

Flush with new funds, NIH faces challenges of distribution

According to many economists, the US is in the midst of the worst economic slump since the Great Depression. But instead of slowing down, the biomedical research community is ramping up. All across the country, researchers are working late into the night, racking their brains for brilliant research proposals. What's at stake? A slice of the National Institutes of Health's \$10.4 billion stimulus pie.

The unprecedented infusion of cash has created tremendous excitement but also a tremendous amount of work. The American Recovery and Reinvestment Act mandates that all stimulus funds be out the door by September 2010. The agency has already posted more than a dozen funding announcements since the act was signed in mid-February and will probably post more in the coming months. In many cases, researchers have just weeks to respond. "It's really exciting to have this kind of money after such lean years," says Beverly Ginsburg-Cooper, senior vice president for research at Dana Farber Cancer Institute in Boston. But, she adds, "I think everybody is feeling slightly overwhelmed."

No decisions have been made regarding specific grant proposals, but some of the money will go toward one-time expenses like construction or new equipment. Per the recovery act, the National Center for Research Resources at the National Institutes of Health (NIH) will receive \$1.3 billion. The bulk of that—\$1 billion—will fund renovations, repairs and new construction at biomedical facilities across the country.

The act also allocates \$800 million to the NIH's Office of the Director. The office plans to dedicate at least half that amount to two new types of funding: so-called 'Challenge' grants and 'Grand Opportunities' (GO) grants. Challenge grants will provide up to \$500,000 per year for research projects that address high-priority topics such as screening methods for breast cancer. The larger GO grants, which are capped at \$1 million per year, will support "high-impact ideas that lend themselves to short-term, nonrenewable funding and may lay the foundation for new fields of investigation" according to the NIH.

The largest chunk of the stimulus funds—\$7.4 billion—will be divided among the NIH's 27 institutes and centers. Of that amount, \$60 million had already been committed to autism research as *Nature Medicine* went to press. Beyond that, "it's going to be hard to specify where the money is going until we see what [proposals are] coming in," says Marina Volkov, acting director of the National Institute

of Mental Health's Office of Science Policy, Planning and Communications.

A second look

The NIH has already begun sifting through the 14,000 grant applications that just missed the funding cutoff during the last round of review. The standard 'R01' grant applications are typically funded for five years, but officials hope to identify some proposals that can accomplish their goals within the shortened two-year timeframe.

Another chunk of the stimulus funds will go to support researchers already funded by the NIH. They can apply for administrative supplements, which provide support for new equipment, the hiring of graduate students or postdocs and grant revisions that allow investigators to expand the scope of their projects.

Any remaining money will fund educational opportunities for students and science teachers, help core centers hire new investigators and support other yet-to-be-identified projects.

Ten billion dollars is no small amount of money. Yet competition for some of the grants could be fierce. Chi Dang, vice dean for

research at Johns Hopkins University's School of Medicine, says that his university alone plans to submit roughly 200 Challenge Grant applications.

But amidst all of the enthusiasm lies one major concern: "what happens 24 months from now?" asks Stephen Prescott, president of the Oklahoma Medical Research Foundation. "Are we suddenly back in the crisis mode of not having enough money to fund projects?" Organizations such as Research!America and the Federation of American Societies for Experimental Biology are doing their best to ensure that doesn't happen. They've already started lobbying for future increases in the NIH's budget. Mary Woolley, president of Research!America, points out, however, that it would be unrealistic to expect a 15% bump like the one the NIH will have over the next two years as a result of the recovery act.

For now, the biomedical research community has enough to worry about. GO Grant applications are due on 27 May. "Don't forget, we still have our regular grant processes going on," Ginsburg-Cooper says. These days, "we do nothing but write grants."

Cassandra Willyard, New York

Will a robot steal your job?

A robot named Adam that can design, implement, interpret and modify its own experiments has uncovered previously unknown functions of several genes involved in yeast metabolism, British scientists have reported (*Science*

324, 85–89; 2009). To the authors' knowledge, Adam is the first machine to make scientific discoveries on its own. The Adam robot, which consists of a box connected to lab equipment rather than taking a humanoid form, uses an algorithm to select yeast mutants from a sample and hypothesize about their genes. The creators of the machine, led by Ross King of Aberystwyth University, hope that their next robot, Eve, will help uncover new drug candidates.

Kirsten Dorans, New York



Adam in the lab: Two views of the robot



Aberystwyth University