issues like climate change and rising sea levels.

"It has assumed much greater importance as people realize that as the glaciers melt, it affects the rest of the world," Benson said. "The interest now is because people look at it and see how our whole world is so intertwined."

But Benson's early career was forged in locations where few other scientists had been. Soon after he finished his bachelor's degree in 1950, he joined the U.S. Geological Survey's geological mapping efforts in the northern foothills of the Brooks Range. The area was so unknown to non-Natives that the team didn't have names for many of the geographical features they encountered.

Some of his defining field research occurred in the 1950s, when he was a scientist with the Snow, Ice and Permafrost Research Establishment, a U.S. Army Corps of Engineers research unit that later morphed into the present-day Cold Regions Research and Engineering Laboratory. Fieldwork included studies in California's Central Sierra Snow Lab, northern Canada and the Greenland ice sheet.

Carl Benson

Benson in 1953 on one of his Greenland traverses.

A photo of Benson during one of the expeditions shows a rugged-looking young bearded man with a red plaid jacket and a contented half-smile.

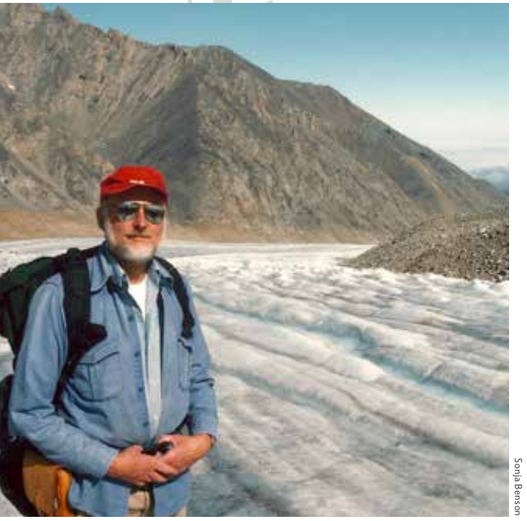
The look on his face is authentic. He still lights up at the memory of his earliest work, which took place in some of the most remote parts of the world. He talks about his time in the northern foothills of the Brooks Range as the camping trip of a lifetime.

"Those were wonderful field seasons," he said. "It's the sort of thing nobody does anymore. You're with a small group all by yourself, totally isolated. Now people fly in by helicopters for a few days and fly

Carl Benson outside the Geophysical Institute building on the Fairbanks campus in February.

back out. It was totally different. You get to live in undisturbed land, sleep in it and get to know it."

Benson got to know Greenland particularly well. He was part of a team that went to northwest Greenland in 1952 to locate sites to construct two radar stations for defense of Thule Air Base.



Sonja Benson

Benson pauses at the McCall Glacier in Alaska's Romanzof Mountains in 1986.

In 1955, he worked with Samuel Epstein, a professor at the California Institute of Technology, to make the first use of stable isotopes of oxygen in interpreting snow stratigraphy. Stable isotopes of both oxygen and hydrogen played an important role in his later research on ice fog and seasonal snow in Alaska.

Four consecutive years were spent extending that knowledge to the interior of Greenland's ice sheet. Benson led the final two expeditions, traveling by modified amphibious track vehicles called Weasels that pulled sleds behind them. Since the missions took place well before GPS technology, Benson's party used the position of the sun to determine their course and location each day.

Weight was so important that the team couldn't afford the luxury of carrying C-rations, which had a cargo weight of 6.4 pounds per person each day. They worked with military food researchers, using dehydrated rations to slice that weight to just 2 pounds. Their longest expedition, a 120-day journey in 1955, was punctuated by four supply flights by C-54 cargo planes, which would skim 20 feet above the snow cover and drop 55-gallon barrels filled with supplies.

"We dropped over 100,000 pounds in four years and never broke anything," Benson said proudly.

The data collected during those traverses became Benson's Ph.D. dissertation, a 153-page report packed with maps, charts and diagrams. It's so comprehensive that it remains a standard resource for Greenland ice research, more than 60 years after its publication.

Chris Polashenski, a research geophysicist for the U.S. Army Corps of Engineers, followed some of the same routes when he did follow-up studies on Greenland ice conditions from 2012 to 2014.

Polashenski said he felt a kinship with Benson throughout his travels, and the two enjoyed speaking about the contrasts of their journeys across the ice. Benson's early work allowed the two scientists to collaborate on a research paper comparing the condition of the ice sheet from the 1950s to today.

"At least in the U.S., Carl is kind of the godfather of Greenland research," Polashenski said. "He spent so much time there and he put so much work into his report. It covered really everything you wanted to know in there."

"The biggest recruiter is Alaska itself"

With his love of snow and ice, it seems natural that Benson eventually ended up in the only Arctic state in the U.S. After earning his doctoral degree from Caltech, under the guidance of Robert P. Sharp, he headed north in 1960 to a position at UAF.

Benson and his wife, Ruth, made their life in Alaska. Ruth became the university nurse, and they raised their three children in Fairbanks.

But Benson said UAF of the 1960s was still in its infancy, with fewer than 1,000 students. Before he and Ruth made their move north, he said numerous people warned him about the underdeveloped facilities at UAF. Like many students and faculty, he said the location played a bigger role in his decision that the school itself.

He's still enthusiastic about the draw of Alaska, crediting it for attracting many of the smart, ambitious students who study science at UAF.

"The best recruiter we have is Alaska itself," he said. "We have more and bigger earthquakes than any other state. In terms of glaciology and natural sciences, this place is right in the center of a natural laboratory that's 1 ½ million square kilometers in size. The coastline exceeds the combined coastline of all 50 states, including Hawaii. What other state can talk like that?"

Benson devoted his research to issues like ice fog, working to understand the components of the dense winter smog. He studied the dynamics of stream freezing, and has used the seasonal snow pack as a laboratory. He said the effects of strong temperature gradients can be studied in Alaska better than anywhere.

Benson also examined glaciers in the Brooks Range and studied glacier-volcano interactions in the Wrangell Mountains and on Mount Redoubt in Cook Inlet.

Along the way, UAF gradually grew up around him. West Ridge on the Fairbanks campus has blossomed with research facilities, many focused on the environmental issues that were, and continue to be, Benson's focus.

Benson noted that soon after arriving, he mentioned to a friend that Alaska's university was sometimes tough to have confidence in. After more than a half-century at UAF, he said things are much different.

"UAF is a world leader in Arctic research and is strong in every department," he said.

Sturm, who did his Ph.D. research under Benson in the early 1980s, said his mentor's influence is profound. Although Benson is responsible for important research as a glaciologist, his role as a teacher shouldn't be underestimated, Sturm said.

Even into retirement, Benson continues to serve as a mentor. Sturm regularly has lunch with his former professor, discussing topics that often go well beyond research.

"When you became a student of his, you didn't just learn about snow and ice," he said. "You learned about ethics and how to be a scientist."

Classroom in a cab

Alison York, a longtime friend and colleague, got a unique view of Benson's legacy during a trip to Anchorage in February. While attending a conference, she stepped into a taxi and began a conversation with the driver about the unseasonably warm Alaska winter.

When York mentioned where she worked, the cab driver enthusiastically mentioned a friendly, blue-eyed UAF scientist he'd met a decade earlier. They'd discussed ice and snow during a memorable ride. He said the experience had changed the way he understood winter weather by the end of the trip.

"He said, 'Do you know this guy who's a glaciologist? I learned so much from him,'" York said.

That scientist, of course, was Carl Benson. York, who has known Benson for more than 30 years, said he knows how to leave an impression.

"The driver said, 'I want him to know that I remember him after all these years,'" she said.

Well into his 80s, education is still an evident passion. Benson is long retired, but he's hardly done working. He still maintains an office in the Elvey Building and continues to chip away at questions he began pondering more than 60 years ago.

Benson is also clearly energized by the world around him. He talks about satellite technology that can detect the movement of tectonic plates — which creep at about the same speed as growing fingernails — and the recent discovery of gravitational waves. Earth is going through its sixth mass extinction, he said, a shift that humans are undoubtedly driving.

Benson lets loose a rare burst of colorful language at the thought of the United States being the only country that hasn't adopted the metric system for everyday use. He's such an advocate that he once had his driver's license measurements in kilograms and centimeters, before DMV automation made it too much trouble.

York said Benson's curiosity is a key to his continued role as a scientist well into his retirement years.

