

Making a quake
escape

Campus ridge
name restored

Frozen rock
blobs flow

aurora

Fall 2014

DAVE KLEIN

SCIENTIST. MENTOR. MILKER OF COWS.

For alumni and friends of the University of Alaska Fairbanks

FROM THE CHANCELLOR



Chancellor Brian Rogers and Sherry Modrow stroll at Ballaine Lake, known in Lower Tanana Athabascan as Tr'ekhwghotthidi Troth Yeddha' Bena', or "lowland wild potato lake."

As many of you have probably heard, the State of Alaska's, and therefore the university's, recent budget climate has been challenging, to say the least. This challenge will continue into the foreseeable future. In light of that, we are doing what we can to boost revenues by recruiting more students, conducting more research (which increases grant funding) and raising more private dollars, as well as tightening our belts.

Despite the budget outlook, there is plenty of good news. While there haven't been any new construction projects on our community campuses in recent years, the Fairbanks campus has had several. A public-private partnership has created new dining facilities in Wood Center, a more convenient central location. The state legislature approved a funding package to replace our 50-year-old power plant so we can reliably heat and light the campus. We're also working on a new engineering facility between the Duckering and Bunnell buildings. If you have seen the Fairbanks campus lately, you will have no doubt noticed our changing skyline.

The next project of great importance to our university and state is the development of the Troth Yeddha' Legacy.

Troth Yeddha', which means "wild potato ridge" in the Lower Tanana Athabascan dialect, is the hill on which the Fairbanks campus sits. Elders tell us that Athabascan residents of this area not only harvested the roots here but also held meetings to discuss important matters.

Today, UAF carries on this legacy, with people gathering from across the globe to learn and teach. Athabascan Chief Peter John of Minto, speaking about Troth Yeddha' in 1994, said elders endorsed this vision of Troth Yeddha's future. They agreed that this traditional gathering spot should, in Chief John's words, "continue being a place where thinking and working together would happen."

The Troth Yeddha' Legacy will be developed in two phases. First, Troth Yeddha' Park, already established between the UA Museum of the North and the Reichardt Building on the Fairbanks campus, will be enhanced to celebrate Alaska Native cultures and to create a central gathering place for events. The second phase will build an indigenous studies center in the park.

Expanding the Troth Yeddha' Legacy will help us reach several goals. We will honor Alaska Native culture and history. We will strengthen the wide variety of UAF academic programs relevant to indigenous peoples. Finally, we will create a tangible sense of belonging for Alaska Native students. All this will make UAF an even finer institution in the coming century.

You can learn more about Troth Yeddha' on p. 18.

Maasee', *

Brian Rogers, chancellor

*"Thank you" in Tanana Athabascan

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UAF photos by Todd Paris unless otherwise noted. Class notes photos provided by alumni unless otherwise noted. 09/2014



aurora



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◀ **Creating good habitat — for grad students and other creatures**

By Sam Bishop

During his 60-plus years in Alaska, Dave Klein, '53, has been a student, scientist, advocate, mentor and milker of cows. His indefatigable curiosity and generous spirit draw admiration from fellow biologists and students past and present.



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8 Aftershocks and darkness: a story from the Japan earthquake

By LJ Evans

Leah Denman was an exchange student in Japan in 2011 when the ground started shaking. While the world watched Japan's devastation in helpless horror, Leah's friends and family focused on bringing one young woman back home.

18 From the beginning: the roots of the Troth Yedtha' name

By Sam Bishop

The federal geographic place names board, responding to a group of Alaskans, adopted the traditional Athabaskan name for the Fairbanks campus ridge last year. Now the university has embraced the name as a banner for its campaign to develop a park and indigenous studies center on the ridge.

28 Dalton Highway danger

By Sam Bishop

Vast blobs of debris and muck are oozing down hillsides toward the trans-Alaska oil pipeline and Dalton Highway. Moving 10 feet a year or more, at least one is within 150 feet of the road, and no one is sure if they can be stopped.



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Volume 7 No. 1

Published twice a year for alumni and friends of the University of Alaska Fairbanks

**“It’s the difference
in geology that then
allows you to chemically
fingerprint the river they
came from”**

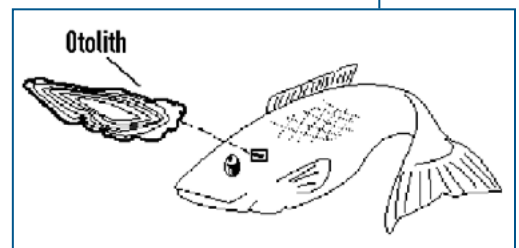




Live stream

Chinook salmon grow to adults in the ocean but return to spawn in the streams where they hatched. PhD student Sean Brennan has helped develop a way to match individual salmon to their home streams long before they arrive to spawn. He uses markers laid down in salmon bones by the chemistry of the waters in which the salmon hatch and grow. His doctoral thesis research at the School of Fisheries and Ocean Sciences adds an important tool to those used by scientists and salmon managers.

The tool is the ratio of two isotopes of strontium, a chemical element found naturally in the Earth. Differences in rock types, their ages and how they weather create variations in the strontium isotopes picked up by water that flows across the rock. The unique strontium ratio of a stream is captured in the auditory structures, called otoliths, of young salmon swimming in the water.



Otoliths grow in rings, similar to trees, where the center rings represent the fish's younger life. By matching the isotope ratios in the inner rings with ratios in rivers and streams, Brennan can pinpoint the region and sometimes the tributary where each salmon was born.

"It's the difference in geology that then allows you to chemically fingerprint the river they came from and were headed back to," said Brennan.

Brennan does his isotope analysis at the University of Utah, which has the necessary laboratory. A new engineering facility being built at UAF will house its own lab capable of measuring strontium isotopes.

Brennan's project, funded by Alaska Sea Grant, is focused on chinook salmon in the Nushagak River, but he hopes this work will be continued to develop baseline data for all potential salmon hatching and rearing locations. Brennan believes these types of tools are important for maintaining salmon biodiversity and managing sustainable fisheries.



National rifle tourney returns to UAF

UAF will host the NCAA Rifle Championships next spring for the second time in the school's history.

The championships will be held March 13–14, 2015.

“When we last hosted, in 2007, we were able to change the way championships were hosted by being the first to do the air rifle event in the gym,” said Dan Jordan, head rifle coach, in a news release announcing the season schedule.

As a result, more than 1,000 people attended the 2007 championships, an NCAA record.

The Alaska Nanooks have won the national rifle championships 10 times, most recently in 2008. The team placed second in the 2014 championships.



Racing vet retires sled

Veterinarian Arleigh Reynolds won both the Anchorage Fur Rendezvous Open World Championship Sled Dog Race and the Open North American Championship in Fairbanks in early 2014, but he's retiring from racing to focus on his job as the associate dean of the new Department of Veterinary Medicine. Reynolds gave credit for the victories to his lead dog, Guts, who he said can't stand lagging behind other dogs. “She's the reason we won,” Reynolds told the *Anchorage Daily News* after the Rony win.

Besides being a veteran musher, Reynolds holds both a doctor of veterinary medicine degree and a PhD in nutrition from Cornell University. He focuses on the relationship between nutrition and performance in sport dogs. The new veterinary program is a joint effort of the College of Natural Science and Mathematics and Colorado State University.

UAF photo by JR Anchetta.



International pianists impress

Peter Friis Johansson, an acclaimed concert pianist from Denmark and Sweden, won the Alaska International Piano-e-Competition on July 12 in the Charles Davis Concert Hall.

The international competition, the first of its kind in Alaska, featured 22 of the best young pianists in the world competing for two weeks on the Fairbanks campus. The competition also featured a Yamaha Disklavier piano, which streams performance data via the Internet to other similar pianos across the world. The other Disklaviers reproduced, in real time, the precise keystrokes and pedal techniques of the performing musicians in Fairbanks.

Friis Johansson won \$30,000, an Alaska-made gold medallion and the opportunity to perform in Chicago and New York. He also won the privilege of returning to open the Fairbanks Symphony Orchestra's season on Sunday, Oct. 5.



Butterfly bounty

Tens of thousands of preserved butterflies arrived at the UA Museum of the North this past spring. Renowned Alaska butterfly expert Kenelm Philip spent almost 50 years creating the collection before he passed away in March. About 90 percent of the collection will eventually go to the Smithsonian Institution, at Philip's request. The remainder will stay at the Museum of the North.

UAF photo by Theresa Bakker.

DNA suggests polar bears survived past warm periods

Polar bears survived several warm periods during the past 1 million years when the Arctic had little or no ice, according to a DNA analysis by a group of scientists that includes Matthew Cronin, research professor of animal genetics with the School of Natural Resources and Extension in Palmer.

Cronin thinks the polar bears' survival of previous warm periods should be factored into models predicting the species' response to current climate change.

"It seems logical that if polar bears survived previous warm, ice-free periods, they could survive another," he said.

Other researchers disagree, according to reporting by the *Anchorage Daily News*. **Steven Amstrup, '95**, a friend of Cronin's, was the lead scientist on the U.S. Interior Department's 2008 decision to list polar bears as "threatened." He said warming is much more abrupt this time, leaving today's bears less time to adjust. Today's polar bears are less genetically diverse and therefore potentially more susceptible to climate change, said the University of Buffalo's Charlotte Lindqvist.

Cronin acknowledged that suggesting the species could survive future warming is speculative. "But so is predicting they will not survive, as the proponents of the Endangered Species Act listing of polar bears have done," he said.

Bear illustration by Lisa Peñalver.

Pollock pills

Thanks to a new, cleaner purifying system, Alaska pollock oil is now in pill form, sold as 54°North Omega-3 with Vitamin D3 from American Marine Ingredients. The process was developed by Alex Oliveira, associate professor with the Alaska Sea Grant Marine Advisory Program in the School of Fisheries and Ocean Sciences. Pollock is by far the highest-volume fishery in Alaska, and using pollock livers to produce a high-purity nutraceutical makes environmental sense and increases the value of the fishery.

On the web:
<http://bit.ly/PollockPills>

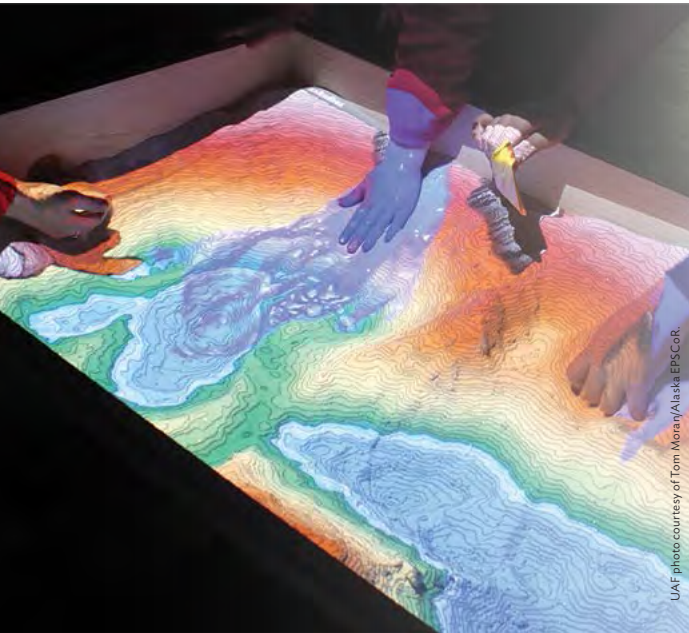


Photo courtesy of Wright estate.

Longtime Alaskans leave scholarship legacy

Leonard and **Marjorie Wright, '58**, spent more than 25 years in Alaska. Marjorie earned her teaching degree from UAF and taught in North Pole, while Leonard established a construction business, and they maintained their ties with Interior Alaska after they moved Outside. Leonard passed away in 2007. When Marjorie died in 2013, their estate provided more than \$2.5 million to UAF to support student scholarships. It is one of the largest individual donations in the university's history.





Drawing map lines in the sand

Employees at the Geographic Information Network of Alaska have built an “augmented-reality sandbox” to help people understand topographic maps.

A projector hangs above the traditional sandbox. When a person plays in the box — building up mounds or scooping out valleys — the projector lays down corresponding elevation lines such as those seen on paper maps. That helps people understand how to interpret traditional maps.

The sandbox, which appeared at local conferences earlier this year, was created by GINA’s Will Fisher, Greg Wirth and Dayne Broderson.

GINA, a research unit of the International Arctic Research Center, is building a new, high-resolution digital map of Alaska with a variety of geospatial data.

UAF photo courtesy of Tom Morley/Alaska EPSCoR.

Short and sweet

It takes a lot of time and energy to make birch syrup, but master’s degree student Tricia Kent in the School of Natural Resources and Extension has developed a system that runs the sap through devices that suck out the water using reverse osmosis, making the process faster and cheaper. Even sweeter, the machine costs less than \$500 to build. Pancakes, anyone?



Photo courtesy of Evon Peter.

Alumnus named vice chancellor

Evon Peter, '98, was selected in July to serve as UAF’s vice chancellor for rural, community and Native education.

Peter holds a bachelor’s degree from UAF in Alaska Native studies and is completing a master’s degree in rural development. He began his professional career coordinating UAF’s Yukon Flats Center in 1998. He since has served in various leadership positions in Native and nonprofit groups.

Peter succeeds Bernice Joseph as vice chancellor. The position oversees the College of Rural and Community Development, which includes all of UAF’s rural campuses and sites, as well as the Community and Technical College.

Far-CITed

In the still-new, sometimes intimidating world of online learning and collaboration, two professors stand out for their innovations and enthusiasm. The Chancellor’s Program for Innovation in Technology and Elearning, or CITE, gave the Google Glass Award (which included an actual Google Glass) to Rob Prince, assistant professor of journalism, for his project combining several individual courses into a film production lab. Rorik Peterson, associate professor of mechanical engineering, won the \$1,000 Innovation Incentive for his work with the CITE Fellows online community, where he freely shares his suggestions for new teaching techniques and technologies, and is equally free in asking for feedback on thorny issues he encounters in the classroom.





By Sam Bishop



Photo courtesy of Chukchi Campus.

Autumn Barr, of Kiana, stands in the center of the podium after winning the Inupiaq Spelling Bee during the 2014 Chukchi Olympics at the Chukchi Campus in March. Kirk Koenig (right), of Kivalina, won second place. Corilyn Adams, of Noatak, won third.

A spelling bee can intimidate even expert English speakers, but imagine one held in the Inupiaq language. Can you spell “sibxibnaqtuq”?

Um, the definition, please?

That would be “difficult.”

Fortunately, the winner of the first Inupiaq Spelling Bee at the Chukchi Campus in Kotzebue this past spring found the challenge a little easier because of her upbringing.

Autumn Barr, 16, grew up in a bilingual household in the Northwest Alaska village of Kiana. Her mom, Helena Barr, teaches Inupiaq at the school. Her grandmother, Viola Barr, also taught the language there before retiring.

So when the spelling bee judges gave Autumn the word that earned her the first-place prize, she knew how to spell it.

“It was a pretty easy word. It was ‘uvva,’ meaning ‘here,’” Autumn said.

Autumn was the top speller among a dozen contestants in the bee, held during the first Chukchi Olympics in Kotzebue this past March.

These Olympics were for the mind, not the body.

Siikauraq Whiting, a grants administrator at Chukchi Campus, dreamed up the idea after attending the 2013 World Eskimo-Indian Olympics, an annual athletic competition held in Fairbanks.

“I had just got back from WEIO and I was also meeting with our staff about a way to market our campus to young people,” Whiting said.

An academic Olympics seemed like one way to do it, so she got started. The event could help the college, Whiting thought, but she wanted to create it for another reason: “So the kids could get recognition for being smart.”

Small grants from UAF’s People’s Endowment, the Northwest Arctic Borough, the Aqulaq Trust and the Red Dog Mine helped with the expenses.

To attract participants, the college scheduled the Olympics during the annual high school basketball tournament

in Kotzebue, when many students and their families visit the regional hub village.

It worked. About 200 kids entered the Olympic events, which included contests in math, poetry, general knowledge and computer gaming.

Some people wondered about the academic relevance of gaming, Whiting said, but she argued to keep it. The event attracted boys, who in general are less likely to go to college, she said.

“It’s all about thinking outside the box,” she said.

Autumn appreciated all the effort put into the Olympics.

“I’d like to thank her for starting this,” she said of Whiting.

While Autumn won the bee, she doesn’t feel fluent in Inupiaq yet. She said she understands a lot when people

speak, but she has trouble expressing her own thoughts in the language.

