





America's Arctic University

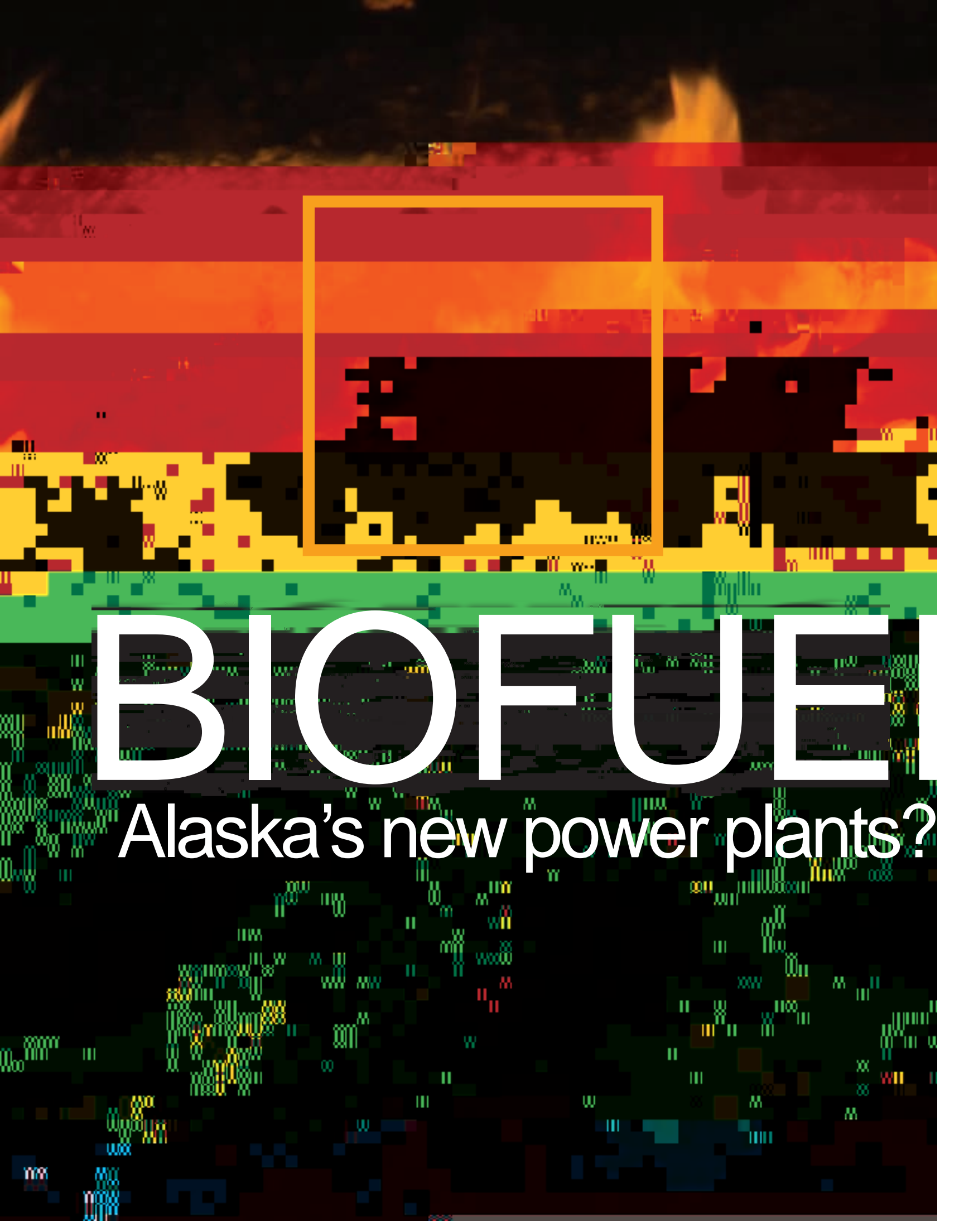
Dear editor,

I recently received the fall 2008 edition of UAF's Aurora magazine. I was thoroughly offended by the short story on the back cover about Ty Keltner's LEGO® model of the Gruening Building. Specifically, I was offended by the comment that "the project was more ambitious than many graduate student theses." This statement is extremely insulting, not only to the graduate program at UAF, but to the many graduate students that spend countless hours writing grant proposals, doing high-quality research, conducting labwork, performing analyses, and writing articles in peer-reviewed journals. In some departments, this LEGO



The swimming Alaska Nanooks set myriad school and individual records in their fourth season of competition. Six swimmers qualified for the NCAA Division II





BIOFUEL

Alaska's new power plants?