"I think he has a lot of things he still wants to get done," York said. "I think that's one of the hallmarks of a real academic."

Benson, for one, said he doesn't feel like a pioneer.

He shrugs at a question about his role in positioning UAF as a modern leader in Arctic research, mentioning the debt he owes to inspiring teachers, co-workers and students. Benson was the Ph.D. chairman for the late Sue Ann Bowling, the first woman graduate student at the Geophysical Institute. He credits other graduate students for enriching his life, including former Ph.D. students Roman Motyka and Sturm, who became colleagues.

"I'm honored, but I feel like it's undeserved praise — I think that there have been a lot of people involved," said Benson.

"All of these guys have done a lot. I've worked with special people."

> "When you became a student of his, you didn't just learn about snow and ice. You learned about ethics and how to be a scientist."

Jeff Richardson is a public information officer at UAF and previously spent more than 20 years as a newspaper reporter. He grew up in Delta Junction, so he can relate to Carl Benson's appreciation for a good snowdrift.

The view from here

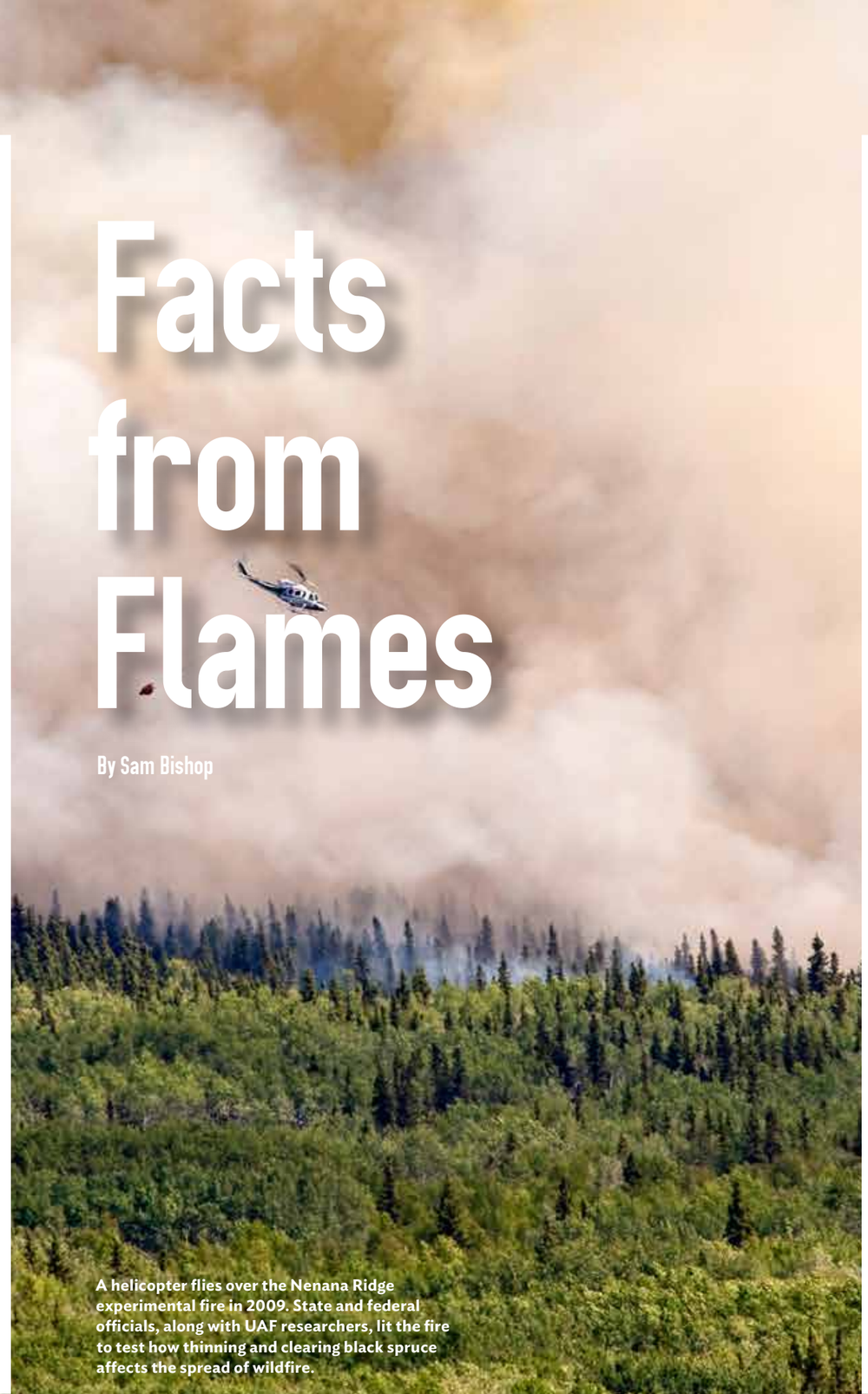
The top of the Gruening Building is a favorite spot for UAF photographers like JR Ancheta — and those lucky few people who get to drop the watermelons during SpringFest celebrations. The circular Constitution Park fills the space between Gruening, Constitution Hall, the Fine Arts Complex and Rasmuson Library. Before it was built in 1982, though, there was just gravel and a seasonal mud pit.

If it's been a while since you graduated, how have things changed? What memories do you have?
Tell us at **www.uaf.edu/uaf100/memories/**!

See more of campus at www.uaf.edu/virtualtour/.

Facts from Flames

By Sam Bishop



A helicopter flies over the Nenana Ridge experimental fire in 2009. State and federal officials, along with UAF researchers, lit the fire to test how thinning and clearing black spruce affects the spread of wildfire.

Scott Rupp and a few curious co-workers walked into a burned forest of black spruce about 35 miles southwest of Fairbanks in late June 2015. A lightning strike had ignited a moderately intense fire just a few days earlier. Pockets in the thick ash still smoldered. Open flames licked a few stumps.

Not far into the thicket of blackened, branchless trunks, though, the UAF professor's group found an entirely different forest.

"Here was this giant big green postage stamp of vegetation with most of the trees intact and most of the understory," Rupp said.

"So it really did work," he added.

What worked was an idea Rupp and Alaska's wildland firefighting managers had come up with 10 years earlier: By thinning thickets of black spruce and pruning their lower branches, they might slow down the fires that occasionally tear through such forests and threaten communities.

They tested the idea on that patch of state land at the end of the Nenana Ridge Road. Since then, the evidence from the site has accumulated slowly and sporadically.

The results are encouraging not only for wildland firefighters but also for anyone with a treasured few acres and a home in the potential path of a black spruce inferno — to protect your property from fire, you don't have to clear-cut it. Thinning and pruning can greatly increase the odds of stopping the flames.

Ending the data drought

Finding a way to stop Interior Alaska's wildfires had just become an even more urgent need a decade ago when Rupp and others put together the Nenana Ridge project. In the super-dry summers of 2004 and 2005, unstoppable fires in black spruce set new records for acreage burned. Fire managers doubted they could stop a fire if it came down the valleys into Fairbanks suburbs.

Government officials, anxious to do something, arranged to mow multiple lengthy clear-cuts in the black spruce on the outskirts of Fairbanks' urban core — west along Chena Hot Springs Road, north of Goldstream Valley, near Harding Lake and in several other areas.

But no one had much scientific data about how Interior Alaska's fire behaved when it hit such clear-cuts or alternative treatments such as thinning. Some modeling suggested thinning might even increase the speed at which fires spread because it would allow more wind into the thick forest.

So a team of fire managers secured about $1.5 million in federal, state and university funds to create an experiment and collect that data.

Robert Schmoll, now the state Division of Forestry's fire operations forester in Fairbanks, said he and a group of longtime colleagues put the proposal together. "We got it going beyond our normal jobs," he said.

The team included Rupp, who today leads the Scenarios Network for Alaska and Arctic Planning at UAF's International Arctic Research Center.

In summer 2006, crews under the team's direction drove down the Nenana Ridge Road, a logging track that starts on the Parks Highway southwest of Fairbanks. The road winds 11 miles down the ridge, ending in a muddy, rutted trail near the Tanana River. A wide bend of the river encircles about 1,000 acres of marshy flatland half-covered with black spruce thickets.