“That’s pretty difficult,” she said. “I want to learn more and how to speak it more, like the sentences.”

The bee was the Chukchi Olympics’ premier event, Whiting said. While Autumn captured the first place prize, Kirk Koenig of Kivalina and Corilyn Adams of Noatak had to engage in an extended spell-off to earn their respective second- and third-place titles.

“It was kind of a long, drawn-out process, which made it kind of exciting,” Whiting said. “We had it live-streamed on our district website. There were basketball players in the cafeteria watching.”

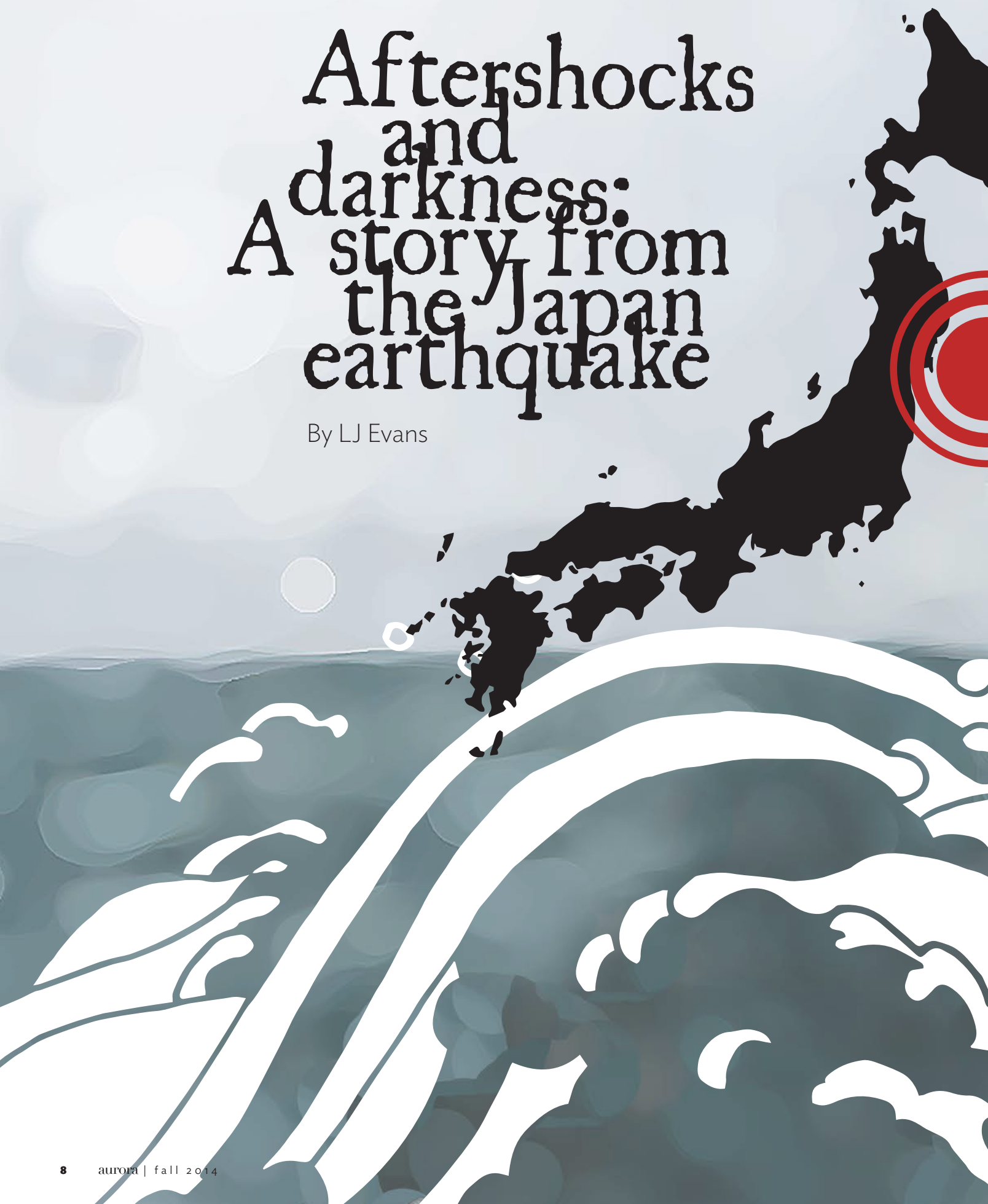
That was success in itself. Honoring student athletes is important, Whiting said, but “it was good to recognize kids that are actively involved in academics.”


For Autumn, the visit to Kotzebue brought recognition in both realms — besides winning the spelling bee, she helped the Kiana High School girls win the regional basketball championship. When she stepped onto the spelling bee’s medal podium for a round of applause in the gymnasium, she wore her basketball jersey.

CAN YOU SPELL “SIBXIBNAQTUQ”?

Aftershocks and darkness: A story from the Japan earthquake

By LJ Evans





Leah Denman was introduced to Japanese culture and language while at Lathrop High School in Fairbanks. She pursued that interest at UAF, and as a junior she received a scholarship to go on international exchange. On Oct. 2, 2010, she arrived in Sendai, Japan, to spend a year at Tohoku University, studying Japanese linguistics.

At 2:46 p.m. on March 11, 2011, a magnitude 9 earthquake shook northeastern Japan, unleashing a savage tsunami. The epicenter was approximately 80 miles east of Sendai, under the ocean. Leah, her mother, Sherrie Roberts, and Donna Anger of the Office of International Programs and Initiatives tell, in their own words, what happened.

Leah: I had reached that point in my stay where I was over my culture shock. I kind of felt at home. I had gone out grocery shopping. On my way back to the dorm, the earthquake hit. To this day I am happy that I was outdoors. I think it helped me handle it better.

I was almost at my dorm when the gate at the graveyard next to me that I was walking by started shaking, making noise. I was taking steps but I was going side to side. It was hard to walk. Then the real shaking happened.

There was a little enclosure made from concrete about as tall as I was. I grabbed onto it because I couldn't stand up any more. I could see my dorm, shaking back and forth. This huge, strong, seven-story building was just swaying back and forth.

Donna: It was around 11 at night on the 10th when I got my first email about the earthquake. [Japan is 17 hours ahead of Fairbanks.] I got something from Marmian [Marmian Grimes, UAF public information officer], "I'm guessing you've heard about this," and asking about our collaboration with IARC [International Arctic Research Center] and the Geophysical Institute, thinking about the students and faculty here. Of course, we also had students in Japan, and we started to think about where they were.

I sent emails to all of the students, asking them to check in, let us know if they were OK.

Leah: When it finally stopped shaking, I stood up and got on my

phone. I think I was trying to maybe access the news. I went on Twitter even, just to see what had happened.

After that is kind of a blur.

My Chinese friend Emma came and grabbed my hand. She was full-blown hysterical. I didn't understand why she was panicking so much. I was thinking, "Oh, it was just an earthquake."

A bunch of people congregated in front of the dorm. Every time an aftershock hit, everyone would scream. Then they would try to calm down again.

At some point, Emma and I went to look at our dorm rooms. She kept on running outside every time there was an aftershock, so we couldn't get to her room. My room was right by the door. Everything was everywhere. Just oh, my God.

That was when I realized that we had no power.

Sherrie: I heard about it at work, in our [Marketing and Communications] office. I sent Marmian an email and asked if she'd heard anything about the students in Japan. I went on Facebook to see if Leah had posted anything.

LEAH'S FACEBOOK MESSAGE, MARCH 11:

Massive quake just hit Sendai, still rocking. Outside with everyone ... so scared.

**ON 3/11/11 12:06 PM,
MARMIAN GRIMES EMAILED:**

We have nine exchange students in Japan: 7 have been heard from, including one in Sendai. Of the remaining two: One is thought to be in Tokyo, where

communications are limited. The other is likely in the Sapporo area, which is not among the hardest-hit areas.

LEAH'S FACEBOOK MESSAGE, MARCH 11:

Smoke in the air, alarms, helicopters. Not what I signed up for. Still shaking off and on.

Leah: Emma and I found out they were setting up a place to go at a middle school gym just down the road. We took our blankets and food and walked to the gym.

We still didn't know what was going on. We didn't know about the tsunami. The university is up high and we were inland, so the tsunami never reached us. We were very, very lucky because the earthquake was nothing — nothing — compared to the tsunami.

The gym quickly grew very crowded. Emma was just terrified. We laid out our blankets and claimed our little spot. Sleeping that night, we were head to foot. We would roll over on each other, everyone.

LEAH'S FACEBOOK MESSAGE, MARCH 11:

In a gym at the school, but okay. Phone is dying, no elec. Love you all.

Sherrie: That was the last I heard from her for a couple of days. I tried to call but couldn't get her to answer her phone. I couldn't get her to answer in Facebook, either. I'm thinking, "OK, she's scared, but she says she's OK. Everything's good!"

Then the scare about the Fukushima nuclear plant started



THE RIPPLE EFFECT

By Regan Campbell

The catastrophic meltdown of the Fukushima nuclear plant after the March 2011 Tohoku earthquake has created ongoing concerns in the United States about the radioactive material released into the sea and the atmosphere.

This has been a matter of interest to Stephen Jewett, in his 40th year as a research professor at UAF, and Douglas Dasher, a research professional at UAF who worked for the Alaska Department of Environmental Conservation for 31 years.

Three years after the Fukushima disaster, both have concerns about the lack of comprehensive radiation monitoring in the wake of the disaster.

Modeling studies and air monitoring showed that radioactive cesium made it to Alaska's western coast and the Aleutian Islands during the first few weeks after the Fukushima plant explosions, Dasher said. Sampling by Jewett and Dasher at Amchitka Island in the Aleutians, part of the U.S. Department of Energy's long-term monitoring of underground atomic bomb test sites, found "clear evidence" of Fukushima fallout in nearshore marine fish, seaweed and lichens. Fallout also showed up in "very limited" tests of Dolly Varden, a freshwater fish species, they said.

"Terrestrial animals like caribou and freshwater fish are what we really should have been looking at."

Why won't anyone fund more monitoring specifically for Fukushima contamination? "It's two-pronged," Dasher explained. Agencies agree that it's good to know

what radiation levels are, but the levels detected so far have proved to be acceptably low for humans, so it hasn't become a priority, he said.

Alaska's Commissioner of Environmental Conservation Larry Hartig confirmed that view.

Levels seen in tests to date have been so tiny that "you get more radiation risk from eating a banana than eating a tuna in that area," he told state legislators, as reported in the *Fairbanks Daily News-Miner* in January. "When we look at this we don't see a driving need in Alaska to try to institute a program, particularly where we would need to start from scratch. It would be a tremendous expense for a risk that we don't see."

Nothing radioactively "hot" has turned up in seafood on the U.S. side of the Pacific yet, Jewett and Dasher acknowledged, but they said the sample sizes may be too small to detect changes in the marine food chain.

"You've got to do some monitoring," Jewett implored.

What's more, the Fukushima plant continues to leak radioactive water into the ocean.

"You have that constant input. The thing's still leaking. It's a concern," Dasher said.

The monitoring work that has been done also might not have looked in the right places, they said. The heaviest airborne contamination to hit Alaska's land area fell with rain and snow in the Aleutians, Dasher said. Yet he and Jewett know of no efforts to look specifically at that fallout.

"Terrestrial animals like caribou and freshwater fish are what we really should have been looking at," Jewett said.

"You drop cesium into an environment like that, and [freshwater fish] are going to pick that up much more readily and concentrate it much higher — levels thousands of times higher than they were in any marine fish," Dasher said.

happening. [Tohoku University is about 52 miles from the plant.] If it had just been a little bit different, if she'd been in a different place, it would have been OK.

I kind of fell apart.

Leah: It was below freezing, they had no heat, we just had our blankets and whatever clothes we were wearing. Some other international students and a couple of Japanese people were sitting with us. I gave them my groceries. I thought, people were hungry, they need food — it will keep them calm.

I wish I could properly explain just how uninformed we were, how in the dark. It's terrifying to think about.

At some point, the next day or the day after — it's all kind of blurred together now — I realized that things were more serious than I thought when I went back to my dorm to try and clean up. I turned on the water and all that came out was this brown gunk.

LEAH'S FACEBOOK MESSAGE, MARCH 13:

I have electricity again, still no water. Safe and sound in my dorm, stored up plenty of food and water for the time being. Thank you everyone, I seriously appreciate everyone who took time to write something, or was there for my family. The phone networks are still a mess, so I can't call out, but I will as soon as I can.

Leah: I went back to the gym and Emma was gone. I guess she left with the other Chinese exchange students. I never saw her again. I

can't find her because I don't know her Chinese name; she always went by an English name. I can't even ask the school how to reach her because I don't know her real name.

Sherrie: About the third day she was able to get a charge to her phone and send me a text. She still couldn't call, but texts could go out.

Leah: I realized the severity of my situation when I finally went out to get food and water. It was only the second or third day, and the shops were ransacked, the shelves were bare.

At one mom and pop store they had a whole assembly line set up. They had this little gas cooker and they were making little meals for people. All we had had at the gym shelter was rice soaked in cold water. Very crunchy and strange. I was really hungry and it was so nice to see cooked food. It wasn't easy for them, and they were selling it really cheap, 100 yen — about a dollar.

Sherrie: I was kind of in panic mode, but I wanted to be not panicking too much because I felt like I just had to bring her home.

Donna Anger got me calmed back down. She said, "We'll figure out what to do."

Donna: Her mom was the one looking at all the routing for Leah's travel to Tokyo. So many of the airports were closed.

They [UAF administrators] were expressing support for whatever we needed to do. They were very

concerned about the Japanese nationals we had here, the students, scholars and also of course our students who were away. It was just an outpouring of support for what we were doing, the students and the families.

Sherrie: I asked for help from Sen. Murkowski's office; Nathan Bergerbest from her office was very helpful. We got directions from the U.S.-Japanese Task Force through Nathan. There was a path and a time schedule Leah was to follow [from Sendai to Tokyo].

Leah: The rest of that week was just a blur. Every time there was an aftershock, I would get under my desk. My room was on the first floor, and I could just picture it all collapsing. There were aftershocks about every 15 to 20 minutes.

I wouldn't say so much that I decided to come home. I felt like it was a necessity for my family that I should come home.

The usual route out of Sendai was impassable. A bus was taking people to Yamagata, a mountain village about 40 miles away. Then I would take another bus to Niigata, where I could catch a train to Tokyo.

I packed up what I could fit in my luggage and threw everything else out. Some part of me didn't want to leave my dorm room a mess, so I made the bed and put everything else out with the trash collection. I grabbed my one piece of luggage and my messenger bag and just took off.

The messenger bag held the laptop and my phone. The luggage had clothes and pictures, a lot of pictures.

ON 3/15/11 2:29 PM, DONNA ANGER EMAILED:

Sherrie:

I've just received a text from Leah that she is in line for the bus at Yamagata which means that she's successfully completed the first part of her journey out of Sendai. I understand how distressing this is for you and for Leah and I'll continue to remain in contact by phone and email for updates and additional information.

Best regards and know our thoughts are with you,

Donna

Leah: It was snowing there — great big fat, wet snowflakes. I had this tunnel vision: you need to get a bus to Niigata so you can go to Tokyo. I bolted out of the bus. The place was packed with people. I walked straight up to the person at the gate and asked, "Do you have any buses to Niigata?" and he said, "No, they're all full."

I remembered my luggage. They had been pulling the luggage out and putting it on the sidewalk. Mine wasn't there. I talked to the bus drivers but they said there are hundreds, maybe thousands of people here. Someone probably took it.

I still had my laptop and phone, passport and money — I had the important things. I just didn't have the clothes and the books. And the pictures, those were a big deal. Those were the only pictures I had of me and Emma.

Sherrie: I stayed with her, texting back and forth. When her phone

would catch reception we would talk. I was trying to call ahead of her to get hotel reservations, which was so funny because I don't speak Japanese and everyone I was talking to could barely speak any English.

Leah: I went to a little store and bought some grapes. I ate two of them.

I asked my mother, please can you find me a hotel here? Back in Fairbanks she had Internet access, but for me to make calls was really expensive.

When I got [to the hotel Sherrie booked], I asked, "Do you have a reservation for Leah Denman?" The guy looks at me kind of funny and he's smiling. He hands the reservation to me and written on it is "Cableah Beaman." My mom had told him, "She'll be coming by cab and her name is Leah Denman." I think that was the first time I had laughed in a while.

The first thing I did was take a shower. It was the best shower in my entire life.

