

NIH Releases Strategic Plan; Secures Enhanced Funding

The National Institutes of Health (NIH) on December 16 released *NIH-Wide Strategic Plan, Fiscal Years 2016–2020: Turning Discovery Into Health*, a report that identifies new priorities for scientific exploration, funding, research, and development. Two days later President Obama signed into law legislation designating \$2 billion in new funding for NIH in 2016, the largest increase in almost a decade. The increase is likely to result in diverse new initiatives and programs. The approved budget identifies \$200 million for the Obama administration's Precision Medicine Initiative, a \$350 million increase for research on Alzheimer disease, and an \$85 million increase for the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative to map the human brain. The legislation designates an additional \$303 million for research in antibiotic-resistant bacteria and an additional \$91 million to research on opioid abuse. Every NIH institute and center will also receive enhanced funding to support ongoing basic biomedical and translational research. These efforts will be closely tied to the newly released strategic plan.

A press release accompanying the NIH strategic plan noted that it had been developed after hearing from hundreds of stakeholders and scientific advisers. In collaboration with leadership and staff of NIH's Institutes, Centers, and Offices (ICOs), the plan is designed to complement the ICOs' individual strategic plans, which are aligned with their congressionally mandated missions. "Scientific and technological breakthroughs that have arisen from NIH-supported research account for many of the gains that the United States has seen in health and longevity," said NIH Director Francis S. Collins, MD, PhD. "But much remains to be done. This strategic plan will guide our efforts to turn scientific discoveries into better health, while upholding our responsibility to be wise stewards of the resources provided by the American people."

The plan focuses on 4 essential and interdependent objectives that will "help guide NIH's priorities over the next 5 years as it pursues its mission of seeking fundamental knowledge about the nature and behavior of living systems and applying that knowledge to enhance health, lengthen life, and reduce illness and disability." These objectives include:

- (1) Advancing opportunities in biomedical research in fundamental science, treatment and cures, and health promotion and disease prevention;
- (2) Fostering innovation by setting NIH priorities to enhance nimbleness, consider burden of disease and value of permanently eradicating a disease, and advance research opportunities presented by rare diseases;
- (3) Enhancing scientific stewardship by recruiting and retaining an outstanding biomedical research workforce,

enhancing workforce diversity and impact through partnerships, ensuring rigor and reproducibility, optimizing approaches to inform funding decisions, encouraging innovation, and engaging in proactive risk management practices; and

- (4) Excelling as a federal science agency by refining and developing the "science of science," balancing outputs with outcomes, conducting workforce analyses, continually reviewing peer review, evaluating steps to enhance rigor and reproducibility, reducing administrative burden, and tracking effectiveness of risk management in decision making.

"We are faced with extraordinary opportunities that demand exceptional attention if their promise is to be fully realized. Implementing these objectives will enable the more than 300,000 researchers supported by NIH across the nation and around the world to drive science further and deliver cures faster," said NIH Principal Deputy Director Lawrence A. Tabak, DDS, PhD.

The plan concludes with a vision for NIH, listing specific achievements and advances that the agency will attempt to deliver over the next 5 years. These goals, referred to as "aspirations," include enhanced survival of cancer patients through the application of precision medicine; substantive progress toward a universal flu vaccine; effective, tailored behavioral and social interventions to promote health and prevent illness in populations that experience health disparities; improved clinical outcomes with several drugs; development of a novel HIV vaccine that will confer $\geq 50\%$ protection against the acquisition of HIV; clinical trial identification of common interventions that have no beneficial value; introduction of new structural biology methodologies to revolutionize drug screening and optimization; U.S. Food and Drug Administration approval of therapies for ≥ 12 rare diseases; evidence-based advancement of mobile health technologies in health promotion and disease prevention; development of a wearable biosensor for monitoring blood alcohol levels and evidence for prevention of alcohol-related injury and disease; development of technologies to reverse paralysis and restore some level of normal function in individuals with spinal cord injury; efficacy testing of vaccines against respiratory syncytial virus for treatment of childhood pneumonias; continued research on artificial pancreas development for better management of diabetes; and more rigorous application of the scientific method by NIH and its funded projects to better support and advance biomedical research.

NIH-Wide Strategic Plan, Fiscal Years 2016–2020: Turning Discovery Into Health is available in full at www.nih.gov/sites/default/files/about-nih/strategic-plan-fy2016-2020-508.pdf.