There, crews cut lines around a few large areas. They selected four blocks, each about 150 yards square, in two of the areas, called A and B. On two of the four blocks, they sheared all the trees with bulldozers. On the other two, they thinned the trees so none was closer than 8 feet to another. Then they pruned lower branches on remaining trees 4 feet up the trunks. They either hauled out the trees and trimmings from the thinned blocks or burned the piles the next winter.

Then everyone waited for the weather. For three years.

A wall of orange

In summer 2009, conditions were perfect to set the experiment on fire. Managers scurried to have crews set up the equipment — pumps, sprinklers and hoses to protect the perimeter lines, and fireproof video cameras and other scientific equipment to record the fire data.

Firefighters walked the southern line of area A, dripping ignited diesel on vegetation. Helicopters dropped plastic spheres of burning fuel, dubbed ping-pong balls.

"The idea was to try to start a fire under fairly extreme fire conditions so we could mimic approaching the worst-case scenario," Rupp said. It worked.

"We had a fully engaged crown fire, so there was a fire burning up in the canopy of the trees as well as down on the ground," he explained.

Black spruce grow in areas that often are classified as wetland. The ground is usually covered with sponge-like mosses, tussocks, sedges and even puddles. But the moss surface carries fire well during dry weather. Dead branches crowd the base of many spruce trees, creating a fuel ladder into the flammable needles above.

Firefighters call it gasoline on a stick. The sticks can grow 2,500 or more per acre, and in such places they can torch with a ferocity matching fires in the dry brush lands of the western United States.

By thinning thickets of black spruce and pruning their lower branches, they might slow down the fires that occasionally tear through such forests and threaten communities.

A video camera in a fireproof container set in the untreated forest at Nenana Ridge recorded a wall of orange approaching through the thickets. Twigs near the camera ignited, even though the nearest visible flames were still a dozen yards away. The small blazes quickly converged, and chaotic winds drove the burn into a swirling inferno for several minutes.

Video footage taken from just inside one of the thinned forest blocks started out the same. The wall of orange approached rapidly through the untreated forest. As the wall met the thinned area, though, it paused. The flames collapsed. Dense smoke

rolled over the flame front. Measurements taken later showed the fire dropped out of the canopy within an average of 8 ½ feet of the thinned area's boundary.

Rupp said the ground fire continued to burn into the treated area, but it moved slowly and went out on its own after an average of 259 feet.

Schmoll, the state fire operations forester, said that surprised him. Later investigation indicated that horsetails, which sprouted after the thinning, contained enough moisture to retard the fire, Schmoll explained.

"The spacing of the trees allowed some light in there," he said. "It changed the surface herbaceous structure."

Fires usually begin on the surface, then move into the crowns, Schmoll said.

With the surface fire slowed or stopped and no ladder fuels to climb up the trunks, the 2009 fire just died when it hit the thinned block within area A at Nenana Ridge.

A second chance

That's also where the experiment died. The fire on that first day had only burned around one of the thinned blocks in the A area. The next day, fire conditions were more extreme, and managers decided it would be too dangerous to continue with the controlled burn experiment.

The right conditions never re-emerged, and the money ran out. Since firefighters were able to torch only one area in a single year, peer-reviewed academic journals had limited interest in publishing the results, Rupp said.

So the project went dormant — until that lightning strike in June 2015.

The lightning bolt hit on the west side of the old experiment area, and the fire burned eastward through area B. However, the scientific equipment needed to record the fire's characteristics was long gone.

"So it was somewhat of a forensic investigation afterward to try to piece things together," Rupp said.

They discovered that the 2015 fire was less intense than the 2009 blaze. "We did not have an active crown fire," Rupp said. "It was more of a fire running along the ground with individual trees torching and starting on fire."

"But the result was the same, in that the [thinned] area for the most part did not burn."

"But the result was the same, in that the [thinned] area for the most part did not burn," he said.

And when it stopped burning, it left that green postage stamp of untouched forest that Rupp and his co-workers discovered a few days later.

Randi Jandt

Randi Jandt

The thinned and pruned black spruce in test unit B, at left, contrasts with the dense untreated forest above. In 2006, crews thinned the trees to create 8-foot gaps between each and pruned trunks at least 4 feet high.

Who will do it?

Rupp and Schmoll believe the Nenana Ridge results demonstrate the value of thinning as a way to slow down major wildland fires.

"There are a couple data points out there that now essentially provide some solid evidence that fuel treatments are effective both in changing the physical fire behavior but also providing additional options operationally for the fire managers," Rupp said.

"They're not going to put firefighters into a dog-hair stand of black spruce," he said. "That's too dangerous."

But in a thinned stand, Schmoll said, they may be able to put firefighters in place for direct attack. Aerial retardant can be more effective. They can set up sprinklers fed by hoses from trucks or pumps placed in nearby ponds.

Thinning might even be more effective than bulldozing, in some conditions. While the bulldozed areas at Nenana Ridge slowed the fires, the slash piles burned for a long time. Also, because grass grows densely in bulldozed areas for many years after the clearing work is done, fires can move across them very rapidly during dry spring conditions, Rupp said.

All this raises a question, though: Can firefighting agencies do clearing and thinning work on a scale that matters?

Bulldozing land costs up to $350 per acre, and hand thinning and pruning costs up to $5,000 per acre, Schmoll said.

The intensive treatment on just the few acres at Nenana Ridge alone cost about $500,000, according to a 2011

Protect your property.

Results from the Nenana Ridge research project back up the advice offered by Firewise, a national multiagency effort to help people protect their property from wildfire.

The Alaska Firewise's zone recommendations for homeowners are reproduced here. The goal is to create defensible space, reducing the risk of destruction and damage from wildfires.

Is your home in a safe zone?

A defensible space is a buffer zone you create around your home or cabin that is clear of heavy vegetation or anything that could catch fire with embers. This space decreases the intensity of a wildfire as it approaches your home site and provides firefighters with an opportunity to defend and protect your home and outbuildings.

Don't get burned!

- Have a detailed evacuation plan so you are prepared to leave at a moment's notice.
- Provide adequate access to your home site; is there room for emergency vehicles to turn around?
- Develop an emergency water supply; have a pump, adequate hose and nozzle close by.
- Contact your local fire department or the state Division of Forestry for information on the burn permit program.
- Maintain your defensible space annually.

Zone 3 (within 100-200 feet)

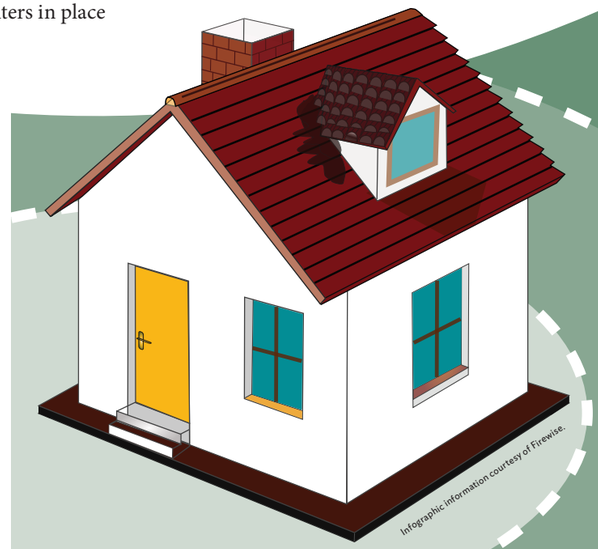
- Manage wooded property in a traditional manner.
- Remove trees that are damaged, dead, infected by disease, or are of poor form. This will improve the health of the forest.
- Prune and thin out trees along driveways and trails.

Zone 2 (within 100 feet)

- Remove dead and dying trees, shrubs and brush.
- Prune remaining trees to a height of 8-10 feet above ground.
- Properly dispose of all slash and woody debris.
- Position firewood, vehicles (including four-wheelers and snowmachines), fuels and hazardous materials in appropriate locations away from flammable vegetation.

Zone 1 (within 30 feet)

- Remove all flammable vegetation and other materials within 5 feet of home.
- Keep roof and gutters free of branches, leaves and needles.
- Choose non-flammable roofing materials on all structures.
- Keep all firewood, vehicles (including four-wheelers and snowmachines), fuels and hazardous materials out of this zone.



Infographic information courtesy of Firewise.

Professor Scott Rupp talks about the Nenana Ridge experimental fire in 2009.

paper Rupp wrote summarizing the results for the federal Joint Fire Science Program, one of the funding agencies.

