

ALASKA THIS MONTH • BUSINESS ETIQUETTE • REAL ESTATE

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Alaska Business Monthly's
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**ENGINES
OF
DIVERSITY**


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SPRINGBOARD

Launching Technology in Alaska

Juneau-based
program
matches Alaska
businesses,
federal labs.



Kim Boding placing concrete
at the Cold Climate Housing
Research Center.

BY WILL SWAGEL

Say you sit down for your usual breakfast of a glass of Tang powdered orange drink and three scrambled eggs cooked without oil in a Teflon pan. You scan the Internet for the latest traffic reports, secure that your car's global-positioning-system-based navigation will enable you to find alternate routes to work. Consider the fact that Tang, Teflon, the Internet and GPS were all first developed in military or other federal government laboratories and then passed on for civilian uses.

Today, there are more than 200 federal laboratories operating nationwide – many doing research that could have both military and civilian applications, said Rollo Pool, communications director for Springboard, a Juneau-based nonprofit with the mission of facilitating partnerships between those federal

labs and Alaska businesses, scientists and educators.

“(The businesses) can take technology that has been patented by a lab, get a license to use it, and then they can develop a commercial application for it,” Pool said. “The idea is to not only do that first transfer, but progress to a second one where you sell your application back to the federal government.

“I call it a two-way bridge,” he said.

Springboard is a statewide program of the Juneau Economic Development Council and is one of six such programs nationwide. Each of the six was established through federal legislation and each partners with the Department of Defense to facilitate transfers of technology to civilian inventors and manufacturers.

Pool said there are a lot of good ideas being developed in federal labs every

day. At the same time, there are many firms with good commercial expertise that are on the lookout for new products to develop, manufacture and market.

“That’s where (Springboard) comes in,” Pool said, “We’re the matchmaker, the eHarmony.com.”

CLEANING CARRIER DECKS

Palmer-based Triverus LLC is a Springboard client. Triverus is building a machine that cleans the decks of the giant aircraft carriers of the U.S. Navy – a job that is much harder than just making a super-sized Zamboni. Navy jets land and are catapulted off carrier decks at tremendous speeds and friction with the deck surface is a critical factor. Add a corrosive marine environment and strict environmental protection guidelines, and the machine needs to

be maneuverable, space-efficient, ultra-reliable and repairable at sea. Triverus is tackling all of these specifications.

But engineers used to solving thorny technical problems can still be stymied by the bureaucratic complexities of dealing with the federal government.

"There are a lot of unique barriers to entry in working with the military, and Springboard either has the resources or can get the resources in assisting with that process," said Triverus President Hans Vogel. "Whether it be a couple of key questions about intellectual property management or other questions that could really stump you, if the resources are there in-house they could answer the question very easily."

Vogel said that Springboard has provided Triverus with essential services all along the development curve thus far.

"The nitty-gritty issues of working with the bureaucracy – I don't have a huge staff that can work on those issues all the time," he said.

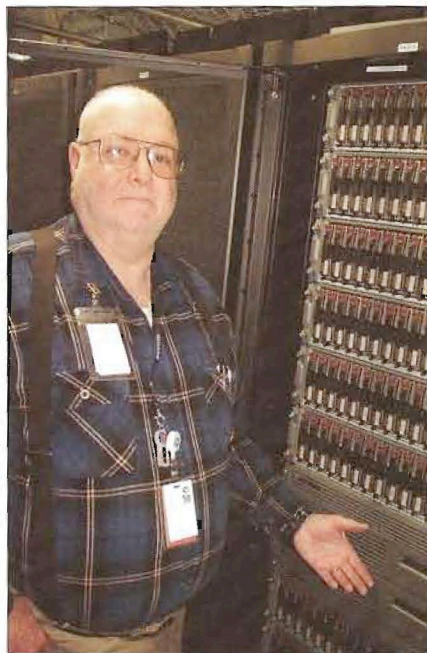
On the technical side, Vogel said the Triverus machine is at the "hardening" stage now. The attention is on making the device more durable and maintainable. Vogel said he hopes ultimately to sell 50 to 100 of the deck-cleaning machines to the Navy – all to be manufactured in Palmer. He said Springboard is a great help with business and strategic planning.

In December, Springboard announced it had added two technology managers to its staff. One has expertise in geology and geothermal energy, and the other has expertise in computer science and microwave radio communication.

COOL CLIMATE

Sequestered Solutions Alaska LLC, an Anchorage data-storage and security firm, is another Springboard client. The \$1.5 million, three-year-old business has 10 employees doing work for the State of Alaska, among a number of clients. Sequestered handles clients' data through their server "farms" – banks of machines that can be located nearly anywhere. But it turns out Alaska has an advantage.

