

ANNUAL REPORT

2015



NATIONAL ACADEMY OF MEDICINE

Leadership • Innovation • Impact | *for a healthier future*

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Our Vision: **Welcome from** **the President**

A photograph of Victor J. Dzau, MD, speaking at a wooden podium. He is an older man with white hair and glasses, wearing a dark suit, white shirt, and blue patterned tie. He is smiling and looking slightly to the right. The background is a wood-paneled wall. A teal triangle is visible on the left side of the image.

Victor J. Dzau, MD
President, National Academy of Medicine

Dear Friends,

Welcome to the first annual report of the new National Academy of Medicine (NAM)! It has been a very unusual year—and a truly historic one. For the first half of 2015, we were still the Institute of Medicine. On July 1, we became the National Academy of Medicine, a momentous achievement that reflects the high distinction of our members and acknowledges our important contributions to science, health, and policy in the 45 years since our founding. This is not only a name change but an organizational realignment that positions us for greater leadership and deeper impact than ever before.

We are now a full academy alongside the National Academy of Sciences (NAS) and the National Academy of Engineering, overseeing the work of seven program divisions that produce rigorous, evidence-based guidance in matters of science, technology, and health (see pages 5-6 for our past and current organizational charts). This reorganization facilitates more efficient collaboration and enhances the Academies' collective response to complex and cross-cutting issues. In our rapidly evolving world, we cannot work effectively in silos. I look forward to seeing what we can accomplish by working together in new and innovative ways.

Our reconstitution as the NAM provides an occasion for us to re-examine our vision and our mission. Not only must we assess and advise on the state of the science and evidence, we must marshal that knowledge on behalf of *leadership, innovation, and impact for a healthier future*. We must *lead* the health and medical community by identifying the most urgent priorities, and we must continue to be a trusted voice guiding policy and practice in the United States and worldwide. We must also *innovate*, developing new solutions and seeking new partners to respond quickly to emerging challenges. And all that we do must be with a commitment to *impact*—our foremost goal is to shape policy, advance science, cultivate leadership, and, ultimately, improve human health. See page 11 for examples of our impact in 2015.

Our achievements and goals for the future are reflected in the groundbreaking achievements of our members, as well as in our programmatic activities. For example, the NAM's Leadership Consortium (formerly called "Roundtable") for Value & Science-Driven Health Care convenes senior leaders and innovators to advance progress toward a continuously learning health system. Our Health Policy Educational Programs and Fellowships, which launched in 1973, nurture the next generation of health and medical leaders by immersing them in health policy and administration at the national level. And one of our newest programs, Innovation to Incubation (i2I), uses staff enrichment, strategic support, networking, and targeted communications to increase the impact of Academies reports and activities.

We have also launched several novel initiatives aligned with our strategic vision. Consistent with our commitment to lead by identifying urgent priorities and guiding policy and practice, the Human Gene Editing initiative, a joint effort of the NAM and the NAS, was developed in response to a critical need for ethical, scientific, and regulatory boundaries in a controversial and rapidly developing field. In December 2015, we co-hosted with the Royal Society and the Chinese Academy of Sciences a groundbreaking international summit to examine the issue, attended by experts from 20 nations. A consensus study is now under way to provide a framework of fundamental scientific, medical, and ethical principles for human gene editing research.

In another example of leadership and impact, the NAM worked quickly to convene experts and develop recommendations for a more efficient global response to infectious disease threats after the Ebola outbreak in West Africa. We convened an independent Commission on a Global Health Risk Framework for the Future, consisting of 17 international members with diverse expertise in finance, governance, R&D, health systems, and the social sciences. To inform their work, we hosted 11 days of information-gathering workshops across 4 continents and considered comments from more than 250 stakeholders. The Commission's report, *The Neglected Dimension of Global Security: A Framework to Counter Infectious Disease Crises*, was published on January 13, 2016, and has already been influential in high-level conversations about reforms to the World Health Organization and the United Nations and in setting the agenda for the G7 Summit for world leaders, to be held in Japan in May 2016.

We are also leading efforts to guide future health policy and practice. With the next U.S. presidential election only months away, there is no better time for the NAM to lead policy discussions by identifying the most urgent priorities in health and health care and offering independent, nonpolitical, evidence-based recommendations for the next administration. Through a multi-pronged strategy of expert publications, media outreach, public engagement activities, and relationship building, the Vital Directions for Health and Health Care initiative will build consensus among policy makers and health experts to inform policy and practice for the future.

Implicit in all of these examples is a proactive and impact-oriented new stance for our organization. We cannot limit our work to activities commissioned by outside parties, although such relationships remain a large part of the Academies' service. Instead, we must ourselves identify the areas of greatest need and be the engine driving their solutions. Of course, to be a proactive and nimble organization, we require the development of adequate, ongoing internal resources. The NAM is an independent, nonprofit organization whose work is supported by its members and other generous individuals, foundations, businesses, government, and other organizations. We need your support to realize our vision, and I welcome opportunities to collaborate.

As you can see, 2015 was a pivotal and exciting year for our organization. I hope that, in many ways, 2016 will be even more important. We have never been in a better position to impact the future of health and medicine.

Warm regards,

A handwritten signature in dark ink, appearing to read "Victor J. Dzau". The signature is fluid and cursive, with the first name "Victor" being more prominent.

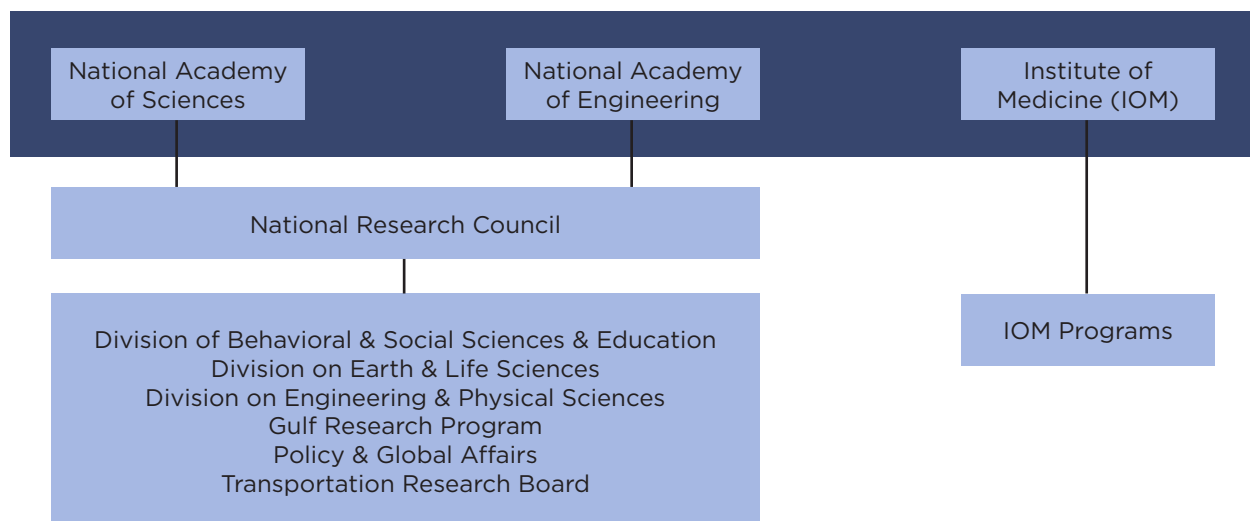
Victor J. Dzau, MD
President, National Academy of Medicine

About This Report

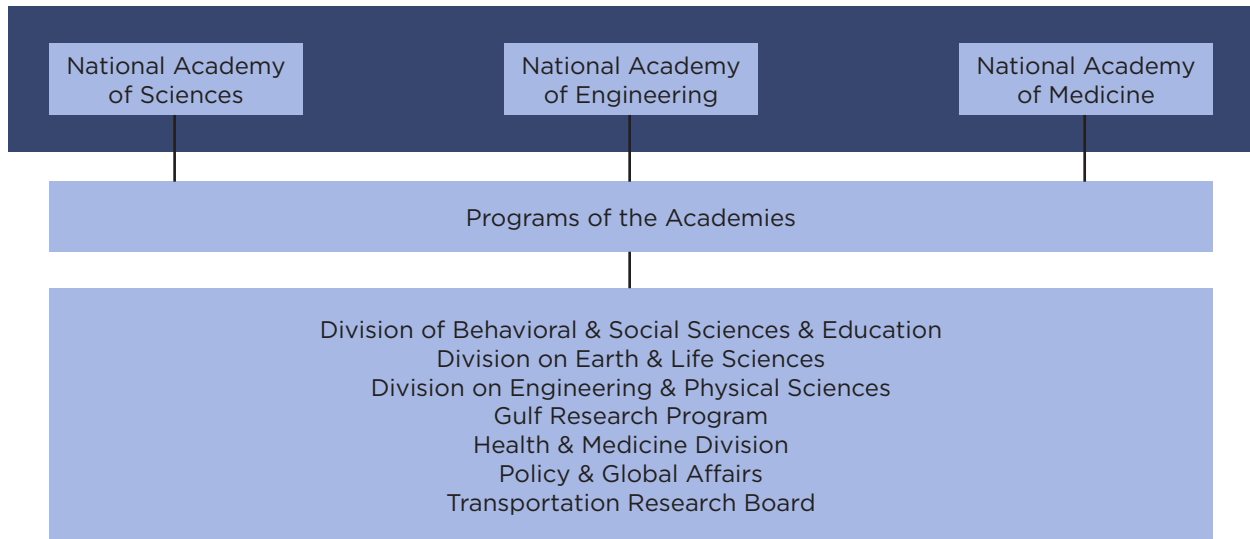
On July 1, 2015, the Institute of Medicine (IOM) became the National Academy of Medicine (NAM). At the same time, many of its program activities were moved into a new program division called the Health and Medicine Division (HMD) of the National Academies of Sciences, Engineering, and Medicine (for short, “the Academies”). See the pre- and post-restructuring organizational charts below.

Because the reorganization happened midway through 2015, this report contains information about both the NAM and the HMD. Although 12 months of information is provided for both, it is important to note that, since July 1, 2015, the NAM and the HMD have been operationally separate. Focus is given in this report to the programs and initiatives of the NAM.

