NIH Announces Translational Sciences Institute

The National Institutes of Health (NIH) announced on December 23 its intention to establish a National Center for Advancing Translational Sciences (NCATS) to "re-engineer the process of translating scientific discoveries into new drugs, diagnostics, and devices." The action was made possible by Congressional approval of a fiscal year 2012 spending bill and President Obama's signing of the bill, which included $30.7 billion overall for NIH and a budget of $575 million for NCATS. NCATS is intended to serve as the nation's hub for innovations in translational science, working with partners in the regulatory, academic, nonprofit, and private sectors to identify and overcome hurdles that slow development of effective treatments and cures.

"Congressional support for the NCATS marks a major milestone in mobilizing the community effort required to revolutionize the science of translation," said NIH Director Francis S. Collins, MD, PhD. "Patients suffering from debilitating and life-threatening diseases do not have the luxury to wait the 13 y it currently takes to translate new scientific discoveries into treatments that could save or improve the quality of their lives. The entire community must work together to forge a new paradigm, and NCATS aims to catalyze this effort."

One example cited by NIH of the types of innovative projects that will be led by NCATS is a new partnership led by NIH, the Defense Advanced Research Projects Agency, and the U.S. Food and Drug Administration (FDA) to develop cutting-edge chip technology. This technology will allow researchers to screen for safe and effective drugs far more quickly and efficiently than is possible with current methods.

To meet the goals of NCATS, NIH is reorganizing a wide range of current preclinical and clinical translational science capabilities within its institutes into an integrated scientific enterprise with new leadership and a new agenda. While the effort to recruit an NCATS director continues, organizational changes and realignment of resources will move forward under the leadership of Acting Director Thomas R. Insel, MD (director of the National Institute of Mental Health), and Acting Deputy Director Kathy Hudson, PhD (deputy director for science, outreach, and policy at NIH). NCATS will include a number of existing and new NIH programs, among them the Bridging Interventional Development Gaps initiative, Clinical and Translational Science Awards, the Cures Acceleration Network, the FDA–NIH Regulatory Science partnership, the Office of Rare Disease Research, the Components of the Molecular Libraries initiative, and the Therapeutics for Rare and Neglected Diseases program.

NCATS will be funded largely by a reallocation of budgets from programs previously located in the NIH Office of the Director, National Human Genome Research Institute, and National Center for Research Resources. NIH sources indicated that the current funding ratio between basic and applied research "will not be disturbed by the establishment of this new center."

The NIH Scientific Management Review Board in December 2010 recommended the creation of a new center dedicated to advancing translational science. This recommendation was followed by a year of intensive feedback from all sectors of translational science through advisory meetings and extensive public consultation. "I am deeply grateful for the expertise and insight provided by the many researchers, industry executives, patients, voluntary organizations, and NIH staff that helped NIH evaluate NCATS' purpose and crystallize its vision," said Collins.

National Institutes of Health

Women in Medical Device Studies

The U.S. Food and Drug Administration (FDA) released on December 16 draft guidance aimed at addressing the "historic underrepresentation of women in clinical studies." Intended for medical device developers and manufacturers, the guidance outlines agency recommendations for designing and conducting device clinical studies that may enhance the enrollment of women in such studies, when appropriate. "The FDA recommends that investigators and manufacturers strive to enroll representative proportions of both women and men in their device studies," said Jeffrey Shuren, MD, director of the FDA Center for Devices and Radiological Health. "Our draft guidance outlines what we recommend for obtaining and improving the quality and consistency of sex-specific data on devices."

An FDA press release accompanying the guidance noted that some medical products may elicit different responses in women and men, resulting from differences in genetics, hormones, body size, diet, and sociocultural issues. In addition, certain sex-specific variables, such as size or certain illnesses, may be responsible for differences between men and women in the safety and effectiveness of medical devices. A 2001 report by the U.S. Government Accountability Office on FDA-reviewed drug studies found that although women represented 52% of study enrollees, 30% of study documents did not report outcomes by sex and nearly 40% did not report enrollment demographics. A 2009 study of cardiovascular device premarket applications showed that pivotal studies that reported sex enrolled an average of 33.9% women.