Then I was just there, going crazy. I left the hotel and went back to the bus station. I asked, "Do you have any bus rides now?" The woman looked at me and said, "Wait, you need to get to Niigata?" She ran back to where the bus drivers were and she worked something out. I had been trying to keep outwardly calm, but when I got on the bus it washed over me.

Sherrie: She texted me, "Can't believe it. I'm on the bus and I'm going to make it."

Leah: The buses in Japan make a lot of stops at these little bus stops along the roads. They're really nice, they have these little shops, vending machines, really nice bathrooms. I'd been up for a really long time. I was standing at the vending machine and I kept on putting in coins. The extra coins were just coming out the bottom. The old Japanese man behind me said, "What are you doing?" "I don't know, I don't know," I said.

Eventually we got to Niigata. I went straight to the train station and got my ticket for the Shinkansen bullet train.

I got to Tokyo late at night. I got lost in the lower levels [of the train station]. Every time there was an aftershock I was like, "Oh, I don't want to be down here!"

Finally I made my way to the surface, but then I couldn't get a taxicab to stop. I was still wearing pajama bottoms and a hoodie, something you don't see on the streets in Japan, even in times like that.

I nearly broke down. All of a sudden I hear this gruff voice. A really old cab driver was peering out of his window. He was asking me, "Hey, you need to go somewhere? Where do you need to go? I'll take you."

When I got to the hotel room, the first thing I did was take another bath. Then I just went to bed. I was woken up by aftershocks a few times, but ultimately it was the best sleep I'd had in so long.

I got a text in the early morning from my mom. "I got you a flight. You need to get in a taxi right now because it leaves soon."

Normally, you take a train to the airport. It's much cheaper, it's fast — but it wasn't fast enough. I didn't realize how far away it was. I ended up spending \$300 for a cab ride. I do not regret it to this day.

LEAH'S FACEBOOK MESSAGE, MARCH 16:

Thank you everyone for your concern, help, and well, everything really. I'm safe in Tokyo waiting for my turn to get in line to check in. The amount of support I have received is a bit surreal. I have a lot of people to thank when I get home.

Donna: I felt like Leah was doing all of the right things. I was more concerned with the infrastructure, especially when a person is moving from one place to another and you don't know what's going to happen at the next spot.

Leah: The Japanese were so amazing. Through all of that, this horrible thing that had just happened, they were still running bus stations and convenience stores. They were so calm and so ready to help each other out. They got me through it.

The Tokyo Narita airport was jam-packed. I remember thinking about how awful it must be for all the foreign families who came here for a vacation.

My mom texted me that my little brother was crying because he was scared. She said, "Your brother says you need to eat bananas because they help combat radiation." He was about 14 years old then, and the idea of him crying just broke my heart. I

bought a banana in the food court. I told her to tell him, “I’m eating a banana, fighting that radiation!”

LEAH’S FACEBOOK MESSAGE, MARCH 17:

I’m in Seattle. Finally on ground that isn’t shaking, and absolutely relieved.

Donna: We arranged for them to be able to have a private space at the [Fairbanks] airport. If someone’s been through an experience like that, you want the family to be able to have some time for the process.

Sherrie: Kevin [Kevin Kircus, Leah’s fiancé] was at the airport with us. I told him to go out to greet her. I said, “I think she’s going to need you more than Mom right now.” He seemed very calm, but when she showed up, you could see in his face that he wasn’t going to let her go.

She looked tired and worn out, but she looked so good to me! She came in and she’s hugging everybody and she’s just saying in this little voice, “Let’s go home, I just want to go home!”

Leah: An attendant and Kevin met me at the gate. They pulled me into a back room reserved for us. My mom was there, my grandpa, my brother, Tyler, my older sister, Alicia, Donna Anger — they were all there. They kept me pretty sheltered there for a bit.

EPILOGUE: LESSONS LEARNED

Donna: I think we’re tending to think more cautiously now about political unrest and natural disasters. The first thing when we hear about anything is we ask, “Do we have any students there or do we have any students or scholars from there?” We think about what support we need to provide. And the other thing, and this is across the board in international education, is a heavier reliance on social media. This was the first time Facebook played such an important role in communicating with our students.

Sherrie: I would never want to say don’t travel, don’t go anywhere,

because then you lose out on so much. Just have a way to get out, a way you can jump on in a heartbeat.

I think Leah will still have a little sensitivity to things for a while. She carries things with her, deep down, where no one knows it unless they know her really well.

Leah: When I was back in UAF, in the classrooms with rows of seats that are hooked together, when someone moves the other seats moved, it would trigger a really bad panic attack. I’d ask myself, “Am I OK?” I took a class on earthquakes, because my fear was uncontrollable. I needed to educate myself so I could stop. That was essential in helping me come to terms with earthquakes and the dangers.

Although I was there and deeply affected by what happened, my story is the story of someone who was alongside the disaster. I don’t feel I was fully “in it,” as I consider the tsunami to be the true disaster, but I was definitely not outside of it either.

There was one thing — it was so small, but it was so awful. I had just

Across the subducted Pacific

By Regan Campbell

No one was in the office at the Alaska Earthquake Center on the Fairbanks campus when the Tohoku earthquake struck at 8:46 p.m. local time on March 10, 2011. Occurring only 43 miles off the coast of Japan, it was the fourth-largest earthquake since modern record keeping began. It created a catastrophic tsunami that led to the death of nearly 16,000 people and the evacuation of many more.

It’s not a scenario remote to Alaska residents. For decades, the Alaska Earthquake Center has kept watch on seismic activity. It manages 400 monitoring sites, picking up the tremors and aftershocks that make up approximately 100 in-state earthquakes per day and 2,500 per month.

Natalia Ruppert, a seismologist who completed her PhD at UAF in geophysics in 2001, is the seismic network manager at the AEC. She recalled what happened after the 2011 quake struck.

“Immediately people were receiving emails that a significant earthquake had occurred in Japan, and tsunami warnings had been issued,” she said.

“Nobody thought that plate boundary would produce a magnitude 9,” Ruppert said. “It caught scientists by surprise.”

In time, as the news coverage and raw seismic data began to flood in, the staff took careful notice of the proceedings and the handling of the aftermath.

gotten out of the taxi in downtown Sendai and I was about to cross the street to the bus station. When you're at a crosswalk in Japan, cute female voices say, "You can cross now, the light is blue!" It's so adorable.

But, because of the earthquake, the voice was distorted. It was croaky, crackling, robotic and weird. You couldn't even tell it was a woman's voice. The sound of that crosswalk voice will never, ever leave me.

Leah Denman graduated in 2013 with a bachelor's degree in Japanese studies and a minor in linguistics. She plans to pursue graduate work in Japanese literature. In 2014, Leah journeyed back to Japan for three months. She volunteered in a summer camp helping children affected by the earthquake. She now lives in Austin, Texas, with her fiancé. 📍



Donna Anger



Sherrie Roberts



Leah Denman

LJ Evans has a multifaceted, postretirement freelance career guiding visitors up the Dalton Highway to Coldfoot and Deadhorse, starting a peony farm in Ester, and writing whenever she can squeeze it in.

Regan Campbell is an MFA candidate in English at UAF. As a toddler growing up in Indiana, he repeatedly failed to run away from home with a circus troupe while disguised as a capuchin. He eventually grew out of that phase and got away for real.

Web extra: Learn more about the disaster at www.uaf.edu/aurora/.

Alumni in this story: Douglas Dasher, '10; Leah Denman, '13; Stephen Jewett, '77, '97; Sherrie Roberts, '07; Natalia Ruppert, '95, '01

"We were watching what information was available — what extent of the fault this earthquake ruptured, the extent of tsunami damage," Ruppert said.

Alaska, it happens, sits on the edge of the very same seismic plate as Japan, but at the opposite corner. Like Japan, Alaska is at the edge of a subduction zone, where the Pacific plate, with nowhere else to go, is forced under the neighboring plate as they press together.

If Alaska's 9.2 quake in 1964 is any indication, Alaska is particularly likely to see the process at its worst.

According to Ruppert, Japan has the best seismic network in the world, in terms of technology, awareness and evacuation policies.

Nevertheless, the Tohoku earthquake was the most expensive natural disaster in global history, according to the World Bank's estimates.

In terms of evacuation procedures, things mostly worked the way they were supposed to in Japan.

"They knew what to do," Ruppert observed.

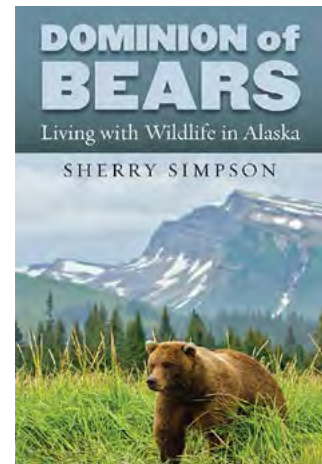
That's something Alaska is still working on.

While communities in the Aleutian Islands have tsunami evacuation protocols, the infrastructure and extensive public awareness showcased by Japan do not exist consistently across Alaska's coastal areas, Ruppert said.

Dominion of Bears

Sherry Simpson, '86, '95
2013, University Press of Kansas
www.sherrysimpson.net

Long ago we invited bears into our stories, our dreams, our nightmares, our lives. We have always sought them out where they live, for their hides, their meat, their beauty, their knowingness. Human country and bear country exist side by side. As Sherry Simpson suggests, the relationship between bears and humans is ancient and ongoing and, in Alaska, profoundly and often uncomfortably close. And nearly every aspect of Alaska society reflects their presence, from hunting to tourism marketing to wildlife management to urban planning.



Excerpt from *Dominion of Bears*

All afternoon, the bears at Chenik Creek galloped in the shallows or waded neck deep in a silvery penumbra of salmon. A couple of fishermen skiffed over from the seiners to photograph the bears fishing, offering a kind of professional respect, I thought. Gulls flapped and shrieked as they snatched fish scraps from the distracted bears. The bears, the fishermen, the gulls, the watchful eagle on the bluff behind us, and the harbor seals gliding under water—all of us were here because of the salmon. Derek tried to remember a German word that means “the joy of bears” but finally gave up. “I think part of the joy of watching bears is watching other things going on in the country,” he explained.

When we returned to camp in the early evening, we drank some beer and noodled around a question that Nora had raised. “Who cares about bears?” she’d asked, not for herself but on behalf of the legions of people who do not feel an absence of bears in their lives, who are indifferent or hostile to bears as individuals or as a species, who cannot conceive of any response to bears other than fear. Yes, why do bears matter? There are lots of ways to answer such a question: Bears make us humble. Bears help us feel alive. Bears have an ancient relationship with people all over the world. Bears are an apex predator. Bears are smart. Bears are cute. Bears are cool. Bears are an umbrella, keystone, indicator, or flagship species. Bears are cosmic, primal, iconic, spiritual, noble, sacred, profane. Bears are like us, only better. Bears are like us, only worse.

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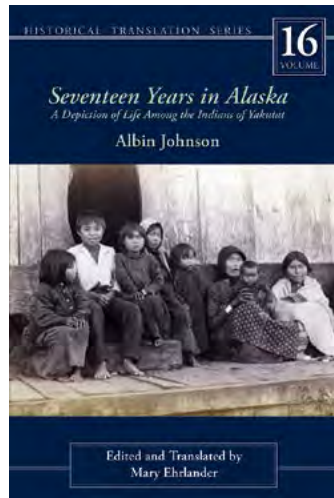




Should Our Undoing Come Down Upon Us White

Jill Osier, '00
2013, Bull City Press

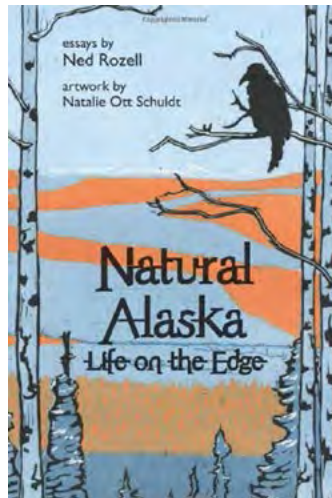
“As with some singing voices, there are poetic voices of such direct authority and clarity that they capture our deep engagement almost before we are aware that we have begun to listen. Jill Osier’s is such a voice. Like Franz Schubert’s song-cycle *Winterreise*, these poems of Osier’s take us on a lonely winter-journey through a stripped-down world, in which, as she says, ‘all the roads are well worn, all the wagons breaking.’” — poet Patrick Donnelly
Osier won a 2014 Rasmuson Foundation Individual Artist Award this past spring.



Seventeen Years in Alaska, A Depiction of Life Among the Indians of Yakutat

Edited and translated by Mary Ehrlander, '92, '93, professor of northern studies
2014, University of Alaska Press

Swedish missionary Albin Johnson arrived in Alaska just before the turn of the 20th century, thousands of miles from home and with just two weeks’ worth of English classes under his belt. While he intended to work among the Tlingit tribes of Yakutat, he found himself in a wave of foreign arrivals as migrants poured into Alaska seeking economic opportunities and the chance at a different life. While Johnson came with pious intentions, others imposed Western values and vices, leaving disease and devastation in their wake.



Natural Alaska: Life on the Edge

Ned Rozell, '90, Geophysical Institute science writer
2013, CreateSpace

Pioneer creatures at the limits of their range do remarkable things to survive. Ned Rozell has been one of those animals living at the edge of civilization in Fairbanks. The frogs, bats and flying squirrels that share that subarctic space are the subject of the science and natural history writer’s book. Illustrated by Natalie Ott Schuldt, '01.



Alaska Sampler 2014 (e-book)

Edited by Deb Vanasse and David Marusek
2014, Running Fox Books

Dana Stabenow, '73, and nine other authors from the Great Land offer a smorgasbord of fiction, biography, memoir and nature writing that reaches beyond media stereotypes to lay bare a primal land that can’t be packaged or staged.

Alumni VOICES — blogs to bookmark

Canyon Stories

Carolyn Rosner, '04,
<http://canyonstories.wordpress.com>

Chena Girl Cooks

Heidi Drygas, '00, <http://chenagirlcooks.blogspot.com>

Ink & Snow

Jamie Smith, '98, <http://inksnow.blogspot.com>

TROTH YEDDHA' LEGACY

"A place where thinking and working together would happen."

Story by Sam Bishop

Plant and campus illustrations by Jan Sanders Stitt

From the university's earliest days, the distinctive sloping east-west ridge on which it was built seemed to lack a name to encompass its entirety.

Fairbanks residents informally referred to the east end, where the campus originated, as College Hill. The other end became West Ridge. Few knew the name for the whole rise.

A name for the entire ridge does exist, but it wasn't widely used because it came not from English but rather the indigenous language of the area — Lower Tanana Athabascan, or Dene.

That name — Troth Yeddha' — now officially graces the hill, thanks to diligent efforts by a group of Alaskans. The U.S. Board on Geographic Names adopted the Athabascan name on Feb. 14, 2013.

"Troth" refers to the root of the plant known in English as "wild potato," which grows in the area. Troth is the most important traditional vegetable for Athabascan people. "Yeddha'" means "its ridge."

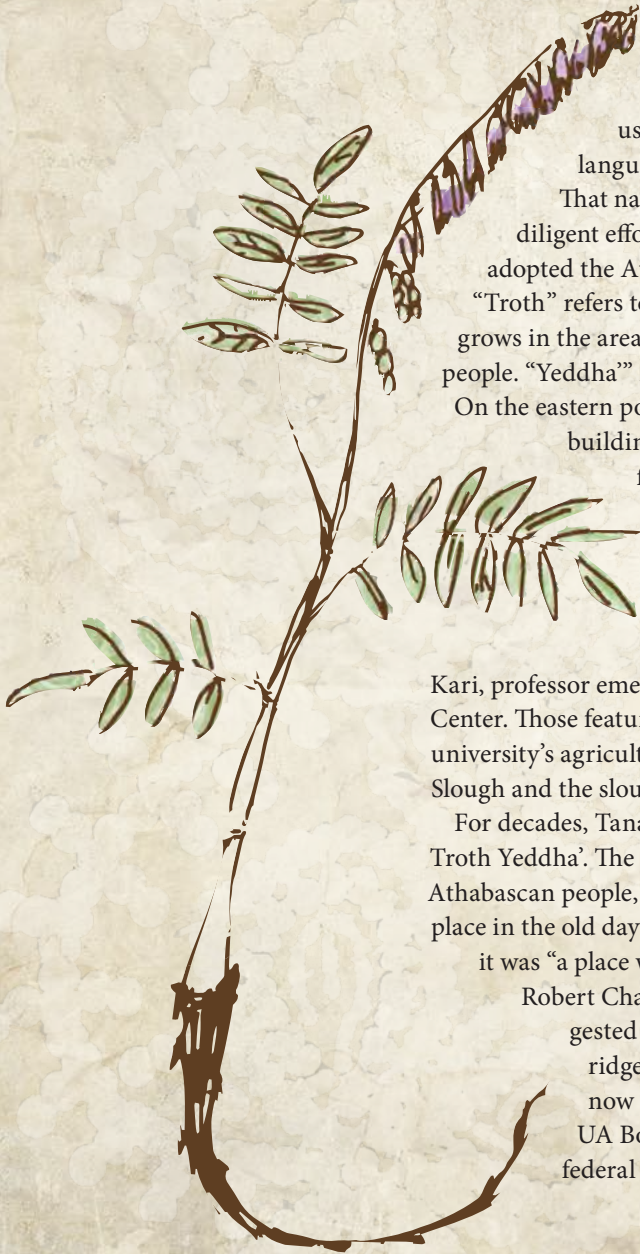
On the eastern point of the ridge, just downhill from the Bunnell and Duckering buildings, archaeological excavations from the 1930s through the 1990s found more than 9,000 artifacts left by people who used the area.

