
What does the future of health care look like when antibiotic resistance is at play? Many Americans agree that this issue requires the attention of public health initiatives in order to prevent potential negative consequences. In a new national survey commissioned by Research!America in collaboration with Infectious Disease Society of America (IDSA) and with support from Pfizer, nearly two thirds of Americans (65%) confirmed that they believe antibiotic resistance is a public health problem. Further, a strong majority (81%) say they are concerned that antibiotic resistance will make future infections more difficult or impossible to treat, and even deadly.

Dr. Mukherjee's books have made better understanding of the history and nature of cancer and gene therapies accessible to millions of people. His book, The Emperor of All Maladies, was adapted into a documentary by filmmaker Ken Burns, and was included among Time magazine's 100 best nonfiction books of the past century. He is also the author of The Gene: An Intimate History which won international awards and was recognized by The Washington Post and The New York Times as one of the most influential books of 2016.

Dr. Mukherjee has also advocated for funding for the National Institutes of Health (NIH) as a member of ACT for NIH. He currently serves as an assistant professor of medicine at Columbia University Medical Center and as a staff cancer physician, generating hope for countless patients and families around the world, while revolutionizing our blueprint for healing.

Other 2019 Research!America Advocacy Award Nominees are The Honorable Louis W. Sullivan, former Secretary, U.S. Department of Health and Human Services and founding dean and president emeritus of the Morehouse School of Medicine; Dr. Susan Hockfield, President Emerita, Massachusetts Institute of Technology and Professor of Neuroscience and a member of the Koch Institute for Integrative Cancer Research; Dr. David R. Williams, Florence and Laura Norman Professor of Public Health, Harvard T.H. Chan School of Public Health and Professor of African and African American Studies and Sociology, Harvard University; Denny Sanford, health care philanthropist, supporter of Sanford Health, which includes Sanford Research, in Sioux Falls, South Dakota; and The Cystic Fibrosis Foundation. The recipient of the Edwin C. Whitehead Award for Medical Research Advocacy, presented to an elected official, will be announced in the coming weeks.

Over 80% Concerned About Antibiotic Resistance

How concerned are you that antibiotic resistance will make more infections difficult or impossible to treat and even deadly?

<table>
<thead>
<tr>
<th>Concern Level</th>
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<td>3%</td>
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<tr>
<td>Not Sure</td>
<td>7%</td>
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Source: Research!America Survey of U.S. Adults, Conducted in Partnership with Judy Analytics in October 2018. Due to rounding, the total may not add to 100%.


What does the future of health care look like when antibiotic resistance is at play? Many Americans agree that this issue requires the attention of public health initiatives in order to prevent potential negative consequences. In a new national survey commissioned by Research!America in collaboration with the Infectious Disease Society of America (IDSA) and with support from Pfizer, nearly two thirds of Americans (65%) confirmed that they believe antibiotic resistance is a public health problem. Further, a strong majority (81%) say they are concerned that antibiotic resistance will make future infections more difficult or impossible to treat, and even deadly.

However, despite this awareness, it appears that the majority of Americans need more education on how antibiotic resistance arises, and what they can do to slow down this process. For example, despite the fact that antibiotics are not effective in treating viral infections, such as the cold or the flu, more than a third (37%) of those surveyed still wrongly stated that antibiotics are an effective treatment for viral infections. Additionally, only 57% of those surveyed are aware that even a single course of antibiotics taken when not appropriate can contribute to the development of antibiotic resistance.

The results of the survey support action across all sectors. Nearly three quarters (73%) of those surveyed agree that the federal government should provide incentives to encourage increased private sector investment in the development of new antibiotics, reflecting consensus among 80% of Republicans, 76% of Democrats and 63% of Independents. Some 83% of those surveyed believe pharmaceutical companies should develop more antibiotics. In fact, only 21% of those surveyed say that no action is needed from the federal government on antibiotic research and development at this time.
As we go to press there is still no resolution on the spending bills that fund the National Science Foundation (NSF) and the FDA; Congress and the Administration have not come to terms. Along with other stakeholders, we are working hard to assure that these valuable agencies don’t have to work in the public’s interest with one hand tied behind their backs, unable to effectively plan for the months ahead, a moment longer. Too many patients are waiting for answers. The best resolution is for the current, 115th, Congress, which will likely be in session for most of this month, to get the job finished. (See more details elsewhere in this newsletter.)