National Academies of Sciences, Engineering, and Medicine Former Structure (pre-July 1, 2015)



National Academies of Sciences, Engineering, and Medicine
New Permanent Structure



NAM Leadership



Victor J. Dzau, M.D., is President of the National Academy of Medicine, Chairman of the NAM Council, and Chair of the Health and Medicine Division of the National Academies of Sciences, Engineering, and Medicine. He served as Chancellor for Health Affairs and James B. Duke Professor of Medicine at Duke University and the President and CEO of Duke University Health System. Dr. Dzau was the Hersey Professor of Theory and Practice of Medicine and Chairman of Medicine at Harvard Medical School's Brigham and Women's Hospital and previously the Chairman of the Department of Medicine at Stanford University.



J. Michael McGinnis, M.D., M.A., M.P.P., is Leonard D. Schaeffer Executive Officer for the NAM. In this role, he serves as the chief operating officer and is responsible for managing the NAM's programs and guiding its operations on a daily basis. He is also the Executive Director of the NAM's Leadership Consortium for Value & Science-Driven Health Care. The Consortium stewards the nationally recognized Learning Health System Initiative, a program of collaborative action and publications dedicated to aligning science, informatics, incentives, and culture for continuous improvement and innovation in health.

2015–2016 Council



Nancy E. Adler, Ph.D.
Professor of Medical Psychology, and
Director, Center for Health and
Community, University of California,
San Francisco



Ellen Wright Clayton, M.D., J.D.
Craig-Weaver Professor of Pediatrics,
Professor of Law, and Co-Founder,
Center for Biomedical Ethics and Society,
Vanderbilt University



Nancy Andrews, Ph.D., M.D.
Vice Chancellor and Dean,
Duke University School of Medicine



Angela Diaz, M.D., M.P.H.
Jean C. and James W. Crystal Professor of
Adolescent Health, Department of
Pediatrics and Department of Preventive
Medicine, Mount Sinai School of Medicine



Sheila P. Burke, M.P.A., R.N.
Faculty Research Fellow, Malcolm
Weiner Center for Social Policy,
John F. Kennedy School of Government,
Harvard University



Jack E. Dixon, Ph.D.
Associate Vice Chancellor, Science Affairs,
and Distinguished Professor, Department
of Pharmacology, University of California,
San Diego



R. Alta Charo, J.D.
Warren P. Knowles Professor of Law
and Bioethics, School of Law, and
Department of Medical History and
Bioethics, School of Medicine and Public
Health, University of Wisconsin-Madison



Mark C. Fishman, M.D.
President, Novartis Institutes for
Biomedical Research

2015–2016 Council (cont.)



Elaine Fuchs, Ph.D.

Investigator, Howard Hughes Medical Institute; and Laboratory Head of Mammalian Cell Biology and Development, The Rockefeller University



Gilbert Omenn, M.D., Ph.D.

Professor of Computational Medicine and Bioinformatics, Internal Medicine, Human Genetics, and Public Health, University of Michigan



Lynn R. Goldman, M.D., M.P.H.

Dean, School of Public Health and Health Services, and Professor, Environmental and Occupational Health, The George Washington University



E. Albert Reece, M.B.A., M.D., Ph.D.

Vice President for Medical Affairs, University of Maryland; and John Z. and Akiko K. Bowers Distinguished Professor and Dean, University of Maryland School of Medicine



Diane E. Griffin, M.D., Ph.D.

Distinguished University Service Professor, Johns Hopkins Bloomberg School of Public Health



William W. Stead, M.D.

Associate Vice Chancellor for Health Affairs; Chief Strategy Officer; and McKesson Foundation Professor of Biomedical Informatics & Medicine, Vanderbilt University Medical Center



H. Robert Horvitz, Ph.D.

Investigator, Howard Hughes Medical Institute; and Professor of Biology, Massachusetts Institute of Technology



Tadataka Yamada, M.D.

Vice Chair, NAM Council; and Venture Partner, Frazier Healthcare Partners



Steven E. Hyman, M.D.

Harvard University Distinguished Service Professor; and Director, Stanley Center for Psychiatric Research, Broad Institute of MIT and Harvard



Keith R. Yamamoto, Ph.D.

Vice Chancellor for Science Policy and Strategy; Vice Dean for Research, School of Medicine; and Professor, Cellular & Molecular Pharmacology; University of California, San Francisco



Arthur L. Kellerman, M.D., M.P.H.

Professor and Dean, F. Edward Hebert School of Medicine, Uniformed Services University of the Health Sciences



NAM FOREIGN SECRETARY

Margaret A. (Peggy) Hamburg, M.D.

Former Commissioner of Food and Drugs, U.S. Food and Drug Administration



Raynard Kington, M.D., Ph.D.

President, Grinnell College



NAM HOME SECRETARY

Jane E. Henney, M.D.

Former Commissioner of Food and Drugs, U.S. Food and Drug Administration

NAM Organizational Chart

President Victor J. Dzau <i>Chief of Staff: Morgan Kanarek</i>	Home Secretary Jane E. Henney	Foreign Secretary Margaret A. Hamburg
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Executive Office

Leonard D. Schaeffer Executive Officer J. Michael McGinnis
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Communications Laura DeStefano <i>Associate Director</i>	Council and Membership Services Judith Shamir <i>Director</i>	Development Julie Ische <i>Director</i>	Finance and Administration Vacant <i>Director</i>
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Programs

Leadership Consortium for Value & Science-Driven Health Care J. Michael McGinnis <i>Executive Director</i>	Health Policy Educational Programs and Fellowships Marie Michnich <i>Director</i>	Innovation to Incubation Kimber Bogard <i>Director</i>
Lienhard, Sarnat, Member, and Cecil Awards	Perspectives	Rosenthal Symposium
DC Public Health Case Challenge	A Culture of Health	

Initiatives	
Global Health Risk Framework Vital Directions for Health and Health Care Human Gene Editing (<i>with the National Academy of Sciences</i>)	Grand Challenges in Health and Medicine Improving End-of-Life Care



Our Impact in 2015

Of the three values in the NAM's statement of guiding principles—*leadership, innovation, and impact for a healthier future*—none is more important than impact. By providing independent, evidence-based advice and convening leaders to drive action around key priorities, we strive to make a difference in policy, care delivery, science, and medicine worldwide—and, ultimately, to improve human health. Here are just a few of the ways we made a difference in 2015.

Measuring Our Impact

NAM programs, as well as consensus reports and other Academies activities related to health and medicine, have reverberating impacts across science, policy, and practice worldwide. We characterize the impact of our studies and convening activities according to five tiers: (1) “effecting change” by improving health outcomes or changing laws and policies; (2) “inspiring action,” or causing legislation to be introduced and advocacy or research initiatives to be launched; (3) “informing the field” through educational efforts, professional meetings, or congressional hearings; (4) “receiving recognition” in the form of a formal response from a named actor; and (5) “spreading the message” through noteworthy media coverage. In the pages that follow, we share a few examples of achievements in these categories during the past year.

Meeting Global Challenges



Scientists from around the world gather for the International Summit on Human Gene Editing, December 1-3, 2015, in Washington, DC

Human Gene Editing

The International Summit on Human Gene Editing, co-hosted by the National Academy of Sciences, the National Academy of Medicine, the United Kingdom's Royal Society, and the Chinese Academy of Sciences, was attended by more than 500 people, including experts from 20 nations, and drew more than 3,000 viewers from 71 countries on the live webcast. The Summit marked the first time nations gathered to discuss recent developments in human gene editing technologies and explore the complex ethical and regulatory issues they raise.

The event was covered extensively by leading media outlets worldwide, many of which hailed it as a historic gathering on the scale of the 1975 Asilomar Conference on Recombinant DNA. A *New York Times* article noted that the Academies' "moral authority on this issue seems very likely to be accepted by scientists in most or all countries."

The Summit's organizing committee, chaired by David Baltimore, released a statement of conclusions at the close of the event calling for clinical research to proceed with caution under specified circumstances. The presidents of the four hosting organizations also announced that they "stand ready to establish a continuing forum for the assessment of the many scientific, medical, and ethical questions surrounding the pursuit of human gene-editing applications."

The NAS/NAM Human Gene Editing Initiative will continue with a consensus study, due to be published in late 2016, that provides a framework of fundamental scientific, medical, and ethical principles that can be adapted by any nation pursuing this research.

A Global Health Risk Framework for the Future

In Spring 2015, NAM president Victor J. Dzau and World Bank Group president Jim Yong Kim met to discuss the state of the global response to the then-ongoing Ebola outbreak in West Africa. Both agreed that an expert assessment was needed to identify shortcomings and make recommendations for improvement. To meet this need, the NAM convened the independent Commission on a Global Health Risk Framework for the Future, consisting of 17 international members with diverse expertise in finance, governance, R&D, health systems, and the social sciences. To inform the Commission's deliberations, the Academies hosted 11 days of information-gathering workshops across 4 continents and received input from more than 250 experts and stakeholders.

The Commission's report, *The Neglected Dimension of Global Security: A Framework to Counter Infectious Disease Crises*, was published in January 2016 and garnered widespread coverage in the international media. The report frames pandemic preparedness as a fundamental tenet of global security and recommends an annual investment of \$4.5 billion to strengthen national public health systems, improve global response coordination and capabilities, and accelerate R&D. The report was discussed at the World Economic Forum's annual meeting and presented to the World Health Organization's Executive Board. Planning is under way for promotion at the World Health Assembly, G7, G20, and other international meetings.



Advancing Population Health



Reconsidering the Minimum Age to Purchase Tobacco

The Tobacco to 21 Act (S. 2100) was introduced in the Senate, with companion legislation in the House, to prohibit the sale or distribution of tobacco products to individuals under the age of 21. The bill cites three recommendations from the recent report *Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products*. The report notes that raising the minimum age for tobacco purchase to 21 would result in 223,000 fewer premature deaths, 50,000 fewer deaths from lung cancer, and 4.2 million fewer years of life lost for people born between 2000 and 2019; reduce tobacco initiation, particularly among youth aged 15 to 17 years old; and lead to a 12 percent reduction in smoking prevalence.

Farewell to Partially Hydrogenated Oils

In June 2015, the U.S. Food and Drug Administration (FDA) ruled that partially hydrogenated oils (PHOs), the primary dietary source of artificial *trans* fat in processed foods, are not safe for human consumption and required manufacturers to entirely remove PHOs from products within 3 years. The FDA cited the landmark report *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids* in its announcement of the new ruling.