In addition, treatments are controversial. The closer they get to people's homes, the more controversial they become.

"No one wants to have a large swath of forest bulldozed in their back yard," Rupp said.

The ecological effects of widespread clear-cutting and thinning also concern scientists. The cuts can fragment wildlife habitat, increase permafrost thawing and cause erosion.

The homeowner option

While agencies are constrained by such considerations, homeowners may be less so. The effectiveness of the thinning technique in particular might help convince individual property owners in high-risk areas to undertake the work.

Joe Little, a UAF economics professor, is looking into that possibility as part of a broad study of the cost-effectiveness of fire fuel treatments in Alaska. He's working with Rupp and other researchers at UAF's SNAP.

This fall, Little plans to survey up to 2,000 property owners in the Interior and Kenai Peninsula regions of Alaska.

"We're trying to identify those factors which motivate people to mitigate wildfire risk on their own land," Little said.

Clearing or thinning land might seem to be a logical thing to do from a fire protection standpoint, but it's not so simple, Little said.

Scott Rupp

A fire crew works to control flames along an exterior line of the experimental plot on June 17, 2009.

"I mean, you tend to live in Alaska for the amenities," he said. "So why would you want to, say, clear fuels from your land if you appreciate the trees and the flora and fauna?"

In addition, studies have shown that people tend to free-ride off their neighbors' protective actions, whether those neighbors are public agencies or private property owners. Little identified this tendency in an earlier computer lab experiment he conducted.

"If you're looking at thinning and pruning, those tend to be pretty effective measures," said Little, who grew up in Idaho and spent four years fighting wildfires in that region in the 1990s before attending graduate school. "But it's going to be contingent upon the area where you're working, the actual fire risk and how many of your neighbors are doing the same thing."

Follow Firewise

Firefighting agencies already have a concerted nationwide program, called Firewise, that tries to get people in high-risk neighborhoods to act both individually and as organized communities. While the Nenana Ridge experiment was designed primarily as a test of landscape-scale fire treatments, the results reinforced the Firewise recommendations.

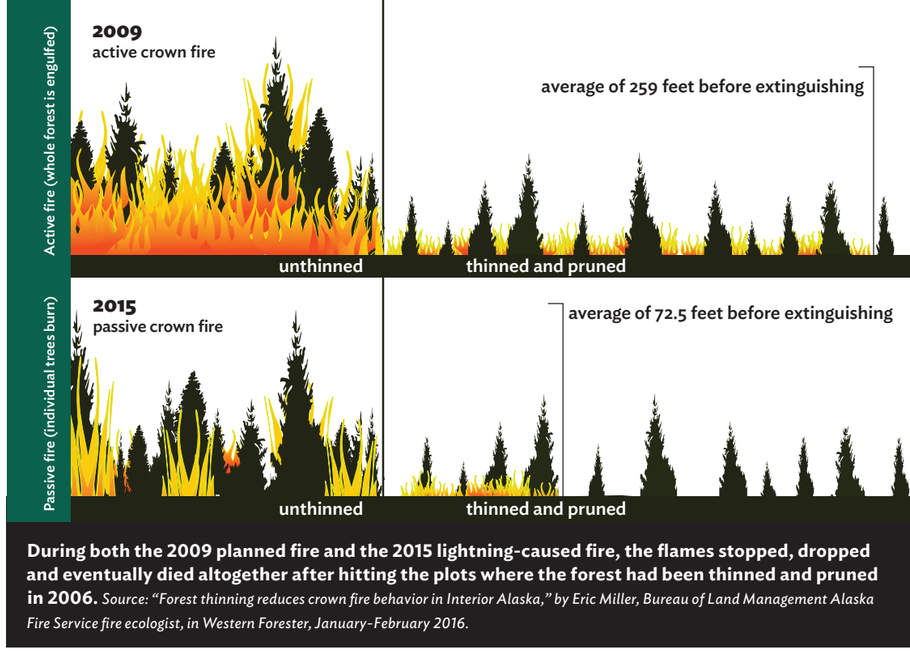
Firewise suggests numerous measures. Maintain a lawn. Edge your house walls with small plants, flowers or gravel. Don't store flammable material and firewood under decks or in sheds against the house. Enclose porches, sheds and vented areas with non-combustible screens to keep out flying embers. Clean gutters of needles and sticks.

However, even these measures won't save a home if a fully engaged crown fire gets close. The heat radiated by such fires can ignite combustible material on the home's exterior, even when visible flames are still far away.

That's in part why Firewise recommends removing all spruce and other conifers within 15 feet of the building. It also recommends thinning conifers in an area extending 100 feet from a home — more if you're on a steep slope.

In the thinned area, branches of remaining individual trees or clumps of trees should have 15 feet between them. If a homeowner opts to keep clumps of black spruce rather than individual trees, the clumps should be no more than 10 feet in diameter.

In addition, limbs of all conifers should be pruned 6 to 8 feet up the trunks. Dead vegetation and shrubs underneath must be removed to avoid the ladder effect.



During both the 2009 planned fire and the 2015 lightning-caused fire, the flames stopped, dropped and eventually died altogether after hitting the plots where the forest had been thinned and pruned in 2006. *Source: "Forest thinning reduces crown fire behavior in Interior Alaska," by Eric Miller, Bureau of Land Management Alaska Fire Service fire ecologist, in Western Forester, January-February 2016.*

Evidence from the Nenana Ridge fires indicates that the Firewise measures will prevent a crown fire from approaching a home and might even stop a ground fire before it gets close.

> "We're trying to identify those factors which motivate people to mitigate wildfire risk on their own land."

"The suggestions that they give you and the rules of thumb in many ways mimic what we did out there," Rupp said.

Increasing danger

Schmoll, with the state Forestry Division, said thinning also helps firefighters.

"The biggest advantage is time," he said. When a fire is approaching a neighborhood, firefighters will conduct triage on threatened properties. At homes where thinning or clearing has occurred, firefighters are more likely to have time to set up sprinklers or take other protective measures.

Places where the natural forest abuts the buildings aren't as likely to get help. "Those are the ones you write off," he said.

Even in cases where firefighters decide they do have time to protect a property, the results won't be pretty if a fire is approaching, he said.

"If we come out and do it, we're going to cut everything down," he said. "If you do it yourself, you can do it the way you want to."

Rupp, who lives at 25-mile Chena Hot Springs Road, had to evacuate in 2013 when the Stuart Creek fire approached his home.

Rupp said residents of Fairbanks and other communities should consider the information about fire protection in light of the growing fire danger.

"If it's a fire season of any extent," he said, "Fairbanks is going to suffer through bad smoke, and it's very likely that some part of our community is going to be threatened to the point of evacuation."

Robert Schmoll

Randi Jandt

An aerial photograph taken in 2009, at left, shows how the flames failed to burn an area of thinned and pruned forest located in the center of the circle. At right, a ground-level photograph taken in that circled area reveals how the active crown fire in the untreated forest stopped when it hit the thinned and pruned forest.

Sam Bishop is a writer and editor at UAF University Relations. He worked previously as a newspaper journalist for 27 years in Fairbanks, Anchorage, Juneau and Washington, D.C. As a college student he spent two slow seasons as an emergency firefighter for the state Division of Forestry.

Learn more about Firewise at **http://forestry.alaska.gov/fire/firewise** and the Nenana Ridge project at **http://bit.ly/Aurora-fire**.

CLASS NOTES

Your fellow Nanooks want to know what you've been up to!

Send us a note about your latest adventures — with photos — and we'll include them in a future Aurora. If you'd like to send us an audio or video update, we can include that in our online version as well. This is your chance to write for Aurora. Drop us a line and your photo at **aurora.magazine@alaska.edu** or visit **www.uaf.edu/alumni/classnotes/.**

1960s

Jim McCaslin Brown '60, '63 — "Retired from Alaska Pacific University as emeritus professor of environmental geology at the end of a 50-year career split 50/50 between universities and engineering consulting firms. Most experience has been in Alaska, as well as Wisconsin, Montana, Indiana and Ontario. Currently a senior fellow of the Geological Society of America and a senior member of the American Institute of Professional Geologists. Retired activities include playing flute/piccolo with the Anchorage Community Concert Band, and I worked this past summer interpreting landforms and contained sediments along the Alaska LNG pipeline route, which is the seventh Alaska pipeline I have worked on. So far only Alyeska has been built."