In January, Washington will welcome the 116th Congress. The mid-term elections determined that there will be at least 100 new members of the Congress — that means 100 potential new champions for medical and health research! I strongly encourage every recipient of this newsletter to email the representative elected from your district last month (new or incumbent) to offer congratulations on their election and urge support for speeding medical progress. Consider handwriting a personal note and attaching it to the email. Take the time to make a meaningful connection. Elected officials respond to their constituents; be a constituent whose voice is heard.

I end this newsletter with a heartfelt salute to the young scientists across the nation who participated in our Civic Engagement Initiative last fall. Your energy and innovative approaches to connecting to community and candidates for office were palpable, and I think you made a difference. Thank you for your science and for your advocacy. The nation’s future looks brighter for your commitment!
Research!America Names Jennifer Luray Senior Advisor

Jennifer Luray, a health policy leader whose work spans across the public and private sectors, has been named Senior Advisor at Research!America, the nation’s largest nonprofit alliance working to make research to improve health a higher national priority. She began her new role on December 3.

As Senior Advisor, Luray will collaborate across Research!America’s policy, development and communications departments to build partnerships and enhance capacity. She will serve on the organization’s leadership team and participate in coalition development and strategic planning.

Luray directed U.S. policy and government affairs at BD and Abbott, where she worked with key research and healthcare stakeholders to advance a wide array of issues including diagnostic regulation, drug safety, antibiotic resistance and infection prevention. As President of the Susan G. Komen Advocacy Alliance, she drove better access to breast cancer screening.

Luray has held several high-level roles in government. She served as Chief of Staff to former Senator Barbara Mikulski (D-MD) and as legislative director to Congresswoman Nita Lowey (D-NY). Luray supported Congresswoman Lowey’s efforts to champion funding for NIH and increase women in clinical trials. Appointed to the White House under President Clinton, Luray served as Deputy Assistant to the President and Director of Women’s Initiatives and outreach.

Public Health Thank You Day By the Numbers

Organizational Partners = 61
Impressions on Twitter = Over 11.1 Million
Accounts Reached on Twitter = Over 4.4 Million
Accounts Reached on Facebook = Almost 800
15 tweets from Influential Leaders

Federal Policy Update

The results of the November 6, 2018 midterm elections have the potential to bring about several R&D-relevant changes in Congress. Among more than 100 new members, nearly a dozen have STEM backgrounds. The stakes for science R&D will certainly be high for the new Congress. Among the many issues that must be addressed: the return of “sequestration” budget caps in 2020, which could bring a cut of $54 billion to non-defense discretionary spending, the January 2020 reinstatement – after two consecutive, two-year suspensions – of the medical device excise tax, and erosion of our nation’s global R&D leadership and competitiveness as nations like China continue to ramp up their R&D investment and assign a top priority to R&D.

Before the 116th Congress is sworn in, the 115th Congress still has unfinished business, including the need to complete the Fiscal Year 2019 (FY19) appropriations process. The continuing resolution (CR) that provides flat funding for critical science-focused agencies such as FDA and NSF is set to expire on December 7. It is likely Congress will pass another CR that provides a bit more time for Congress to negotiate the final bills, but after that brief reprieve a partial government shutdown is possible. See the chart on page 4 for FY19 funding details.

Another pending issue for the 115th Congress is the nomination of Dr. Kelvin Droegemeier to be the next director of the White House Office of Science and Technology Policy (OSTP). Though he has been approved by the Senate Commerce, Justice, Science, and Related Agencies Committee and has received widespread support from the scientific community, Dr. Droegemeier’s nomination has yet to receive a vote by the full Senate.

In November, the Department of Health and Human Services (HHS) announced that they were examining whether the department, and agencies under its jurisdiction, would be permitted to continue funding fetal tissue research. HHS has held a series of listening sessions lead by Deputy Secretary Brett Giroir, but has not announced next steps.

On November 20, Research!America released its report on U.S. Investments in Medical and Health Research and Development, 2013-2017. As the report continues, the U.S. has seen strong growth across sectors. However, U.S. investment continues to be dwarfed by the costs, both qualitative and quantitative, of disease.
2018 Post-Election Briefing: The Future of Funding

The midterm election of 2018 continues to make waves through the political landscape. How will funding for science and medical research fare in this new Congress? Journalists, former members of Congress, and former congressional staff discussed this issue at Research!America’s Post-Election Briefing on November 8, 2018.

Reid Wilson, national correspondent for The Hill, set the stage by highlighting some of the big trends in the election but emphasized that nation remains fundamentally divided along rural, urban, cultural, political, social, and geographical lines.

