

Microryza helps round up dollars for fund-it-yourself science

July 10 2013, by Sandi Doughton, The Seattle Times

When two University of Washington graduates launched one of the first crowd funding sites for science, they had to beat the bushes for projects. A year later, so many researchers are beating on Microryza's door that the startup born in Seattle is juggling a backlog of 500 proposals.

Recent cuts in federal science budgets are helping fuel the demand, says co-founder Cindy Wu. But the enthusiastic response also proves that too many good ideas are falling through the cracks of traditional science funding, she added.

So far, individual donors have helped bankroll an expedition to bring a Triceratops skeleton to Seattle, a project to cure parasitic-[worm infections](#) and the development of an electronic race car.

But whether crowd funding will evolve into a significant force in science remains uncertain.

"Right now, we're just a small sliver of the pie," Wu said. "But I think in the next year you will see that sliver is going to grow really, really rapidly."

About 80 projects have raised a combined \$200,000 through Microryza ("micro-rye-zuh"), less than half the amount of the average federal grant for [biomedical research](#).

Researchers have already started ratcheting up their ambitions, though.

In the early days, few proposals aimed for more than a couple thousand dollars. Projects seeking \$10,000 to \$20,000 are common now, and several have succeeded. Two research groups are currently trying to drum up \$65,000 each for studies of the way the brain controls the immune system, and how speed affects the bodies of race car drivers.

"A lot of people are skeptical as to whether or not you will be able to raise large sums of money," Wu said. "But I think it will definitely get into the multimillions."

Seattle-based Planetary Resources, which wants to launch a small [space telescope](#), recently raised more than \$1.5 million through the crowd funding site Kickstarter. To entice donors, it is mounting an elaborate online campaign and offering rewards ranging from a front-row seat at the launch to personalized photos from space.

Few individual scientists can recruit celebrity spokespeople or hire a PR firm, and courting donors online can be time-consuming. Submitting a proposal to Microryza is easy, but scientists are expected to also post a short video and regular updates on their research and fundraising progress.

"Most scientists don't have time to be both scientists and cheerleaders," said UW biology instructor Evan Sugden.

Sugden's first Microryza campaign raised \$2,250 for a beekeeping class on the verge of being eliminated. "It really kept us going," he said.

The cause struck a chord with bee enthusiasts. Students and members of the UW bee club pitched in to keep visibility up through Facebook and other social media, and to solicit potential donors.

But without a similar effort, Sugden's second request-for \$2,800 to

explore methods of purging pesticides from beeswax - fell flat. Because he didn't raise the full amount during his allotted time, Sugden got nothing, as per Microryza's rules.

"We just didn't have enough hands on deck and we didn't shake the right trees," said Sugden, who is ambivalent about taking another run at crowd funding. "Basically, we're just high-tech beggars."

Wu and fellow UW science grad Denny Luan founded Microryza out of frustration at being unable to get funding for their own research. (The name is a combination of "microcredit" and "mycorrhiza" - tiny fungi that nurture the roots of plants.)

Competition for federal grants has become so stiff that more than 80 percent of proposals are rejected. In biomedicine, the average age for a first-time grant recipient is 42.

UW paleontologist Greg Wilson has applied for 10 federal grants over the past five years, scoring only one victory. "You can end up putting a lot of effort into a proposal and coming home with nothing," he said.

Through Microryza, Wilson was able to raise more than \$11,000 for a four-day field school in Montana for K-12 science teachers. The teachers learn how to excavate fossils and gain insights they can share with their students, while Wilson and his colleagues get assistance with their research on dinosaur extinction and the rise of mammals.

Dinosaur projects seem to be a slam-dunk on Microryza, with several garnering full support. Some researchers bemoan the fact that sexy proposals fare better than the kind of incremental science that often moves research forward. UW doctoral student Jeff Huang asked for \$900 to figure out how spammers harvest email addresses, and raised more than five times that amount.

"Everybody hates spam," Huang said.

Wu points out that many key breakthroughs in science arose from the type of unorthodox approaches often passed over for federal funding today. "What Microryza does is allow these neglected ideas to come to fruition," she said.

Wilson is hopeful his successful Microryza campaign will help him find long-term funding to keep the field school going. Federal agencies might look more favorably on a project with some preliminary data and a track record of public support, he said. And now his lab has a constituency - a group of people keenly interested in the research and who may be willing to help out in the future.

Though one of Microryza's original goals was to make it easier for nonscientists to do science, nearly all the projects so far have come from universities or other research centers. Wu said she hopes to change that soon.

One recently funded project will create a biotech lab in Seattle where amateurs can conduct experiments and run analyses.

Meanwhile, as the number of sites crowd funding science grows - others include Indiegogo and RocketHub - universities are scrambling to figure out how to handle the donations and ensure that projects follow ethical and regulatory guidelines.

"It's the Wild West out there now," said the UW's Walt Dryfoos, who's responsible for processing all monetary gifts. Each crowd funding site has its own protocols and none yet dominates the field, he said. And the amounts are piddling compared with the \$300 million in donations the university took in last year.

"There's a lot of buzz about it," Dryfoos said, "but we'll have to see if it evolves into something with legs."

A for-profit business, Microryza takes a 5 percent cut of money raised and charges an additional 3 percent to cover credit card fees. The staff, which now numbers eight, recently shifted its base from Seattle to San Francisco to be closer to Silicon Valley.

Wu and Luan still recruit projects based on their personal interests or controversies of the day. They reached out to a University of Alabama economist who was stymied by restrictions on federal funding of gun violence research. Propelled by media coverage, her \$25,000 proposal to study the impact of state gun laws on crime and other factors was quickly funded by nearly 300 supporters.

Seeking publicity and selling themselves to the public is something that doesn't come easily to many scientists. Danny Colombara, a doctoral student working at the Fred Hutchinson Cancer Research Center, waited until his office mate was away to film his pitch for a project to explore whether viruses can cause lung cancer.

"I'm rather shy," he said. "You won't find another video of me on the web."

Many labs are tackling the same question with major federal grants. But Colombara has access to 9,000 blood samples collected from people in China who were tracked for nearly a decade. The \$5,622 he raised through Microryza will be enough to determine whether those infected with a suspect virus were more likely to develop lung cancer over time.

It's an example of the kind of discrete project that may benefit the most from [crowd funding](#).

"You can't build a particle collider this way," said UW biologist Dee Boersma, who raised enough money to buy one satellite tracking tag for her ongoing studies of Magellanic penguins. "But the biggest bang for your buck often comes from little science."

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<https://phys.org/news/2013-07-microryza-dollars-fund-it-yourself-science.html>

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