

## Standing tall

By Duane A. Compton, Ph.D.

I had a near miss while I was driving to my laboratory one dark and foggy morning this past fall. Suddenly, in the middle of the road, there was a moose. The animal hardly moved as I swerved and narrowly escaped undercutting its towering bulk.

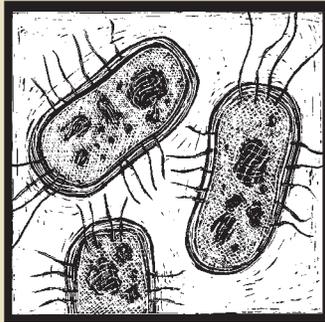
That close encounter with disaster sprang to mind as an apt metaphor when I got to the lab and started catching up with my e-mail. Among the messages was a notice from the National Institutes of Health (NIH) informing me that the budget of my research grant was being cut. Again. In an all-too-banal manner, the notice stated that the cut was part of an NIH-wide compensation for downturns in federal appropriations. Like striking a moose with a car, these downturns are cutting the legs out from under research efforts at DMS and countless other institutions.

The concept for the NIH dates back to the late 1880s. The agency was formally established in 1930 by the Ransdell Act (named for Senator Joseph Ransdell of Louisiana), to promote “science in pursuit of fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to extend healthy life and reduce the burdens of illness and disability.” To accomplish that mission, the NIH funds large centers—such as cancer centers—as well as multi-investigator projects, training grants, and single-investigator-initiated research at universities and companies all over the U.S.

**Basic:** Recognizing the long-term benefits of basic and applied biomedical research, the federal government steadily increased the NIH budget by an average annual rate of about 9% between 1971 and 1998, then doubled the budget between 1998 and 2003—to about \$28 billion today. As a result, the U.S. is the world leader in biomedical research, Americans live longer and healthier lives, and there have been dramatic reductions in deaths from cancer and heart disease.

New Hampshire receives just over \$90 million annually for NIH-sponsored biomedical research programs, and Dartmouth gets the lion’s share of that sum. According to U.S. Census figures, New Hampshire ranks among the top 15 states in per-capita NIH funding. NIH grants support DMS’s mission to “aspire to be the best in the world at expanding knowledge and using it wisely to improve health.” DARTMOUTH MEDICINE has, over the years, informed its readers of many discoveries made by DMS’s basic science and clinical researchers. Most of those projects are funded by NIH grants, which support not only the research itself but also the institutional infrastructure that makes research possible. NIH grants even bolster the local economy.

The extended period of growth in research funding culminated in



SUZANNE DEJOHN

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term support. Most research projects are designed and implemented over many years. But now, in the face of sudden funding decreases, investigators with ongoing research have had to cut components—sometimes even making reductions in well-trained technical staff—to maintain their laboratories. And, because NIH funding cycles are typically four to five years long, new grants can be funded only after existing commitments are fulfilled. The consequence of sudden cutbacks is that new investigators seeking their first grants are hit the hardest. This negative climate is beginning to dissuade young people from pursuing biomedical research careers. It even threatens to undermine the nation’s future competitiveness in this area.

**Crucial:** Oddly, federal funding for the NIH has declined despite polls showing that Americans overwhelmingly support investment in biomedical research. Members of Congress profess that the NIH is the premier institution for medical research and agree that it will play a crucial role in alleviating the impending health-care crisis arising from the country’s aging population. However, given limited tax revenues and a complex federal budgeting system, achieving steady increases in the annual NIH budget is not simple.

Is it possible to avoid continued reductions in NIH funding? I believe it is. It is imperative that we become an active citizenry and convince our elected officials of the importance of increasing the NIH budget. I have met with my own elected officials and their staffs and learned that they are keenly aware of the impact that continued reductions in NIH funding will have on the local economy as well as on U.S. competitiveness worldwide.

**Advocate:** Everyone can play a role. It is easy to contact your representatives and senators directly by e-mail ([capwiz.com/jscpp/dbq/officials/](mailto:capwiz.com/jscpp/dbq/officials/)); through the advocacy groups organized by scientific societies (such as the American Society for Cell Biology or the Federation of American Societies for Experimental Biology); or through other nonprofit organizations (such as Research!America). In addition, academic medical centers, including DHMC, have government relations offices that can point concerned individuals in the right direction to advocate on this issue. Actively contacting your elected officials is the only way to get them to steer the budget process in the right direction so that medical researchers everywhere can stand tall without fear of being undercut by further “boom and bust” funding cycles. ■

*The Grand Rounds essay covers a topic of interest to the Dartmouth medical faculty. Compton, a professor of biochemistry, studies chromosome segregation mechanisms during the division of human cells. He is a member of the Public Information Committee and the Project 50 public policy advocacy program of the American Society of Cell Biology.*