A panel lead by PBSNewsHour’s Yamiche Alcindor explored the implications of the election for medical and health research and development. The panel included The Hon. Michael N. Castle, Research!America Board Chair and Partner, DLA Piper, The Hon. John Edward Porter, Research!America Chair Emeritus and Senior Advisor, Hogan Lovells LLP, The Hon. Bart Gordon, Research!America Board Member and Partner, K&L Gates LLP and Sudip Parikh, PhD, Research!America Board Member and Senior Vice President & Managing Director, DIA Americas. The panelists generally agreed that while science funding in general has a positive outlook, challenges remains as there will be competition for limited funds and sequestration presents a significant concern on the horizon. “The whole world of scientific research is opening up like never before,” said Gov. Castle. However, Porter expressed a concern that a divided Congress might have a more difficult time reaching an agreed-upon budget. Parikh added that any growth in science programs would mean growth in discretionary spending, which would be unlikely, especially, since as Gordon pointed out, there is talk of “pay-as-you-go” budgeting and “about a $54 billion hole that’s going to be in discretionary spending soon.”

The midterm elections will have an impact on “medical and health progress, for R&D writ large and more broadly for the process of policy making which affects all of these priorities,” said Research!America’s president and CEO Mary Woolley in her remarks. “There is still a lot of advocacy to be done.”

Public Health Thank You Day 2019

On Monday November 19, 2018, Research!America partnered with 61 organizations to thank the public health professionals who work hard to keep our country healthy and safe. More than 4.4 million people saw messages on social media thanking researchers, health inspectors, nutritionists, occupational health professionals, first responders, and so many others for their tremendous work to improve the health of our communities. Civic leaders also lent their voices to thanking public health professionals. CDC director Robert Redfield, NIH director Francis Collins, Secretary of HHS Azar, U.S. Surgeon General Jerome Adams, and several members of Congress all shared quotes or contributed to the outpouring of support that included more than 1500 original tweets with #PHTYD.

Public health professionals protect us from disease and injury and help during recovery efforts from natural disasters. Research!America is proud of its role in thanking these dedicated people. You can learn more about public health professionals and our partner organizations at www.publichealththankyouday.org or by searching twitter for the hashtag #PHTYD.

Federal Research Budget

<table>
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<tr>
<th>AGENCY</th>
<th>FY18 REQUEST</th>
<th>PRESIDENT’S FY19 REQUEST</th>
<th>RESEARCH!AMERICA’S FY19 ASKS</th>
<th>FY19 HOUSE</th>
<th>FY19 SENATE</th>
<th>FY19 MINBUS</th>
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</table>

* indicates that program level is reported in this chart
** indicates that budget authority is reported in this chart

U. of Florida Scientists Urged to Advocate for Science

The importance of scientists connecting with policymakers and the non-scientific public to discuss research issues that impact society was at the core of a town hall meeting hosted by The University of Florida in Gainesville on November 15.

“The opportunities for science have never been richer,” said Research!America president and CEO Mary Woolley, who kicked off the discussion. Woolley encouraged students and faculty to share their passion for research and innovation to shore up support for stronger federal investments for research.

Research!America Chair Emeritus, The Honorable John Edward Porter shared his experiences working with scientists and advocates as a member of Congress for 21 years. He emphasized the need for advocates to be consistent with their outreach to elected officials as medical research competes with other priorities. “Scientists are going to have to stand up for themselves, you’ve got competition,” he said. The most effective advocates engage regularly, clearly and consistently with their members of Congress, underscored Porter.

David Norton, PhD, vice president for research in the UF Office of Research, and Stephen Sugrue, PhD, Professor and senior associate dean for research affairs at the UF College of Medicine and acting associate vice president for research at UF Health, also served on the panel and provided perspectives on international research collaboration, legislative engagement and other issues related to university research. The panel was facilitated by Todd Golde, MD, PhD, director of the director of the Evelyn F. and William L. McKnight Brain Institute of the University of Florida.
Antibiotic Resistance Public Opinion Surveys

Research!America, in collaboration with the Infectious Disease Society of America (IDSA) and Pfizer Inc released national public opinion survey data about antibiotic resistance that received extensive media coverage in outlets such as U.S. News & World Report, Washington Examiner, Health Day and Becker's Hospital Review.

Medical and Health R&D Investments


Climate Change and Health

In a Fierce Healthcare article about a study warning of the escalating health risks from climate change, Research!America board member Georges Benjamin, MD, executive director of the American Public Health Association, commented that more action is needed to protect public health from climate change.

