

# **From slowdown to shutdown: US leadership in biomedical research takes a blow, says ASCB**

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A senior researcher who can't get an answer from a shutdown NIH about a proposed clinical trial on a neurodegenerative disease, a Nobel Prize-winning scientist who fears that a generation of innovators will be lost, and a young investigator wearied at the lab by endless funding cuts and frustrated at home by the halt to promising research into a genetic disorder that affects her daughter—these are the leaders and members of the American Society for Cell Biology (ASCB) who today told a press conference at the National Press Club that the "temporary" shutdown of the federal government is making an already bad situation far worse for biomedical researchers and jeopardizing America's long-term leadership in global bioscience.

ASCB Executive Director Stefano Bertuzzi, PhD, told reporters that shutting down the driving engines of American bioscientific research, the National Institutes of Health (NIH) and the National Science Foundation (NSF), will have effects well beyond the days or weeks the Capitol Hill standoff lasts. "As America keeps hitting the brakes on scientific research, we are, in effect, accelerating the damage done to our continued leadership in global bioscience, in health outcomes and in the economic power that we have always derived from basic research," Dr. Bertuzzi said, "Americans will pay dearly for these slowdowns, sequestrations, and shutdowns in finding cures and on maintaining economic competitiveness."

Dr. Bertuzzi added, "Today I am wondering what U.S. science will look like in a week, a month, five years from now."

ASCB President Don W. Cleveland, PhD, from the Ludwig Cancer Institute at the University of California, San Diego, said that the NIH shutdown has put researchers like himself, who rely on NIH guidance and support, into an untenable position. "We have some reserves and we are running on those reserves but (long term) we have nothing to keep the team together but public funding and philanthropic organizations," said Dr. Cleveland.

Ironically, last month was a great one in his lab, Dr. Cleveland told reporters. "We identified a way to introduce gene silencing therapy to silence a gene in neurodegenerative disease." His lab has a collaborator lined up to start a clinical trial. "We wrote the grant application and now nothing is happening. We need public support."

Carol Greider, PhD, ASCB member, winner of the 2009 Nobel Prize in Medicine, and Daniel Nathans Professor and Director of Molecular Biology & Genetics, John Hopkins University, said that the shut down and cutbacks are especially cruel on the young scientists training in her lab. "It's often assumed that the dollars they're talking about are for fancy equipment but the bulk of the funding in my lab goes to training the future scientific leaders. This training is truly in jeopardy with the decreased funding."

Dr. Greider said that when she was doing the research on telomeres, the repetitive nucleotide sequences that mark the end of chromosomes, that won her the Nobel Prize, the NIH "success" rate on grants was 30%. "Now it's 15%. Breakthroughs usually come through the youngest generation," said Dr. Greider. "A generation of innovators might be lost. We can surely do better. We must."

"I represent the younger generation of scientists," said Rebecca Burdine, PhD, ASCB member, Associate Professor, Department of Molecular Biology, Princeton University, and mother of a child affected by Angelman syndrome, a genetic disorder that recent NIH-funded research has linked to a mistake in genomic imprinting. "My generation has been feeling the strain of the NIH budget for over a decade. You're fighting for a pool of money with people who are just as brilliant, just as ambitious, and have just as good ideas," she said. "This prevents really good science from being done. I've seen many of my peers spiraling down the drain. They are slowly shutting down their labs and leaving science."

Beyond the impact on her own career, Dr. Burdine said that the slowdown and now the shutdown are hurting her child. "My daughter has Angelman's syndrome," she explained. Because NIH-funded research identified the cause of Angelman's as a mistake in genomic imprinting, new therapies are possible. "This is a disease that we could treat and potentially cure," said Dr. Burdine. "The only thing keeping my daughter from living a seizure-free life is money. It's like the government threw a concrete brick at a group of people already treading water. My daughter is one of the ones affected by this."

The current shutdown, said Dr. Bertuzzi, only adds insult to injury, putting the future of America's long-term leadership in bioscience in doubt. The shutdown comes on the heels of a nine stagnant years of virtually flat NIH and NSF budgets, falling purchasing power for America's biomedical research labs, and unprecedented low "success" rates for grant applications. The sequester forced a flat 5.1% across-the-board cut on NIH spending and set off what Bertuzzi described as "near panic" among America's young bioscientists, the graduate students and postdoctoral research fellows, who increasingly fear that basic biology research is not an attractive career path in this country.

ASCB Director of Public Policy Kevin Wilson outlined a growing list of impacts from the NIH and NSF shutdowns. "We are here today because the shutdown of the federal government is dragging on in the second week," Wilson said. The damage is already clear at the NIH where outside researchers can no longer submit grants and peer review of proposals is at a stop.

The situation is similar at the NSF, Wilson said, where no new funding initiatives or grants will be issued, the NSF peer review process is halted, reviews of existing grant applications can't be submitted and there will be no payments made during the closure, including no-cost extensions, funding transfers, or supplemental funds.

The haste and waste of the federal shutdown, said Wilson, could be seen on the first day of the NIH shutdown. NIH scientists were given four hours to mothball their labs before being sent home. "Critical research at the NIH has been put on ice, sometimes literally," said Wilson.

Provided by American Society for Cell Biology

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