US risks losing out to Asia in medical research

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Medical research saves lives, suffering and dollars – while also creating jobs and economic activity. The United States has long led the world, with hundreds of thousands of jobs and marketable discoveries generated by government research funding every year. Top students from around the world come here for training—and often stay to help fuel medical innovation.

Now, warns a team of researchers in the New England Journal of Medicine, the U.S. risks losing out to Asia as the hub of medical discovery.

The result, they caution, could be a "brain drain" of top young researchers, and the loss of untold discoveries and economic activity. The authors are two physician researchers from the University of Michigan Medical School and VA Ann Arbor Healthcare System, and an American researcher who left the U.S. for better job prospects in Singapore.

They compiled data on five Asian countries – China, India, Singapore, South Korea and Taiwan – that are all boosting their government support for medical research right now. All five have a long-term plan for increased support for such research, as part of efforts to boost their national economies and world standing.

By contrast, American medical scientists and physician researchers face almost certain cuts to federal research funding.

At best, the authors say, funding for the National Institutes of Health – which supports most U.S. medical research – will fail to keep pace with inflation next year.

At worst, if the federal budget falls off the 'fiscal cliff' of automatic cuts, American medical research spending will fall by 8 percent, with thousands of researchers cut off from funding. One estimate says this could cost the U.S. $4.5 billion in economic activity. There are also proposals to cut entire health research agencies.

By contrast, China has increased spending on medical research by 67 percent, South Korea by 24 percent, India by 15 percent, Singapore by 12.5 percent and Taiwan by 4 percent in the most recent year for which data was available.

"In recent years, NIH funding has not kept pace with growth in biomedical innovation, making it harder for scientists to win grants," says first author Gordon Sun. M.D., an otolaryngologist and health researcher who is currently a 2011-2013 Robert Wood Johnson Foundation Clinical Scholar at U-M, supported by the U.S. Department of Veterans Affairs. "Meanwhile, these five Asian countries have pledged long-term increases in funding."

He notes that the number of clinical trials of new medical ideas in the U.S. has fallen, while the number in countries like China has grown.

Sun and his co-authors warn that this trend could lead to long-term economic damage for the United States and the loss of its stature as a global leader in the field. "Powerful incentives that can retain an elite biomedical research workforce are necessary to strengthen the U.S. health care system and economy," they write.

The stakes of this Asian rise and American decline are highest for

current and future postdoctoral fellows – young researchers who have finished their M.D. or Ph.D. training and have decided to go into research as a career.

Post-doctoral training in a laboratory or health research specialty usually primes them for their first full-time research position – and their first grant applications as independent researchers. Winning grants year after year is vital to a research career – making sustained federal research support important.

But with grant dollars becoming harder to find in the U.S., and easier to obtain in Asia, young researchers may choose to take their very portable talents overseas.

In fact, China has started programs to attract young Chinese scientists back to China after training in the U.S.

And with English being the common language for researchers in India and Singapore, those nations may attract increasing numbers of American-born researchers – such as Jeffrey Steinberg, Ph.D., Sun's co-author and personal friend. He now works at the Singapore Bioimaging Consortium, supported by the nation's Agency for Science, Technology, and Research.

"In researching this article, we were surprised at how well-developed other countries' plans are for including medical research and scientific research as part of long-term goals," says Sun. "All of them have a fairly well-defined plan, which is part of their overall efforts to become economic powers. Whereas in the U.S., NIH funding is considered as just another part of the annual budget, and can be cut at any time."

The American approach to budgeting for medical research appears to ignore the long-term economic payoff of sustained research, says Sun.

"Simply cutting research spending off will end a lot of projects immediately. Then, all these well-trained people – what are they going to do? Many will go somewhere where their work may be more appreciated."

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