Healthier Foods in Schools

The U.S. Department of Agriculture (USDA) is awarding more than \$8 million in grants to support healthier foods in schools and child care centers. As part of the Healthy, Hunger-Free Kids Act, students have eaten healthier breakfasts, lunches, and snacks at school since 2012. The grants will add to resources that USDA provides to help schools serve healthier food options that meet updated nutrition standards. More than 95 percent of schools report that they are successfully meeting those nutrition standards, which were based on Academies recommendations.

New Vital Signs for Health

Central to the growing demand for streamlining, harmonizing, and aligning measurement to the issues that matter most in health and health care is the 2015 report *Vital Signs: Core Metrics for Health and Health Care Progress*. The report calls for a small, standardized set of measures that better reflect the system's record in meeting its potential to improve health and health care. Measurement requirements have grown exponentially in recent years, with a paradoxical result: the expanded investment (and burden) of health measurement has blurred the focus on system performance. The number of measures—in addition to their inconsistent and often incompatible characteristics—undermines their utility. *Vital Signs* recommends a set of 15 core measures to be gathered at national, state, local and institutional levels in four domains: healthy people, quality care, better value, and engaged people. The report also recommends a process to refine, implement, and revise the measures over time. Many key stakeholders have pledged their support for the report, including the American Medical Association, the National Governors Association, the American Public Health Association, and the National Quality Forum.

Protecting Brain Health

The President's Budget for Fiscal Year 2016 allocates \$5 million to fund research into sports-related brain injuries in youth. Furthermore, a House bill (H.R. 1271) was introduced to provide for systemic research, treatment, prevention, awareness, and dissemination of information about sports-related concussions. Both actions responded to recommendations from a 2013 Academies report.

#1 Most Notable Medical Finding of 2015

The *New Yorker* named the importance of CPR outside the hospital setting as the most notable medical finding of 2015. This finding was highlighted in the 2015 report *Strategies to Improve Cardiac Arrest Survival: A Time to Act*, which found that less than 3 percent of the U.S. public receives CPR training annually.

Shaping Health & Science **Policy**



Chimpanzees in Biomedical and Behavioral Research

After an Academies report found that there is a decreasing scientific need for the use of chimpanzees in biomedical and behavioral research, the U.S. Fish and Wildlife Service ruled in June 2015 that all chimpanzees, both wild and captive, are endangered under the Endangered Species Act. Previously, captive chimpanzees had been excluded to allow the National Institutes of Health (NIH) to carry out research. In November, the NIH announced that it is ceasing its chimpanzee research program altogether. Animals currently owned by the NIH will be retired to sanctuaries.

Understanding Myalgic Encephalomyelitis/Chronic Fatigue Syndrome

The NIH will undertake a multi-institute research effort to improve diagnosis and treatment for Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS), a disease estimated to affect up to 2.5 million Americans. The NIH's efforts are guided by a 2015 report that found that many care providers misunderstand or lack awareness about managing the disease—a knowledge gap that leads to delayed diagnoses and ineffective care. The report recommended new diagnostic criteria and a more precise name for the illness: systemic exertion intolerance disease, or SEID.

Health and Well-Being of Sexual Minorities

The NIH recently announced its “Strategic Plan to Advance Research on the Health and Wellbeing of Sexual and Gender Minorities,” which will provide the agency with a framework for progress in this area and lay a foundation for improved health and well-being among these groups, whose health needs have not traditionally received strong attention from the research community. The plan draws on recommendations from the 2011 report *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding*.

Restore the U.S. Lead in Biomedical Research

Former and current NAM presidents Harvey V. Fineberg and Victor J. Dzau published a joint call in the *Journal of the American Medical Association* to restore the U.S. lead in biomedical research. Fineberg and Dzau warned that the United States' position as a global leader in biomedical research is being undermined as other countries outpace the U.S. commitment to research. Their statement called for increased research funding and more robust alternatives to traditional research funding mechanisms.

Health Policy Retreats for State Governors

In collaboration with the National Governors Association (NGA) and the Peterson Center on Healthcare, the National Academy of Medicine facilitated governors' retreats in five states—Alabama, Pennsylvania, Tennessee, Virginia, and Wisconsin. The sessions engaged key state stakeholders in cooperative discussions and action plans on the most compelling health and health care transformation challenges faced. An NGA-wide session was held in Utah to consider common themes and opportunities related to data-driven health care; linking physical and behavioral health; combatting heroin and opiate abuse; rural health and workforce planning; and delivery system transformation and payment reform. Growing out of the conversations, NGA has developed and is implementing a toolkit to help states address these issues.

Improving Care Quality & Value



Nurses test the NAM's soon-to-be-released community toolkit for end-of-life conversations.

Support for End-of-Life Care Conversations

Under a new rule announced by the Centers for Medicare & Medicaid Services (CMS), health care providers will be paid to counsel Medicare patients about end-of-life decisions—a service not previously reimbursable for Medicare’s approximately 50 million beneficiaries. The ruling cites the 2014 report *Dying in America: Improving Quality and Honoring Individual Preferences Near the End of Life*, which found that most people nearing the end of life do not discuss their values, goals, and preferences with care providers—often leading to care that is not person-centered, family-oriented, or life-improving. The report recommended systemic changes to support clinicians in leading these important conversations with patients and their families. The new rule went into effect on January 1, 2016.

Scope of Practice for Nurse Practitioners

California Senate bill 323 would grant appropriately trained nurse practitioners “full practice authority” without supervision from a physician. The bill reads, in part, that “due to the excellent safety and efficacy record that nurse practitioners have earned, the Institute of Medicine of the National Academies has recommended full practice authority for nurse practitioners.”

Assessing the Value of Cancer Treatment Options

The American Society of Clinical Oncology released a “Framework to Assess the Value of Cancer Treatment Options,” drawing on recommendations from three Academies reports, to assess the value of new cancer therapies according to clinical benefit, safety, and cost. Once finalized and adapted for clinical use, the tool will allow clinicians to tailor an assessment of value to each individual patient’s health preferences and financial situation.

Price Transparency for Medical Services

An Oregon Senate bill seeking price transparency for medical services cites the 2012 report *Best Care at Lower Cost: The Path to Continuously Learning Health Care in America*. The bill would require licensed health care providers in Oregon to post on their websites, and in their facilities, charges for their most common health care services. Licensed health care providers would also have to provide cost estimates to prospective patients on request.

Learning Health System

For nearly a decade, the NAM has been exploring and catalyzing ways to accelerate the development and application of the evidence essential for better health and health care. Progress in technology, research tools, care models, and stakeholder engagement make possible the vision of a continuous learning health system—one in which science, informatics, incentives, and culture are aligned for continuous evaluation, improvement, and innovation of care. Working through the NAM’s Leadership Consortium for Value & Science-Driven Health Care and its Innovation Collaboratives, the NAM has fostered field attention to the notion, possibilities, and strategies for the learning health system. The program has also stimulated and partnered in initiatives of public and private organizations to implement research studies that dramatically reduce time to achieve results, streamline regulatory processes to allow more real-time evidence generation, build capacity for inter-institutional cooperative research networks, identify and share best practices in high value care, and create accelerated learning networks for health care organizations, as well as for their patient and family partners. The coming year will see additional work to set the stage for accelerated progress in the application of clinical decision support tools, spread of knowledge on the effectiveness of person- and family-engaged care, and efforts to reduce the burden of health measurement by streamlining and sharpening its focus.

Building Leaders



Fellows address the NAM membership
at the 2015 Annual Meeting.

Rebekah Gee Named Secretary of Louisiana Department of Health and Hospitals

Louisiana Governor John Bel Edwards named Dr. Rebekah Gee, the NAM's inaugural Norman F. Gant/American Board of Obstetrics and Gynecology (ABOG) Fellow, as Secretary of the Louisiana Department of Health and Hospitals.

In her new role, she will oversee the expansion of Louisiana's Medicaid program—a move that will extend health insurance to as many as 300,000 of Louisiana's working poor.

In remarks following her appointment, Gee pledged to use her skills as a physician, patient, parent, and policy maker to do everything she can to improve the lives and health of people in Louisiana.

In her role as inaugural Gant/ABOG Fellow, Gee served on national committees for women's health research and preventive services for women. She also actively contributed to the development of national reports and recommendations on women's health. Gee currently serves as a member of the Academies' Board on Health Care Services. Previously, Gee served as medical director for Louisiana's Medicaid program.

prevention in her new position as a clinical professor at the New York University College of Nursing. Suzanne Bakken, the 2015-16 Nurse Scholar, is working on a Culture of Health consensus study.

The eight active **NAM Anniversary Fellows** had various placements within the Academies, contributing to consensus reports on recommended social and behavioral domains in the electronic health record, supporting parents with young children, and responsible sharing of clinical trial data; an *American Journal of Preventive Medicine* commentary; and a workshop on Cancer Prevention in Low-Resource Areas, among other activities.

The 2014-15 class of the **FDA Tobacco Regulatory Science Fellows** contributed to the Food and Drug Administration's Center for Tobacco Products (CTP) in the areas of compliance and enforcement, policy, regulations, science, and health communication and education. Their activities included providing key research for the evaluation of the CTP mass media campaigns and presenting at an FDA lecture series.

Fellows Activities in 2015

Robert Wood Johnson Foundation (RWJF) Health Policy Fellows were central contributors to health and health care reform legislation, working in both the executive and legislative branches through three Democratic, two Republican, and two Executive assignments. All worked in areas of great significance to the ongoing implementation of the Affordable Care Act and a variety of the most challenging public health issues of our time, including end-of-life issues; military health; sustainable growth rate for physician reimbursement; and the Medicare Access and CHIP Reauthorization Act; as well as medical product research, development, and delivery.

After leaving the NAM, Sally Cohen, the 2014-15 **Distinguished Nurse Scholar-in-Residence**, launched a program of research on bullying

RWJF Health Policy Fellow Kimberlyn Leary was named as 1 of 29 "Powerful Black Women Calling the Shots in the Obama Administration" by *Essence* magazine.



Member Spotlight

The NAM is the world's premier membership organization for those who have dedicated their lives to improving human health. NAM members are the architects of major scientific breakthroughs, policy leaders in the United States and abroad, exceptional care practitioners, and the brightest minds in academia. Our members dedicate their time to serve the mission of the NAM and the Academies.