Growing research may offer alternatives to fossil fuels in Alaska.

Chris Garber-Slaght let out a slight groan as he hoisted a five-gallon jug of syrupy brown liquid and emptied it into a large, liter-lined funnel near eye level.

"This stuff's pretty disgusting," he said, turning his nose away from the source. "But it's free."

Garber-Slaght was in the midst of a twice-weekly stop at the filling

What's good for the Garber-Slaghts might soon be good for others in the area as well. Reports estimate as many as 10,000 gallons of WVO are generated by commercial kitchens around Fairbanks every month. Since WVO is considered a toxic waste, vendors are prohibited from using drains or the land fill to dispose of their leftover oil. The borough maintains a collection site where businesses can dump their waste veggie oil at a cost of around \$15 per gallon, but a fledgling industry has sprouted to collect waste oil

According to Wiebold at The Woodway, local barley is a clean-burning, affordable, easy-to-handle alternative to wood pellets, and he likes the idea of buying fuel from a local supplier.

“When you spend a hundred bucks on fuel from a local source, that money turns right around and gets spent in other local businesses,” Wiebold said. “I kind of like the idea of my energy dollar staying in the local economy.”

Sonnichsen sees a future in developing barley to be used specifically for fuel.

“What we’ve been growing here for decades is aimed as a livestock feed. If we get a variety better suited for fuel it would make barley an even more viable long-term energy solution.”

Rich Seifert is one local expert who disagrees with that assessment. Seifert, an energy specialist with UAF’s Cooperative Extension Service, is convinced that the idea of burning grain as fuel makes no sense.

“I think that’s just a bad path for us to take,” Seifert said. “The amount of fossil fuel needed to produce a crop through modern agricultural techniques throws the whole idea of using grain as a fuel out of balance. Why would you use fossil fuels to run the tractors and combines and trucks to get the grain to market, when you could be growing native species of trees instead, and then burning the trees for heat? The farmers may be able to make a profit in the short term, but sooner or later a market correction will have to occur and the idea will have to fizzle out.”

It’s the same problem with growing corn for ethanol Outside, Seifert said. “You can’t violate the physics of it. It’s the basic law of thermodynamics.”

[Alaska grasses and grains may hold the key to rural fuel woes](#)

Seifert isn’t alone in his contention that burning fossil fuel to transport biofuel can be both economically and environmentally unfriendly. UAF’s Professor Stephen Sparrow and his colleague, Associate Professor Mingchu Zhang, are studying a variety of local grasses and grains to determine if there’s an untapped energy source that’s readily available in many parts of Alaska.

“The energy content in these biofuels is simply not comparable to coal or oil, so it makes no sense to try to transport it long distances,” Sparrow said. “We’re looking primarily at local usage as a supplement to existing sources, rather than a sole energy source. But in rural Alaska if we could substitute, say, 30 percent biofuel for diesel, that would be fantastic.”

“There’s a lot of interest in utilizing biofuels in Western Alaska, near Bethel and on the Seward Peninsula,” Sparrow said. “They’re particularly interested in willows and native grasses that are well”
Bob Vanveldhuizen, a research technician with UAF’s School of Natural Resources and Agricultural Sciences, harvests canola as part of a research study to determine the viability of biofuels.

adapted and easy to grow in that environment. We're just trying to compete with that and create a market for locally produced, 'Made in Alaska' canola oil." Zhang said he's not ready to give up on canola as a source of commercial-grade food oil.

Zhang's work includes studies of canola, or rapeseed, which has one of the highest oil contents of any domestic crop. Growing canola in Interior Alaska has been tried before without much success, primarily because of a short growing season that doesn't give seeds enough time to mature, resulting in an unappealing green oil. But Zhang says biodiesel may be a viable alternative market for Alaska canola. "If it's going into a fuel tank, it doesn't matter what it looks like."

Zhang said another benefit of growing canola in the Interior is that it provides a valuable rotational crop for local farmers.

"Most of the farmers in Delta have only been growing barley, but it would be good for the soil to rotate their fields with another marketable grain."

And Zhang said he's not ready to give up on canola as a source of commercial-grade food oil.