The FDA draft guidance addresses study and evaluation of sex differences, data analysis, and reporting in both pre- and postmarket device clinical studies. In addition, it covers issues regarding statistical analyses of sex differences

and appropriate methods for reporting sex-specific information in summaries and labeling for approved devices. Devices intended for single-sex use would not be expected to address potential sex differences.

The FDA is seeking input on this draft guidance during a 90-d public comment period extending to mid-March 2012. The draft guidance can be found at: www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm283453.htm.

U.S. Food and Drug Administration

AAPM and Medical Radiation Risk

The American Association of Physicists in Medicine (AAPM) on December 13 released a brief statement endorsing current efforts to deliver diagnostic radiation at the lowest appropriate doses but cautioning against overly dramatic estimates about potential long-term sequelae from routine medical imaging procedures. The statement noted in part that "discussion of risks related to radiation dose from medical imaging procedures should be accompanied by acknowledgement of the benefits of the procedures" and cautioned that the "risks of medical imaging at effective doses below 50 mSv for single procedures or 100 mSv for multiple procedures over short time periods are too low to be detectable and may be nonexistent." In what amounted to a condemnation of authors who have released widely publicized articles in the past decade based on the linear–no threshold theory and extrapolating predictions of a certain percentage of cancer deaths as inevitable from currently used levels of CT exposure, the AAPM statement warned: "Predictions of hypothetical cancer incidence and deaths in patient populations exposed to such low doses are highly speculative and should be discouraged. These predictions are harmful because they lead to sensationalistic articles in the public media that cause some patients and parents to refuse medical imaging procedures, placing them at substantial risk by not receiving the clinical benefits of the prescribed procedures."

American Association of Physicists in Medicine

New Research Facility at Fermilab

On December 16, the U.S. Department of Energy (DOE) broke ground for a new accelerator research facility at the Fermi National Accelerator Laboratory (Fermilab) in Batavia, IL. Supported jointly by the state of Illinois and DOE, the construction of the Illinois Accelerator Research Center (IARC) will provide a state-of-the-art facility for research, development, and industrialization of particle accelerator technology. DOE's Office of Science Director William Brinkman participated in the groundbreaking ceremony.

IARC will house 42,000 sf of technical, office, and educational space for scientists and engineers from Fermilab, DOE's Argonne National Laboratory, local universities, and industrial partners. A major focus of the facility is to develop partnerships with private industry for the commercial and industrial application of accelerator technology for energy and the environment, medicine, industry, national security, and discovery science. IARC will also offer unique advanced educational opportunities to a new generation of engineers and scientists. DOE is providing $13 million to Fermilab to refurbish an existing heavy industrial building that will be incorporated into the complex, adding 36,000 sf of specialized work space. More information is available at: www.fnal.gov/pub/IARC.

U.S. Department of Energy

DOE Commercialization Initiative

The U.S. Department of Energy (DOE) announced on December 8 a new pilot initiative to reduce hurdles that prevent innovative companies from working with DOE national laboratories. The new Agreements for Commercializing Technology (ACT) will help businesses bring technologies to the market faster by allowing them to work with the national laboratories from startup to development and commercialization. "To compete in the 21st-century global economy, we need to make it easier for businesses to move great ideas from the drawing board to the marketplace," said DOE Deputy Secretary Daniel Poneman. "The ACT will cut red tape for businesses and start-ups interested in working with our nation's crown jewels of innovation, the national laboratories, and strengthen new domestic industries by helping bring innovative, job-creating technologies to the market faster."

The DOE was expected to announce in January the laboratories selected to participate in the pilot. The initiative is designed to remove barriers for businesses and startup companies interested in accessing the research, facilities, and scientists available at the national laboratories. In October 2011, President Obama issued a memorandum to executive departments and agencies directing those with federal laboratories to accelerate technology transfer and commercialization of research and to take steps to increase partnerships between businesses and laboratories. DOE's laboratories have a long tradition of working with businesses and academia on scientific research and technology development efforts, and these have generated advances, spawned new businesses, and supported the creation of new industries. The ACT authorize: (1) a more flexible framework for negotiation of intellectual property rights to facilitate technology transfer; (2) contractors operating national laboratories to partner with businesses using terms that are better aligned with industry practice, attracting more private investment; and (3) national laboratories to participate in groups formed to address complex technological challenges that are of mutual interest. A frequently asked questions document on the ACT is available at: http://technologytransfer.energy.gov/ACTpilotFAQ.html.

