Lab finds growth in applied science

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The U.S. Department of Homeland Security is looking for ways to detect and disarm lethal packages.

A consortium led by Northeastern University has submitted a proposed solution that could mean up to $1.6 million worth of work for Spokane's growing Applied Sciences Laboratory.

Founder Yogi Gupta says that contract would add to a grant backlog that already stands at $7 million. The grant pipeline, $3 million in state money over the next two years and ongoing federal support excite the intense Gupta, who has doggedly nurtured the lab along since securing $6.5 million from the Office of Naval Research in 2004.

"We are reaching critical mass," he says, not just in funding, but in the scientists he has brought to Spokane to share his vision of a research center that puts new technology to work.

Santanu Chaudhuri, for example, is working to solve a major impediment to a nonpolluting hydrogen economy.

When people think of stored hydrogen, they envision a tank susceptible to a rupture or leak. But there are solid materials that can soak up the gas. Chaudhuri, a computational chemist, will try to determine how to best store hydrogen, and in what material.

In what could be a precursor to the Northeastern project, Hergen Eilers was just awarded grants by the Army Research Office and National Science Foundation to test new materials for use in sensors with potential national security applications.

ASL is an affiliate of the Institute of Shock Physics at the Washington State University campus in Pullman. There, Gupta oversees experiments on the frontiers of materials science and optics.

But that kind of pure science is not what the Spokane lab is about. Applied science means just that: research government agencies and private corporations can use to solve problems. Although defense and security agencies have been the source of all the lab's research funds so far, Gupta says the lab has expertise and equipment that chould be useful to several area companies.

Perhaps newcomers as well.

Small companies cannot afford the kind of equipment – $1 million worth – the lab will soon have installed in the basement of the Sirti building. Some might relocate for the chance to access ASL lasers, for example,

Work at the lab will also afford opportunities for faculty and students at the area's teaching universities – Eastern Washington, Gonzaga and Whitworth – to do some research of their own or assist lab scientists.

The lab roster now includes seven Ph.D.-level researchers. Several, like Gupta, are experts in materials science. Others are specialists in optics or chemistry.

They have been recruited from New York, Wisconsin and California. All but one is foreign-born. Some left secure positions to join the lab.

"I think they all believe in the concept," Gupta says. "They are all risk takers."

All will be expected to seek more grants to expand their work and create openings for more scientists and graduate students.

"I want to change the intellectual landscape of Spokane" and raise the city's economic profile in the process, he says.

In 10 years, Gupta projects a lab with 100 to 200 employees, maybe one with its own building.

To assure financial viability, Gupta hopes to amass a $15 million endowment. A development specialist was hired Aug. 1.

"Private fundraising will be essential," says Gupta, who adds that Spokane must help nurture what will someday be one of the area's most significant economic assets. He has certainly applied much of his own energy.

"Starting ASL has been the hardest thing I've done in my life," Gupta says.