E- Cigarettes

Research!America board member Nancy Brown, CEO, American Heart Association, was quoted in a New York Times article about the consequences of marketing e-cigarettes on tobacco control efforts.

Reinventing U.S. Healthcare


Research and the Midterm Elections

In a Science Business article about impact of the the U.S. midterm outcomes on science and the policy agenda, Research!America board member the Honorable Bart Gordon was quoted about the future leadership of the House Committee on Science, Space and Technology.

In a Bloomberg Law article about future House leadership, Research!America Vice President of Policy and Advocacy Ellie Dehoney was quoted about potential champions for research.

IN BRIEF

Bipartisan Civic Engagement Update

In connection with the National Science Policy Network, Research!America launched the Bipartisan Civic Engagement Initiative during which microgrants were provided to ten science policy groups to increase their level of engagement with candidates during the midterm elections. To share the experience, Research!America invited the Missouri Science and Technology Policy (MOST) Fellows co-founder Rachel Owen to present at the Research!America Post-Election Briefing. During her presentation, Ms. Owen discussed her group's initiative, which involved hosting a science policy café for scientists to share their research with candidates. MOST also hosted “Watch Parties” where they discussed policies covered in the Missouri Senate Debate. In culmination to the project, Ms. Owen traveled to Capitol Hill to share her work with Missouri Senators Roy Blunt (R-MO) and Claire McCaskill (D-MO). For more information, please visit http://bit.ly/2FWnlRv.

Funding for the initiative was provided through the generous support of our sponsors:
- American Association for the Advancement of Science
- American Astronomical Society
- American Chemical Society
- American Institute of Physics
- American Physical Society
- American Psychiatric Association
- American Society for Microbiology
- Association for Psychological Science
- Coalition for Life Sciences
- Federation of Associations in Behavioral & Brain Sciences
- International Association for Dental Research
- The Optical Society (OSA)
- Rita Allen Foundation
- Sigma Xi
- Society for Neuroscience
- Supporters of Agricultural Research Foundation (SoAR)

Research!America Releases New Report on Funding

On November 20, Research!America released its report on *U.S. Investments in Medical and Health Research and Development, 2013-2017*. Generally, the report shows that the U.S. has seen strong growth across sectors. However, U.S. investment continues to be dwarfed by the costs of disease.

U.S. investments in medical and health research and development grew by 27% from 2013 to 2017. Among those sectors funding R&D, industry and the federal government represent the lion's share of that investment. In 2017, industry accounted for 67% of total R&D investment and the federal government accounted for 22%. Biopharmaceutical companies and the National Institutes of Health (NIH) represent the highest contributors to medical and health R&D in the industry and federal government sectors respectively.

Though the federal government saw more than 18% growth in R&D investment from 2013 to 2017, these investments were uneven across health agencies. NIH, for instance, received $2 billion increases in 2016 and 2017, while agencies such as the Centers for Disease Control and Prevention (CDC) and the Agency for Healthcare Research and Quality (AHRQ) experienced stagnant or reduced budgets over the same time period. In the industry sector, ups and downs in medical technology investment coincide with the establishment and subsequent suspension of the medical device excise tax, with investment slowing when the tax was fully in place and picking up the pace when the tax was suspended.

Even with consistent five-year growth across all sectors, the U.S. continues to spend just 5 cents of every health care dollar on research into treatments, cures, and preventative measures for disease. With the impending threat of austerity-level “sequestration” budget cuts in FY2020 and the return of the medical device excise tax in January 2020, our nation is at a critical juncture in determining whether we are doing enough to confront deadly and debilitating diseases.

The Chase for Cancer Care Solutions Continues

Cancer can be a many-headed monster, and finding the cure for it is a herculean effort. The Washington Post held an event on November 13, 2018 entitled “Chasing Cancer” in which scientists, physicians and leaders in the field of oncology convened to discuss the ever-elusive cure for cancer. The program opened with a discussion of the latest advancements in cancer treatment technology and research. Norman E. “Ned” Sharpless, MD, Director of the National Cancer Institute, stated, “Everything that we do successfully in a patient with cancer has come about as a result of a clinical trial, so the ability to do clinical trials rapidly and efficiently at low cost is critical to making progress against cancer.”

Scott Gottlieb, MD, Commissioner of the Food and Drug Administration, noted that the FDA is working to remove the obstacles that are preventing clinical trials from being conducted in smaller communities. “We have some specific policies we’ll be rolling out to make it less burdensome on providers to try and democratize clinical trials,” he said.