Laurie Ayars Reeve '68 — "Heading to Africa again this year for my fifth volunteer mission, this time in Uganda. Have volunteered for several years with an NGO based in St. Paul, Minnesota, that does community development in rural villages and slums in both Kenya and Uganda. My husband, **David Reeve '67**, and I now live in Port Angeles, Washington, after he retired from the aviation world having worked with five different airlines all over the U.S."

Jennifer Jolis '69 (above center) was named a 2016 Woman of Distinction by the Farthest North Girl Scout Council in Fairbanks in May. Read more at **www.fairbanksgirlscouts.org/news/women_of_distinction/**.

1980s

Casey Emoto '85 — "I am very grateful for my education from UAF and for where it has taken me. This is especially so given where my journey started in my hometown of Sand Point, Alaska, and how I came to be a professional engineer. When I headed off to Fairbanks to major in engineering, I had never met a real engineer. The only engineers that I knew were those that were responsible for the engines on fishing boats. Clutching my admissions paperwork, I arrived at Professor Lokken's office at the appointed time. I did not know what to think when the professor asked me what drew me to chemistry. Luckily for me, Professor Lokken was able to connect me with Professor Burdick in the civil engineering department, and as they say, the rest is history. Today, I am part of the executive management team at the Santa Clara Valley Transportation Authority that is responsible for the delivery of hundreds of millions of dollars in highway and transit projects. On the national level, I am co-chair of the Transportation Research Board's Managed Lanes Committee. You can find me on LinkedIn."

Thomas Moll '86 is a civil engineer at Hanson Alaska Professional Services in Anchorage and celebrated five years with the company in February 2016.

Kelly Sassi '89, '96 — "I am now a tenured associate professor of English and education at North Dakota State University and have been director of the Red River Valley Writing Project for the last two years. I live in Fargo with my husband, Enrico, and our two teenage sons, Alessandro and Massimo."

1990s

Mark Correia '91 — "I am beginning my third year as dean of the College of Health and Human Services at Indiana University of Pennsylvania. Our college has nine departments and is the largest on campus with about 4,500 of the university's 13,800 students. Located in western Pennsylvania, we are one of 14 universities in the state system."

Moira O'Malley '93, '06 won a 2016 BP Teacher of Excellence Award. She teaches at Watershed Charter School in Fairbanks.

Shawn Wilson '94 gave a presentation in April at UAF outlining indigenous philosophy as it relates to values and ethics. Shawn is Opaskwayak Cree and hails from northern Manitoba, Canada. He is the director of research at Gnibi College of Indigenous Australian Peoples at Southern Cross University. His 2008 publication, "Research is ceremony: Indigenous research methods," has earned global recognition. He also gave the keynote address in April at the Alaska Native Studies Conference in Anchorage.

Ron Tavernier '97, '07 — "I am currently working at the State University of New York in Canton, New York. This last year I was promoted to associate professor, granted tenure, and became head of the science department here. Still miss Alaska every day. Facebook has allowed me to connect with a lot of the old Alaska gang. But I know more are still out there. Drop me a line. Miss UAF every day."

Birgit SUESS '01 —

"**Amy Eubank '94** and I went to UAF at the same time (way back in the '90s!) but we didn't actually meet each other until the fall of 2015, when I flew out to the Aleutians to evaluate students for speech and language services. Amy is the special education teacher at Sand Point School, and for years she has not only provided special education services, but like most special education teachers in Alaska, has also been doing most of the speech, occupational and physical therapy guided by the itinerant therapists who travel there about once a quarter (weather permitting!).

"I am a speech language pathologist and co-founder of E-Therapy, a company based in Flagstaff, Arizona, that provides speech, occupational and physical therapy and counseling via teletherapy across the country. E-Therapy has master's-level therapists who meet with the students online using video conferencing. This model is particularly useful for rural and remote areas [such as the Aleutians]. Amy reported the students are making great progress and are highly motivated to work with their therapists over the computer."

Jean Paylow '98 — "Celebrated my 25th wedding anniversary this past summer. Retired early (from human resources) and hope to keep on traveling to more exotic places in the years to come. Husband, Kevin, is still consulting, and daughter, Katie (15), won gold at the USAT National Taekwondo Tournament. Hoping to do it again this year and then travel to our first international tournament in Korea this summer."

2000s

Marisa Sharrah '01 became the president and CEO of the Greater Fairbanks Chamber of Commerce in July 2016. Prior to that she was the community relations manager at Flint Hills Resources Alaska since 2007. She grew up in North Pole.

Melanie Bahnke '04 was appointed to the Governor's Tribal Advisory Council in May 2016. She is the president/CEO of Kawerak in Nome.

Sara Harriger '04 was named consul of the United States to western France in January 2016. Her office is in Rennes. She joined the diplomatic corps of the U.S. State Department in 2006. Read more at **http://bit.ly/AuroraHarrigerRennes**.

Teresa Thompson '04 — "January 2016 marked my seventh year raising philanthropic support for UAF's School of Fisheries and Ocean Sciences. My communication degree from UAF has helped me personally and professionally. Thanks, UAF!"

Etsuko Kimura Pederson '05 (above left) — "I organized a tsunami relief concert in Sendai, Japan in June 2015, where I performed my modern music compositions for piano in concert. The concert featured 10 of my compositions for two and three pianos, performed with two other pianists. The concert was free and revenue from the sale of my CDs after the concert was donated to the Tsunami Relief Fund of the City of Sendai."

Kris Racina '06, '09 was chosen as staff member of the year for 2016 by the Associated Students of UAF in April. She was the associate vice chancellor of University and Student Advancement until April 2016 and now teaches in the School of Management.

2010s

Kinsey Laine '11 won Hawaii's Olympic-distance Lavaman Triathlon in April 2016. Kinsey is UAF's assistant swim coach. Read more at **http://alaskasportshall.org/2016/04/laine-wins-lavaman-triathlon/.**

Jeremy Fulk '12 completed a doctor of optometry degree at the Arizona College of Optometry of Midwestern University in June 2016. He plans to practice at The Eye Clinic of Fairbanks.

CLASS NOTES

Laura Schlutt '12 — "I'm working really hard in Austin, Texas. I'm working at a job that I love doing. When I graduated from UAF, I wasn't sure what I was going to do. I've been floating trying to get into the film scene here in Austin. It's a hard scene to get involved. I'm now teaching with a nonprofit in Round Rock, Texas. We teach kids to embrace the performing arts and media formats. I'm so happy to find a job that I didn't know I would love."

Tristian Monterastelli '13 — "I will be graduating from Pepperdine University's School of Public Policy with my master's in economics and state and local policy in April 2016! I am returning to Alaska in December 2016 to work as a juvenile probation officer in Barrow! I could not be more excited!"

Michael Washburn '13 was selected chief of police for the Indio, California, police department in June 2016. He has 30 years of experience in law enforcement.

Matriculates

Jeff Dean is a sculptor in Homer. His father, Fred Dean, was professor of wildlife management at UAF from 1954-1990. You can view Jeff's art at **www.jeffreyhdean.com**.

Wally Harrison — "88 years young and still going strong."

Friends

George Benson — "I recently completed writing a book, 'A Distant Calling: One Young Man's Journey into Alaska,' about the adventures I had in Alaska during the 70s. You can find it on **www.amazon.com**. A lot of the book has to do with the time I spent at UAF while trying to get out on the pipeline. Eventually, I settled down, got married and taught at Barnette Elementary School in Fairbanks for seven years."

Volunteer of the Year awards

Alaska First Lady Donna Walker honored 13 Alaskans in May with the 2016 First Lady's Volunteer of the Year awards, including UAF alumni **Mark Ahsoak '96; Jamie Marunde '04, '14; Denny Mehner, matriculate; and David Musgrave '78, '83**. Read more at **http://bit.ly/Aurora-volunteers**.

Top 40 under 40

The Alaska Journal of Commerce included the following alumni in its 2016 Top 40 Under 40 list:

Bill Bailey '06, community and communications manager for Alyeska Pipeline Service Co., Fairbanks;
Matt Carle '00, Alaska Native program director for Alyeska Pipeline Service Co., Anchorage;
Brix Hahn '14, event director for the Anchorage Chamber of Commerce;
Erin Harrington '05, executive director for the Salmon Project, Kodiak; and

Tom Marsik '07 (below), professor and program head of sustainable energy at UAF's Bristol Bay Campus in Dillingham.