"Canola oil from central Canada sells for about \$15 dollars a gallon in local grocery stores. I think the opportunity exists to be able to

Biomass may be the only alternative to petroleum

Meanwhile, at UAF's Agricultural and Forestry Experiment Station in Palmer, research Assistant Professor Andy Soria is breaking new ground with his work in biofuels. Soria came to UAF's Department of Forest Sciences after working in the alternative energy field in several corners of the world.

Soria's research in Palmer involves breaking down the chemical components of various species of Alaska wood to create not only energy but other resources as well. Petroleum isn't just what makes your car run — it's also in the car's steering wheel, seat cushion and floor mat. Energy can be derived from wind, sun and water, but products like plastic can't, so Soria is investigating the possibilities of replacing hydrocarbons — the petroleum-based building blocks of products ranging from plastics to ingredients for lipstick — with

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Glossary of Terms

Alternative fuels

Fuel sources that appeal to unconventional or nontraditional interests, such as nuclear energy, biofuels, etc. (as opposed to fossil fuels, the traditional source of most fuel).

Biofuel

Any fuel derived from renewable biological sources, as plants or animal waste; esp., a liquid fuel for automotive engines made from corn or soybean oil.

Biomass

1. the amount of living matter (as in a unit area or volume of habitat) 2. plant materials and animal waste used especially as a source of fuel.

Renewable energy

Energy that can be replenished naturally, as solar, wind or water power.

Sustainable

Designating, of, or characterized by a practice that sustains a given condition, as economic growth or a human population, without destroying or depleting natural resources, polluting the environment, etc.

— per Webster's New World College Dictionary and Merriam-Webster Online.



Todd Paris, '83, is a freelance writer, professional photographer and photo manager at UAF Marketing and Communications. He recently installed a pellet wood stove in his home.

By Tori Tragis

Fuel oil is normally a viscous, slow-moving material, more syrup than quicksilver, but the price of it sure has a way of defying gravity. In the past year, its budget-busting ascents into the atmosphere have sent hundreds of households in Interior Alaska scrambling for other, cheaper ways to heat their homes and businesses.

government also had little influence over decisions regarding federal funding and resource allocation, though the federal government regulated many of the region's natural resources, like fish and game.

In a 1946 Alaska Statehood Association publication, Judge

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Lorena Hegdal turned a life of challenge into a life of abundance she shares with everyone around her.

By Lynne Snifka



The sink in Lorena Hegdal's kitchen is bright yellow — crazy yellow. It's just a sink, but in Hegdal's otherwise traditional kitchen it stands out like a red spot on a Dalmatian. The kitchen is on the north side of her Fairbanks home, and "I wanted it to always be bright and sunny," Hegdal said. Paint seemed ephemeral. Towels not enough. A sink, however, feels permanent. "I had to order it special," she said.

On a Sunday morning in early November, the smell of sourdough pancakes and fresh coffee filled the kitchen. At 9:30, the first shift of breakfast — two friends staying with Lorena and her husband, Ian — was finished and headed home to Anchorage. The second shift, including Hegdal's sister, Ruth, had just arrived.

"Take some water," Hegdal said to the travelers as she followed them to the door. "Do you want some chips or anything?"

"She likes to give," Ruth said. "I tell her, 'You know, you can come over to my house and not bring anything.'"

Hegdal returned to the kitchen, a red apron tied loosely at her waist. With her wide eyes, weathered hands and natural blush on lightly freckled skin, she seemed like an average woman in her 50s, which is what Hegdal insists she is.

But she's also been the director of engineering at Alyeska Pipeline Service Company. She's a one-woman support system for college students from villages across Alaska. She's raised two sons. She's the first Native woman to graduate with a civil engineering degree from UAF. She's a skin sewer, berry picker, hunter, sewer and role

UAF alumni featured in this story: Ian Hegdal, '78; Lorena Hegdal, '77

model. She is all these things despite circumstances that would have crushed a lesser woman. What's more, Lorena Hegdal is, by most accounts, magnanimous beyond compare.

"She's always done exceptionally well at whatever job she's been doing, and she's been a homemaker and mother on top of that," said Chu

Finding a place of peace

In Hegdal's crowded sewing room is a "parka" she's working on to keep her propane tank warm. It's the only project she can show off. She's given the rest away.

It's a choice she makes, this giving. It sustains her, as does the photograph of Salmon Lake that hangs in her Alyeska of ce. It reminds her of the place where she feels most grounded. She knows now, that's what Kayagosee was doing staring at the mountains all those summers. It was a place of peace for her grandmother, an immovable spot — not unlike that crazy yellow sink in her own kitchen.

