

## Up front

## Lab scores deal for scanning device

BY LESLIE MLADINICH

Lawrence Livermore National Laboratory's technology soon could be going head-to-head with major medical imaging companies through a business deal with a Davis-based startup.

Under the agreement, which has just been negotiated, Life Wave Inc. will begin marketing an inexpensive and mobile imaging device using the lab's Micropower Impulse Radar technology.

Life Wave, a three-person family company that includes the University of California system's acting medical director, is set to commercialize the device that, when held close to or directly on a person's chest, reads signals and images them using low-emission energy.

Life Wave will license the technology from the lab. Financial terms of the agreement were not disclosed.

"We've just finished negotiations, and I hope we have a nice long relationship," said John Tupin, Life Wave's director of business development. The license should be signed by the end of this month, said Anne Stark, lab spokeswoman.

The device still needs approvals from the Federal Communications Commission and U.S. Food and Drug Administration before hitting hospitals, although Tupin anticipates regulatory approval to come quickly because of the radar's low emission rate. The military may be another potential Life Wave customer because the device can be carried into the battlefield or on other assignments.

John Chang, a lab researcher on the project, said the basic science behind Micropower Impulse Radar has a broad range of applications. Instead of using ionizing radiation like X-rays, micropower impulse radar sends out pulses of energy, which then bounce off body parts, read the distance between tissue, and send a signal, which is displayed as a diagnostic wave form.

"This opens up a door which we can see into the body," Chang said before holding a Brownie camera-sized prototype on his chest and taking a deep breath. A blue band jumps on his computer, which is hooked up to the device by a cord, measuring his heart rate.

Life Wave sees its competition in multi-million-dollar companies with medical technology divisions like General Electric, Siemens, Hitachi, and Hewlett-Packard. One area being studied is for the device to read the difference between different types of strokes, which can affect treatment.

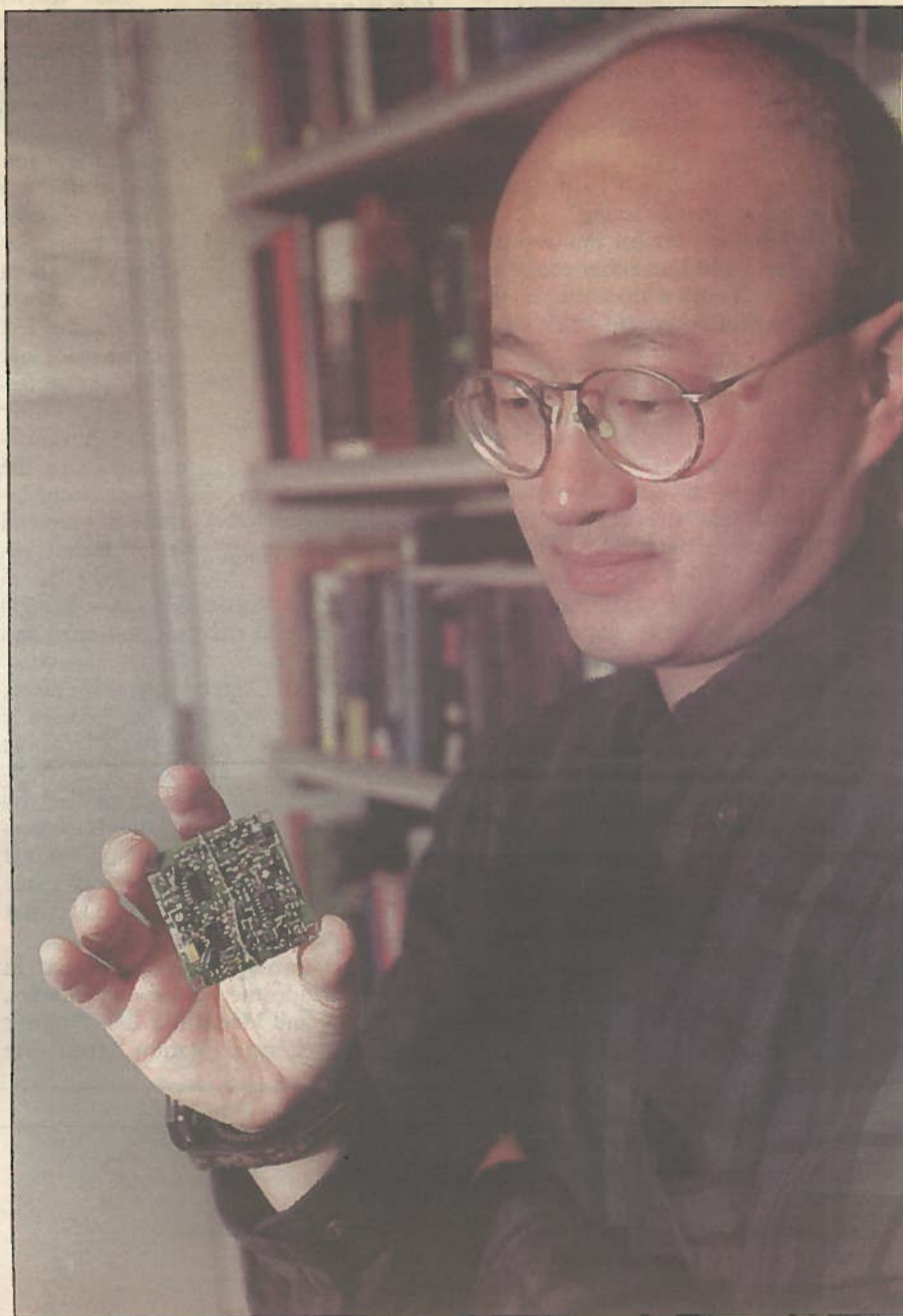
"We are ready to take them down," Tupin said with a slight chuckle.