U.S. Department of Energy

Deadline Extended for PET Radiopharmaceuticals

On December 6, the U.S. Food and Drug Administration (FDA) issued a 6-mo extension to the deadline by

which all Abbreviated New Drug Applications (ANDAs) and New Drug Applications (NDAs) for PET drugs must be filed. FDA had received requests to extend the application submission deadline from and on behalf of some PET drug producers trying to comply with new regulation and application submission requirements. Concern was expressed that if manufacturers were unable to submit their applications by the original date of December 12, 2011, they would have to halt production of PET drugs for use in clinical care of patients. Moreover, although FDA did not anticipate any shortages of PET drugs after the December 12 date, there was concern that sole producers in isolated areas might halt production if their applications had not been submitted, creating barriers to access. For those reasons and because the FDA had yet to issue the 2 instructive guidances for PET drug producers (Investigational New Drug Applications for PET Drugs and FDA Regulation of PET Drug Products, Questions and Answers) then under development, the agency decided to "exercise enforcement discretion" until June 12, 2012.

An FDA press release detailed the terms of this extension: (1) The agency does not intend to take enforcement action against a PET facility currently producing PET drugs for clinical use for a failure to submit a new drug application by December 12, 2011, provided that the facility complies with all other FDA requirements, including current good manufacturing practices. (2) FDA will not exercise enforcement discretion after June 12, 2012. Therefore, if a facility wishes to continue to produce PET drugs for clinical use after June 12, 2012, it must have submitted an NDA or an ANDA by that date or be producing the drugs under an investigational new drug exemption (IND). PET producers who are unable to submit an NDA or ANDA by June 12, 2012 or operate under an IND must find a new supplier who has submitted an NDA or ANDA. All PET producers must be operating under an approved NDA or ANDA, or effective IND, by December 12, 2015.

Additional information is available on the FDA Web site at: www.fda.gov/Drugs/DevelopmentApprovalProcess/Manufacturing/ucm085783.htm

SNM

IOM Report on Research Chimps

On December 15 the Institute of Medicine (IOM) of the National Academies and the National Research Council released a report recommending stringent limits on use of chimpanzees in biomedical and behavioral research. The study, *Chimpanzees in Biomedical and Behavioral Research*, was mandated by Congress and supported by the National Institutes of Health (NIH). The report concluded that because chimpanzees are so closely related to humans and share similar behavioral traits, NIH should "allow their use as subjects in biomedical research only under stringent conditions, including the absence of any other suitable model and inability to ethically perform the research on people." In addition, the report recommended that use of chimpanzees should be permissible only if forgoing such use "will prevent or significantly hinder advances necessary to prevent or treat life-threatening or debilitating conditions." Based on these criteria, the report's authors noted, chimpanzees are not necessary for most biomedical research.

The report also advised that NIH should limit use of chimpanzees in behavioral research to studies that provide "otherwise unattainable insights into normal and abnormal behavior, mental health, emotion, or cognition." Moreover, these studies should be performed "only on acquiescent animals using techniques that are minimally invasive and are applied in a manner that minimizes pain and distress." Animals used in either biomedical or behavioral studies also "must be maintained in appropriate physical and social environments or in natural habitats."

Advances in the development of other research tools and methods, including cell-based tests and other animal models, have rendered chimpanzees largely nonessential as research subjects, the authors noted. Two possible ongoing uses discussed in some detail were development of a limited number of monoclonal antibody therapies already in the pipeline and development of a vaccine that would prevent infection by hepatitis C virus.

On December 15, NIH Director Francis S. Collins, MD, PhD, released a formal response to the IOM report, acknowledging its findings and recommendations. "I have considered the report carefully and have decided to accept the IOM committee recommendations," he said. "NIH is in the process of developing a complete plan for implementation of the IOM's guiding principles and criteria. I will be assembling a working group within the NIH Council of Councils to provide advice on the implementation of the recommendations and to consider the size and placement of the active and inactive populations of NIH-owned or -supported chimpanzees." No new awards for research involving chimpanzees will be made until processes for implementing the recommendations are in place.

Institute of Medicine
National Institutes of Health