IN MEMORIAM

Adlai Alexander '97, June 27, Fort Yukon, Alaska

Zelma Joseph Axford '01 and former Cooperative Extension employee, June 12, Fairbanks, Alaska

Bryan J. Borjesson '76, '81, May 31, Fairbanks, Alaska

Thomas L. Boucher '83, Feb. 13, Mount Vernon, Washington

Klinton L. Chace '93, March 25, Fairbanks, Alaska

William F. Coghill, matriculate, April 28, Fairfield, California

Richard E. Corbaley '64, May 11, Lander, Wyoming

Victoria Jean Cramer '98, '01, Feb. 26, Whittier, Alaska

Margie R. David '84, June 16, Mekoryuk, Alaska

James Hanson Doore '73, June 29, Fairbanks, Alaska

Ricardo V. Ernst '70, May 15, Trapper Creek, Alaska

Ellen Catherine Feaster '90, June 22, Anchorage, Alaska

Charlotte R. Fitzhugh '97, May 3, Fairbanks, Alaska

Artis Flanagan, retired Facilities Services employee, Feb. 29, Fairbanks, Alaska

Jack H. Fowler '98, April 19, Florence, Kentucky

Deborah L. Grahek-Boeh '90, March 17, Boise, Idaho

Cynthia L. Halterman, matriculate, April 25, Santa Cruz, California

Donna M. Hancock '95, Feb. 22, Two Rivers, Alaska

David W. Heimbigner, matriculate, June 13, Juneau, Alaska

Carleton F. Herdering '56, '58, April 25, Pullman, Washington

Kenneth J. Johansen '68, June 30, Albuquerque, New Mexico

Albert Jorgensen '72, March 27, Wasilla, Alaska

Sylvia "Tass" Kelso '87, June 1, Colorado Springs, Colorado

Myra Laakso, former Facilities Services employee, March 26, North Pole, Alaska

Kurt F. Lotspeich '74, May 15, Talent, Oregon

Cora M. Maguire '84, March 26, Fairbanks, Alaska

Leonard F. McKinney '66, April 26, Anchorage, Alaska

Nancy H. Mendenhall '53, May 18, Fairbanks, Alaska

Steven A. Mills '95, June 24, Fairbanks, Alaska

Roderick M. Moore '60, '70, April 18, Farmington, Maine

Hugh J. Moore '86, '92, '96, June 14, Soldotna, Alaska

Kottayam V. Natarajan '65, June 1, Pearland, Texas

James R. Nelson '05, Feb. 13, Delta Junction, Alaska

Henry Joseph Niebauer, professor emeritus, Feb. 24, Middleton, Wisconsin

Pamela A. Phillips, former KUAC employee, May 15, Fairbanks, Alaska

Janice Eileen Platzke, matriculate, June 17, Fairbanks, Alaska

Michael A. Rogan '72, June 1, Fairbanks, Alaska

Timothy J. Rogers '95, May 21, Danville, Pennsylvania

Lawrence Dale Rorrison '75, April 7, Soldotna, Alaska

Thomas A. Schuck '65, June 3, Helena, Montana

Florence L. Spaulding '66, April 15, Fairbanks, Alaska

Lynn (Freeman) Stevens '67, March 18, Anchorage, Alaska

Gloria J. Taylor '71, April 11, Fairbanks, Alaska

Nancy Jo Thomas '06, April 21, Fairbanks, Alaska

Nancy W. Thornton '69, April 25, Boulder, Colorado

Mary R. Tucker '68, May 14, Sitka, Alaska

Jack (Bud) Van Hatten '11 and former student regent, March 20, North Pole, Alaska

Bert W. Varnell '62, May 31, Temecula, California

Blanche L. Vest '80, '93, March 27, North Pole, Alaska

Cynthia L. Walker, matriculate and associate professor emeritus, Feb. 20, Newark, Ohio

Ruby Dean Walser '88, June 25, Van Wert, Ohio

Ellen LeSure Whitcher '69, Feb. 25, Fairbanks, Alaska

Kenneth R. Wichorek '68, May 10, Anchorage, Alaska

Wanda L. Wood, former Community and Technical College adjunct faculty, May 7, Fairbanks, Alaska

Georgia "Jackie" L. Young '12, June 3, Fairbanks, Alaska

Thomas E. Zalewski '72, June 6, Fairbanks, Alaska

**H=honorary degree*

Ron Cosgrave '58, '03H*, who led Alaska Airlines to success in the 1970s, died on May 12, 2016, in Seattle. He was 84.

While considered a brilliant businessman, Ron is remembered first by his friends for his grace, humility and generosity. In 2007, nearly three decades after he first established an engineering student scholarship fund at UAF, Ron gave another $2.7 million to the university. It remains the largest gift ever received from a living donor.

Ron was born in New York, the fifth of 11 children. He fought as a Marine in the Korean War, earning a Purple Heart and a medal for valor. Using the GI Bill, he enrolled in 1954 at the University of Alaska, where he received the institution's first chemical engineering degree.

While still in school, Ron and several other students started a real estate company that provided low-cost housing near campus. One of their projects developed land from the estate of Charles Bunnell, UA's first president.

Through the success of his company, Ron acquired a substantial share of Alaska Airlines stock and joined the board of directors. In 1972, he became the airlines' CEO.

Ron was named chairman emeritus of the airline in 1981 but continued to serve on the board until 2004. He was a mentor to Brad Tilden, the current CEO, and to **Bruce Kennedy '63, '98H***, who was a partner in their original real estate company and then succeeded Ron as chairman and CEO.

Both Ron and Bruce, who died in 2007, received honorary Doctor of Laws degrees from UAF. Ron also was recognized by the UAF Alumni Association as a distinguished alumnus in 1978. He served as a UA Foundation trustee from 1979-1983.

Ron is survived by three sisters and two brothers. A celebration of Ron's life was held July 22 in Seattle.

Dean, Professor and Curator Emeritus Brina Cattell Kessel died March 1, 2016, in Fairbanks. She joined the University of Alaska in 1951 and was granted emeritus status 48 years later in 1999. Along the way, she became Alaska's most prominent ornithologist.

Brina was born in Ithaca, New York, in 1925 but grew up on a 110-acre parcel near Storrs, Connecticut, where her father taught at the public university.

Both her parents had taken ornithology courses at Cornell University in Ithaca. "My dad would take me out for hikes, identifying birds," she said in a 2003 interview. "I guess that's where my love of birds began."

Brina worked her way through Cornell at a poultry farm, then studied for a master's degree under famed conservationist Aldo Leopold at the University of Wisconsin. Tundra fascinated her, though, so she went north after finishing a doctorate at Cornell. She took an instructor position at the University of Alaska.

Anthropology Professor **Ivar Skarland '35** took Brina and a group to Cleary Summit, about 20 miles up the Steese Highway, for a picnic in early summer. "There was tundra right there at the very tip top," she said in 2003. "I knew for sure that I was never going to leave Alaska."

Brina soon became a professor, and she advanced rapidly. The university did not hold her back because she was a woman, she said, but others were not so open-minded in that era. In the early 1950s, the Naval Arctic Research Laboratory in Barrow denied her permission to float the Colville River. The Navy said it would only allow married women on its petroleum reserve, which covered the North Slope's western half.

So Brina sent her student instead. That student, **George Schaller '55**, is today one of the world's most well-known field biologists.

Brina, George and others joined Olaus and **Margaret Murie '24** at their camp on the Sheenjek River in the summer of 1956, a visit chronicled in Margaret's bestselling book, "Two in the Far North."

Brina was named head of the Department of Biology in 1957 after Druska Schaible died. She then served as dean of the College of Biological Sciences and Renewable Resources from 1962-1972.

Brina married Ray Roof, a physics faculty member at the Geophysical Institute. He died in 1968 at age 61.

Brina was named a fellow of the American Association for the Advancement of Science in 1960. She became the first woman to serve on the American Ornithologists' Union Council in 1968, was named an AOU fellow in 1973 and was elected its national president in 1992-1994.

After serving in various university positions in the 1970s, Brina turned again to research and museum collection development in 1980. She worked at the University of Alaska Museum of the North as a curator, first of the terrestrial vertebrate collection and then, from 1990 until her retirement, of the bird collection.