To measure vital signs, the device will be the size of a silver dollar. To measure stroke type, a critical aspect that determines what type of treatment a stroke patient gets, the device will look a lot like a bicycle helmet, said Tupin.

Computed tomography or MR machines cost hospitals millions of dollars, and patients, if they aren't insured, into the thousands. In addition, scans that are picked up by insurance rarely reimburse a physician the actual cost for the expensive procedure.

"One of the things that makes it (MIR) a relevant technology is you still have the Medicare market going toward capitated care. It's a little bit easier for the government to manage (the cost of the MIR device)," he said.

The Life Wave device can be used in an ambulance or fire engine with a laptop computer or a personal digital assistant like a Palm Pilot, and the technology can also be a sort of bridge to more sophisti-

PHOTOS BY STEPHANIE SECREST  
EAST BAY BUSINESS TIMES

cated and expensive imaging techniques like MR and CT.

Tupin is in the business with his brother, Joe Tupin Jr., and father, Dr. Joe Tupin, acting medical director for the UC system who works from Oakland.

The lab has an entire department devoted to innovations in medical devices, and signs deals with a bevy of businesses that use its technology for new products. In addition, the lab solicits grants and funding from other scientific institutions and schools to work on certain projects.

The last medical device with lab origins that got FDA approval was the Peregrine system, a tumor-killing device that distributes beams of radiation to unhealthy tissue

#### Livermore Lab researcher John Chang demonstrates the prototype of the vital signs monitor.

according to a mathematical equation invented by a team of scientists, including principal investigator Christine Hartmann Siantar.

That system is being sold by NOMOS, a Pittsburgh company. About one-third of all the businesses the lab deals with are startups, said Stark.

Life Wave was started with \$200,000 in seed money, and is currently searching the Sacramento and Bay Area regions for more money, said Tupin.

"We are just now starting to get serious about going out and looking for the money," Tupin said. "We've been contacted by about three different firms."

Tupin estimates that Life Wave will need about \$1.5 million in a first round of funding to cover additional startup expenses, licensing MIR technology from the lab, product development and operating costs.

Life Wave will also have to endure clinical trials of the product, which can be expensive. Because the company could potentially use this technology for different varieties of medical devices, Life Wave will have a pipeline of products, making it attractive for a larger company to come in and buy it. The company may also be ripe for an initial public offering, Tupin said.

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Nanci L. Valcke

#### Another Bermuda mystery

The Caribbean has its Bermuda Triangle, but Oakland has its Bermuda Building. I find it easier to understand disappearing ships in the triangle than the myriad deals floating around the earthquake-damaged building at 21st and Franklin streets. But, here's the latest scoop, according to sources in the know. The city is negotiating with the Pankow Cos. to turn the building into a suite of offices — not a hotel as is rumored. I also hear the city is negotiating with Ellis Partners LLC for the same thing. As for Ted Dang and the Bermuda Associates LLC investment group that entered into an agreement with the city last year to buy the property for \$1, the city is looking for another spot for their trade center project. Alex Greenwood, project manager for the city, is very tight-lipped, refusing to confirm any details. He says only, "We are going to move very quickly. Ted Dang ... is not out of the picture. He is very much a part of this project." Richard Kunnath, president and CEO of the Pankow Cos., is also hush on the proposed project and the financing. When asked how much Pankow is paying for the property that Oakland seized from the prior owners, Kunnath would only say, "More than a dollar." The courts have ruled that the city must pay the prior owners \$3.5 million. Dang isn't giving up his claim until he knows what kind of a package deal the city comes up with for another site.

#### When a hole is not a hole

Here's one for the books. There's a public hearing April 23 for PetroGulf Corp. to drill a natural gas well in the Bethel Island area. This is continued from March 12. Problem is, PetroGulf withdrew its application three to five years ago. Seems the planning process was so arduous, the Denver company decided not to pursue it and drilled elsewhere. But, no one has told county planner Lashun Cross, who is slogging forward with the process. And you wondered how your tax dollars are being spent. It's not just the planning department. The health department keeps sending correspondence to PetroGulf, including a registered letter insisting the company renew its hazardous waste permit. The county's even threatened to sue and shut 'em down. An employee of PetroGulf, who doesn't want to be identified, told me he finally got so fed up he challenged the county to go ahead and close the well. They're probably out there still looking for the nonexistent hole.

#### Too much of a crowd for business

The atmosphere in downtown Concord has become pretty intense because of the hordes of high school students who flood into the park each day to wait for their friends before continuing home. They're scaring the older folks who live in the downtown and a few troublemakers have tainted the crowd. It's beginning to be very bad for business. Monte Lukov, head of the city's Main Street Program, says the city, school district, police and businesses will meet to find a solution. I know some businesses want the solution sooner rather than later.

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