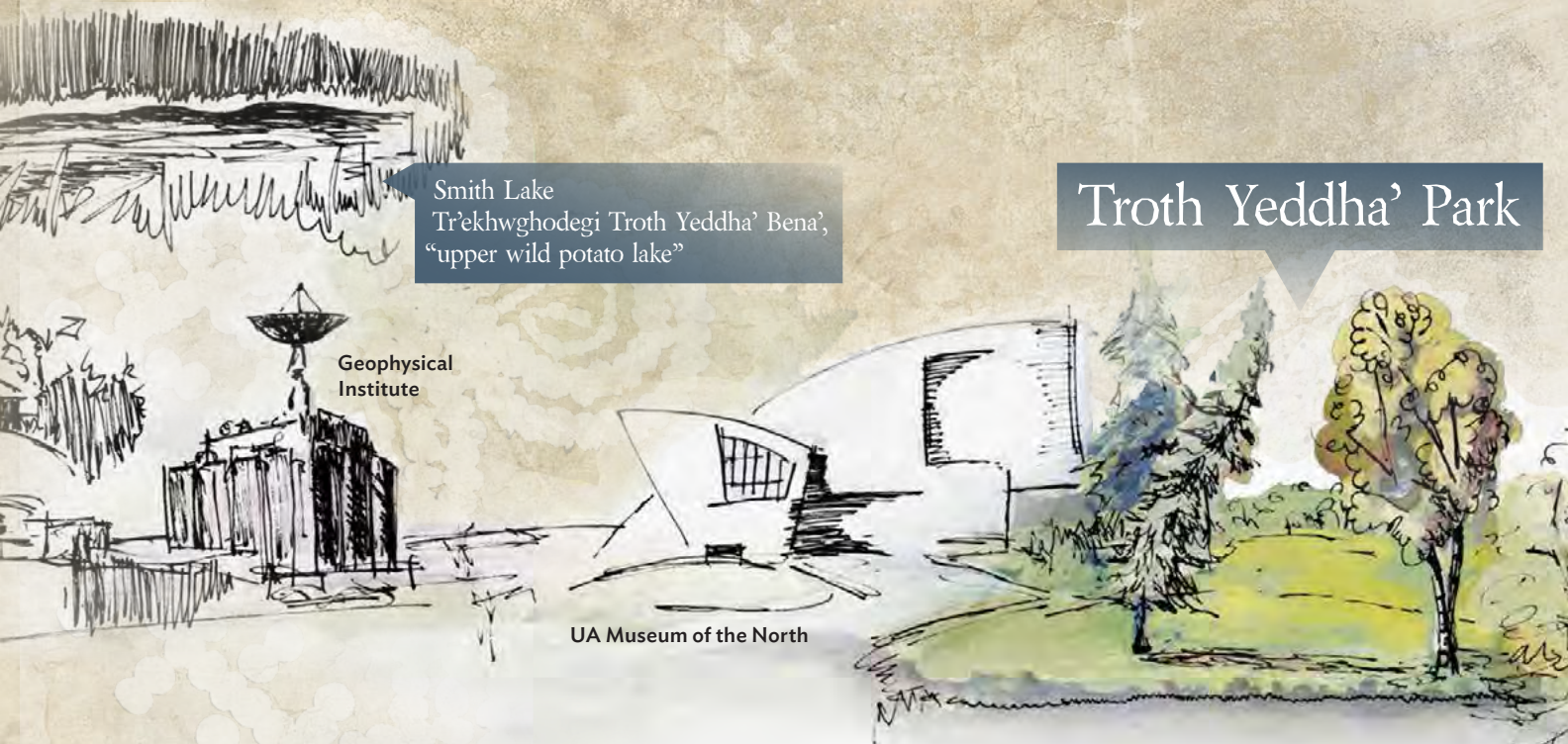
Archaeologists debate the age of the artifacts from the location, known as the Campus Site, but there's no doubt that many are thousands of years old.

The word "troth" also forms the base for 11 other place names in the area, according to a report compiled by James Kari, professor emeritus, and published in 2012 by UAF's Alaska Native Language Center. Those features include Smith and Ballaine lakes and the flats occupied by the university's agricultural and recreational fields, as well as Ballaine Creek, Deadman Slough and the slough's mouth at the Chena River.

For decades, Tanana Valley Athabascan speakers have proudly shared the name Troth Yeddha'. The late Peter John, of Minto, traditional chief of Interior Alaska's Athabascan people, said in 1994 that Troth Yeddha' had been an important meeting place in the old days. The university rightly continued that tradition, he said, because it was "a place where thinking and working together would happen."

Robert Charlie, also a Lower Tanana Athabascan speaker from Minto, suggested the idea of formally adopting the traditional name for the full ridge. During the past few years, he, Kari and Annette Freiburger, who now directs UAF's Rural Student Services, obtained approval from the UA Board of Regents, the Alaska Historical Commission and finally the federal board.



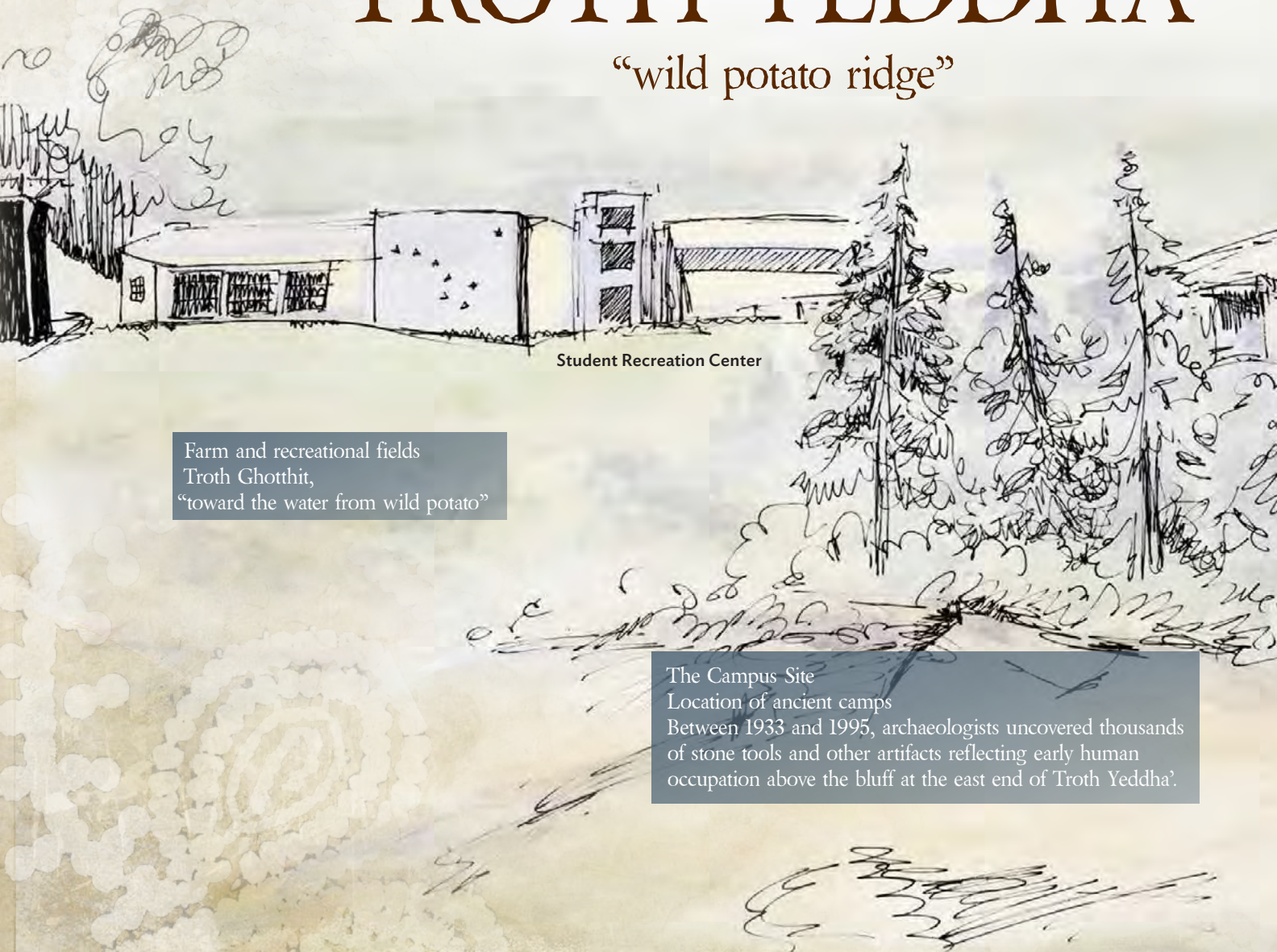


Smith Lake
Tr'ekhwghodegi Troth Yeddha' Bena,
"upper wild potato lake"

Troth Yeddha' Park

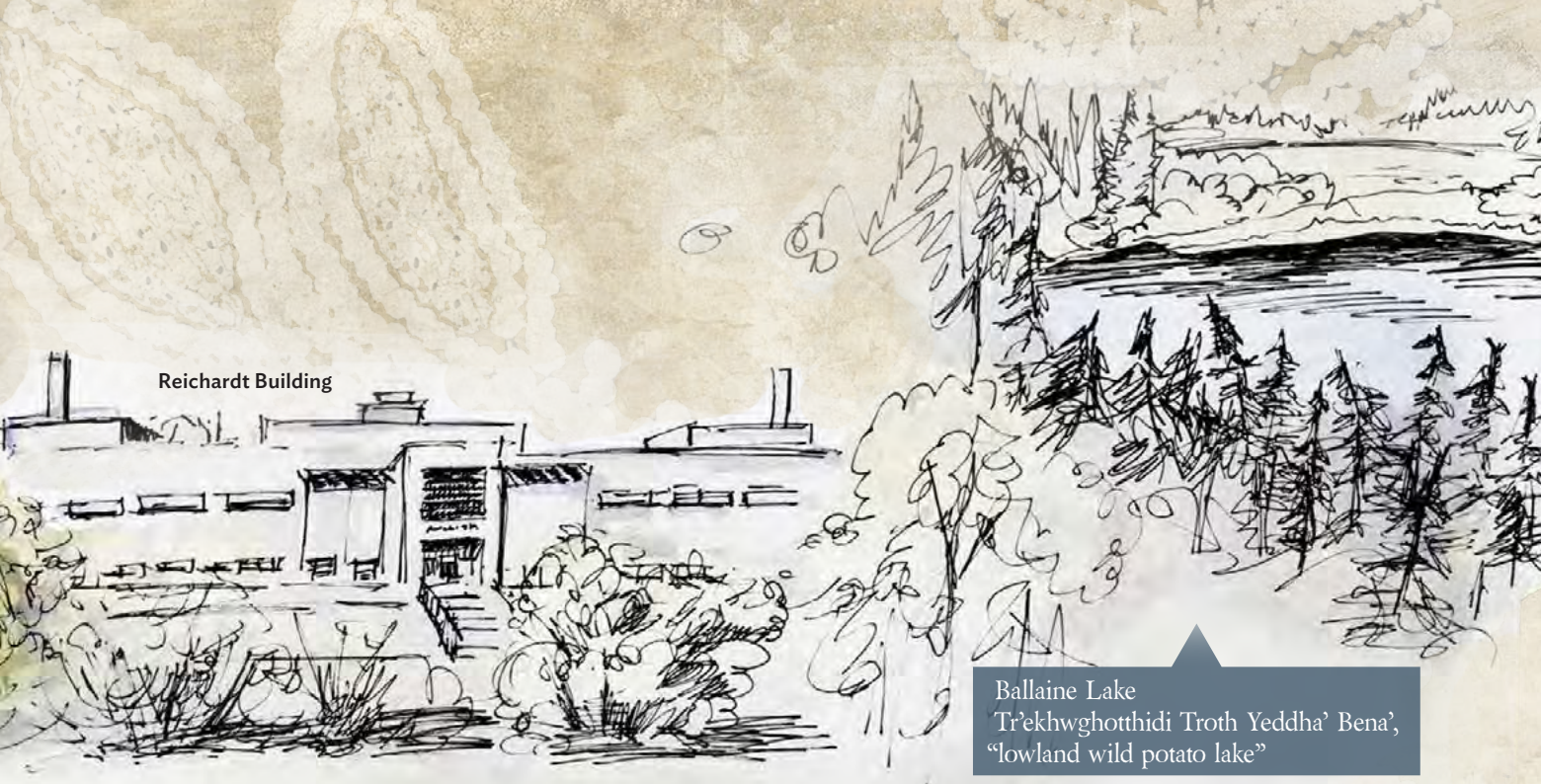
TROTH YEDDHA'

"wild potato ridge"



Farm and recreational fields
Troth Ghotthit,
"toward the water from wild potato"

The Campus Site
Location of ancient camps
Between 1933 and 1995, archaeologists uncovered thousands of stone tools and other artifacts reflecting early human occupation above the bluff at the east end of Troth Yeddha'.



Reichardt Building

Ballaine Lake
Tr'ekhwghotthidi Troth Yeddha' Bena',
"lowland wild potato lake"



Wood Center

Charles Bunnell statue

LOOKING TO THE FUTURE

As a ridge where Athabascan people gathered and watched the landscape, Troth Yeddha' offered a natural metaphor for UAF to build upon.

The university, after all, also brings people together to study the surrounding world for insight. The institution's role is rooted in the legacy of the place.

A dozen years ago, efforts began to establish the Troth Yeddha' Park on the Fairbanks campus. In 2008, the UA Board of Regents approved the location between the museum and the Reichardt Building.

Two years later, a committee of supporters, working with the architectural firm Jones and Jones, completed a park development plan designed to recognize and honor Alaska Native peoples.

Since then, the concept has grown to include an indigenous studies center — an academic hub for the study of Native cultures in Alaska and beyond. It will feature not only classrooms, labs and a library but also space to gather, perform and display art.

Advocates expect this unique park and center of scholarship to create an enduring connection between indigenous cultures and higher education in Alaska.

Last year, the committee launched a \$25 million fundraising campaign to build the park and center — to complete the Troth Yeddha' Legacy.

For more information, contact UAF Development at 907-474-2619 or uaf-giving@alaska.edu, or visit www.uaf.edu/trothyeddha/.

Sam Bishop is an editor and writer at Marketing and Communications. Born in Alaska, he worked previously as a newspaper journalist for 27 years in Fairbanks, Anchorage and Washington, D.C.

Raven, aka Jan Sanders Stitt, can be spotted almost anywhere in Alaska with an easel and either watercolor or oil paint. She is a resident artist at Alaskan Raven Studio and creative director emeritus from UAF. She gathered her memories (more than 40 years of them) and tramped around the Fairbanks campus to create the illustration.

Web extra: Learn more about Troth Yeddha', including audio recordings of elders speaking about it, at www.uaf.edu/aurora/.

Alumni in this story: Annette Freiburger, '14; Peter John, '94H*

*H = honorary degree



Illustrations on this page courtesy of Jones + Jones.

DAVE KLEIN, '53

By Sam Bishop

Historical photos courtesy of Dave Klein

Dave Klein bought a used Model A Ford in spring 1947 so he could drive from Connecticut to Alaska. His biggest challenge wasn't geographic. The Ford's engine was in pieces.

Klein put the engine together, and, trusting his novice wrench work, drove the car with a buddy across the freezing Great Plains of Canada and up the newly opened Alaska Highway to Fairbanks.