In 1993, friends established the Brina Kessel Medal for Excellence in Science, an annual award for undergraduate science students at UAF.

Upon retirement, she was granted emeritus status in three positions — dean of graduate studies, dean of the College of Biological Sciences and Renewable Resources and curator of terrestrial vertebrates.

A reception to remember Brina was held March 11 at the museum.

Memorial contributions may be made to the University of Alaska Foundation (fund 40815), P.O. Box 755080, Fairbanks, AK 99775 to support Brina's "Birds of Alaska" project.

NANOOK NOOK

Stubborn Gal

By Dan O'Neill

There is an axiom in children's book publishing that says girls will read about boy heroes, but boys won't read about girl heroes. Whatever conventional wisdom drives this bias, it's time to defy it.

In "Stubborn Gal: The True Story of an Undefeated Sled Dog Racer," a crusty old-timer tells his granddaughter the story of a 60-mile sled dog race and a young woman determined — if not exactly qualified — to run it. Sarah has never competed in any kind of race before and never run a big team of dogs. But when a race official strongly discourages her, she boldly decides to enter.

She has three days to learn how to control a dog team twice as powerful as any she has ever run. Two practice runs end in complete disaster. On the third day, Sarah enters the race, and the results amaze everyone. The book ends with a surprise for the granddaughter too.

Excerpt from "Stubborn Gal"

Bravely — some might say "foolishly"— Sarah waded into the pile, unsnapping lines and throwing dogs apart while trying hard not to let her legs get tangled up in the lines. You don't want to fall down into a 500-pound heap of fighting dogs, that's for sure.

As it was, reaching in among the snapping jaws, Sarah got her hand chomped good and hard. It was all she could do to get the team back to the yard and the dogs chained up again. Inside the cabin, she doctored her bleeding hand and collapsed into a chair, totally exhausted.

The next day, with her hand bandaged and aching, Sarah loaded the eager dogs into the dog box, then drove down to the wide, frozen Tanana River. A stiff wind on the river made the temperature feel like twenty-five degrees below zero. Her idea was to hook up the dogs right at the river's edge. She could tie the sled to the truck and hitch up the team all lined out on the long, straight river. The river had no hills or sharp turns to give her trouble. And once the dogs burned off their wild energy, they'd be more manageable. It was a good plan, but sometimes even good plans don't work out.

When Sarah pulled the slipknot, her leaders pulled a U-turn!

"No! No!" she yelled. But the dogs ignored her, and the sled flipped onto its side. With Sarah hanging on and dragging on her belly, the dogs took off across the icy parking lot at a full gallop.

Sarah hollered, "Whoa!" But the dogs kept going.

They ran right through the parking lot and straight across the highway, with Sarah bouncing through all the bumps and potholes. If a car had been coming down the road, Sarah and the dogs could easily have been run over and killed. It's happened before.

Instead, our gal ended up battered and bruised in the far side ditch, with the dogs all tangled up in the willows.

The next day was the day of the race. And what do you suppose Sarah did?

She went to the race?

Exactly.

She loaded up the dogs and drove to the start of the 60-miler. Not the 30-miler. She was that stubborn. Or that bold.

Dan O'Neill worked at UAF's Oral History Program for many years. His other books include "A Land Gone Lonesome," "The Last Giant of Beringia" and "The Firecracker Boys," for which he was named Alaska Historian of the Year.

Klara Maisch '12 is a Fairbanks artist and wilderness guide. This is her first book-illustration project.

The Nanook Nook showcases the talent of our alumni and students. If you have an original poem, essay, short story, artwork or photograph(s) you would like to share with our readers, contact **aurora.magazine@alaska.edu** for submission guidelines.

A state of progress

By Sam Bishop

James Wickersham explained why Alaska should have a university when he spoke to the people gathered on Troth Yeddha' in 1915 to dedicate a cornerstone to the idea.

"Our homes are here now and our children are demanding the educational advantages which we had," the territory's congressional delegate said, "and if we fail to meet the demand promptly there will be retrogression instead of progress in our new state."

So has the university helped Alaska to progress since the Territorial Legislature created it in 1917? The past century offers much evidence that it has.

Of course, any assessment must acknowledge more complexity than Wickersham's either-or model allows. Sometimes what one person calls progress another calls regress — or worse.

Yet that doesn't diminish the fact that we all strive to advance our visions of progress. Whatever those are, the university has often helped make them happen.

A few examples follow:

- Many parts of Alaska depend upon reliable, safe airplanes. So inside the Community and Technical College's hangar on the East Ramp of the Fairbanks International Airport, students work year-round while earning airframe and powerplant mechanics certifications. UAF bought the hangar in 2013, but the aircraft maintenance program began at CTC's Hutchison Institute of Technology on Geist Road in 1975. The institute is named for James Hutchison of Fairbanks. He began repairing aircraft for Carl Ben Eielson's Alaska Airways in 1929, and the Federal Aviation Administration named him its Alaska mechanic of the year in 1972.

Dedication day, Sept. 13, 1922.

- Crops grow in Alaska, but not all of them do well, so the university steps in to help. In Delta Junction, the Wrigley family's Alaska Flour Co. is growing the Sunshine variety of barley developed at UAF. It took 16 years, but the result in 2009 was a hull-less, early maturing grain that thrives in Alaska's tough conditions, producing up to 2,500 pounds per acre. Sunshine barley is just one of many plant varieties that UAF researchers, from the institution's earliest days, enhanced for Alaska's farmers and gardeners.

"... it will also support a university course and become a fountain head for the general diffusion of knowledge among the people of Alaska" — James Wickersham

- The aurora dances regularly across the night sky high above Alaska. Describing the northern lights and their effects upon Earth-bound electrical phenomena is one of the university's longest-running and most successful scientific enterprises. In 2015, UAF arranged to acquire the military's High-frequency Active Auroral Research Program, an antenna array near Gakona that UAF scientist Bill Bristow '88, '92 and others use to continue studies of the upper atmosphere.
- Mining supports thousands of well-paying jobs in Alaska operations ranging from small mom-and-pop placer sluices to vast pits owned by multinational corporations. For the past century, UAF graduates have led the industry, and they continue in those roles today. For example, Karl Hanneman '79, Rick Solie '84 and Denise Herzog '87, '09 all are working on International Tower Hills' effort to develop a major new mine at Livengood, 70 miles northwest of Fairbanks.
- Writers, artists and others in the liberal arts interpret what is happening in Alaska and the world, and the university provides the training and forums to help them. In 2015, Sherry Simpson '86, '95 was recognized with the John Burroughs Award for her book, "Dominion of Bears," putting her in the company of such internationally known environmental writers as John McPhee, Peter Mathiessen and Aldo Leopold.
- The glue that holds Alaska's economy together — stinky, sticky crude oil — sometimes escapes. When that oil has hit water, many people have said "just torch it." But does that work, especially in northern waters? Bill Schnabel '00, a UAF engineering professor, and other researchers worked with the industry to investigate the question. In 2015, they chemically treated and then ignited crude oil on a 300-foot square basin of water. The oil caught fire and completely burned. The research could aid in design of an air-based response system to hit oil spills quickly.
- Alaska's southern coast forms an arc in the ring of fire, a line of active volcanoes around the Pacific Ocean. UAF operates the Alaska Volcano Observatory to study, predict and detect eruptions so people can get out of the way when necessary. Aircraft are especially vulnerable. In 1989, before the AVO existed, a 747 hit an ash cloud from Mount Redoubt near Anchorage and lost power, dropping 14,000 feet before the engines restarted. The observatory's seismometers now monitor Redoubt and about 20 other volcanoes. The AVO also monitors satellite images and even tracks alerts from Russia.
- Fire poses a constant challenge across Alaska, whether the flames erupt midwinter in a woodstove chimney or midsummer in a spruce-filled subdivision. Students in UAF programs learn how to deal with both.

  The university's campus fire department began with student volunteers. Today, the students work as UAF employees, and many live at the fire station. They earn fire science degrees and paramedic certifications from the Community and Technical College. The program, unique in the nation, has trained hundreds of firefighters — including Doug Schrage '85, the university's current chief.