About Membership in the National Academy of Medicine

The NAM has more than 2,000 members elected in recognition of distinguished professional achievement and commitment to protecting and advancing health through volunteer service in the activities of the NAM and other groups in the Academies. Each year, NAM members elect up to 70 U.S. members and 10 international members to join their ranks from a large pool of exceptional nominees. Election reflects the highest esteem of professional peers in clinical, scientific, and other fields that interface with health and medicine.

Member Achievements in 2015

The **2015 Nobel Prize in Chemistry** “for mechanistic studies of DNA repair” was awarded to Paul Modrich of Howard Hughes Medical Institute and Duke University School of Medicine, a member of the NAM and the NAS. Aziz Sançar and Tomas Lindahl shared the prize.

On December 22, 2015, the White House announced this year’s recipients of the **National Medal of Science** and **National Medal of Technology and Innovation**. These medals are the nation’s highest honors for achievement and leadership in advancing the fields of science and technology. Seven NAM members received their medals from President Barack Obama at the White House on January 22, 2016.

National Medal of Science:

Albert Bandura, Stanford University

Stanley Falkow, Stanford University School of Medicine

Rakesh K. Jain, Harvard Medical School and Massachusetts General Hospital

Mary-Claire King, University of Washington

National Medal of Technology and Innovation:

Joseph DeSimone, University of North Carolina at Chapel Hill, North Carolina State University, and Carbon3D

Mark Humayun, University of Southern California

Cato T. Laurencin, University of Connecticut



Members Elected in 2015

Evan Dale Abel, Carver College of Medicine, University of Iowa

Sudhir Anand, University of Oxford and Harvard T.H. Chan School of Public Health

Christopher P. Austin, National Center for Advancing Translational Sciences, National Institutes of Health

Howard Bauchner, *Journal of the American Medical Association*, American Medical Association

Kirsten Bibbins-Domingo, University of California, San Francisco

Andrew B. Bindman, University of California, San Francisco

Diane Feickert Birt, College of Agriculture and Life Sciences and College of Human Sciences, Iowa State University

Rena Bizios, University of Texas, San Antonio

Linda Burnes Bolton, Cedars-Sinai Medical Center

Otis Webb Brawley, Emory University and American Cancer Society

Serdar E. Bulun, Feinberg School of Medicine, Northwestern University; and Prentice Women's Hospital

Atul Butte, University of California, San Francisco

Joseph D. Buxbaum, Icahn School of Medicine at Mount Sinai

Mario R. Capecchi, University of Utah School of Medicine

Jean-Laurent Casanova, Howard Hughes Medical Institute and St. Giles Laboratory of Human Genetics of Infectious Diseases, The Rockefeller University

Glenn M. Chertow, Stanford University School of Medicine

Kathleen R. Cho, University of Michigan Medical School, Ann Arbor

Benjamin K. Chu, Kaiser Permanente

Sarah Cleaveland, College of Medical, Veterinary, and Life Sciences, University of Glasgow

Josep Dalmau, Institut d'Investigacions Biomediques, August Pi Sunyer, Hospital Clinic, Universitat de Barcelona

Sally C. Davies, Department of Health, United Kingdom

Tejal A. Desai, School of Pharmacy and School of Medicine, University of California, San Francisco

Richard DiMarchi, Indiana University, Bloomington

Dennis E. Discher, University of Pennsylvania

Kenneth A. Dodge, Sanford School of Public Policy, Duke University

Ronald Stanton Duman, Yale University School of Medicine, Connecticut Mental Health Center

James C. Eisenach, Wake Forest School of Medicine

Napoleone Ferrara, University of California, San Diego

Julie A. Freischlag, University of California, Davis, School of Medicine

Amato J. Giaccia, Stanford University School of Medicine

Melissa Lynn Gilliam, University of Chicago

Gary Gilliland, Fred Hutchinson Cancer Research Center

Christopher K. Glass, University of California, San Diego

Fastone Mathew Goma, University of Zambia School of Medicine

Michael R. Green, Howard Hughes Medical Institute; and University of Massachusetts Medical School

Murat Günel, Yale School of Medicine and Yale-New Haven Hospital

Robert A. Harrington, Stanford University

Sean Hennessy, University of Pennsylvania

Friedhelm Hildebrandt, Harvard Medical School and Boston Children's Hospital

Frank Hu, Harvard T.H. Chan School of Public Health, Brigham and Women's Hospital and Harvard Medical School

Anna Huttenlocher, University of Wisconsin School of Medicine and Public Health, Madison

Frances E. Jensen, Penn Medicine Translational Neuroscience Center, Perelman School of Medicine, University of Pennsylvania

Ned H. Kalin, HealthEmotions Research Institute, University of Wisconsin School of Medicine and Public Health, Wisconsin Psychiatric Institute and Clinics, Madison

Beth Y. Karlan, Samuel Oschin Comprehensive Cancer Institute and Cedars-Sinai Medical Center

Arthur Kaufman, University of New Mexico, Albuquerque

Kenneth W. Kinzler, Ludwig Center and Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University

Keith Paul Klugman, The Bill & Melinda Gates Foundation; Emory University; and University of the Witwatersrand Respiratory and Meningeal Pathogens Research Unit

Walter J. Koroshetz, National Institute of Neurological Disorders and Stroke, National Institutes of Health

Vivian S. Lee, University of Utah

Kung-Yee Liang, National Yang-Ming University, Taipei, Taiwan

Roberto Malinow, University of California, San Diego

Laurie Kay McCauley, School of Dentistry, University of Michigan, Ann Arbor

David A. McCormick, Yale School of Medicine

David Owen Meltzer, University of Chicago

Joan W. Miller, Harvard Medical School and Massachusetts General Hospital

Vincent Mor, Brown University School of Public Health

James A. Morone, Brown University

Edvard Ingjald Moser, Kavli Institute for Systems Neuroscience, Norwegian University of Science and Technology

May-Britt Moser, Kavli Institute for Systems Neuroscience and Centre for Neural Computation, Norwegian University of Science and Technology

Vasant Narasimhan, Novartis Pharmaceuticals

Robert W. Neumar, University of Michigan Medical School, Ann Arbor

Laura Elizabeth Niklason, Yale University

Elizabeth Odile Ofili, Morehouse School of Medicine; Atlanta Clinical and Translational Science Institute; and RCMI Translational Research Network

Nikola P. Pavletich, Howard Hughes Medical Institute and Memorial Sloan Kettering Cancer Center

Jonathan Brian Perlin, Hospital Corporation of America; Vanderbilt University; and Virginia Commonwealth University

Kenneth S. Ramos, University of Arizona Health Sciences Center, Tucson

Bonnie W. Ramsey, Seattle Children's Research Institute and University of Washington School of Medicine

Valerie F. Reyna, Human Neuroscience Institute; Center for Behavioral Economics and Decision Research; Cornell Magnetic Resonance Imaging Facility; and Cornell University

Alexander Rudensky, Howard Hughes Medical Institute; and Ludwig Center for Cancer Immunotherapy, Memorial Sloan Kettering Cancer Center

Richard H. Scheller, 23andMe Inc.

Susan E. Skochelak, University of Wisconsin School of Medicine and Public Health and American Medical Association

Nahum Sonenberg, Rosalind and Morris Goodman Cancer Research Centre, McGill University

Douglas O. Staiger, Dartmouth College

Kevin Struhl, Harvard Medical School

Tan Chorh Chuan, National University of Singapore,

Marita G. Titler, University of Michigan School of Nursing

Richard Leo Wahl, Mallinckrodt Institute of Radiology, Washington University School of Medicine

Alan Reed Weil, *Health Affairs* and Project Hope


John Whyte, Moss Rehabilitation Research Institute and Thomas Jefferson University

Shinya Yamanaka, Gladstone Institute of Cardiovascular Disease; University of California, San Francisco; and Center for iPS Cell Research and Application, Kyoto University

Programs

A listing of NAM programs and special initiatives, as well as the boards, roundtables, and forums of the Health and Medicine Division.

NAM Programs



A still from a video on Improving the Health of Young Adults produced by the NAM's Innovation to Incubation (i2I) program.

Leadership Consortium for Value & Science-Driven Health Care

Executive Director: J. Michael McGinnis
Contact: Mina Bakhtiar (mbakhtiar@nas.edu)

The Leadership Consortium is comprised of national leaders and innovators from major stakeholder sectors and organizations who share a common commitment to transformational progress in the effectiveness and value of health care, attainment of a health system that continuously learns and improves, and better health for all Americans. The Leadership Consortium works through the activities of its member organizations, as well as through five Innovation Collaboratives (ICs). Each IC is devoted to stewarding and facilitating cooperative projects and shared energies on the issues most important for advancing science and value in health and health care.

Care Culture and Decision Making

CCDmIC brings together patients, families, clinicians, and technology and communications professionals to promote patient- and family-centered care, including team care and shared decision making. Its vision is for care that “is designed, with patient involvement, to ensure timely, convenient, well-coordinated engagement of a person’s health and health care needs, preferences, and values; it includes explicit and partnered determination of patient goals and care options; and it requires ongoing assessment of the care match with patient goals” (*Transforming Health Care Scheduling and Access: Getting to Now*, 2015). CCDmIC also stewards the National Patient & Family Leadership Network, which is committed to expanding person- and family-engaged care.

Clinical Effectiveness Research

The constantly increasing diversity and sophistication of health care interventions hold great promise for gains in patient health, but also raise substantial challenges to the pace and nature of research about the effectiveness of treatments. Clinical research is straining to keep up with the rapid and evolution of medical interventions and the innovation that occurs in clinical practice. It has become clear that progress is needed in the use of new technology and research techniques to better capture the care experience for evidence on efficiency and effectiveness under various circumstances. CERIC aims to foster that progress.

Digital Learning

With more components—testing, diagnosis, records, and patient–clinician communication—shifting to digital platforms, there exists transformative potential for increasing the efficiency, convenience, and effectiveness of health care. Digitalizing health care processes and information provides the foundation necessary to drive a continuously improving health system in which knowledge from past events is used to guide decisions. A health information technology infrastructure that supports a continuously improving, learning health care system requires consideration of the capabilities, technical and policy approaches, and operating principles needed to allow data from multiple areas of clinical health care, population health, clinical, biomedical, and translational research to be leveraged, while protecting patients’ privacy.