After spending the winter in Fairbanks, Klein found his mechanical home schooling handy the next summer. While driving back to the Lower 48, he and a friend had to replace a decapitated piston in tiny, remote Fort Nelson, B.C.

The only auto shop was closed when Klein coaxed the Model A into town on three good cylinders, the fourth smoking like a locomotive. Residents said the shop owner could be found in a particular cabin, where he was on a drunk.

"He was, but it was a planned drunk apparently," Klein recalled. The inebriated garage owner granted permission to use his outdoor ramp, so Klein and his friend went to work under the elevated car.

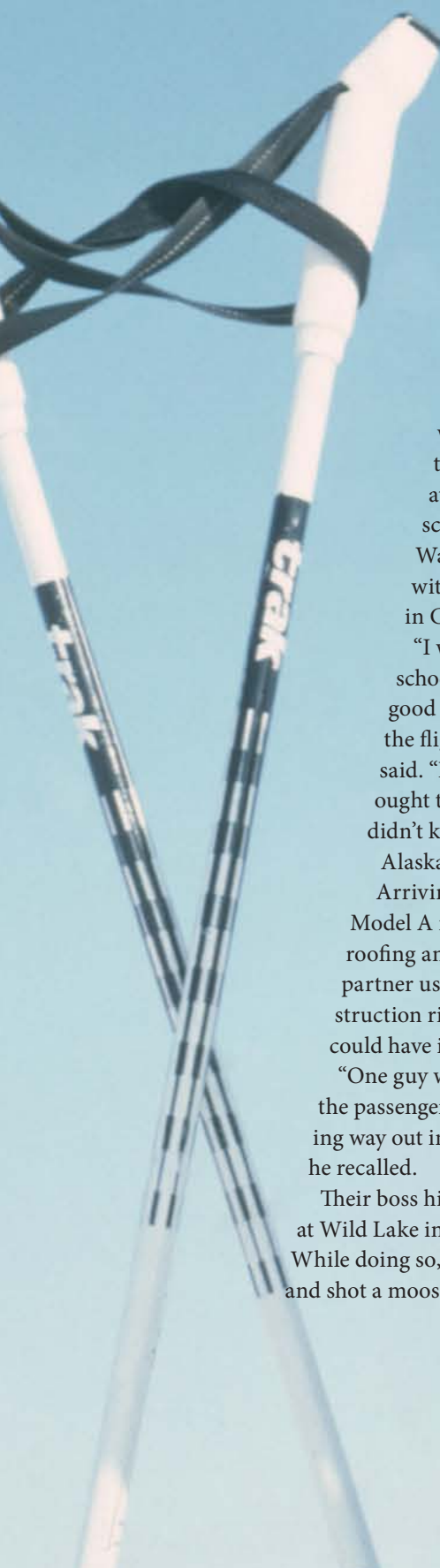
"It was right in the middle of mosquito season. We didn't have anything but citronella or something, and it wasn't very good," Klein said. "Your hands were all greasy and you ended up in a pretty bad way afterward."

The repaired vehicle survived until Spokane, Wash., where he sold it for bus fare home to Connecticut.

The cold, the mosquitoes and challenges of traveling in the North didn't discourage Klein, and he gladly returned in 1951 to enroll at the University of Alaska in wildlife management.

Despite a few additional challenges, he's still there, now as a professor emeritus, and hundreds of graduate-level biology students who followed in his footsteps are grateful to have benefited from his guidance. Klein retired 17 years ago at the age of 71, but he keeps an office at the Arctic Health Research Building that overflows with documents, memorabilia, awards and wildlife curiosities that include

Dave Klein during a field trip on the Seward Peninsula in late winter of 1982.



three African porcupine quills the size of knitting needles. From that office and a home off Yankovich Road just north of the Fairbanks campus ski trails, he consults with graduate students, conducts research and prods policymakers about Alaska's wildlife and their habitats.

Klein grew up in New England, a "country kid" who always felt drawn to the woods. He briefly attended flight training school at the end of World War II, then landed a job with a state forestry crew in Connecticut.

"I wasn't a very good high school student, and I wasn't too good with the math required by the flight training program," he said. "I knew that I ultimately ought to go to the university, but I didn't know what to do."

Alaska resolved that uncertainty.

Arriving in Fairbanks with the Model A in June 1947, Klein found roofing and siding work. He and a partner used the car as their construction rig, an arrangement that could have inspired a *Three Stooges* skit.

"One guy would hold the ladder on the passenger side and it would be sticking way out in the front and in the back," he recalled.

Their boss hired them to build a cabin at Wild Lake in the Brooks Range that fall. While doing so, they fished for lake trout and shot a moose and a few Dall sheep.

"I fell in love with Alaska," Klein said. "And by this time I realized there was a wildlife management field and that's probably what I should strive for."

No such program existed yet at the University of Alaska, but Klein ended up on campus anyway. The Fairbanks Experiment Farm, a federally funded station run by the university, needed someone to milk its dairy herd, and Klein got the job.

"So I got familiar with the university here, and that was so nice. It was so small. I took all kinds of courses that I wouldn't have otherwise, and the cost was almost nil."

As spring 1948 approached, though, he resolved to return to the States to pursue his education. He had found the focus that would sustain his career for decades to come: Alaska's wildlife.

So he pointed the ill-fated Model A southward as soon as a spring flood had cleared. Arriving home, he enrolled in the University of Connecticut, found another milking job to pay for it and graduated in three years with a bachelor's degree in zoology and wildlife.

"I was dedicated, and then I became a good student. I had motivation," he said.

Meanwhile, the University of Alaska created the Alaska Cooperative Wildlife Research Unit on the Fairbanks campus in 1950. The federal government paid for the unit leader's salary, and the university provided the offices and faculty status for the leader, an arrangement that continues today.

The unit's first leader invited Klein to enroll in the master's program, which he did. Ten years later, after a job as a federal biologist in Southeast Alaska and a brief stint with the new Alaska Department of Fish and Game, he was running the unit and finishing up his PhD.

In the midst of this busy career, Klein married a Petersburg schoolteacher named Arlayne, and they began a family. Though she and Klein divorced in the 1970s, she remarried (with the last name Knox) and also still lives in Fairbanks. Their children are Martin, who works as the auxiliary and contract services manager at UAF; Peggy, of Homer; and Laura, of Seattle.

After becoming the cooperative wildlife unit leader in 1962, Klein spent the next 35 years there. He moved to the position of senior scientist in 1992 when the wildlife unit merged with the fisheries unit. He retired in 1997.

Throughout those years, his primary job was advising graduate students as they worked on master's and doctoral degrees. He counts 66 students who completed such degrees under his direct tutelage. Their theses sit in his office bookshelves today.

Klein's students feel lucky to be part of his legacy.

Bob Ritchie, who received a master's degree from UAF in 1976, said Klein obviously loved to study large mammals, but "he could be just as inviting and engaging with a project like mine, which was a land plan for the upper Yukon."

They traveled together along the upper Yukon River during the study. Ritchie was hooked.

"He was the reason that I stayed at the University of Alaska," Ritchie said.

Pat Valkenburg, a retired Fish and Game biologist, estimated that Klein sat on the thesis committees of hundreds of other students. That's how they first met when he was studying for his master's degree in the mid-1970s.

"He loved to take students on field trips, and I loved to go along," Valkenburg said.

Ken Whitten, who earned his master's degree studying Dall sheep in Denali National Park and Preserve in the early 1970s, said Klein often tried to combine field research with another passion — skiing.

"It was virtually a sure thing that if you had any field work to do, Dave would come out to help, and suggest that we do it

on cross-country skis," said Whitten, now retired from Fish and Game.

Maria Berger, who studied bison under Klein's guidance for her 1996 master's degree, recalled a spring ski trip into the mountains near Cantwell.

"He, in his 70s, was outpacing us graduate students," she said.

Rod Boertje, who researched caribou in Denali during the late 1970s and early '80s for his master's degree, said Klein would often come along on field trips.

"I think that's what he lived for. He wasn't one of those couch potato kind of professors," Boertje said.

The trips weren't always for research. Often, they were just to have fun, to hunt or to build a cabin or tent frame to make the next trip more comfortable. Decades ago, Klein, students and friends created a primitive stone cabin above treeline on a ridge overlooking the upper Chena River drainage.

"We had pretty good fun building it and staying in it," Valkenburg said of the cabin.

Berger said snowdrifts would bury the cabin in the winter. Visitors had to know where to dig to find the door. When a





◀ In 1987, Dave Klein and a Danish wildlife technician work in northern Greenland to fit muskoxen with satellite collars.

Lower left: Klein's students take a grazing ecology field trip near Cantwell in March 1975. Among them is Dan Roby, far left, who now is wildlife unit leader for the cooperative fish and wildlife research unit at Oregon State University.

Below: Dave Klein at his home earlier this year.

"It was virtually a sure thing that if you had any field work to do, Dave would come out to help, and suggest that we do it on cross-country skis."



large group visited, some would camp in tents, braving intense winds. The cabin was snug and quiet, "while to the people up in the tent, it felt like the wrath of God was descending upon them," Berger recalled.

Klein's abilities and his generosity with his personal life draw lasting admiration from his students, even those he has ended up opposing in contentious debates about wildlife management.

Klein served on a National Research Council panel that in 1997 said Alaska's ongoing efforts to cull wolf and bear populations in certain areas weren't supported by enough science. One criticism mirrored Klein's long-term problem with state management in general: "Data on habitat quality are inadequate" to know whether the land can support more moose and caribou when predators are culled.

Boertje was the state's most prolific researcher on the topic during his 31 years with Fish and Game. UAF granted him an honorary doctorate this year, with Klein's endorsement.

Boertje said the state's studies showed "pretty conclusively" that predator control can be done well. Valkenburg, who spent 26 years as a state biologist and then served two years as deputy





Dave Klein, then a biologist with the U.S. Fish and Wildlife Service, looks at a reindeer shot in 1957 as part of a study on St. Matthew Island in the Bering Sea. The reindeer at the time were very healthy. This one weighed 400 pounds. Within a few years, the reindeer herd had overgrazed the island and the population crashed. Today, there are no reindeer on the island.

commissioner starting in 2009, said the efficacy of predator control was clear by 1997. “Now it’s much more so,” he said.

With so many connections to the state’s wildlife managers, Klein acknowledged that he sometimes feels conflicted.

“The hard part for me is, when I disagree with where Fish and Game is going, I don’t want to come down hard on them because their staff are top-notch,” he said.

Klein said he believes state policymakers too often overlook the less obvious benefits of predators. Research on the Kenai Peninsula, for example, links healthy moose with abundant bears.

“They’re partners with the salmon in spreading the marine nutrients around in the system, which makes for good habitat for moose and other wildlife,” Klein said. “Why are the moose so big? Why do you have big antlers? It’s the damn salmon.”

Klein’s students admire his enthusiastic curiosity about such relationships and the sharp field skills that lead him to pose interesting questions.

Martha Kopplin, who earned a master’s degree in 1981, recently retired from UAF, where she was involved in introducing K-12 students to science. The job reinforced her view that alert observation is the key to good science. “I have to credit Dave for that,” she said.

Klein’s former students marvel that his keen senses function fully even when he appears to be asleep, a condition sometimes provoked by Friday afternoon seminars.



Dave Klein sits in his office in the Arctic Health Research Building on the Fairbanks campus in June. He is surrounded by decades of collected books, papers, photographs and memorabilia. Master’s and doctoral thesis papers written by the 66 graduate students he advised fill one shelf on the far wall. Hundreds of slides taken during his personal and professional activities, which have brought him to Portugal, Russia, Greenland and beyond, fill the cabinet behind him.

When the time comes for questions, though, Klein belies the impression.

“His hand would be the first one up, and he would ask this very deep, insightful question, so he had to be aware of your presentation,” Ritchie said.

In March 2000, a few years after Klein retired, former students organized a research symposium in Fairbanks to recognize his contributions. At the end of the conference, Klein offered some remarks.

“We all pretended to fall asleep,” Whitten recalled. Fortunately, Klein enjoyed the prank, he said.

“He brings a lot of life and color to his science, and humor, and that’s wonderful,” said Brian Barnes, director of UAF’s Institute of Arctic Biology.

In the 1980s, Klein and Bob White, another biology professor, were Barnes’ faculty mentors, which meant they bought the beer when they got together, Barnes said.

“I’d sit in the middle of them, and they’d argue,” Barnes said. It was a fine introduction.

“He tells great stories,” Barnes said of Klein. Even if a tale dates back 60 years, “he’ll tell you what the weather was like.”

Barnes credits the strength of today’s cooperative unit to Klein and his legacy. It’s the largest cooperative unit in the country, with five full-time scientists. Many of their former students work for state, federal and private employers in Alaska. Klein, who has spent considerable time in Greenland, Scandinavia and Portugal, also lured numerous students from foreign countries.

“It’s a real nice pipeline,” Barnes said. “And Dave had a big hand in putting it together.”

For example, after graduating, Ritchie helped establish ABR Inc., a biological consulting business headquartered in Fairbanks.

“Seventy-five percent of our senior staff have advanced degrees from UAF, and a number were affiliated with Klein’s regime there,” Ritchie said.

Valkenburg said Klein helped guide hundreds of students to success in their fields.

“He helped to create a very congenial learning environment that was very fun and sociable,” Valkenburg said. “That was his tremendous contribution.”



Highway workers repair an Alaska Highway bridge across a river south of Whitehorse, in Canada’s Yukon, in May 1948. High water that spring washed out parts of the road and its bridges. Dave Klein and a friend had to wait here briefly while driving his Model A back to the Lower 48.

Today, Klein continues as an active member of the Fairbanks campus.

“He’s here at work more days than not and completely engaged both physically and intellectually,” said Barnes, the IAB director. “It’s really incredible.”

Sam Bishop is an editor and writer at Marketing and Communications. Born in Alaska, he worked previously as a newspaper journalist for 27 years in Fairbanks, Anchorage and Washington, D.C.

Web extra: See more of Dave Klein and his exploits at www.uaf.edu/aurora/ and listen to an upcoming interview with him on KUAC FM and www.kuac.org.

Alumni in this story: Maria Berger, '96; Rod Boertje, '81; Dave Klein, '53; Martha Kopplin, '81; Bob Ritchie, '76; Pat Valkenburg, '76; Ken Whitten, '75

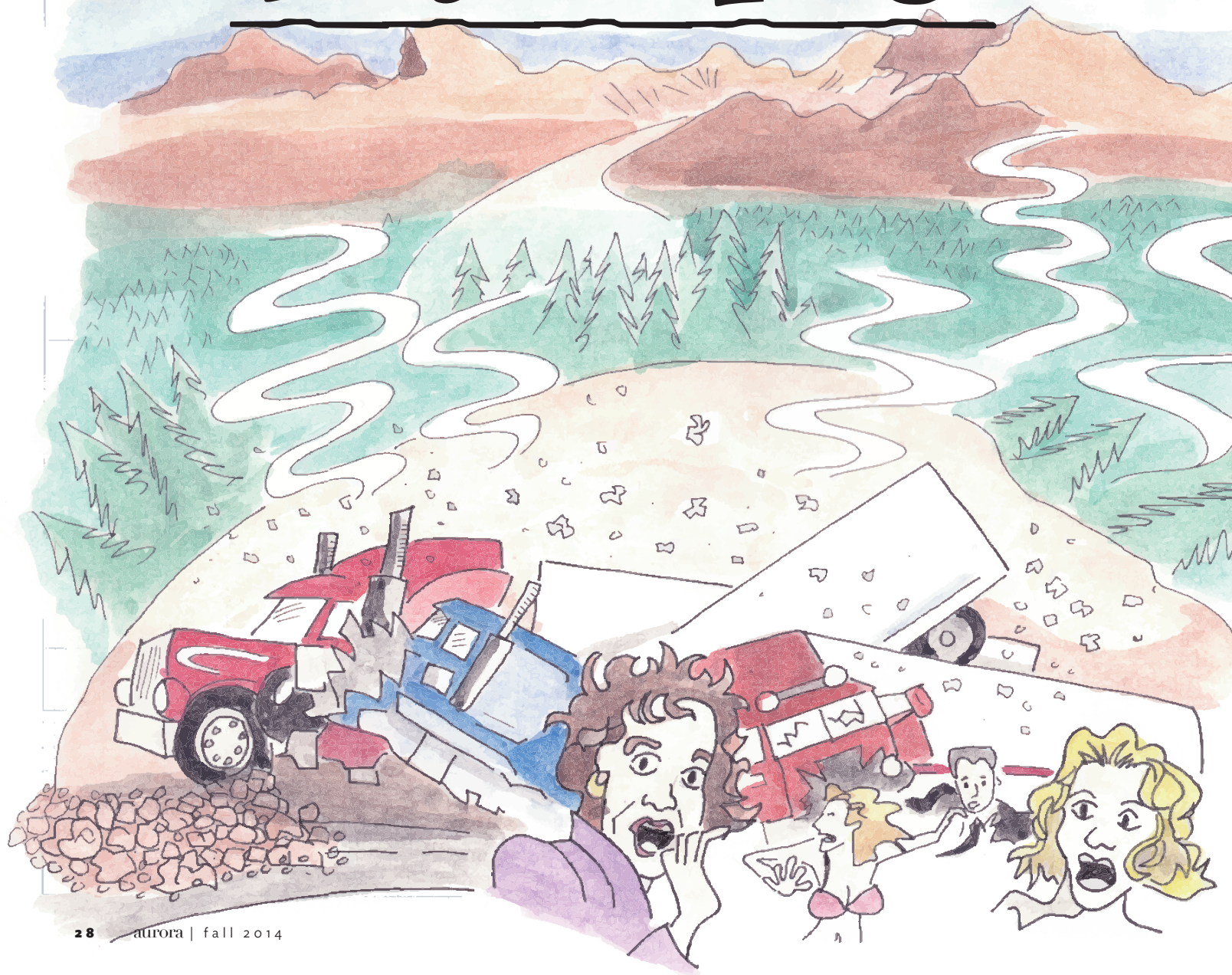
Dave Klein stands next to his Model A shortly after he and a friend pushed it through a flooded section of the Alaska Highway in spring 1948. The car stalled during the crossing when the cooling fan kicked water onto the ignition system.