**Laurie Fenton Ambrose**, President and CEO of *Lung Cancer Alliance*, shared the organization’s partnership with the YOUR Cancer initiative in a panel sponsored by AstraZeneca. YOUR Cancer strives to keep patients and their loved ones the focus of cancer care as well as connecting patients and their communities with research projects. “The more that we can use every means of connecting to our community, the better the community will be. It’s about informing them, educating them, supporting them empowering them,” she said.

Other notable panelists include **Peter Bach**, Director of the Center for Health Policy and Outcomes for Memorial Sloan Kettering Cancer Center, **Jennifer Bryant**, Senior Vice President for Policy and Research for PhRMA, and **Sean Parker**, Founder and Chairman of the Parker Institute for Cancer Immunotherapy.
Founded in 1824, the GW School of Medicine and Health Sciences (SMHS) was the first medical school in the nation’s capital and is the 11th oldest in the country. Working together in our nation’s capital, with integrity and resolve, the GW SMHS is committed to improving the health and well-being of our local, national, and global communities.

Competition for funding is a consistent challenge for research institutions, regardless of whether they’re based in the public or private sectors. Medical discoveries don’t come cheaply, however, and while the available stream of federal research dollars has remained relatively constant over the past two decades, the costs associated with scientific investigation have increased.

Beginning in 2015, in an effort to boost both federal and non-federal funding for biomedical and health research and build on its overall research enterprise, the George Washington University (GW) School of Medicine and Health Sciences (SMHS) shifted its focus to building network-based research programs that support creative, interdisciplinary collaborations. The school turned its attention to three areas critical to the broader research mission — education, infrastructure, and mentorship — and invested in programs in cancer, neuroscience and infectious disease.

“We’ve hired people, both seasoned researchers and young investigators, who are interactive and enthusiastic about collaborating,” says Robert Miller, PhD, senior associate dean for research at SMHS. That focus on finding eager partners has served as a catalyst across disciplines, leading current faculty into fresh areas of inquiry, adds Miller, who also serves as Vice President for Research at GW.

Beyond investment in collaborative faculty members, the school has turned attention to developing shared resources, namely the school’s core lab facilities, including the Research Pathology Core Laboratory, the Nanofabrication and Imaging Center, and the Flow Cytometry Core Facility.

Mentoring junior faculty is also key to growing the success of research at the institution. The school developed several initiatives — including a searchable researcher database, a grant opportunities e-newsletter, and a peer-to-peer learning community — to support these early career faculty members and connect them with the rest of the SMHS research team. Development activities across the school include guidance on research education, promoting research opportunities, and sponsored research support directed by the Associate Dean for Research Workforce Development, Alison Hall, PhD. University-wide programming including research awards, seed grants, and facilitating funds help get research investigations off the ground in preparation for outside funding applications.

SMHS is also growing its cadre of clinician-scientists — who focus on both clinical care and research and often hold dual degrees in medicine and science — to add their valuable clinical insight to our biomedical workforce. The school is working to foster opportunities for clinician-scientists to form effective research networks, find collaborators on campus and off, and partner with mentors in their field of interest.

Overall the results have been significant. “The research enterprise has grown significantly over the last three years as a result of investment from the school and from the university,” Miller explains.

The school’s emphasis on collaborative research has helped investigators land significant program project grants, including a partnership with Children’s National Health System on a Clinical and Translational Science Award from the National Institutes of Health and a Eunice Kennedy Shriver National Institute of Child Health and Human Development grant to support research in pediatric dysphagia, which draws upon faculty talent from a range of disciplines.

More Than Half Favor Doubling Federal Spending on Medical Research

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<thead>
<tr>
<th>Strongly Favor</th>
<th>Somewhat Favor</th>
<th>Not Sure</th>
<th>Strongly Oppose</th>
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<td>35%</td>
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SOURCE: A RESEARCH!AMERICA SURVEY OF U.S. ADULTS CONDUCTED IN PARTNERSHIP WITH ZOGBY ANALYTICS IN JANUARY 2018. DUE TO ROUNDING, THE TOTAL MAY NOT ADD TO 100%.
Support the Nominee for OSTP Director

The President has nominated respected atmospheric scientist Dr. Kelvin Droegemeier to serve as the Director of the White House Office of Science and Technology Policy (OSTP). The Director of OSTP plays a crucial role in advancing science and science-based policy. The U.S. Senate has responsibility for reviewing Presidential nominations. Encourage your Senators to move swiftly to confirm Dr. Kelvin Droegemeier as the next director of OSTP!