In 2007, the American Indian Science and Engineering Society named Hegdal its Professional of the Year. There was a big awards dinner in Arizona and Hegdal was asked to give a speech. She showed slides of Alaska so people could understand her home, she said.

"I encourage and challenge each of you to cherish your past while embracing the rapidly changing future," her speech reads, in part.

"Be respectful and honest, learn how to make the right choices, how to love and care for yourself so that you have the strength to love and care for others."



A Legacy of Change

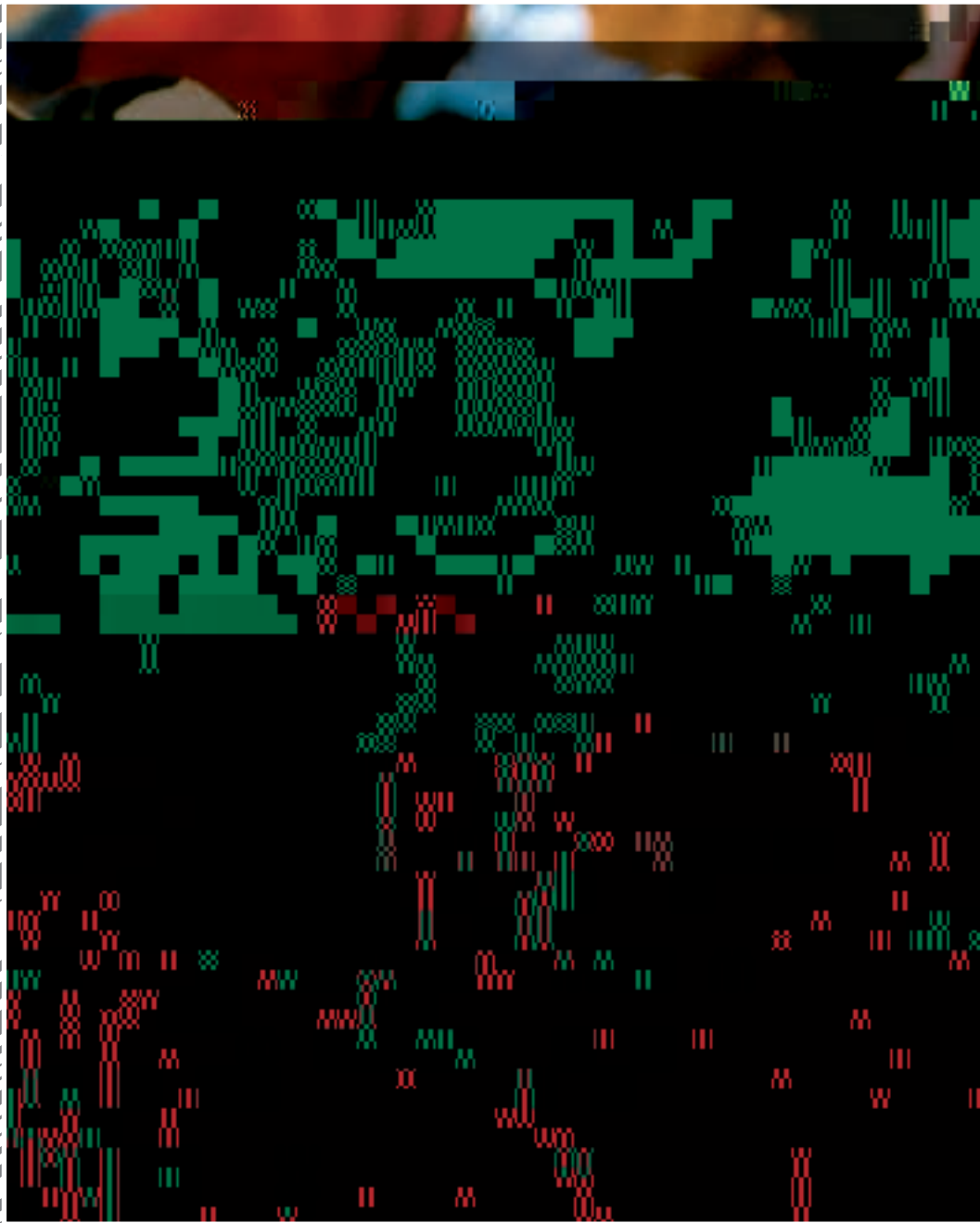


Photo by Susan McClinn

But she had worked on women's health and poverty issues in New York while in grad school. They were the issues that galvanized her passion and intellect. In a 1995 interview with Pete Pinney,

By Susan McInnis

Ruth Lister arrived in Fairbanks with her 15-month-old daughter, Cady Sky, on her hip. She was a tallish, willowy Canadian, a hippie girl with long blond hair.