Value Incentives and Systems Approaches

Health care in the United States is, in many circumstances, the best in the world. Yet we pay more for health care relative to other nations to get results that, on a population basis, are just mediocre. The prevailing approach to payment and design for health care—which focuses predominantly on fees for individual services rendered—lies at the center of the issue. Application of basic systems engineering principles can improve value achieved by

health care by better integrating and aligning the multiple process in play. Some promising initiatives are developing to redirect incentives away from volume and toward value (e.g., value-based payment design, pay for performance, bundled payments). However, there remains a need to advance the implementation of these initiatives in a coordinated and systemic way. The utility of systems-based solutions is well-documented, and will be essential to advancing the coordinated implementation of and collaboration around value-based delivery models.

Members of the Consortium

Mark McClellan (*Chair*), Duke University
Raymond J. Baxter, Kaiser Permanente
Paul Bleicher, Optum Labs
David Blumenthal, The Commonwealth Fund
Paul Chew, Sanofi US
Susan DeVore, Premier, Inc.
Judith Faulkner, Epic Systems
David Feinberg, Geisinger Health System
Joseph F. Fifer, Healthcare Financial Management Association
Patricia A. Gabow, Denver Health (Formerly)
Atul Gawande, Ariadne Labs; Brigham and Women's Hospital; Harvard University
Paul Grundy, IBM
James Heywood, PatientsLikeMe
Paul Hudson, AstraZeneca
Brent C. James, Intermountain Healthcare
Craig A. Jones, Vermont Blueprint for Health
Gary Kaplan, Virginia Mason Health System
Darrell G. Kirch, Association of American Medical Colleges
Richard E. Kuntz, Medtronic
Richard C. Larson, Massachusetts Institute of Technology
Peter Long, Blue Shield of California Foundation
James L. Madara, American Medical Association
Mark Miller, MedPAC
Mary D. Naylor, University of Pennsylvania
William D. Novelli, Georgetown University
Harold Paz, Aetna
Jonathan B. Perlin, Hospital Corporation of America
Richard Platt, Harvard Medical School
Richard J. Pollack, American Hospital Association
Michael Rosenblatt, Merck & Company

John W. Rowe, Columbia University
Leonard D. Schaeffer, University of Southern California
Joe Selby, Patient-Centered Outcomes Research Institute
Mark D. Smith, University of California, San Francisco
Harrison Spencer, Association of Schools & Programs of Public Health
Craig Samitt, Anthem, Inc.
Jennifer Taubert, Johnson & Johnson
Marta Tellado, Consumers Union
David Torchiana, Partners HealthCare System
Reed V. Tuckson, Tuckson Health Connections
Debra B. Whitman, AARP

Ex Officio

Robert M. Califf, Food and Drug Administration (*Peter Lurie*)
Francis Collins, National Institutes of Health (*Kathy Hudson*)
Karen DeSalvo, Department of Health and Human Services
Thomas Frieden, Centers for Disease Control and Prevention (*Chesley Richards*)
Richard Kronick, Agency for Healthcare Research and Quality
James Macrae, Health Resources and Services Administration
David Shulkin, Department of Veterans Affairs (*Carolyn Clancy*)
Andrew Slavitt, Centers for Medicare & Medicaid Services (*Patrick Conway*)
Jonathan Woodson, Department of Defense

Health Policy Educational Programs & Fellowships

Director: Marie Michnich
Contact: Yumi Phillips (yphillips@nas.edu)

The NAM's Health Policy Educational Programs and Fellowships (HPEPF) enrich the experience of early- and mid-career professionals and nurture the next generation of health and medical leaders. The NAM administers four national health policy fellowship and scholarship programs.

FDA Tobacco Regulatory Science Fellowship

A collaborative program between the FDA Center for Tobacco Products and the NAM, this 12-month, multidisciplinary residential program is designed for mid-career professionals to gain experience and expertise to further define and develop the field of regulatory science as it relates to the regulation of tobacco products and FDA's authorities under the Family Smoking Prevention and Tobacco Control Act.

Distinguished Nurse Scholar-in-Residence

Supported by the American Academy of Nursing, the American Nurses Association, and the American Nurses Foundation

The Nurse Scholar program is designed to assist outstanding nurse leaders to play a more prominent role in health policy development at the national level. The program seeks individuals who have the capacity and skills to bring issues of special interest in nursing to greater public understanding and policy attention.

NAM Anniversary Fellows

This program is designed for health science scholars who are 1 to 10 years away from completion of a residency or receipt of a doctoral degree to participate in the process by which the Academies provides health advice to the nation. This direct involvement in the work of the NAM and the Academies prepares young investigators to contribute to the future direction of health care throughout their careers while also accelerating their career development.

Endowed Fellowships

The Norman F. Gant/American Board of Obstetrics and Gynecology (ABOG) Fellowship is named in honor of Norman F. Gant, MD, a member of the NAM and the executive director of ABOG. The fellowship is designed to provide an exceptional learning and career development opportunity to obstetricians and gynecologists early in their careers.

The James C. Puffer, M.D./American Board of Family Medicine (ABFM) Fellowship provides talented, early-career health policy or health science scholars in the field of family medicine to participate in the NAM and Academies' work and to further their careers as future leaders in the field.

The overall purpose of the **Gilbert S. Omenn Fellowship** at the NAM is to enable talented, early-career scholars combining biomedical science and population health to participate actively in the Academies study process, promoting the linkage of public health and medicine—both scientifically and through practice and policy.

The Greenwall Fellowship in Bioethics enables young investigators to participate actively in the work of the NAM and the Academies and to further their careers as future leaders addressing bioethics issues in clinical care, biomedical research, and public policy.

The Anniversary Fellowship in Pharmacy is designed to enable talented, early-career health policy or health science scholars to participate actively in the work of the NAM and the Academies and to further their careers as future leaders in the field of pharmacy.

Sponsored Fellowships

The Anniversary Fellowship sponsored by the American Board of Internal Medicine Foundation in honor of Dr. John Benson provides an exceptional opportunity for talented, early-career health science scholars to experience the work of the NAM and the Academies. Preference is given to applicants with a demonstrated interest in and focus on medical professionalism.

The Anniversary Fellowship in Osteopathic Medicine provides early-career faculty and future leaders in osteopathic medicine with the opportunity to participate actively in the work of the NAM and the Academies.

Robert Wood Johnson Foundation Health Policy Fellows

This program provides the nation's most comprehensive fellowship experience at the nexus of health, science, and policy in Washington, DC. It is an outstanding opportunity for exceptional mid-career health professionals and behavioral and social scientists with an interest in health and health care policy promoting the health of the nation. Fellows participate in the policy process at the federal level and use that leadership experience to improve health, health care, and health policy.

RWJF Health Policy Fellows Advisory Board Roster

Gail L. Warden (*Chair*), Henry Ford Health System
Joseph Antos, American Enterprise Institute for Public Policy Research
Mary Agnes Carey, Kaiser Health News
Kathryn Edin, Johns Hopkins University
Clyde Evans, CE Consulting
Arthur L. Kellermann, Uniformed Services University of the Health Sciences
Herb B. Kuhn, Missouri Hospital Association
Alan I. Leshner, American Association for the Advancement of Science (Former)

A. Carole Pratt, Commonwealth of Virginia
Charles L. Rice, Uniformed Services University of the Health Sciences
Eduardo Sanchez, American Heart Association
Lisa Simpson, AcademyHealth
Antonia M. Villaruel, University of Pennsylvania School of Nursing
Kenneth B. Wells, University of California, Los Angeles, and RAND Corporation

Innovation to Incubation (i2I)

Director: Kimber Bogard (kbogard@nas.edu)

i2I champions innovative ideas and cultivates pathways to action to augment the work of the NAM and other health-related activities of the National Academies of Sciences, Engineering, and Medicine. Through staff enrichment, strategic support, networking, and targeted communications, i2I aims to increase the Academies' impact on the future of health and health care.

Current Projects

- **Health Innovators Speaker Series:** A semi-annual lecture series to enrich the knowledge of Academies staff.
- **Birth to Age 8 Workforce: Implementation Planning:** A project to foster networks
- **Health Levers Across the Life Course:** A series of expert meetings to discuss issues to consider in designing longitudinal cohort studies with a focus on “health levers” across the lifespan, and inequities in particular.
- **Timely Permanency for Children:** An expert meeting to develop a statement of task for a potential consensus study on timely permanency for children in foster care.
- **Social Justice and Health Equity:** A series of NAM Perspectives will address social justice and health equity from multiple disciplinary lenses.

Culture of Health

Director: Rose Marie Martinez
Contact: Amy Geller (ageller@nas.edu)

The NAM's Culture of Health program, founded in 2015 with support from the Robert Wood Johnson Foundation, aims to identify the conditions and solutions needed for every person to achieve equitable good health and well-being and to examine the policies and practices needed to support a culture that promotes health.

Individual health is shaped by many economic and social factors such as income, education, access to quality health care, geography, and race and ethnicity. The uneven access to the conditions that are needed for good health across the United States has been well-documented, as have the

and collaboration within and among states. Teams will meet regularly over the course of 6 months to share information and develop tailored implementation plans for their areas.

- **Health Levers Across the Life Course:** A series of expert meetings to discuss issues to consider in designing longitudinal cohort studies with a focus on “health levers” across the lifespan, and inequities in particular.
- **Timely Permanency for Children:** An expert meeting to develop a statement of task for a potential consensus study on timely permanency for children in foster care.
- **Social Justice and Health Equity:** A series of NAM Perspectives will address social justice and health equity from multiple disciplinary lenses.

effects of poor health not only for individuals but also their families and society.

The NAM will appoint an advisory committee to oversee a range of activities that will focus on assessing the evidence base; identifying types of successful and sustainable practices, policies, and partnerships; and examining how to promote health equity and scale effective efforts. The first 5 years of this collaborative Academies-wide program will focus on identifying the conditions and solutions needed for all to achieve equitable good health and well-being.

Rosenthal Symposium

Contact: Megan Slavish (mslavish@nas.edu)

Through the generosity of the Richard & Hinda Rosenthal Foundation, the NAM hosts an annual discussion series to bring greater attention to critical health policy issues facing our country today.

2015 Symposium: Protecting Patients—Advances and Future Directions in Patient Safety

The 2015 Richard & Hinda Rosenthal Symposium observed the 15th anniversary of the 1999 report *To Err Is Human: Building a Safer Health System* and 2001 report *Crossing the Quality Chasm: A New Health System for the 21st Century*, and also

highlighted the most recent report in the Quality Chasm Series, *Improving Diagnosis in Health Care*. The symposium highlighted the impact of the reports through implementation of recommendations, addressed the shortcomings of and improvements to our current health care system with respect to patient safety and health care quality, and identified future priorities for reducing medical errors and improving quality and efficiency of the U.S. health care system. More about this year's event, including the full agenda, speaker biosketches, video recordings, and photographs is available at nam.edu/2015Rosenthal.