ATTACK

OF THE

DEBRIS LOBES



Story by Sam Bishop

Illustrations by Daniel Darrow

Margaret Darrow saw the first surprising evidence of pressurized water after a drill bit pierced 50 feet into a massive blob of frozen gravel perched on a mountainside in Alaska's central Brooks Range.

As she and a small band of fellow geologists, engineers and drillers watched, the water percolated from the top of a pipe and into a recycling tub. The gray liquid matched the surface of Frozen Debris Lobe A, itself gone muddy from the light rain on a 35-degree day in late September 2012.

Standing nearby in her rain gear, Darrow had expected some water. The drilling crew, working from a tank-like tracked vehicle, had repeatedly hammered 5-foot sections of casing pipe into the lobe and spun bit-tipped drilling pipe down the casing. Then they'd pumped in water to flush out the resulting ground-up sand and gravel.

However, they got back more water than they put in. When they removed a section of drill pipe during retrieval, the gray liquid would sometimes spurt up several inches from the center of the next pipe emerging from the hole.

"It's not like it shot feet in the air," Darrow said, "but enough that we all went, 'Wow.'"

Later, after sensors lowered into the hole confirmed temperatures well below freezing, Darrow and her fellow researchers said "wow" again.

"Why would there be liquid water that's below freezing? It seems very strange," said Darrow, an associate professor of geological engineering at UAF.

The answer to that question, which team members suspect they have worked out, could help explain the behavior of Frozen Debris Lobe A and other similar blobs that ooze down the mountainsides near the trans-Alaska pipeline where it passes through the Brooks Range. They've counted 23 such lobes less than a mile uphill from the Dalton Highway, which parallels the pipeline and forms the only road connection to Alaska's North Slope oil fields.

With the state's biggest economic engine under a slow-sliding threat, the lobes have drawn the

attention of experts from Alyeska Pipeline Service Co. and government agencies, including state and federal transportation departments, the Division of Geological and Geophysical Surveys, and UAF's Alaska University Transportation Center.

By June of this year, Lobe A's leading edge had slid, rolled and crumbled to within 142 feet of the Dalton Highway's embankment at Mile 219. The lobe now moves westward and downhill into the Dietrich River valley at about 15 feet per year. At that rate, less than a decade remains before the lobe hits the road. Its arrival, at current speed, would be like a 50-ton dump truck dropping a full load of rubble on the highway once every 19 hours.

During construction of the highway and pipeline in the mid-1970s, the lobes were noticed but weren't considered a problem. Today, their movement is unmistakable, and their speed is increasing. No one knows if they can be stopped. Lobe A isn't the

"You can watch it move."

fastest-moving blob, but it's the closest to the highway. It

stretches downhill like an elongated teardrop, flowing about 1,600 feet from its source in a small, round basin set high in a ridge on the eastern side of the Dietrich River valley.

At its most prominent point, the lobe bulges more than 50 feet above the surrounding mountainside. Along its leading edge, or toe, the frozen mass bulldozes trees. In some spots, the toe wrinkles the thick sphagnum moss like a rug kicked on a hardwood floor. Elsewhere, the moss curls in on itself like a cinnamon roll.

On a quiet summer day, Darrow listened as another, more active lobe made small popping sounds. Occasionally, a tree trunk would shift, a little gravel would roll. That lobe's toe has traveled an average of 126 feet per year since 2010, the fastest of several measured to date.

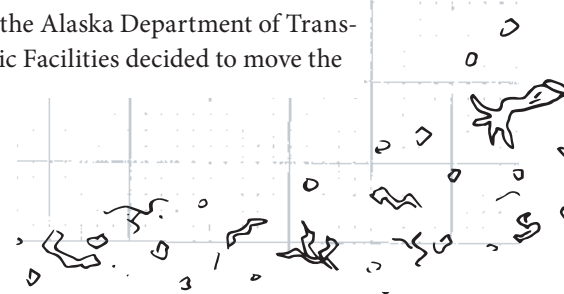
"You can watch it move," Darrow said.

The water her team found within Lobe A could help explain such movement. The water also warns that the movement might soon increase — a change that would mean more costly trouble for the nearby highway and pipeline.

Earlier this year, the Alaska Department of Transportation and Public Facilities decided to move the



"wow"



highway, shifting it westward and downhill about 400 feet farther from Lobe A.

“The assumption is, that will give us a number of years ... to understand it better and come up with a mitigation strategy,” said Jeff Currey, a DOT engineer. “It’s already giving us some grief with respect to the sediment coming off it.”

The sediment has clogged culverts under the highway, built in 1974 to support development of the Prudhoe Bay oil field. The pipeline, which in 2012 carried about 580,000 barrels of oil per day from Prudhoe and other fields, sits another few hundred feet downhill from the planned new road location. So the line has more time.

When the geologists and drilling crew struck water in September 2012, it presented a conundrum. This was, after all, supposed to be a frozen debris lobe. Sensors installed in several drill holes at various depths continued to reinforce the conundrum that fall. Below the summer thaw zone, temperatures sat at 30 degrees Fahrenheit all the way to bedrock at 86 feet.

“We were really wondering, gosh, that’s liquid water there, and how is that all possible?” said Ronnie Daanen, a permafrost hydrologist with the Alaska Division of Geological and Geophysical Surveys.

The answer may be pressure, lots of pressure.

“The skate here is actually the debris that moves down the hill.”

Think of ice skates, Daanen said. They glide well because they melt a thin layer as they pass across the ice.

“That is a form of pressure melting,” Daanen explained.

The pressure creates a layer where most molecules are liquid. That’s what he expects happens within the debris lobe.

“The skate here is actually the debris that moves down the hill,” Daanen said.



Ronnie Dannen, Trent Hubbard (standing) and Margaret Darrow download data in mid-June from instruments installed two years ago in a hole drilled in Frozen Debris Lobe A.

The researchers measured the highest water pressure at the bottom of Lobe A, a depth of about 85 feet.

About 10 feet above that, the lobe is sliding. The researchers discovered this zone when the movement sheared off the lower end of the 100-foot pipe and strings of sensors in their deepest drill hole. An inclinometer recorded sideways movement of 1 inch per day at the shear zone in the month before it failed.

Before the water pressure sensor at bedrock also broke, it transmitted very high readings — about the equivalent of a column, or head, of water 165 feet tall.

That’s intense pressure, but it’s not enough to keep water liquid at 30 degrees.

So Daanen started thinking about what else might be happening in the drill hole. When water freezes, the amount of pressure it can exert on the type of instrument they were using drops radically. So he knew that any freezing in the lobe would essentially suck a large chunk of the measurable pressure out of the system. He also saw pressure and temperature measurements indicating that water in the shear zone was in equilibrium — neither melting nor freezing. It was on the cusp between liquid and solid, like the water under a skate blade.

At 30 degrees, that can only happen at a pressure equivalent to 450 feet of head.

When in ice, though, such high pressure isn't detectable — it's there, but it's locked in the frozen molecules. So Daanen added the 450 feet of inferred head to the 165 feet of detected head from the liquid water, arriving at an estimated total pressure head of 615 feet. That's the height of a 60-floor skyscraper.

Yet how could pressure on that scale build within the debris lobe?

A clue appeared on the surface of the debris lobe far up the mountainside from the drill hole. There, the ground is churned, with exposed gravel, sand and rock.

"You can see a little bit of a step, a bit of a nip," Daanen said. It seems that's where the shear zone surfaces at the upper end of the debris lobe. The zone could create a path for water to enter the lobe — in the summer at least.

Their theory about the source of the high water pressure got a big boost with one remarkable discovery: The shear zone near the top of the lobe, where the water could enter, is 615 feet above the shear zone near the bottom of the drill hole. In other words, the elevation difference almost perfectly matches the water column that would create the theoretically calculated pressure in the drill hole. It seemed unlikely to be coincidence. The intense pressure appears to be the reason some water remains liquid inside the lobe.

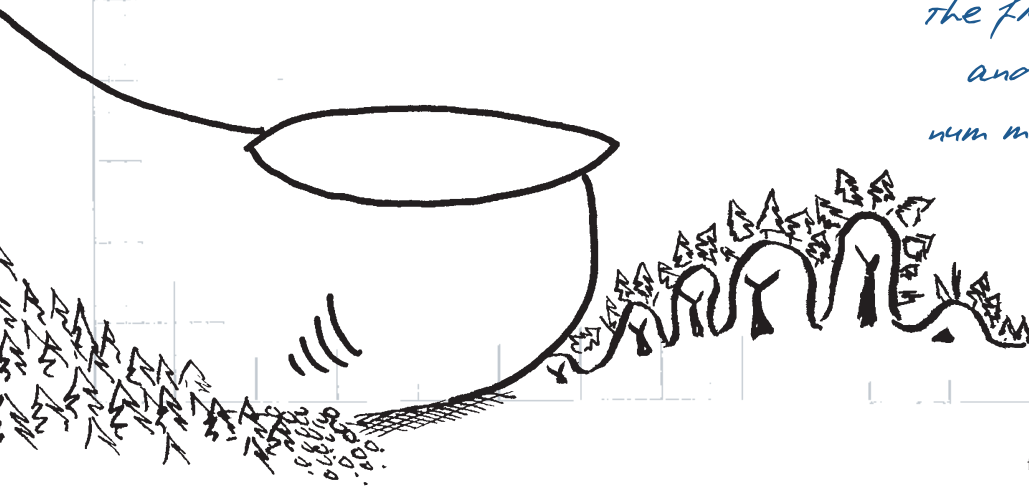
When wet, the lobe's material acts differently than it does when dry. The research team saw that firsthand in the miserable, damp weather they encountered. Daanen, Darrow and graduate student Jocelyn Simpson rented a cabin in Wiseman, a small community 31 highway miles to



Top: Margaret Darrow inspects a tree that has split in several directions while being carried down the surface of Lobe A.

Bottom: Darrow views the toe of Lobe 7, a faster-moving mass of gravel, sand and silt on the west side of the Dietrich River valley.

Along its leading edge, or toe, the frozen mass bulldozes trees and wrinkles the thick sphagnum moss like a rug kicked on a hardwood floor.



the south, where they retreated each night to dry out. Days at the drill site, though, were chilly and soggy.

In the rain, the areas of Lobe A with no vegetation quickly turned to a loose, boot-sucking mud. However, after a day with no rain, “you can walk on it and you don’t even leave prints,” Daanen said. “It dries up and becomes a crust.”

In a laboratory at UAF, Simpson has analyzed sand and gravel samples from the drill cores from deep inside Lobe A. The early results mirror their field experience on the lobe’s surface.

“When it’s saturated, it seems to be really easy to change and it’s easy to slide, but, as soon as it gets to a certain dryness, it becomes rock hard and it’s really

tough to move,” Daanen said.

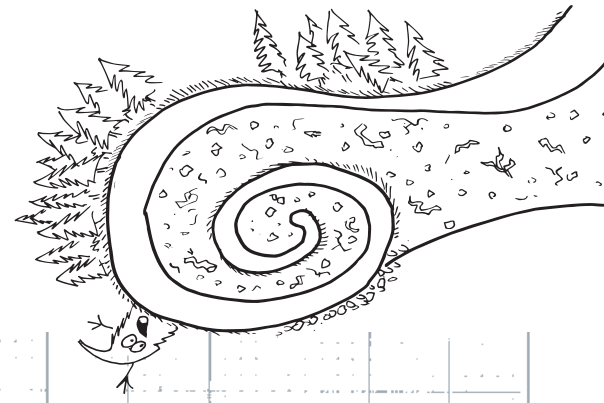
This indicates the highly pressurized water in the shear zone within the frozen lobe probably helps the entire mass advance down the slope, Daanen said.

“What happens is that this pressure is going

along the shear zone and is lifting up the entire lobe, and when it is doing that it is reducing its friction so it can move faster,” he said.

Moving faster has been the trend in recent decades. A question facing the state’s highway caretakers and the pipeline owners is whether the rate will continue to increase. More water in the lobe likely would cause such increased movement. Curiously, the long-term rise in central Brooks Range temperatures alone could make that happen. That might seem obvious — wouldn’t warmer temperatures mean more rain and greater snowmelt? Not necessarily. The weather could actually become drier in a warmer climate. Rather, Daanen looks at the relationship between temperature, pressure and water. The physics equations that describe the relationship predict that warmer conditions would increase the pressure inside the lobe, even if no additional water enters the shear zone from outside sources.

Margaret Darrow pulls on sphagnum moss rolled up by Lobe A’s toe.



“The actual measured pressure will go up here if it gets warmer,” Daanen said of the shear zone deep inside Lobe A. The higher pressure would allow more water to remain liquid in the shear zone, and that’s what would promote movement in the lobe.

“I think that’s the risk here in terms of warming events,” Daanen said.

Daanen has a chart reflecting the rising long-term temperatures in the central Brooks Range, along with a recent shorter-term drop.

“The only thing we can expect to happen, if you trust everything on this chart, is that this will come back up again,” he said, pointing to the recent cooler temperatures. “And, at that point, there’s risk of [the lobe] coming down faster.”

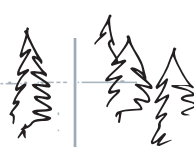
Darrow, Daanen and Trent Hubbard, a DGGG geologist who’s been instrumental in the project, visited the debris lobes in June this year, using money the agency received to investigate geological hazards along the pipeline corridor.

More monitoring and drilling, not only on Lobe A but also on others, would help determine if the discoveries from the recent research are anomalies or widespread realities, Darrow said.

