

Researchers mine funds from variety of sources

These dollars can act as a springboard for larger awards in the future

By SHEILA LIVADAS

Amid flatlined federal support, Rochester-area medical researchers are tapping various sources to fund their projects. Even a five- or low six-figure sum from a state initiative, venture capitalist, non-profit or foundation can serve as a springboard for securing a larger award.

"It's more or less a shot in the arm to enable us to collect experimental data ... without which we cannot compete at all for federal dollars," says Hartmut Land, director of research and co-director of the University of Rochester's Wilmot Cancer Institute.

Support from a local family foundation and a regional non-profit recently led to the cancer center receiving millions in federal funds for pancreatic and liver cancer research.

"And from that point of view, these local organizations are really part of the research team and enable (them) to work and ... produce results with which we can attract larger funding," Land says. "And that then provides jobs and infrastructure for the local community and—not only that—but also really exciting, new research that helps develop new treatments for cancer patients."

Yet some researchers maintain that local funding sources eagerly embrace certain types of health care ventures and investigation but spurn others.

"In Rochester, because we know what we know, which is (medical) devices and software, the (interest in biotechnology) investment is like extracting water from a stone," says Harold Smith, founder, president and CEO of OyaGen Inc., a Rochester-based startup focused on developing treatments and cures for viral illnesses.

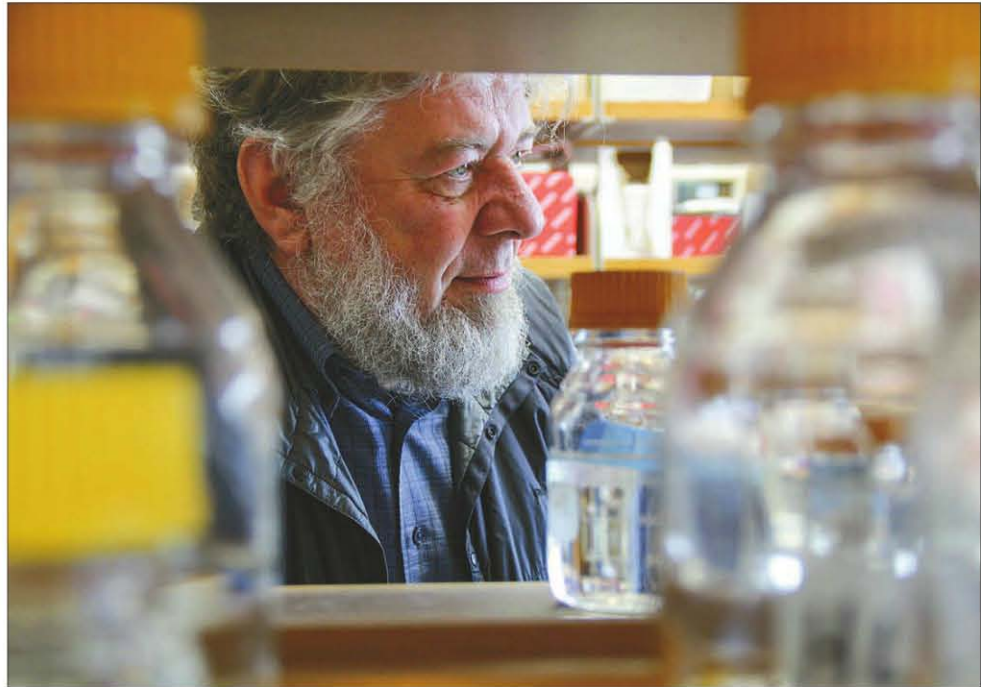
Shorter development times and faster returns on investment have stoked the favoritism, he says.

The local availability of funding for ventures working on surgical implants or dental devices, for instance, "contrasts remarkably with the difficulty in procuring significant capitalization for a startup or for development of a company that's involved in biologicals," says Smith, professor of biochemistry and biophysics at UR's School of Medicine and Dentistry.