Annual Meeting & Public Symposium

Contact: Megan Slavish (mslavish@nas.edu)

In conjunction with the annual members meeting every October, the NAM hosts a 1-day public symposium on a topic of pressing interest.

2015 Symposium on Aging

The 2015 Annual Meeting featured a daylong scientific program exploring the biology of aging; its public health and social impacts; and exciting innovations that could catalyze progress in extending the lifespan and foster healthy aging. Laura Carstensen, founding director of the Stanford University Center on Longevity, delivered the keynote

address. Additional features included a panel on the biology of aging moderated by Richard Hodes, director of the National Institute on Aging; a session on aging, cognition, and frailty moderated by Eric Larson of Group Health; a panel on social influences, interventions, and impacts moderated by Jack Rowe of Columbia University; and a closing forum on innovations in aging science and technology moderated by NAM president Victor Dzau.

The topic of the 2016 public symposium on October 17, 2016, will be "Obesity and Type 2 Diabetes: Reversing the Dramatic, 30-Year Rise in Prevalence."

DC Public Health Case Challenge

Contact: Amy Geller (ageller@nas.edu)

The DC Public Health Case Challenge aims to promote interdisciplinary, problem-based learning around a public health issue that faces the local Washington, DC, community.

Universities in the DC area form teams consisting of five to six members from at least three disciplines. Teams are given a case, written by students from the participating universities, that provides background information on a local public health problem. Teams have a limited amount of time to devise a comprehensive intervention, which they present to an expert panel of judges.

Teams are judged on the interdisciplinary nature of their response, feasibility of implementation, creativity, and practicality.

2015 Case: Supporting Mental Health in Older Veterans

In the 2015 case, teams were charged with developing a feasible and creative protocol that will support mental health in older veterans living in the DC area.

2015 Winners

Grand Prize: American University

Creativity Prize: University of Maryland, Baltimore

Practicality Prize: Georgetown University; George Washington University

Awards & Honors

Lienhard, Sarnat, Cecil: K. Corrin Merritt (kmerritt@nas.edu)
Member Awards: Donna Duncan (dduncan@nas.edu)

The NAM presents awards annually to recognize singular individuals in the fields of health, medicine, and science.

Gustav O. Lienhard Award

The Gustav O. Lienhard Award, established in 1986, is presented annually by the NAM in honor of Gustav O. Lienhard, Chairman of the Robert Wood Johnson Foundation's Board of Trustees from 1971 to 1986. The award—a medal and \$40,000—recognizes individuals for outstanding achievement

in improving health care services in the United States. Support for the award is provided by the Robert Wood Johnson Foundation. Each year, a selection committee appointed by the NAM reviews nominations based on selection criteria that reflect the ideals and work of Mr. Lienhard and the Robert Wood Johnson Foundation.

2015 Recipient

Robert L. Brent, Thomas Jefferson University and Nemours/Alfred I. DuPont Hospital for Children

Rhoda and Bernard Sarnat International Prize in Mental Health

The Rhoda and Bernard Sarnat International Prize in Mental Health is presented annually by the NAM. Rhoda and Bernard Sarnat established the award in 1992 out of a commitment to improving the science base and delivery of mental health services. This international award recognizes individuals, groups, or organizations for outstanding achievement in improving mental health and is accompanied by a medal and \$20,000. Each year, a selection committee appointed by the NAM reviews nominations based on selection criteria that reflect the ideals of Rhoda and Bernard Sarnat.

2015 Recipients

Kay Redfield Jamison, Johns Hopkins University
Kenneth S. Kendler, Virginia Commonwealth University

Member & Staff Awards

The NAM presents awards annually to NAM members and staff of the National Academies of Sciences, Engineering, and Medicine whose service to the mission of the NAM has been especially distinguished.

Walsh McDermott Medal

The Walsh McDermott Medal is awarded to an NAM member in recognition of distinguished service to the NAM and the Academies over an extended period of time.

2015 Recipient

Alan Leshner, American Association for the Advancement of Science (Emeritus)

Adam Yarmolinsky Medal

The Adam Yarmolinsky Medal is awarded to an NAM member from a discipline outside the health and medical sciences, such as the social and behavioral sciences, law, public policy, and administration.

2015 Recipient

Susan Scrimshaw, The Sage Colleges

David Rall Medal

The David Rall Medal is awarded to an NAM member who has demonstrated particularly distinguished leadership as a chair of a study committee or other such activities in a manner that was particularly exemplary.

2015 Recipient

Jonathan Samet, University of Southern California

Cecil Award

Each year, the NAM honors three current or former staff members with a Cecil Award. The Cecil Awards—which consist of a medal and \$5,000—recognize outstanding, sustained contributions of staff members to program or membership activities. The “Cecils” are the highest distinction for a staff member.

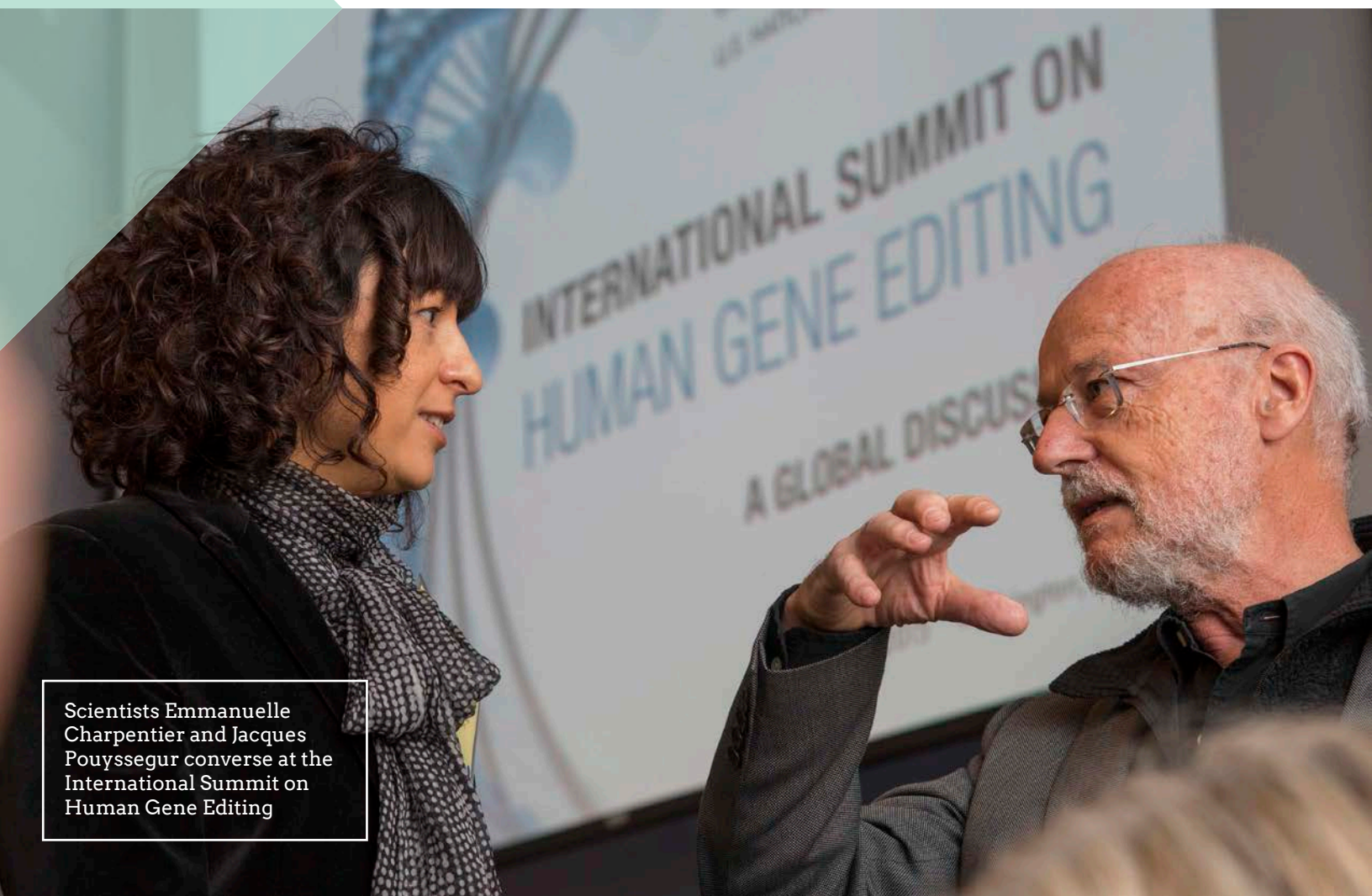
2015 Recipients

Alina Baci, Board on Population Health

Bridget Kelly, Board on Children, Youth, and Families

Yumi Phillips, Health Policy Educational Programs and Fellowships

NAM Special Initiatives



Scientists Emmanuelle Charpentier and Jacques Poussegur converse at the International Summit on Human Gene Editing

Global Health Risk Framework

Contact: Morgan Kanarek (mkanarek@nas.edu)

The NAM convened the independent, international Commission on a Global Health Risk Framework for the Future (GHRF) in late 2015 to assess response to the then-ongoing Ebola outbreak and recommend reforms that will enable more effective management of global health crises in the future. To inform the Commission's work, the Academies hosted 11 days of evidence-gathering workshops across 4 continents and gathered input from more than 250 experts and stakeholders. The process was generously supported by six private foundations, an individual donor, and the U.S. Agency for International Development.

On January 13, 2016, the Commission's report, *The Neglected Dimension of Global Security: A Framework to Counter Infectious Disease Crises*, was released. The report's key takeaway is that

pandemic preparedness and response is not just a health issue—rather, it is essential to global security and economic stability. An original analysis commissioned for the report places annualized expected losses from pandemics at \$60 billion per year, yet the global community spends remarkably little to prevent and respond to them—far less, in fact, than it does on other comparable threats.

The GHRF Commission recommends an annual investment of \$4.5 billion to strengthen national public health systems, improve global and regional coordination and response, and accelerate R&D. Although \$4.5 billion is not a small amount, it is not beyond reach—and it is a mere fraction of what we stand to lose from under-investment.