“They all have telltale signs in their catchments. They have cracks in their catchments with water in



Trent Hubbard inspects a spruce ripped apart by movement on Lobe 7’s surface.





them, and that's a place for water to get down into," Darrow said of the lobes. "If it's going down into the shear zone, if they have a discrete shear zone like A does, that shows that there's signs that they might start moving faster, and it would be good to continue to measure them and see how fast they speed up." 📌

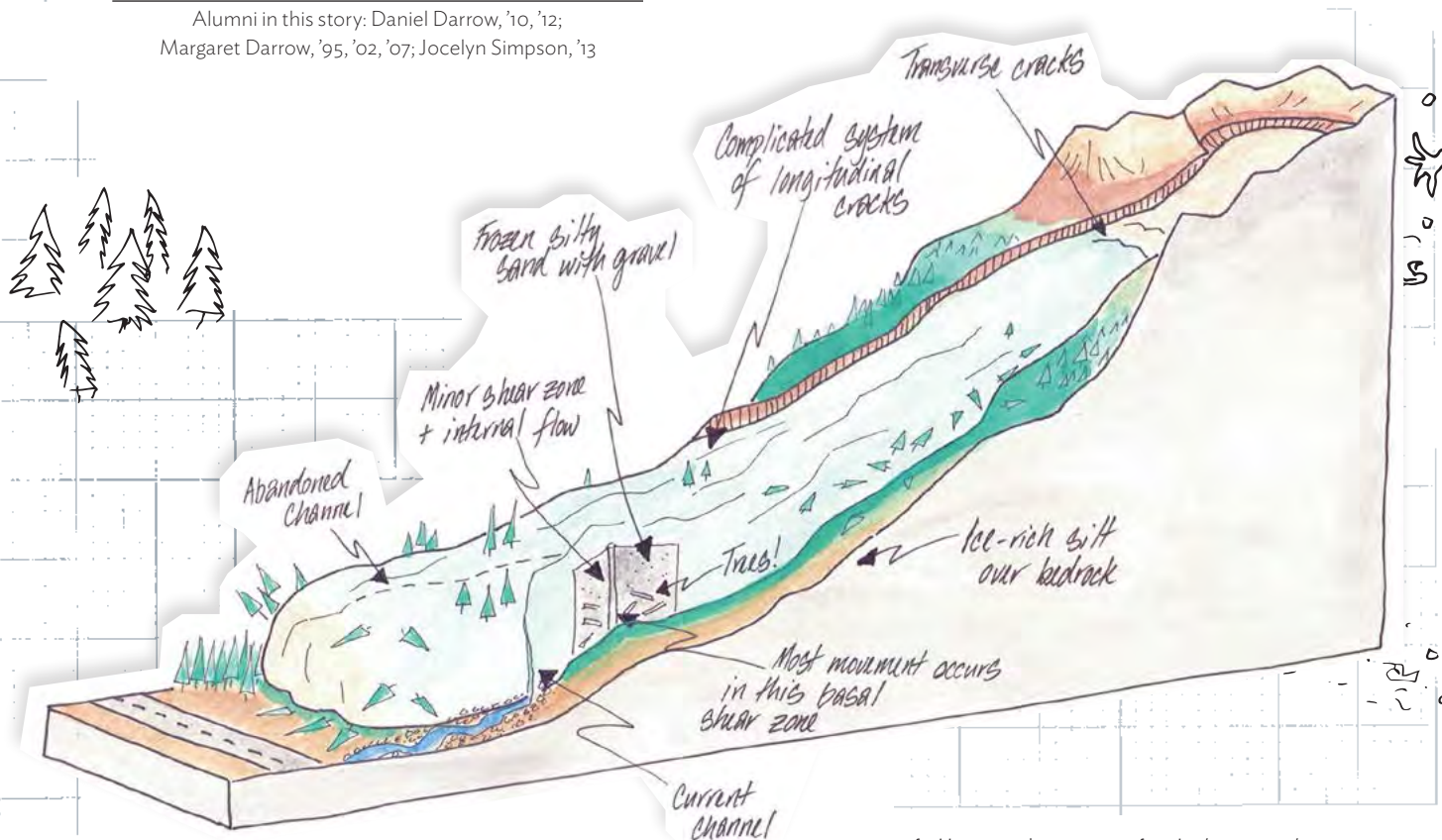
Sam Bishop is an editor and writer at UAF Marketing and Communications. Born in Alaska, he worked previously as a newspaper journalist for 27 years in Fairbanks, Anchorage and Washington, D.C.

Daniel Darrow, mostly known as Margaret's husband, or "oh...you," is a term instructor in the Department of Foreign Languages and Literatures. His last artistic gig was drawing political cartoons for the former bastion of irreverence, the *Ester Republic*.

Web extra: Don't miss a cheesy debris lobes rap video featuring our scientists at www.uaf.edu/aurora/.

Alumni in this story: Daniel Darrow, '10, '12; Margaret Darrow, '95, '02, '07; Jocelyn Simpson, '13

Lobe A approaches the Dalton Highway, the main ground transportation route to the Prudhoe Bay oil fields, in this photograph from mid-June. The trans-Alaska oil pipeline is several hundred feet downhill from the highway, buried near the east bank of the Dietrich River.



1960s

Joel Rudinger, '64, professor emeritus at Bowling Green State University in Ohio, was honored for 45 years of continuous service in spring 2014. He is the poet laureate of Huron, Ohio, and he is working on his memoirs from his years as a working Alaskan and UAF student from 1960–1964.

1970s

Edward T. Martin, '73 — “I want to share a website with everyone: www.jesus-in-india-the-movie.com. During my senior year at UAF I volunteered to join the Peace Corps. I served as a volunteer in Afghanistan and later the Fiji Islands. I traveled extensively in India three times, researching the evidence that young Jesus spent years in India studying Hinduism and Buddhism. My first book, *King of Travelers, Jesus' Lost Years in India*, is the basis for a movie which Paul Davids (of *Roswell* fame) and I filmed in India. P.S. I miss my friend Patrick B. Cole.”

Gordon Betts, '74, '75, retired in March 2014 from New York State Parks and Recreation after more than 37 years as manager of Selkirk Shores State Park. He started his own business, Dragon Catchers, as a licensed nuisance wildlife control operator.

Laird Jones, '78, was elected to serve as vice president of the National Johnson O'Malley Association Board of Directors during its 2014 conference. He is vocational training and resource center manager for the Central Council of the Tlingit and Haida Indian Tribes of Alaska and has been employed there since 2007.



Kelly Drew, '81, received the Sidney A. McNairy Jr. Mentoring Award in June from the National Institutes of Health's Institutional Development Awards program. The award recognizes scientists who demonstrate research productivity through publications, presentations and successful mentoring of students and trainees. Kelly teaches in UAF's Department of Chemistry and Biochemistry. Read more about the award at <http://bit.ly/uafdrew>.

Barry Epstein, '76, self-published a photo-autobiography eBook, *Jersey Boy*, in November 2013.

Steven M. Casey, '78 — “I graduated in 1978 with a criminal justice degree. I have been a Texas master police officer for 33 years. I have been a police chief in two cities and a fire chief in one. I am currently the Bell County, Texas, fire marshal and deputy emergency management coordinator for the county, thanks to my UAF degree.”

1980s

Vic Dull, '80, '91, '99, '04, along with his wife, Aigul Aubanova, wrote a book, *Dignity, What's That Sam?*, set in Salem, Ore. Andrew, a 12-year-old runaway, is befriended by a homeless man who teaches him the definition of dignity. The authors are planning a sequel wherein Andrew learns about the law of attraction and how he begins applying the concept to turn his life around. Read more at www.parentingforeveryone.com.

Joan L. Hurlbut, '81, '91, '93, co-authored her 10th book, *Teenage Suicide: A Cultural Tragedy of Adolescence*, with Phyllis Head Wood and Benjamin B. Keyes in March 2012. It can be purchased on Amazon.

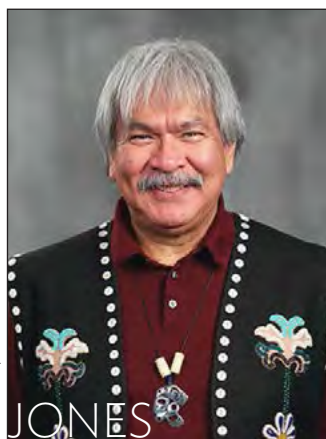


Photo courtesy of www.sitnews.us.

Michael Balen, '84 — “It's been 30 years since I graduated — essentially a lifetime. I graduated UAF full of enthusiasm and ignorance. Somehow, I found my way and have had a seriously great ride getting to my current perch.

“Post-graduation, I went underground — literally — at the Grant Mine just outside of Fairbanks on the flanks of Ester Dome. Several years later, I found my way to the U.S. Bureau of Mines in Anchorage where I worked with a bunch of really great people and spent countless hours in helicopters chasing elusive mineral deposits all over Alaska.

“I've migrated through a career that involved the U.S. Forest Service, mine reclamation, firefighting, transportation system management and now, construction management, where I oddly find myself in Las Vegas, Nev., working to bring home a \$120 million program of work to construct new public infrastructure in the Spring Mountains National Recreation Area just 40 miles from “The Strip.”

“I have many fond and now distant memories of UAF, and find it hard to believe that so much time has passed; so much has changed, yet so much has stayed the same. It's all been a thrilling adventure, and I'd not trade any of it for anything. UAF was the start — the seed well planted — that sprouted many branches and has led to places and experiences unimagined in 1984. I still proudly display my UAF alumni ties wherever I can and am more than happy to give credit to the people from my past: Scott Huang, Sukumar Bandopadhyay, Paul Metz, Lucy Trant, Don Triplehorn and many others.”

Rose Schreier Welton, '84 — “I retired from the Alaska State Library in Juneau (in December 2013) after 23 years as a catalog librarian.”

Linda Thomas, '87, was appointed to Northrim BanCorp's board of directors in April 2014. She is chief operations officer and vice president for the Alaskan Brewing Co.

1990s

Olivia “Libby” Eddy, '92 — “Appointed interim university registrar at UAF in September 2012. Assumed the position on a permanent basis in January 2013.”

Ben Grossmann, '95, was nominated for an Academy Award in visual effects, along with three others, for *Star Trek into Darkness*, at the 2014 Oscars. (Designers of *Gravity* won the category.) Grossmann won an Oscar for *Hugo* in 2012.

Patricia Humphrey, '95 — “I will be the chair of the Faculty Senate at Georgia Southern University for 2014–2015. I am also now the chair of the southeastern section of the Mathematical Association of America (Alabama, Georgia, North Carolina, South Carolina and Tennessee) until 2017.”

Jillian Swope, '97 — “Fellow lifetime alumni association member **Jack Fletcher, '96, '98**, and I are excited to announce the arrival of our first kiddo and future UAF alumnus. Jackson Parrish Fletcher was born on Dec. 21, 2013, in Colorado Springs, Colo. ‘Little Bear’ is back home, doing well and has been practicing his ‘U-A-F!’ arms for Nanook hockey games next year.

I recently presented research with my father, Bob Swope, R.N., at the Transcultural Nursing Society’s 39th Annual International Conference in Albuquerque, N.M., on cultural considerations in high-risk obstetrical air medical transports to improve global neonatal and maternal patient outcomes. Bob is a graduate of that other school in Anchorage (you know, the one with the subpar hockey team) but always cheers for the Nanooks.”

Cameron Wohlford, '97, is senior project manager for the new engineering facility project and the Margaret Murie Building project on the Fairbanks campus. The Murie Building, completed in late spring 2013, was recognized for design merit by the Alaska Chapter of the American Institute of Architects in March 2014. The award distinguishes new construction with exceptional design. The Murie Building was credited for fitting in well with the campus setting and for outstanding use of interior glass.

Valarie Kingsland, '99, graduated with a master’s degree in library and information science from San Jose State University in May 2014. She received the Ken Haycock Award for exceptional professional promise from the university’s School of Library and Information Science and was the student speaker at the SLIS graduation ceremony. In addition, she served two years as president of SLISConnect (the school’s joint association for students and alumni) and maintained a 4.0 cumulative GPA in her master’s program.

2000s

Joe Hardenbrook, '02, worked with Christopher Quist at the LUNCH Café and Eatery [but was not a partner, as previously published]. Joe is co-founder of Northern Adventure Tours with **Jake Hamburg, matriculate**. Joe’s wife, **Anna Sorensen, '06** [not Sorensen as previously published], is administrative director for the Northern Alaska Environmental Center.

David Kingsland, '88, '94,

was named National Distinguished Principal for 2014 by the Alaska Association of Elementary School Principals, nominated and selected by his fellow principals through a statewide search process. He has been the principal of William H. Seward Elementary School in Seward for 14 years and was previously assistant principal in Shishmaref and a teacher at Davis-Ramoth School in Selawik as well as at Head Start in Fairbanks and Circle School in Circle, Alaska.

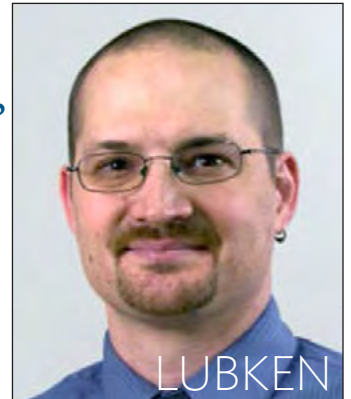


Lorna Shaw, '96, '05,

was named Business Leader of the Year by the School of Management in April 2014. She is the external affairs manager of Sumitomo Metal Mining Pogo, where she oversees community, public and government affairs. She is involved in several community organizations, including this magazine’s advisory board.

Christopher Lubken, '99, '03,

was one of only 10 Wyoming teachers to receive a 2014 Arch Coal Teacher Achievement Award. Teachers are nominated by the public, and a blue-ribbon panel of past awards recipients selects the annual winners. Christopher teaches marching, concert, jazz and steel drum bands at Campbell County High School in Gillette. Read more about his award at www.archcoal.com/community/2014/clubken.aspx.



Jean Potter on the Fairbanks campus in the 1940s.

Scott Legge, '02,

is an associate professor in the anthropology department at Macalester College in Saint Paul, Minn. He received his PhD from UAF, his MA from Southern Illinois University and his BA from Purdue. He joined the Macalester faculty in 2008. Scott is a biological anthropologist with research interests in human and nonhuman primate skeletal biology and dentition, as well as historic and pre-contact archaeology of North America.

Colleen Mondor, '96, '99,

gave a presentation on the book *The Flying North* in September 2013 in Haines, Alaska, at a joint conference by the Museums of Alaska and Alaska Historical Society. *The Flying North* was written by Jean Potter and originally published in 1945. It was reissued by Shorefast Editions (where Colleen is a partner) in 2013. Read Colleen’s article about the presentation and book at www.adn.com/article/20131016/flying-north-testament-glory-alaska-bush-flying.



Photo courtesy of Macalester College.

Digger Stolz, '04, published a novel, *Keepin' On Keepin' On*. This book concludes the lively Appalachian Trail adventure begun in *Stumbling Thru*. To learn more about the series and its author, visit www.adiggerstolz.wordpress.com.

Murphy McCaleb, '06, published his first book in March 2014 with Ashgate Publishing. *Embodied Knowledge in Ensemble Performance* explores how musicians work together through playing their instruments to create unique and creative performances. Murphy received his doctorate in performance studies from Birmingham Conservatoire (Birmingham City University, U.K.) in March 2012. A bass trombonist, Murphy has recorded on multiple classical and folk CDs, the most recent being contemporary ensemble Decibel's *My Broken Machines*. Murphy manages staff and lectures in the creative industries department at Kidderminster College, U.K. He teaches music theory, listening skills, music and society, and professional development for musicians.

Adam W. Baxter, '07, joined Northrim Bank in March 2014 as assistant vice president, lending quality assurance officer. Before that he was a credit analyst at Denali State Bank.

Richard David, '07, works for the U.S. Army Corps of Engineers Alaska District's Northern Area. Read more about him at <http://bit.ly/rdavid07>.



Matriculates

Jan Sanders Stitt, aka Raven — “I was awarded first place for my painting *Mendenhall Glacier* by the juror Daniel Keys in the Great Alaskan Plein Air Retreat painting competition in June. Another of my paintings was selected by the juror Mark Mehaffrey for the Alaska Watercolor Society's show that will be exhibited in Anchorage's Blue Holloman Gallery in September. More paintings can be seen at www.AlaskanRavenStudio.com.”

Penny Gage, '08 — “After graduation, I served in the U.S. Peace Corps in Nicaragua from 2009–2011. I worked for the Rasmuson Foundation and the Alaska State Senate before returning to graduate school in 2012. In May 2014 I graduated from Georgetown University's master of science in foreign service program. I'm currently working at Statoil (a Norwegian oil and gas company) in their D.C. international and federal government affairs office.”

Sheena Cummings, '10, earned her Certified Fundraising Executive designation in spring 2014 from the Association of Fundraising Professionals. There are only 31 CFREs in Alaska. She is the marketing assistant for the Breast Cancer Detection Center of Alaska.

Emerson Eads, '11, '13, wrote and conducted his own opera, *The Color of Gold*, staged by New York stage director Cindy Oxberry, in March 2014 for Opera Fairbanks, featuring Fairbanks opera star Jaimie-Rose Guarrine. In January and February 2014 he starred in Anchorage Opera's *Cambiale di Matrimonio*.

Ed King, '12 — “After graduating with my master's in economics, I started working for the State of Alaska Department of Revenue. A year later, I moved up from economist to policy analyst. I just moved up again to work with the commercial group at the Department of Natural Resources. Meanwhile, I was awarded a Denali Award for exceptional service and was named one of Alaska's Top 40 Under 40. It's been a good year!”

Megan (Lindbergh) Carpenter, '13 — “Shortly after graduation, I moved to Texas with my husband, Matthew Carpenter. I'm now working for the Texas Department of Criminal Justice Rehabilitation Programs Division as a case manager.”

Cole Vanderbilt, '13 — “Got a good job, bought a new car and threw a 300 game (in practice, but hey, it's still something).”

