The Christian Science Monitor

rebuilding the economy

# Science to gain from stimulus funds, but projects must be 'beaker ready'

**The first goal is to create jobs, but new technologies – and the employment that comes with them – can take time to develop.**

By **Ron Scherer** | Staff writer/ April 24, 2009 edition

*NEW YORK*

The last time the US ramped up spending on science this much, the result was a man on the moon. This time the goal is more modest: jobs.

Yes, some interesting science may come out of spending $21.5 billion – equal to a 15 percent boost above recent amounts – in a short burst. But most projects have to be "beaker-ready" because a lot of the dollars will be awarded by September. This means the bulk of the money will be used to build labs, renovate classrooms, or fund projects that are already past the "interesting concept" stage.

Proponents of the spending say it has to be viewed as an "investment," an economy-builder if a scientist discovers, say, the next "flubber."

"This type of investment has a little longer lead time than funds devoted to roads and bridges," says G.P. "Bud" Peterson, president of the Georgia Institute of Technology in Atlanta. "While spending on research, equipment, and infrastructure all create immediate jobs, the real goal is to develop new technologies, which will result in the formation of new companies and thereby create new jobs."

**The mysterious job question**

How many jobs? According to the website Recovery.gov, the $789 billion stimulus package will save or create 3.5 million jobs. But there's no job estimate for the $21.5 billion being spent on science, say officials at the White House Office of Science and Technology Policy. The American Association for the Advancement of Science, a nonprofit, also says it has no jobs number.

But that spending will help the economy, say supporters. For one thing, new science facilities will be constructed. Last fall Arizona State University in Tempe was ready to erect a $187 million building to house earth- and space-exploration research programs and renewable-energy research.

"When you think about our energy needs, we need greatly expanded research in energy, and this building was designed for that," says ASU President Michael Crow.
But state financial constraints put the construction on hold. If Uncle Sam will provide the funding, "we

could start that job in a week," says Doug Pruitt, CEO of Tempe-based Sundt Construction, which won the contract to build it.

Construction of the building will require 500 to 600 people on the job site, estimates Mr. Pruitt. Even more workers would fabricate the steel and build the parts to go in the building.

**Science-facilities upgrades**

Some of the added science funding will be used to renovate buildings. In Brooklyn, Rogers Hall, part of the Polytechnic Institute of New York University, is in need of modernization. The school has requested $65 million to update the building, which houses classrooms, faculty offices, and labs. Included in this request is $5 million to $7 million to replace the windows and rusting window frames, which date back to 1920. But the school also hopes to get money for a three-dimensional printer, which can cost as much as $60,000.

"It's an expensive piece of machinery, and you want it so you can … make prototypes of medical devices and prosthetics that you can't make without it," says Jerry MacArthur Hultin, the school's president. "It is essentially an economy starter."

An order for such a machine also could help provide jobs for companies that make it. Z Corp., a 160-employee firm in Burlington, Mass., that makes the machines in the US, hopes the stimulus bill helps business.

"One order does not make or break a company but does have an impact on people and jobs," says John Kawola, Z Corp.'s CEO. "It helps engineers developing new products, sales people, the folks manufacturing the machines, and all the support people."

**A diffuse 'science race'**

The sharp increase in science and technology spending is reminiscent of the "space race," which began in 1957 when the Soviet Union launched Sputnik, the first Earth-orbiting satellite. In 10 months, the Eisenhower administration formed NASA, started the Defense Advanced Research Projects Agency, more than tripled funding for the National Science Foundation, and began to reform the education system to turn out more scientists.

"Back then we had a single goal: Put a man on the moon and return safely," says Mr. Peterson at Georgia Tech. "But today the overarching aim is to stimulate and renew, and that can be done by a lot of independent goals and projects."

A chunk of the stimulus package is slated for highway construction, but even some of this money could benefit R&D budgets. In anticipation of getting some stimulus money, Research Triangle Park in North Carolina recently opened bids on an intersection improvement totaling $240,000.

"This money frees up other money," says Rick Weddle, CEO of the 7,000-acre industrial park. The park is looking at $13 million in road projects.

Even this relatively modest amount would create jobs. The Associated General Contractors of America

figures each $1 million spent on construction creates 28.5 jobs, or in this case 370 jobs.

**A fast-track labyrinth**

To get money, organizations will need to weed through an assortment of cash-laden government agencies ranging from the National Science Foundation to the Department of Energy.

Some science leaders are concerned about trying to spend so much money so quickly. Projects may get started but not finished, says ASU’s Dr. Crow. He’s also concerned that decisions on funding may be made on the basis of whether “something can get done, not whether it needs to be done.”