GHRF Commissioners and Academies staff meet in Bellagio, Italy.



Commissioners

Peter Sands (*Chair*), Standard Chartered PLC
(Former) & Harvard Kennedy School

Oyewale Tomori (*Vice Chair*), Nigeria Academy of
Sciences

Ximena Aguilera, Universidad de Desarrollo, Chile

Irene Akua Agyepong, Ghana Health Service

Yvette Chesson Wureh, University of Liberia

Paul Farmer, Partners in Health & Harvard Medical
School

Maria Freire, Foundation for the National
Institutes of Health

Julio Frenk, University of Miami

Lawrence Gostin, Georgetown University

Gabriel Leung, University of Hong Kong

Francis Omaswa, African Center for Global Health
and Social Transformation

Melissa Parker, London School of Hygiene &
Tropical Medicine

Sujatha Rao, Ministry of Health and Family
Welfare of India

Daniel Ryan, Swiss Re

Jeanette Vega, Chilean National Health Fund

Suwit Wibulpolprasert, Ministry of Public Health,
Thailand

Tadataka Yamada, Frazier Life Sciences

International Oversight Group

Victor J. Dzau (*Chair*), National Academy of
Medicine

Judith Rodin (*Vice Chair*), The Rockefeller
Foundation

Fazle Hasan Abed, BRAC Bank Limited

Arnaud Bernaert, World Economic Forum

Chris Elias, The Bill & Melinda Gates Foundation

Jeremy Farrar, Wellcome Trust

Shigeru Omi, Japan Community Health Care
Organizaton

Paul Polman, Unilever

Tan Chorh Chuan, National University of
Singapore

Miriam Were, Moi University

Mirta Roses, Pan American Health Organization
(Former)

Shen Xiaoming, Shanghai Jiao Tong University
School of Medicine

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Mr. Ming Wai Lau

Gordon and Betty Moore Foundation

The Rockefeller Foundation

U.S. Agency for International Development

Wellcome Trust

Vital Directions for Health and Health Care

Contact: Liz Finkelman (efinkelman@nas.edu)

More than 5 years after the passage of the Affordable Care Act, health reform is entering a critical new phase. The health system is strained by increasing demand and unsustainable costs. Too often, care decisions do not align with patient goals or evidence of effectiveness and Americans experience untenable disparities in health and access to care. At the same time, new technologies and big data are spurring advances in medical science and the practice of care, including precision medicine. Patients are increasingly empowered to take an active role in their health, and community innovators are designing new models that could revolutionize the delivery of care. Increasing emphasis is placed on population health, wellness, and prevention. These are the unprecedented challenges—and extraordinary opportunities—the 2016 administration must weigh as it charts the next steps for health reform in the United States.

The NAM's Vital Directions for Health and Health Care initiative will comprise expert opinions from a bipartisan group of health and health care leaders to inform the incoming administration and other key decision makers, as well as the public. Building on the NAM's longstanding leadership role, including the NAM Leadership Consortium's sustained focus on advancing a continuously learning health system, the initiative will seek to identify areas of opportunity and explore national policies that are immediately actionable and hold promise for improving care quality, increasing access, and lowering costs, among other goals. A series of 19 NAM Perspectives will be published beginning in the spring of 2016, and a comprehensive synthesis document will be published later in the year. A national public symposium on Vital Directions will be held in September 2016.

Steering Committee

Victor J. Dzau (*Co-Chair*), National Academy of Medicine

Mark McClellan (*Co-Chair*), Duke University

Sheila P. Burke, Harvard Kennedy School

Molly J. Coye, Network for Excellence in Health Care Innovation

The Honorable Thomas A. Daschle, Former U.S. Senator; The Daschle Group

Angela Diaz, Icahn School of Medicine at Mount Sinai

The Honorable William Frist, Former U.S. Senator; Vanderbilt University

Margaret A. Hamburg, National Academy of Medicine

Jane E. Henney, National Academy of Medicine

Shiriki Kumanyika, University of Pennsylvania

The Honorable Michael O. Leavitt, Former Governor of Utah; Leavitt Partners

Ruth Parker, Emory University

Lewis Sandy, UnitedHealth Group

Leonard D. Schaeffer, University of Southern California

Glenn D. Steele, xG Health Solutions

Pamela Thompson, American Organization of Nurse Executives; American Hospital Association

Elias Zerhouni, Sanofi; The Bill & Melinda Gates Foundation

Human Gene Editing

Contact: Monica Gonzalez (mgonzalez@nas.edu)

Powerful new gene-editing technologies, such as CRISPR-Cas9, hold great promise for advancing science and treating disease, but they also raise concerns and present complex challenges, particularly because of their potential to be used to make genetic changes that could be passed on to future generations, thereby modifying the human germline.

The NAS/NAM Human Gene Editing initiative will provide researchers, clinicians, policy makers, and organizations around the world with a comprehensive understanding of human gene

editing to help inform decision making about this research and its application.

The initiative began with an international summit in December 2015 to convene global experts to discuss the scientific, ethical, and governance issues associated with human gene-editing research. In late 2016, the NAS and the NAM will issue a comprehensive study by a multidisciplinary, international committee that will examine the scientific underpinnings and clinical, ethical, legal, and social implications of human gene editing.

Grand Challenges in Health & Medicine

Contact: Liz Finkelman (efinkelman@nas.edu)

“Grand Challenge” initiatives have inspired some of the most striking scientific accomplishments in history. The Apollo program sent scientists to the moon and yielded extraordinary advances in avionics and other technologies. A project to develop electronically mediated strategies for faster communication led to the creation of the World Wide Web and the Internet. The Human Genome Project united international researchers around the goal of sequencing the human genome. The goals may have been ambitious, and the barriers formidable, but when the challenges were laid, the world’s brightest minds took action.

In the same pioneering spirit, the NAM will launch an initiative in 2016 to identify and engage Grand Challenges in Health and Medicine. The initiative will inspire leaders across disciplines—from academia, government, industry, business,

philanthropy, and the public—to coalesce around shared priorities and audacious goals to advance health, medicine, and health sciences. Informed by the fundamental work of related federal efforts—such as the Brain Initiative and Grand Challenges for Development—as well as nongovernmental endeavors like the National Academy of Engineering’s Grand Challenges for Engineering, the Bill & Melinda Gates Foundation’s Grand Challenges in Global Health, TEDMED’s Great Challenges, and the Clinton Global Initiative, the NAM’s Grand Challenges initiative will aim to spur innovation, steward collective strategies, and engage public- and private-sector resources around common goals where the promise of progress is great. The initiative will stand as a clear call to action around the world’s most pressing health priorities.

Improving End-of-Life Care

Contact: Laura DeStefano (ldestefano@nas.edu)

With the support of an anonymous donor, the NAM is carrying out a 2-year dissemination phase for the 2014 report *Dying in America: Improving Quality and Honoring Individual Preferences Near the End of Life*. Activities include a poster explaining the benefits of palliative care, which has been distributed in 46 U.S. states, as well as a national public service announcement on the importance of talking about end-of-life preferences with loved ones and care providers. Additional activities forthcoming in early 2016 include a podcast series for care providers and a community event toolkit.

In March 2015, the Academies hosted a National Action Conference on Policies and Payment Systems to Improve End-of-Life Care. In conjunction with the conference, about 50 organizations made formal written commitments to action in one or more of the report's five recommendation areas. The NAM will reconvene these organizations in spring 2016 to assess progress and launch a new Academies roundtable on end-of-life care.

HMD Boards, Roundtables, & Forums



A still from a video produced for the 2015
report *Improving Diagnosis in Health Care*

Food and Nutrition Board

Director: Ann L. Yaktine (ayaktine@nas.edu)

Food Forum

Co-Directors: Heather Cook (hcook@nas.edu) and Leslie Sim (lsim@nas.edu)

Roundtable on Obesity Solutions

Director: Lynn Parker (lparker@nas.edu)

Board on Global Health

Director: Patrick W. Kelley (pkelley@nas.edu)

Forum on Microbial Threats

Interim Director: Guru Madhavan (gmadhavan@nas.edu)

Forum on Global Violence Prevention

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Global Forum on Innovation in Health Professional Education

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Finances

A general overview of the 2015 finances is illustrated in the materials that follow. For reporting purposes, the finances for the National Academy of Medicine and the Health and Medicine Division are presented together.

Chart 1 shows the program expenditures over the past several years. Direct program expenditures for fiscal year 2015 are estimated at just over \$45 million, representing a slight increase from fiscal year 2014. The ratio of general operation expenditures to total expenditures remains well below 20 percent. Table 1 presents the detailed dollar expenditures.

Sources of funding for general operations and program expenditures for fiscal year 2015 are shown on charts 2 and 3. The primary sources of support for general operations are the indirect cost pool of the National Research Council and income earned from endowment funds. The federal government continues to be the main source of program support, providing 59 percent of the funds in fiscal year 2015.