"You spend a lot of power running the servers and keeping them cool," said Dr. Lara Baker, Sequestered's chief technology officer. "In Alaska, you don't have to spend nearly as much



Dr. Lara Baker, chief technology officer of Sequestered Solutions Alaska, in front of part of a 28-terabyte (28,000-gigabyte) storage network at Sequestered's Anchorage hosting facility.

money keeping the servers cool."

Locating servers in Anchorage saves a whopping 73 percent in power costs over a similar farm located in Seattle, which is hardly the Mojave Desert, states the company's Web site, www.sequesteredolutions.com. Anchorage has fiber-optic cable connections and the super-speeds of the Internet have made terrestrial distances almost meaningless. But, oh, those bureaucratic hurdles.

Baker said Springboard sought out his company in order to help Sequestered Solutions obtain a license to market an electronic device called Trapline – hardware developed by the Naval Research Laboratory that allows data lines to be made one-way in order to protect extremely sensitive data from hackers that might breach a conventional firewall.

"It's the electronic equivalent of a back-flow preventer used in a sprinkler system," said Baker.

While military and national security data would have the most obvious need for hacker-proof electronic safety, there are many firms with ultra-sensitive data that need the highest level of computer security, said Baker, citing oil company seismic data as an example. He said his company will seek to license Trapline and is working with Springboard on commercializing the device.

"It was really – and still is – a very nice relationship," Baker said. "(Springboard) has given us steady support."

HOUSING RESEARCH

Cold Climate Housing Research Center president and Fairbanks' homebuilder Jack Hebert also credits Springboard with helping bring new technology to Alaska. In March 2007, Hebert and the CCHRC, working for Springboard and the U.S. Army Cold Regions Research and Engineering Laboratory, ran tests on a new kind of concrete that doesn't use water and can set up in cold weather. Now, builders wanting to stretch their working season are often forced to build temporary buildings over their pour site and use heaters to warm up the ground, a costly method.

The new concrete was poured onto frozen ground on a minus 8 degree day and set up just fine – a process closely monitored by probes and sensors that CCHRC placed in the wet concrete. The demonstration showed this process could add two critical months to the building season in Fairbanks and, in warmer areas of the state, would allow foundations to be poured year-round. The demonstration, which was widely reported, will help the product gain industry acceptance. CCHRC can be reached at www.cchrc.org.

FUTURE SCIENTISTS

Rare among nonprofits, Springboard's federal funding has been guaranteed for four years – a good thing, because an important part of Springboard's mission is to facilitate education in science, technology, engineering and mathematics.

Pool noted that U.S. scientists are retiring at a fast rate and are being replaced by foreigners with advanced degrees, many of whom may not qualify for the highest security clearances. He was told at one lab that half of their science staff would be retiring in the next five years, a situation he has also heard from other labs.

"This has economic implications in the long-term for Alaska," Pool said. "How many of our companies are going to need scientists? And what could be better for our kids than to have good-paying science jobs here?"

To that end, Springboard recently supported a partnership between a



Jack Herbert, left, and Xavier Schlee direct cold-weather concrete to the pour site adjacent to the CCHRC facility in Fairbanks.

federal military lab in Rome, N.Y., and professors and students at University of Alaska Fairbanks. Students evaluated a

3-D visualization, Web-based software called JVIEW that is under development. Students and professors at UA Southeast Juneau worked with federal researchers using ground-penetrating radar at Mendenhall Lake. The radar was developed to find unexploded ordnance, but it can also find sunken boats, barrels of waste, or discarded batteries.

"This gives students relevant work experience," Pool said. "They can put on their resumes that they worked on something that was used by the federal government."

Springboard's main focus is K-12, demonstrated by the organization's willingness to underwrite a trip to Maryland last summer for 15 Alaska science teachers. The teachers attended classes

sponsored by the U.S. Department of Defense that stressed "hands-on" instruction for students in eight areas:

concrete, composite, smart sensors, biosensors, polymers, food packaging and sports materials. Springboard also facilitated workshops in Alaska on these subjects. Participating teachers received elaborate teaching kits worth several hundred dollars each.

More hands-on came when Springboard organized the Juneau Robot Jamboree last fall. Teams of middle and elementary school pupils from Juneau and Hoonah labored over Springboard-supplied robot-building kits for weeks, and then tested their creations against each other to perform designated tasks. Students were also ranked on teamwork, design and programming.

Pool said he would like to see an experienced scientist deployed to local schools for further projects. He'd also like to task UA masters-in-business-administration students with helping loan-seeking start-ups to polish their business plans.

"(Springboard) is like a snowball going down a hill," said Pool. "We're just getting bigger and bigger as we go along."

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CREATIVE

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VISION