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S P O K A N E

Road to big science requires big money

Patrick Tam - Special to The Spokesman-Review

This Tuesday, one of the great scientists of the past quarter century comes to Spokane.

Dr. Leroy Hood, CEO of the Seattle-based Institute for Systems Biology, will be the featured speaker at the Spokane Regional Chamber of Commerce annual luncheon.

Hood, with colleagues at California Institute of Technology, made the genomics revolution possible with his invention of the DNA gene sequence and synthesizer. He recently was awarded the 2003 Lemelson-MIT prize for Invention and Innovation, the largest such award in the world.

In 1987, he received the Lasker award, widely viewed as a precursor to a Nobel prize in science or medicine.

The eve of this visit is a good time to ponder how it is that Hood finds himself in the Pacific Northwest.

After observing the scientific landscape of the Inland Northwest for several months, I've come to this conclusion: for this area to launch itself into a higher orbit of scientific research, it must invest in star researchers, or national luminaries of their fields.

Our clinical medical cluster is now recognized. But compared with national centers of biomedical excellence, our regional research levels are still quite low.

True, they have grown rapidly over the past five years. Total federal funding at Washington State University for the latest fiscal year was more than \$90 million, with the National Institutes of Health (NIH) and the National Science Foundation (NSF) claiming about a third.

Last year, the University of Idaho reported more than \$63 million in federal funding, with the NIH and NSF responsible for about a sixth of the total. And both Eastern Washington University and Whitworth College have enjoyed some recent success with the NSF and NASA.

Yet, these numbers pale to the levels won by institutions in communities we might compare ourselves with, such as Madison, Wis., Boulder, Colo., and Portland.

By now, I think many in our region realize that research is the pivot around which a technology-based economy grows. Without millions of dollars flowing to bench scientists, it is unlikely that entrepreneurial scientists and engineers will ever form companies. Invention is the primary matter of a technology-based economy. Of course, the immediate economic benefits of scientific research itself are not trivial. The labs pay far beyond the average Spokane area salaries.

Many in our community are impatient with the pace of economic progress. And they should be: per capita incomes in Spokane County are now 80 percent of the national average and this ratio has consistently slipped for 25 years. Reversing this trend is, by and large, arduous.

For example, Washington now ranks in the lowest quartile of all states in funding for research at public, higher ed institutions. In the face of our state's budgetary woes, I don't see any acceleration away from this dubious distinction.

If there is a fast lane for our region to attain another level of medical research, it is to "purchase" the research. Woo researchers to come our way. National luminaries will bring with them their multimillion-dollar grants and teams of highly trained scientists. The quality of their research will ensure that the grants are self-sustaining. Their presence signals the start of a virtuous cycle.

We will also need to continue to build infrastructure, such as the WSU-Spokane Health Science building and the planned SIRTI wet lab incubator. Whether we invest in bricks and mortar or in people, the lesson is clear: this strategy requires a strong, local financial commitment.

While daunting because of the sums called for, this approach has a redeeming feature: it works. Examples abound. Dr. Hood came to Seattle from Pasadena because Bill Gates made a multi-million dollar commitment to fund a special chair at the University of Washington.

The Eminent Scholars Program of the Georgia Research Alliance (GRA) has lured 15 nationally known scientists to that state, with money largely from the private sector. The GRA is now recognized as "best of class" in North America for its ability to unite private, public, and higher educational resources.

Recently, Arizona put itself on the map with a large, governor-led campaign to build a genomics center in downtown Phoenix that complements the clinical excellence of the area's medical community. That investment then led to the landing of one of the federal stars of the Human Genome Project, Dr. Jeffrey Trent.

In the cases of Dr. Hood and the Eminent Scholars program, the commercial consequences have been meaningful. Within a decade, three companies have spun out of Dr. Hood's labs. One of them was sold to Merck for \$650 million. Most of the 15 Eminent Scholars have either formed or assisted startups in the state of Georgia.

Another plus for the national luminary approach: our community has already started to rev these engines. The arrival last summer of Drs. Lisa Shaffer and Bassem Bejjani, genetic researchers from the Baylor School of Medicine, marked a first. Both enjoy appointments at Sacred Heart Medical Center's Cytogenetics Lab where they develop new diagnostic techniques of mental retardation, and at WSU-Spokane, where they carry out their NIH-funded research.

The Medical Research Institute is no longer a gleam in the eyes of a few, but a developing reality. The bulk of its initial funding will support a nationally known researcher and his/her team in the area of sleep.

Dr. Kathy Tuttle at the Heart Institute is considering adding one or two prominent researchers to her team.

These are great steps. But to move Spokane's research base from the labs of two nationally known teams of today to 20 tomorrow, committed corporations and far-sighted individuals must add to public investments.

We all know the Inland Northwest offers a terrifically high quality of life. We are proud of our medical community. We applaud the efforts of our local and regional universities.

These efforts, however, are insufficient if we want to compete at science's highest levels. To land big science, we need some big dollars. Let's put some money where our hearts are.

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