CHART 1
Program Expenditures, Fiscal Years 2011 through 2015

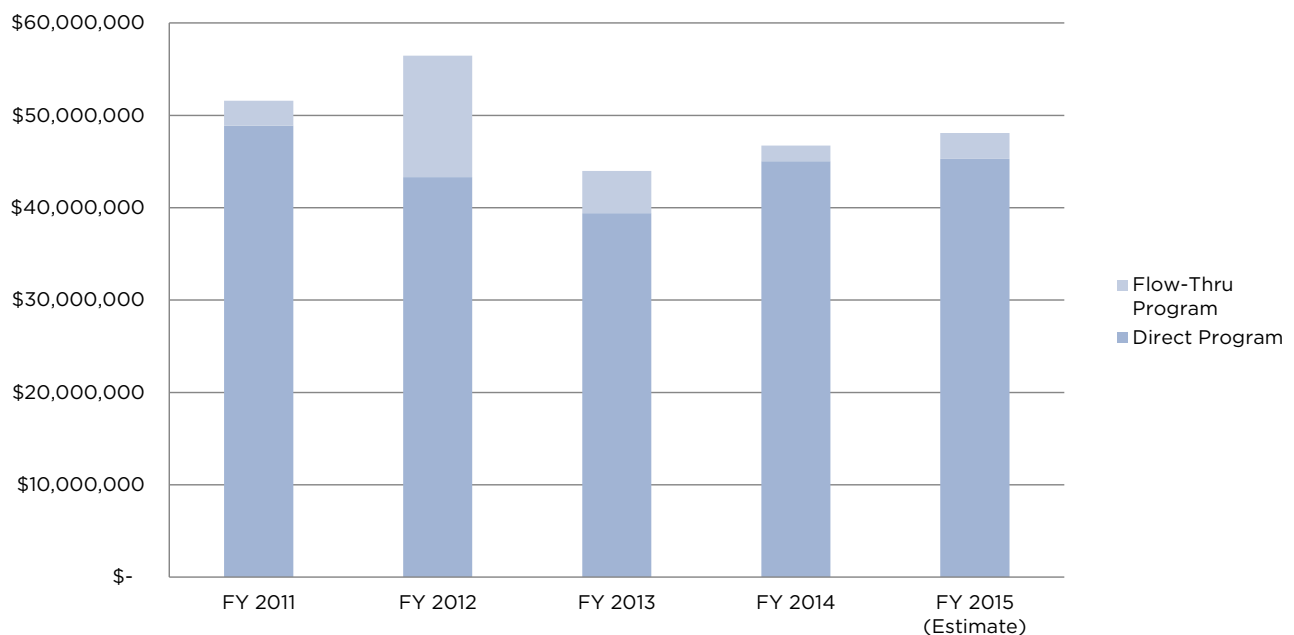


TABLE 1
General Operations and Program Expenditures, Fiscal Years 2011 Through 2015

	Actual				Estimate
	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
GENERAL OPERATIONS					
NAS Indirect Cost Pool	\$ 5,729,670	\$ 5,952,583	\$ 5,823,830	\$ 5,439,361	\$ 5,747,472
IOM Independent Funds	1,828,096	991,691	1,072,437	1,195,843	1,204,669
TOTAL GENERAL OPERATIONS	\$ 7,557,766	\$ 6,944,274	\$ 6,896,267	\$ 6,635,204	\$ 6,952,141
PROGRAM EXPENDITURES					
Direct Program	\$ 48,879,478	\$ 43,309,782	\$ 39,397,397	\$ 45,036,570	\$ 45,277,000
Flow-Thru Program	2,691,475	13,144,858	4,575,107	1,690,013	2,803,000
PROGRAM EXPENDITURES	\$ 51,570,953	\$ 56,454,640	\$ 43,972,504	\$ 46,726,582	\$ 48,080,000
TOTAL EXPENDITURES	\$ 59,128,719	\$ 63,398,914	\$ 50,868,771	\$ 53,361,786	\$ 55,032,141
% General Operations to Total	13%	11%	14%	12%	13%

	Actual				Estimate
	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
STAFF SIZE @ DEC (FTE'S)					
General Operations	34	32	26	28	25
Program	180	148	138	161	144
TOTAL	214	180	164	189	169
% General Operations to Total	16%	18%	16%	15%	15%

CHART 2
General Operations Support, Fiscal Year 2015—Total Budget \$6,952,141

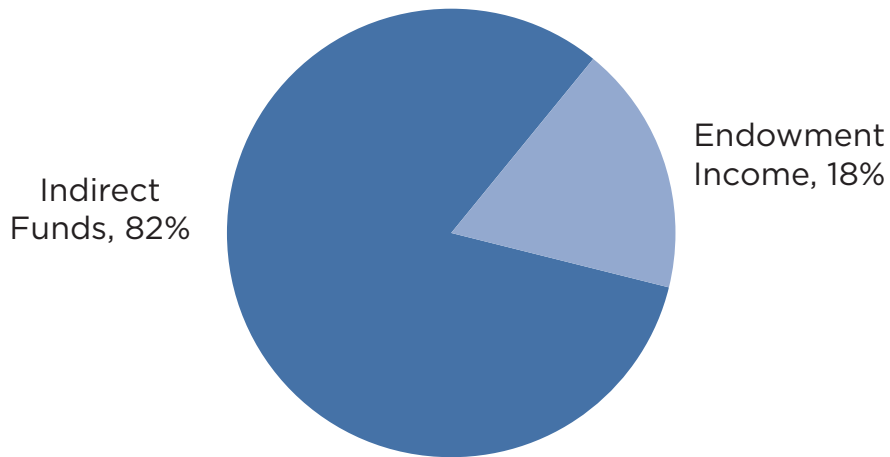
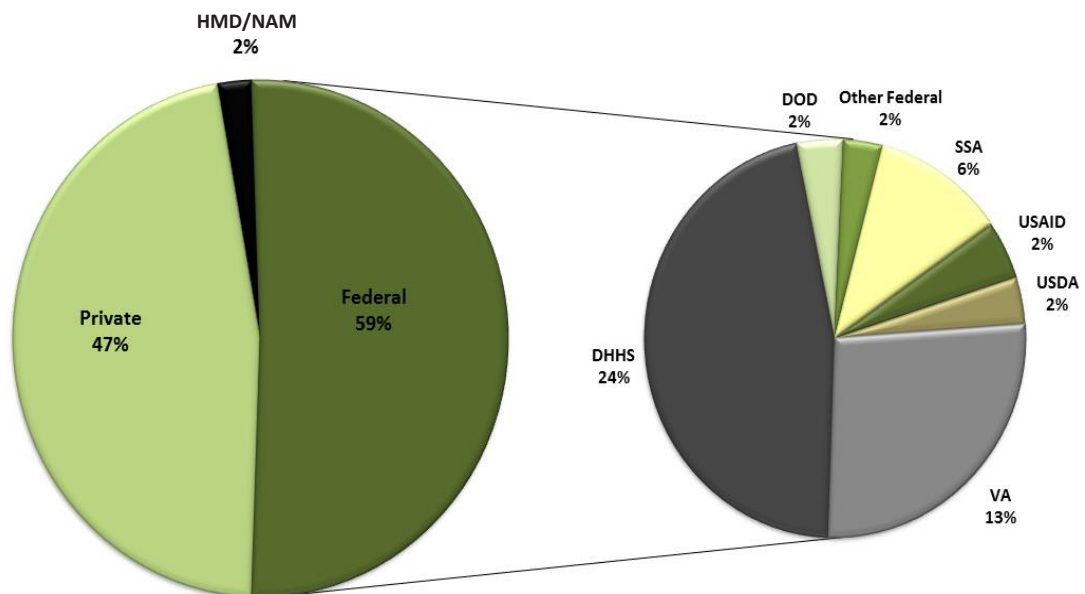


CHART 3
Sources of Program Funding, Fiscal Year 2015



NOTES: DHHS = Department of Health and Human Services; DOD = Department of Defense; SSA = Social Security Administration; USAID = U.S. Agency for International Development; USDA = U.S. Department of Agriculture; VA = Department of Veterans Affairs.

Donor Highlights

The NAM is an independent, nonprofit organization whose work is supported by individuals, foundations, businesses, and government, as well as other organizations.

Thank you

Thank you to the many members, friends, staff, and philanthropic organizations that supported the NAM and the HMD during 2015. Your support helps us address the most important health and medicine issues facing our nation and the world. In 2015, private philanthropy provided more than \$8.2 million in support to the NAM and more than \$19 million was received to support the consensus studies, roundtables, and forums of the HMD. The scope and impact of these gifts and grants are significant. A few highlights of the year include:

- In 2015, the NAM received approximately \$800,000 in unrestricted philanthropic support, including \$417,540 in donations to the annual fund and \$196,900 in gifts to the Harvey V. Fineberg Impact Fund. More than 540 members and friends made contributions. Giving was spurred by a challenge from an anonymous NAM member who matched gifts from first-time and lapsed donors and increases in giving by current donors up to \$150,000. That goal was surpassed, with the NAM receiving \$198,461 in gifts that were eligible to be matched.
- Annual fund donations enable the NAM to identify and respond to urgent priorities in health and medicine and to initiate leading-edge projects for which major funding is later raised from other sources. During 2015, donations to the annual fund supported the Human Gene Editing and Global Health Risk Framework initiatives, enabled the NAM to begin work on a project to advise the next presidential administration on health policy, and supported the development of a Grand Challenges in Health and Medicine initiative.
- Among the projects supported by gifts to the Fineberg Impact Fund was a national summit that convened health leaders and policy makers to discuss recommendations from the 2014 report *Dying in America*. More than 700 people attended, with 50 organizations making formal commitments to action. The report and its dissemination activities contributed to Medicare's decision to reimburse providers for time spent counseling patients about end-of-life planning.
- The NAM also received \$5,933,500 toward its restricted and unrestricted endowment, including \$5 million from the Robert Wood Johnson Foundation (RWJF) to benefit the Culture of Health program; and \$750,000 from the Greenwall Foundation to establish a fellowship in bioethics. A new unrestricted named endowment fund was established with a gift from Harvey Fineberg and Mary Wilson.
- A long-term committee member of the HMD informed the institution of her intention to bequeath to the Academies funds that will establish an endowment to provide perpetual support for the programs and activities of the Board on Health Care Services.
- \$3.5 million was raised from The Rockefeller Foundation, the Bill & Melinda Gates Foundation, the Ford Foundation, the Paul Allen Family Foundation, the Gordon and Betty Moore Foundation, the Wellcome Trust, and Mr. Ming Wai Lau to support the work of the Commission on a Global Health Risk Framework for the Future. These gifts enabled the Academies to convene four international workshops in summer 2015 and produce

the Commission's final report, which made recommendations to inform a more efficient global response to infectious disease outbreaks.

- Our long-term partnership with RWJF continues through the prestigious fellowship program, forums on medical preparedness and early childhood development, and significant support received for the Culture of Health program. In addition to the endowment funds mentioned above, RWJF also made a 5-year, \$5 million commitment of expendable funds to the Culture of Health program that will enable the HMD to undertake a series of studies and other activities that will focus on social policies to promote health and well-being at the community level.
- More than 220 grants were received from corporations, foundations, and other organizations to support 18 HMD roundtables and forums that address issues such as aging and disabilities, drug discovery, environmental health, food and nutrition, public-private partnerships, global violence, innovation in health professional education, genomics, neuroscience, obesity, and health literacy.

These gifts and grants are just a few of the many ways in which members, friends, and organizations supported the NAM and the HMD during 2015. This generous support makes so much possible—from building the next generation of health leaders and tackling complex and controversial issues other organizations are not willing to take on to addressing emerging challenges and increasing the impact of our recommendations.

We thank you for your generous commitment.

To make a gift, contact Julie Ische, director of development, at 202-334-3031 or jische@nas.edu

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