The Seattle Times

Thursday, November 18, 2010 - Page updated at 12:46 AM

Paul Allen grants go where few have gone before

Paul Allen

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When Microsoft co-founder Paul Allen pledged this summer to give away most of his fortune, he singled out brain science and biology as among the likely beneficiaries.

Information
More on the grants: *http://pgafamilyfoundation.com*

Now, the Mercer Island billionaire is following up with $9.4 million in grants to seven research teams, including two at the University of Washington.

The projects include efforts to build tiny microscopes that can peer into the living brain and to identify the neurons that control anxiety and aggression.

The multiple grants reflect a shift in scientific philanthropy by Allen, who in the past has bestowed funding on an eclectic mix of stand-alone projects â€” like the search for extraterrestrial life.

Many of the new studies are equally far out and unlikely to get funding from the National Institutes of Health (NIH) and other traditional sources.

If science is like detective work, "you already have to know whodunit in order to get an NIH grant," said California Institute of Technology neuroscientist David Anderson. "You get the grant to find out details about why they did it, where they did it and how they did it."

Allen is gambling on mysteries that aren't close to being solved.

"It's very risky," said Anderson, who received $1.6 million to search for genetic tags, or markers, that can be used to identify brain cells that regulate fighting, cowering and other emotional behaviors in mice. "We don't know that such markers do exist, and we won't know until we go through a laborious, time-consuming and expensive process."

The Paul G. Allen Family Foundation issued a call for research proposals earlier this year â€” and got 120. Foundation staff ranked the proposals. Allen made the final choices, said foundation Vice President Susan Coliton.

"What we were looking for are breakthrough scientific projects that could really help build a new knowledge base for future discoveries."

The grants run for two to three years. The inaugural group of "Allen Distinguished Investigators" will meet annually in Seattle to share results and insights. In an interview monitored by a public-relations representative, Coliton said the foundation hopes to fund new investigators in the future if all goes well this time.

Some of the projects, like Anderson's, build on the work of the Allen Institute for Brain Science, founded in 2003 with $100 million from its namesake. The institute is refining maps of brain structure and function through painstaking analysis of gene activity.

That work identified some of the possible markers Anderson and his colleagues will evaluate in their quest to better understand the neurological basis of emotions.

UW biologist Michael Dickinson will use his $2 million grant to develop new tools to study animal behavior and relate it to brain activity.

One of his ideas is a fly-sized robot that can interact with real fruit flies, while researchers observe the results. Better yet, he wants to build machine vision systems that can relieve humans of the tedious task of noting when each fly takes wing or walks to the food dish.

"It sounds kind of crazy," Dickinson said, "but the philosophy here is to really push the envelope on technology to help make the study of animal behavior more rigorous."

Stanford University physicist and biologist Mark Schnitzer is also using his $880,000 grant to develop new research tools: microscopes that weigh a tenth of an ounce and can watch signals passing between brain cells tagged with fluorescent chemicals.

Schnitzer and his colleagues have already developed prototypes of the tiny instruments. Now they hope to refine those designs and mass-produce the microscopes.

"Part of the aim is to reach out and make this much more accessible to many labs," he said.

UW plant biologist Jennifer Nemhauser and electrical engineer Eric Klavins got $1.4 million to study basic plant-cell biology â€" with a twist. By approaching the living system as if it were an electrical circuit, they hope to unravel the complex signals that regulate all aspects of plant life. If they succeed, it might someday be possible to re-engineer the system to create something useful for humans â€" like crops that thrive in hostile environments, Klavins said.

The pair were turned down by federal funding agencies, who didn't see the value in reaching so far across disciplinary lines.

"What the Allen Foundation is doing is really farsighted," Nemhauser said. "Historically, the great ideas come at the intersection of fields."

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