  UAF in 2014 began a wildland firefighting program through its Interior Alaska Campus. Students work on a fire crew while earning an associate degree or occupational endorsement. The UAF crew helped fight the 2015 Sockeye fire north of Anchorage that destroyed several dozen structures. "For rural Alaskans, wildland firefighting is a vital part of communities," said Tylan Martin, who grew up in Fairbanks and is now an assistant professor of wildland fire science.
- Alaska's icy waters impede the research needed to ensure that the rich fish, wildlife and other resources are managed well, but UAF now has a ship that's up to the challenge: the $200-million, federally funded *Sikuliaq*. In spring 2017, the ship will carry UAF researchers across the Bering and Chukchi seas during the plankton bloom, which underpins the food chain. That bloom has been hard to study without a big ice-capable research ship.

  "This project is exactly why we built the *Sikuliaq*," said Seth Danielson '96, '12, a School of Fisheries and Ocean Sciences research associate professor.
- The best journalism not only tells people what is happening but raises questions about why. Brian O'Donoghue, a UAF journalism professor and former newspaper and television reporter, spent 14 years working with students to investigate the innocence claims of four men imprisoned for a 1997 murder in Fairbanks. The work prompted litigation that exonerated the men in December. Julia Taylor, a journalism student, covered the final court hearings via more than 10,000 posts on Twitter. "Julia's Twitter feed just opened the courtroom doors to the broader community," O'Donoghue said. He received the Alaska Press Club's 2016 First Amendment Award for his efforts.

James Wickersham told the crowd on July 4, 1915, that the college he imagined would focus on farming and mining — its original name was the Alaska Agricultural College and School of Mines.

However, he said, "it will also support a university course and become a fountain head for the general diffusion of knowledge among the people of Alaska," Wickersham said.

After 100 years, we're just getting started.

Sam Bishop is a writer and editor at UAF University Relations. He spent almost three decades as an Alaska journalist. Some of his earliest memories are of the Fairbanks campus 50 years ago, where his dad, Dick Bishop '67, was earning a master's degree.

Join us to ***celebrate!****

2016

December	31	**Sparktacular:** *fireworks event, sponsored by Alaska Pyrotechnics*

2017

January		**Science for Alaska** lecture series begins
February	11	**Chancellor's Gala**
March		**Midnight Sun Visiting Writers** series begins
		Snedden Chair lecture series begins
	2-4	**Festival of Native Arts**
April	21	**SpringFest**
	25	**Research Day**
May	**3**	**Community event celebrating the 100th anniversary of the creation of the Alaska Agricultural College and School of Mines** Centennial Square, Fairbanks campus
	6	**Commencement**
June		**Summer Sessions' Discover Alaska** lecture series begins
		History cycles: *Pedal around Fairbanks with history Professor Terrence Cole and learn about the Golden Heart City's vibrant past. One in a series of community events around the state.*
July	21-22	**Nanook Rendezvous:** alumni reunion
	22	**Golden Days parade**
August	8	**UAF Day at the Tanana Valley State Fair**
September	9	**Troth Yeddha' Run**
		Starvation Gulch
		Public art: *Tour UAF's Art in Public Places with Professor Emeritus Kesler Woodward. One in a series of community events around the state.*
November		**Centennial donor recognition event**
December	6	**Holiday gathering:** centennial finale

** Not a complete list; dates subject to change*

For the latest calendar of events and to learn more about UAF's centennial, visit **www.uaf.edu/centennial/**. You'll also find an interactive timeline with videos, quotes and many more photos.

Historical photos from UAF Rasmuson Library Archives

Calling all alumni and friends —

help us celebrate UAF's birthday in 2017!

We've made you a banner (sample on the next page) **so you can print it** and send us a photo or video of yourself wishing the university a happy birthday, like our alumni director, Kate Ripley.

Once you've taken your selfie, post it to social media* using the hashtag #uaf100. Or send it to **uaf-alumni@alaska.edu** and we'll post it for you. Your post will become part of our social media wall at **www.uaf.edu/centennial/.**

** Social media posts should be set to public access.*

Flip this page over

HAPPY 100th BIRTHDAY, UAF!

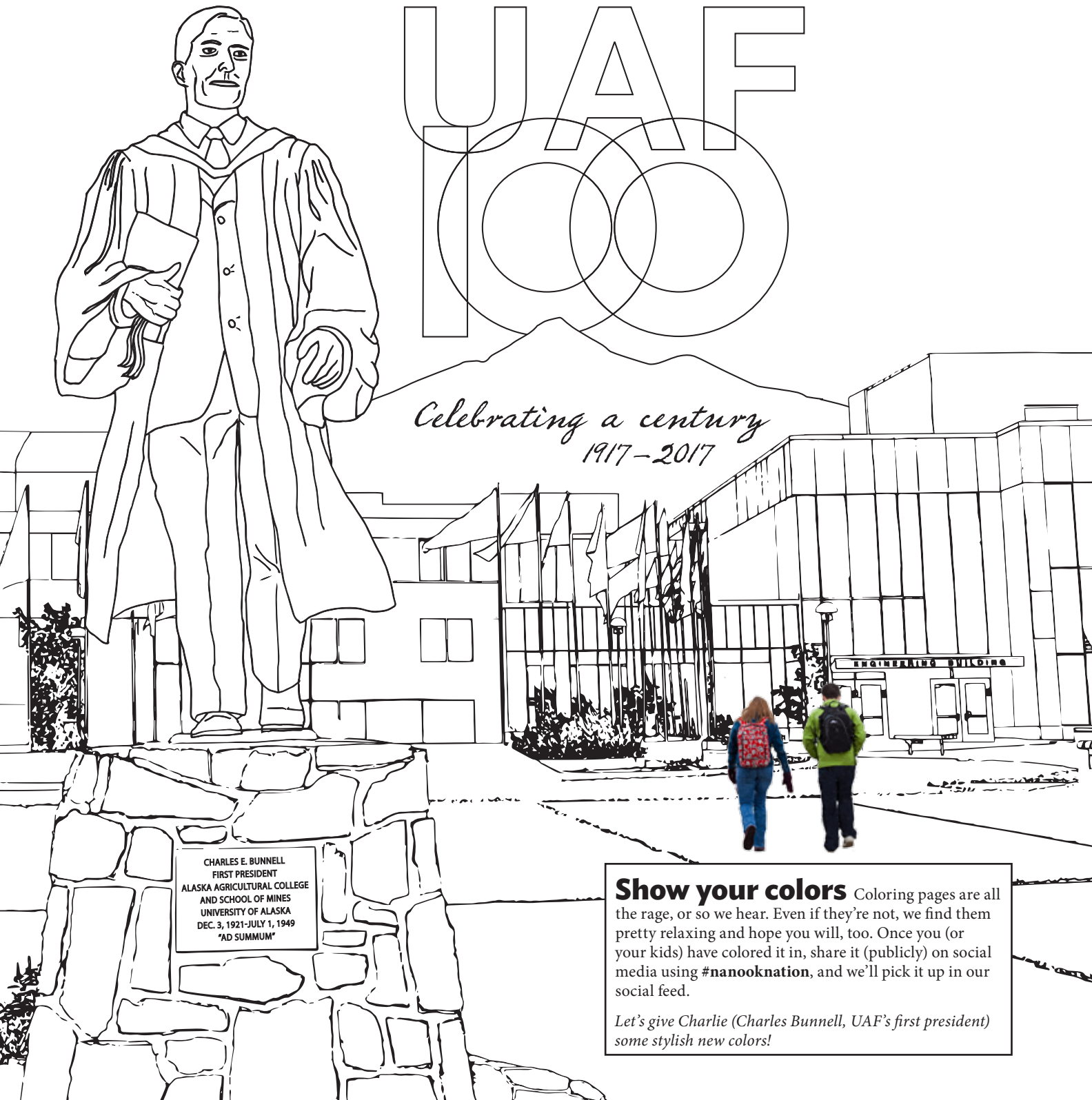
Please print large and legibly.

Name(s) and graduation year(s) (if applicable)

Location (city, state, country)

Download, print and post a selfie with this banner.

University of Alaska Fairbanks
PO Box 757505
Fairbanks, AK 99775-7505



Show your colors Coloring pages are all the rage, or so we hear. Even if they're not, we find them pretty relaxing and hope you will, too. Once you (or your kids) have colored it in, share it (publicly) on social media using **#nanooknation**, and we'll pick it up in our social feed.

Let's give Charlie (Charles Bunnell, UAF's first president) some stylish new colors!