

# Science and research hit hard by US sequester cuts

April 5 2013, by Jean-Louis Santini

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Automatic spending cuts have hit America's science and research sectors especially hard, according to experts, who warn of potentially dire implications for the nation's overall competitiveness.

As the "sequester," a package of spending cuts imposed last month, begins to pinch, many research projects will be slowed or scuttled, from cancer therapies to efforts to convert [medical breakthroughs](#) into marketable therapies.

US government spending on scientific research is to fall from \$140 billion to \$130.5 billion this year, a nearly seven percent reduction, according to experts at the [American Association for the Advancement of Science](#).

"The current budget situation for research and development in the US does not portend well for the future of the [American economy](#)," said AAAS head Alan Leshner, whose group publishes the respected journal *Science*.

Leshner said the cuts, which were hard to notice when they went into effect last month, are beginning to put a squeeze on grant monies given out by US agencies like the National Institutes of Health (NIH).

"National Science Foundation will fund between 800 and 1,000 fewer research grants," he said.

The sequester, Leshner added, "is beginning to deteriorate the quality of American science, and will unquestionably have a dramatic effect of innovation and the economy."

Last month, President [Barack Obama](#), was obliged to implement huge cutbacks to [government spending](#), after failing to get Congress to agree on a less severe approach to reducing the federal deficit.

The cuts have seen funding levels at NIH reduced to those of 2002, said Leshner, adding that such cuts have not just a devastating impact on the scientific community, but on overall [economic vitality](#) as well.

"Over 50 percent of the US economic growth has come from science and technology advances since [World War II](#)," he said.

The impact is being felt most dramatically at the NIH, which with \$31 billion accounts for more than a fifth of the overall US scientific research budget.

NIH Director Francis Collins said that the field can expect to lose about 20,000 highly skilled jobs as a result of the cuts.

He said 430,000 jobs depend on funds for biomedical research provided by the NIH, which comprises 27 separate institutes.

And that comes on top of about 20 percent in effective reductions over the past decade due to flat budgets reduced by inflation.

"Undoubtedly, this will result in slowing down some projects that are particularly at an exciting juncture," said Collins, warning that cancer and Alzheimer's research would be among the affected fields.

"That will delay therefore those discoveries and ultimately the ability to

turn those into new targeted therapies."

The cuts will also "discourage" young researchers, who will interpret the move as meaning that scientific research is no longer a national priority and is a poor career path, according to Leshner.

"I worry deeply that we are putting an entire generation of scientists at risk by the very significant difficulty they see in obtaining support," said Collins.

"Unless something turns the corner pretty soon, a number of our most talented young scientists will basically decide to do something else or perhaps to do it somewhere else as in other places that are providing better support."

The NIH chief noted that America's loss may be other countries' gain, if discouraged young researchers in the United States head overseas to Brazil, China or India.

Even in Europe, which is facing tough austerity measures in the face of sputtering economies, countries like Germany and Britain are maintaining or increasing their funds for medical research, he added.

"Other countries like China and India and Brazil for instance are increasing their support of biomedical research at a remarkable rate in double-digit percentages each year."

Obama this week unveiled an ambitious, \$100 million project to unravel the mysteries of the human brain, stressing the importance of scientific research for America's competitiveness.

"Every dollar we invested to map the human genome returned \$140 to our economy. Every dollar," he said.

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