Nanook Memory

ERNEST KAISER ATTENDED CLASSES AND WORKED AT UAF IN THE 1960S. THIS IS HIS RECOLLECTION OF THE 1967 FAIRBANKS FLOOD.

“On a nice August morning, from my home atop Ester Dome, I could see the rising flood waters and decided to drive to the university power plant, just to make sure it was safe. The university had become the shelter for about 5,000 people who had been flooded out. When I got to the power plant, I found the power plant superintendent, Jerry English. We walked out the railroad siding area of the power plant to check the water level under a small rail span over a small stream. We checked the level and thought it was a bit high but not a danger to anything yet. We checked it a cup of coffee later and found it had risen almost 6 inches; at that rate of rise, it would soon be spilling into the rail coal grate at the plant and flood the lower level. If that happened, it would shut down all electrical power, heating and water to the 5,000 refugees, as well as the entire campus. We had to build a dike around the coal delivery area, and build it quickly.

“I commandeered a bulldozer from a contractor working on the campus and had it begin a dirt dike around the entire area. Jerry moved two coal cars over the grates to supply coal to the plant for an unknown duration. I also called the military to bring sand bags and pumps. We had a response from Fort Wainwright with a 6X truck with sand bags. We called for volunteers and had about 50 people filling and stacking sand bags on the dirt dike we had started. By 6 p.m., the water had risen to the dike and was still rising. Jerry and I went into the lower level of the power plant and found the two wells in the utilidor between the power plant and the maintenance shops were flowing water into the utilidor at a very high rate. We installed pumps in the power plant and began pumping the water into the space inside our dike. We could not pump farther, but now we had to keep the water below the coal delivery grates while still pumping the water out of the power plant's lower level. We needed more pumps, and the Army brought some by helicopter. We set them up and attempted to control the water in the basement and behind the dike. The water in the power plant basement rose to within 6 inches of flooding electric pumps vital to the operation of the boilers. Had the water gone that much farther, we would have lost.

“This condition went on for more than 72 hours when the floodwaters finally began to abate. Except for the volunteers filling and stacking sandbags, not many people found out how close to real disaster we came.”

KEEP IN TOUCH

Send us your news or UAF memories to www.uaf.edu/alumni/classnotes/ or email aurora.magazine@alaska.edu.



Celebrating 50 years

THE UNIVERSITY FIRE DEPARTMENT, FORMED IN 1964,
HAS TRAINED HUNDREDS OF FIREFIGHTERS

By Sam Bishop

The first “barbecue” held at the Cutler Apartment Complex wasn’t planned — and it got completely out of control, as Doug Schrage recalls.

Schrage, now the University Fire Department chief, was a student firefighter in 1983 when the partially finished apartments burned.

Schrage was in the station when the call came reporting a fire in the complex, located several hundred yards up Yukon Drive and behind the Moore-Bartlett-Skarland dorms.

“As soon as we opened the garage doors here, we could see it in the sky,” Schrage said. The apartments, still under construction, had exposed wood framing and plywood. The fire spread quickly.

“They burned to the ground. They had to start over,” Schrage said.

The fire was just one of the many events that has given Schrage and hundreds of other students real-life, on-the-job training during the past 50 years. Department alumni celebrated the 50th anniversary with a reunion in July that drew more than 130 former student firefighters from across the nation.

Schrage, whose career brought him to the deputy chief’s position in Anchorage before he returned to UAF in 2010, responded to his first car crash and performed his first CPR as a student firefighter.

The memories don’t all involve trauma, though.

One winter, Schrage said, student groups were given huge snow mounds to sculpt. “We were going to make ours into a big fire hydrant, but, before it was completed, the dean of students ordered us to knock it down,” Schrage said.

Apparently, Dean of Students Dick Stenard saw something else in the team’s roughed-out sculpture.

“He thought we were building a 10-foot phallus,” Schrage said. Stenard relented after the firefighters clarified the source of their artistic inspiration.

Today, the number of student firefighters has doubled from Schrage’s time in the program, but the basic model has not changed. As of June, the department had 42 student firefighters as well as 11 professional staff. The students must complete a certification class to become eligible for the job. Once hired, they work at the station (or remain on call nearby, such as in classes) an average of 56 hours

“You’ve got to be able to hack it.”

per week as full-time university employees. Fifteen students actually bunk in the station.

During orientation, Schrage said, an instructor draws a triangle with corners labeled “work,” “school” and “social life.” Pick two, the instructor says.

“No, you don’t get Christmas off, but that’s part of the career. You’ve got to be able to hack it,” said Joy Beth Cottle, a student firefighter from 2001 to 2003 and now a captain at the Fairbanks Fire Department.

Cottle said the training can’t be matched.

“I got to make a lot of mistakes so I didn’t have to do them when I got hired in my career job,” she said. The department’s professional staff, who help catch and correct those mistakes, are top-notch, she said.

By giving her confidence, Cottle said, the university’s program helped her overcome the challenges she faced as a woman.

“You are incompetent until proven competent as a woman. It doesn’t change,” she said. “I had the confidence, and that is really where a lot of women struggle, to have the confidence to put themselves out there.”

Given their employability, most students stay for three years, by which time they have their associate degrees and paramedic certifications.

“The advantage that the students have coming out of the program is just huge,” said Cottle, who was the first female firefighter hired by the City of Fairbanks’ department.

The university department, formed in 1964, originally served only the campus. Since 1977, the university has contracted its services to the University Fire Service Area, a volunteer commission-led arm of the

Fairbanks North Star Borough, to provide fire and emergency service to the campus and a surrounding area with about 22,000 residents. The university covers roughly a third of the cost, while the service area pays the rest from taxes on private property within its boundaries.

Schrage said he appreciates that the university continues to support the student-firefighter model. He recognizes the risk involved in trusting 18-year-olds with 60,000-pound, \$1.5 million tanker trucks. “They’re basically still learning to drive a car,” he said of the new students.

But the model, now 50 years in, has proven itself.

Schrage said he tells students that “if they have people your age flying fighter jets in the Navy, we can teach you to drive a fire truck safely.”

On the web: www.uaf.edu/fire/50th-reunion/



IN MEMORIAM

Richard Verran Abbott, '73, June 13, Juneau

Mary Ann Adepoju, '90, May 8, Fairbanks

Jean J. Alder, '64, March 23, Logan, Utah

Sam Burger, Poker Flat employee, Feb. 15, Fairbanks

Susan D. Carpentino, '99, April 22, North Pole

George Edward Cash, '61, March 8, San Jose, Calif.

Derrick Franklin Cedars, matriculate, April 8, Bethel

John F. Cipperly, '51, Feb. 20, La Crescenta, Calif.

Rebecca Conner, former Human Resources staff member, May 4, Fairbanks

Kyle Dickerson-Lockwood, matriculate, May 3, Anchorage

Hugh J. Doogan, matriculate, March 3, Fairbanks

Mary Jane Elliott, '70, March 8, Anchorage

Eugene Evancoe, matriculate, March 1, Irvine, Calif.

Alice P. Evridge, '92, July 5, Anchorage

John Gilbert Fischer, '01, March 27, Tucson, Ariz.

Robert K. Harris, '85, March 18, Lebanon, N.H.

Gary W. Healy, Facilities Services employee, April 12, Fairbanks

Elaine L. Holm, '94, '95, April 15, Wasilla

Nancy L. Kailing, '99, June 11, Silver City, N.M.

Betty Keim, widow of Charles Keim, dean and professor emeritus, Aug. 15, 2013, Gig Harbor, Wash.

William Lawrence Klockenteger, '66, March 22, Castle Pines, Colo.

Claire Kopperud, matriculate, Feb. 15, Palmer

Anna Ruth Lang, '65, March 29, Indianapolis, Ind.

Wayne F. Larson, '76, May 3, Fairbanks

Edward Marshall, '73, June 1, Anchorage

Denise "Dee" I. McDonald, '92, and former CTC faculty member, May 21, Olympia, Wash.

Ralph A. Miller, matriculate, Feb. 9, Fairbanks

Veka Ann Nails, '00, April 14, Fairbanks

B.G. Olson, '67, and former KUAC and UA Press staff member, April 16, Palm Beach Gardens, Fla.

Walter Bruce Parker, '61, '64, June 25, Anchorage

Robert Elton Phelps, '57, June 10, Corvallis, Ore.

Kenelm W. Philip, retired Institute of Arctic Biology research associate, March 13, Fairbanks

Ralph Emerson Pray, '61, May 30, Claremont, Calif.

Mary Jo Pyne, retired Cooperative Extension employee, Feb. 9, Fairbanks

Cameron Scott Rombach, matriculate, Feb. 11, Cedar Park, Texas

Terry Ione Rubincan, '85, March 17, Anchorage

Bing L. Santamour, '89, '01, March 29, Bethel

Linda T. Schuman, '82, '84, June 28, White Lake, S.D.

Kathleen Marie (Aamodt) Shank, matriculate, May 27, Fairbanks

Roberta B. Reeve Sheldon, matriculate, June 4, Talkeetna

Lenora E. Sherwood, '66, May 1, Anchorage

Michael Anthony Stepovich, '09H*, last territorial governor of Alaska, Feb. 14, Medford, Ore.

Joseph Thompson, associate professor of philosophy and humanities, Aug. 4, Fairbanks

Ricky O. Villwock, '84, May 8, Anchorage

John R. Vincent, '92, Feb. 26, Chugiak

Eugene M. Wescott, '64, professor emeritus, Feb. 23, Fairbanks

Stephana L. Wright, '88, Feb. 5, Fairbanks

Nelda Colleen Wythe, '60, March 27, Port Townsend, Wash.

Kim Brookshire Zonge, matriculate, April 11, Tucson, Ariz.

*H = honorary degree

ATKINSON



Helen Linck Atkinson, '36, died May 6 in Anchorage following a stroke. She was 98.

A staunch supporter of the university, Helen served as a regent from 1954 to 1963 and was involved for decades in affiliated organizations. She was named a UAF distinguished alumna in 1987 and received an honorary doctorate of laws in 2003.

Helen was born in Goldroad, Ariz., in 1915 to Jack and Lucille Linck. The family moved to Fairbanks in 1928. Helen was the first woman to earn a civil engineering degree from the university. She worked for the F.E. Co., Boeing Co., the Federal Aviation Administration, the City of Fairbanks, AK Architectural and Engineering, and Golden Valley Electric Association. She also wrote, primarily about Alaska's resource issues, for the *Fairbanks Daily News-Miner* and other publications. She began painting seriously in 1982.

Helen married Frank White in 1937. They had three children before divorcing in 1951. In 1959, she married **Ben Atkinson, '47**, for whom the UAF power plant was named after he died unexpectedly in 1966. In 1975, Helen married fellow civil engineer **Con Frank, '49**, who passed away in 2009. Helen's children are Phyllis Tate, Gayle McDonald, Avriel Rideau and Ben Atkinson, and her stepchildren are Randy Frank; **Andrea Gelvin, '93, '07; Mary Ehrlander, '92, '93; and Steve Frank, '77.**

NASKE



Claus-Michael Naske, '61, professor emeritus, died March 5 in Fairbanks after a long struggle with cancer. He was 78.

As Alaska's preeminent historian, Claus wrote numerous books, including biographies of Alaska's first senators. He co-authored *Alaska: A History of the 49th State* in 1979 and updated it in 2011.

Ever enthusiastic, Claus was swift to praise and to chastise. He shared his insights via newspaper columns and letters to editors and elected leaders.

Born in 1935 at Stettin, Pomerania, then part of northern Germany, Claus was a child when World War II began. His mother's Jewish relatives were all killed. After Russia's army occupied the area, 10-year-old Claus, his mother and sisters walked across Germany to reunite with his father.

At age 16, Claus obtained a sponsorship to come to Alaska, where he joined the Barry family in Palmer.

In 1957, Claus began attending UAF, where he met his wife, **Dinah Ariss, matriculate**. They married in 1960, and had two children, Natalia and **Nathaniel, '00, '02.**

In 1969, Claus earned his doctorate from Washington State University and joined UAF's faculty. After retiring from teaching in 2001, he directed the UA Press until 2004.

Claus received the 2001 Emil Usibelli Distinguished Research Award and the 2012 Distinguished Alumnus Award.

SANDVIK



Ruth Blankenship Sandvik, '51, passed away April 29 in Kiana. She was 85.

Ruth was born in Kotzebue to Walter and Nellie Blankenship. Her father established a store in Kiana, where Ruth spent her early years. She finished high school in Fairbanks, worked as Otto Geist's secretary and earned a bachelor's degree in biology. She received the 1951 Marion Frances Boswell Memorial Award for character, personality, scholarship and activities.

At UAF, Ruth met **Peter Sandvik, '50, '51**, a geological engineering student. They married in 1953. Their children are **Kara Sandvik, '85; Robin Kornfield; Helvi Sandvik, '86; Kristin Nevin; Thor Sandvik; Trygve Sandvik; and Stacy Dale.** Grandchildren **Tamra, '09, and Tyler Kornfield, '13**, are alumni.

The Sandviks lived in cities across the U.S. but always returned to Kiana. Ruth and her cousin, Rob, took over the store in the late 1950s when Walter became ill. Peter died in 1995 and Rob in 2001. Ruth continued to operate the store.

Ruth was an entrepreneur, the family matriarch and an Inupiaq woman walking in two worlds with one spirit.

Robert Marovelli, '50, of Fairfax, Va., became friends with the Sandviks while they were UA students and frequently visited Kiana. He established the Ruth Blankenship Sandvik Memorial Scholarship fund at UAF in July with a contribution of approximately \$267,000.

Flow

Fireworks bloom asters
among dandelion coronets.
Reflections blossom
in a pond.
Without creating ripples,
petals burst and shed.
In both fields,
in both skies,
stars remain
as still as summits
as if other worlds
are beginning
to sprout
into this one
like stalactites
and stalagmites.

--
The apex
of your heart
is the lowest point
of the muscle.
If aligned
with clenched fist,
it will match
exposed palm,
the part unable to close.

--
Along ribbon of middle ground,
between meadow and mountain,
pines grow low. Snow glints,
reflects. Sky
opens. Opens blue, blue
like a belly of a whale
who swallowed a sea.
Snow, sky
roofs each blade of grass,
furs each needle of pine,
curves pines
into ribs for the whale,
collides horizon
into endlessness.

Broken Bits

I scream

and am answered
by caws.

Here in this world
where only ice moves,

she flies below cloud cover
like a bow that has outgrown string.

Raven
knows herself too well to pity me.

She swallows my scream
like a journey:

*A tornado without a mask
dances around a fire.*

*Broken bits sail
into night as charcoal,*

like pieces of a room returning.

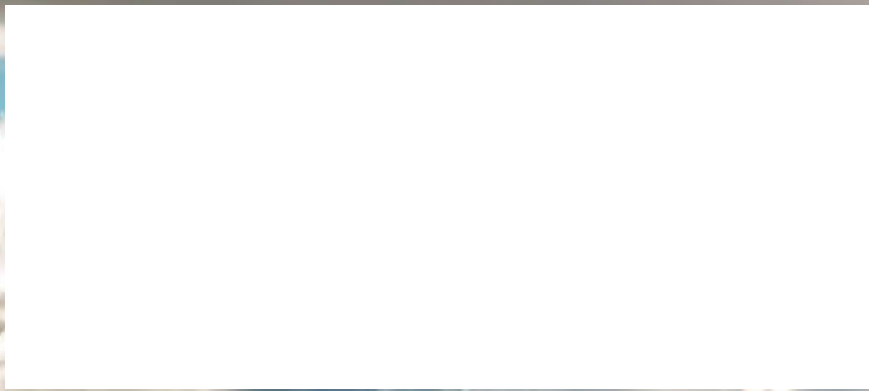
Sharece Randrup is a senior at UAF majoring in accounting. She looks forward to graduating and earning her CPA in Alaska.

Airica Parker, '11, graduated from UAF with an MFA and now makes her home in Colorado. Her poems have appeared in *CALYX Journal*, *The Fiddlehead*, *Lalitamba* and *Skidrow Penthouse*. The Poetry Foundation selected her as a 2011 finalist for a Ruth Lilly Fellowship. Learn more at <http://airicaparker.com>.





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The beauty of the Brooks Range hides a perplexing phenomenon — several dozen moving mounds of frozen earth. Some are approaching the Dalton Highway and trans-Alaska oil pipeline in the Dietrich River valley, pictured here looking southward near milepost 219 of the highway. Read more about the frozen debris lobes on page 28 and online at www.uaf.edu/aurora/.