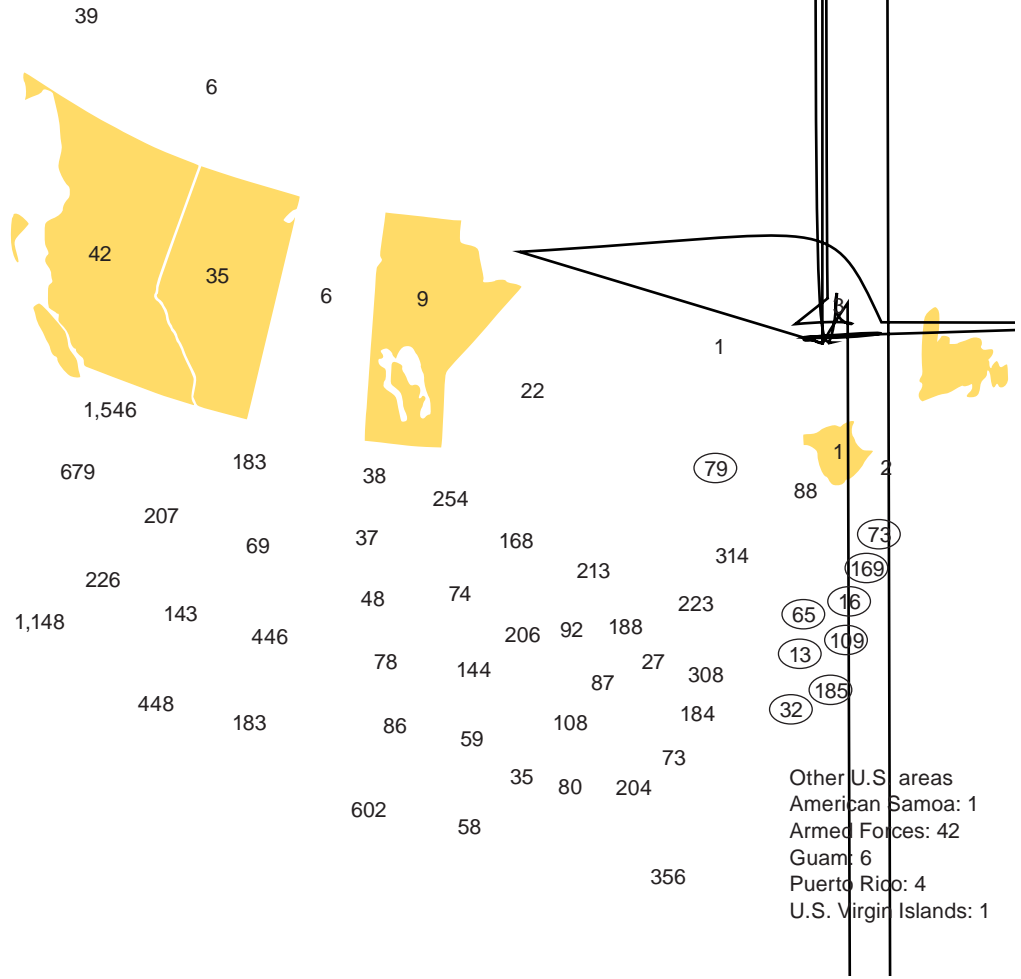
In time, Lister would transform the university's Tanana Valley Campus, and make a broad range of positive changes for Alaska women, children and families. But in 1976, she really had just two concerns: a job and child care.

Enepe'ut Children's Center, at the foot of College Hill then and now, answered both. Lister worked at her daughter's daycare until friends who ran a garage in Fox got a contract to rebuild engines and build and refurbish trucks. The owner wanted to hire women, which suited Lister ne. She pulled on overalls and began fabricating dashboards and fenders, and doing the electrical and plumbing work on big rigs.



15,645


Alaska by region
 Interior: 8,308
 Southcentral: 3,815
 Southeast: 963
 Other: 2,559



Sam Enoka, '95, returned to UAF from California in November 2008 to offer his company's



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Nivia Modelo-Martin, guidance and counseling graduate student, scholarships recipient

To help students like Nivia, please make your annual gift today at www.uaf.edu/giving/.

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