He adds: "And when I say that, I mean developing antibodies, developing small-molecule drugs that one would take orally, targeting a mechanism that the body uses for health or disease, gene therapy ... anything biological. In this community, outside of the (UR) medical center, there tends to be a lack of knowledge concerning what that is."

At URM, a recent three-year, \$1.06 million grant from the New York State Stem Cell Science Program has helped Wei Hsu, professor in the biomedical genetics department at the Eastman Institute for Oral Health's Center for Oral Biology, continue to identify, isolate and characterize the stem cell population that contributes to craniosynostosis, a congenital skull deformity in newborns.

As the second largest funding program of its kind in the nation, NYSTEM sprang from limitations from the New York State W. Bush placed on federal financing of stem cell experiments, says Robert Quivey Jr., director of the Center for Oral Biology. Operating under the guidance of the Empire State Stem Cell Board, the fund-



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Photo by Kimberly McKinzie

ing program has invested more than \$300 million in research, infrastructure and education since its launch in 2007.

Plummeting dollars from the National Institutes of Health have turned non-federal funding sources like NYSTEM into a lifeline for furthering research, Quivey says. Five other UR School of Medicine and Dentistry scientists besides Hsu received a slice of the program's \$3.5 million award.

"So ... we're competitive," Quivey says. "We're just a lot smaller than six institutions in New York City."

Archibald Perkins M.D., professor of pathology and laboratory medicine at URM, agrees that non-federal funding has become increasingly important to keep research plugging along.

"Left and right, you hear about people leaving biomedical research to either retire or go into working for pharmaceuticals or teaching only without (doing) research," he says. "It's a huge problem."

To cope with dwindling federal dollars, Perkins now dedicates more time doing clinical work and applying for grants for his research on a drug for acute myeloid leukemia, a disease that is typically fatal within months if left untreated. The \$100,000 his lab received last year from Alex's Lemonade Stand Foundation, a pediatric-cancer charity located outside of Philadelphia, paved the way to "bootstrap our way to getting a federal grant," Perkins says.

"And so that's what is funding our research now, and it's actually going quite well," he adds.

Besides setting the stage for securing larger awards, five- and six-figure sums from non-federal sources tend to boost researchers' confidence, Perkins says.

In Land's case, funding from the Sally Edelman and Harry Gardner Cancer Research Foundation in Hilton, the Pancreatic Cancer Association of Western New York and the annual Michael F. Contestabile Memorial Golf Tournament provided the seed money to collect sufficient data to craft a

competitive application for more than \$2 million from the National Cancer Institute.

"That's sort of, really, the general importance of having good links between us here in the medical center and our local community," Land says.

Awarded in June, the five-year NCI grant will allow Land and co-investigator Aram Hezel M.D. to do new scientific experiments involving a gene known as Plac8. Earlier work at Wilmot Cancer Institute has shown that inactivating Plac8 stopped or slowed pancreatic-tumor growth in mice and significantly extended survival, making the gene an attractive target for drug development.

Non-federal funding sources OyaGen has tapped over the years include a loan from Empire State Development Corp.'s Upstate Regional Blueprint Fund and \$6.8 million from entities such as the University Technology Seed Fund, organized in 2002 by UR and Pittsford-based Trillium Group LLC; Trillium Lakefront Partners III, which makes growth, buyout/recapitalization and early-stage minority equity investments;

and the Monroe Fund, a now fully invested venture fund established in 1999.

With a particular focus on viral illnesses, OyaGen now has in preclinical development three lead HIV drugs based upon editing enzymes.

While people with HIV are living longer, "the number of new infections is completely unacceptable," Smith says. "If you wander just down to the Bronx, you might as well be in South Africa as far as the amount of HIV transmission infection that's taking place."

Local investors who take a chance on biotech "are not doing so because they think these 'horses' are going to make money in short term," Smith says. Most do so "out of heart and mind. They actually want to see something good happen for health care, not just for our community but around the world."

He adds: "So when they do say 'yes,' it's because they're predisposed to be helpful and want to see their money do good."

Sheila Livadas is a Rochester-area freelance writer.

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