



To: Massachusetts Delegation Legislative Directors, Education LAs and Science LAs

From: **Boston University** – Jennifer Grodsky and Emily Burlij, Federal Relations
Harvard University – Suzanne Day, Jon Groteboer, and Peter DeYoe, Office of Federal Relations
Massachusetts Institute of Technology – David Goldston, Philip Lippel, and Kate Stoll, Washington Office

Date: March 9, 2018

Re: FY 2019 Programmatic Requests for Federal Science and Education Agencies

Please find attached information on fiscal year (FY) 2019 priorities for Massachusetts's research universities to support your programmatic requests to the Appropriations Committee. We appreciate the strong support for research and education amongst our delegation and we are happy to provide further information or assistance as required.

As you are aware, federal support for research, education, and student aid enables Massachusetts's research universities to lead the way in scientific discovery and educating future leaders. This in turn attracts investment from tech-based industries and contributes to the vibrant economy of Massachusetts. Our institutions greatly appreciate your consistent work to enhance funding for scientific research and student support across the federal government.

As reported in the National Science Foundation's Science and Engineering Indicators 2018 report released in January 2018, while the United States is the global leader in science and technology, other nations, such as China continue to close that gap. To ensure the U.S. remains a leader in knowledge creation, technology development, and innovation, and to address issues of national importance, we urge Congress to continue to make research and higher education top priorities in the FY 2019 appropriations process. We hope, too, that Congress will pass FY 2018 appropriations bills that robustly fund research agencies and student aid in order to help the Commonwealth's scientists and students thrive.

Thank you for considering these requests, for your ongoing advocacy for research and education, and for your support of Massachusetts research universities.

LABOR, HEALTH, AND HUMAN SERVICES, EDUCATION AND RELATED AGENCIES

National Institutes of Health (NIH)

FY 2019 Request: At least \$38.4 billion

FY 2017 level: \$34.2 billion

Dear Colleague: Circulated by Reps. Dave McKinley (R-WA), Andre Carson (D-IN), Peter King (R-NY), and Susan Davis (D-CA)

Contact Charlie Arnowitz (Carson) by March 14

Massachusetts institutions received over \$2.72 billion in funding from NIH in FY 2017. Our researchers are making discoveries to advance treatments and cures for diseases such as cancer, Alzheimer's disease, and mental health disorders. NIH also provides irreplaceable training support to early career biomedical researchers at our institutions; this support must be sustained so as not to disrupt the research workforce pipeline.

Department of Education, Pell Grants

FY 2019 Request: \$6,180 Maximum Discretionary Award

FY 2017 Enacted: \$5,920 Maximum Discretionary Award

The Pell Grant program is the foundation of federal student aid, helping approximately 122,000 students attend college in Massachusetts. Our universities build on the foundation provided by Pell by supplementing federal aid with our own institutional financial aid. As a result, we can maintain affordability and outstanding educational quality.

Department of Education, Federal Work Study (FWS)

FY 2019 Request: \$1.011 billion

FY 2017 Enacted: \$989.7 million

Massachusetts universities participate in campus-based student aid programs at a very high level, with an FWS allocation of nearly \$44.6 million in the 2017-18 academic year. FWS helps student succeed in college and prepare for the world of work.

Department of Education, Supplemental Education Opportunity Grant (SEOG)

FY 2019 Request: \$779 million

FY 2017 Enacted: \$733.1 million

Campus-based student aid programs help students by leveraging federal dollars with universities' own aid. SEOG awards are available to students with "exceptional need," and \$779 million would restore funding to the program's fiscal year 2005 level. More than 43,000 Massachusetts students receive SEOG.

Department of Education, Institute for Education Sciences

FY 2019 Request: \$670 million

FY 2017 Enacted: \$605.3 million

Investing in peer-reviewed education research activities at the Institute of Education Sciences results in innovations in both teaching and learning, improving classrooms around the nation.

Department of Education, International Education and Foreign Language**FY 2019 Request:** \$76 million**FY 2017 Enacted:** \$72.2 million**Dear Colleague:** Generally circulated by Rep. Price (D-NC)**Dear Colleague:** Generally circulated by Sen. Schatz (D-HI)

The Title VI/ Fulbright-Hays International Education and Foreign Language programs support training in critical foreign languages, educational outreach activities for K-12 schools, and curriculum development for the multidisciplinary study of regions around the world, including Africa and the Middle East. In an increasingly interconnected world, these international education programs are an essential means for Massachusetts to develop a globally fluent citizenry.

Department of Education, Graduate Assistance in Areas of National Need (GAANN)**FY 2019 Request:** \$41 million**FY 2017 Enacted:** \$28 million

GAANN fellowships provide financial support for Massachusetts graduate students pursuing doctoral education in fields that are critical to national priorities, including: biology; chemistry; computer and information sciences; engineering; mathematics; nursing; physics; and educational assessment, evaluation and research. \$41 million would restore the program to its fiscal year 2010 level.

Institute of Museum and Library Services (IMLS)**FY 2019 Request:** \$231 million, including \$38.6 million for Museum Services**FY 2017 Enacted:** \$231 million

IMLS is the primary source of federal funding for the nation's museums and libraries, including many in Massachusetts. Through grants and local programs, the IMLS supports education, preservation, digitization, and many more programs to enrich the community. In 2017, the IMLS provided \$3.2 million in grants straight to the Commonwealth.

COMMERCE, JUSTICE, SCIENCE AND RELATED AGENCIES**National Science Foundation (NSF)****FY 2019 Request:** \$8.45 billion**FY 2017 Enacted:** \$7.47 billion**Dear Colleague:** Circulated by Reps. G.K. Butterfield (D-NC) and David McKinley (R-WV)

Contact Dennis Sills (Rep. Butterfield) or Christopher Buki (Rep. McKinley) by March 14

Dear Colleague: Circulated by Sen. Ed Markey (D-MA), Deadline to be determined

NSF is the federal government's primary funder of basic research, supporting work across scientific disciplines with the potential to foster breakthrough discoveries. In FY 2017, 1,287 awards totaling approximately \$458.7 million to more than 100 institutions in Massachusetts. NSF makes awards based on intellectual merit and broader societal impact, through a proven system of peer review. Our institutions support research across all NSF disciplines.

National Aeronautics and Space Administration (NASA) Science account**FY 2019 Request:** \$6.2 billion**FY 2017 Enacted:** \$5.76 billion

NASA's footprint in Massachusetts is profound and provides valuable learning opportunities at our institutions for both undergraduate and graduate students. NASA's Science Mission Directorate addresses earth science, planetary science, astrophysics, and heliophysics, and funds the Space Grant Program to encourage space education. NASA is a key federal contributor to advancing research in the physical sciences on Earth and in space.

National Aeronautics and Space Administration (NASA) Space Technology**FY 2019 Request:** \$796 million**FY 2017 Enacted:** \$686.5 million

NASA Space Technology develops innovative tools and invests in cutting edge technology development that support some of the best minds in science. Moreover, it funds fellowship programs to support the next generation of innovators on Massachusetts campuses.

DEFENSE**Department of Defense (DOD) Basic (6.1) Research****FY 2019 Request:** \$2.37 billion**FY 2017 Enacted:** \$2.2 billion

Within the DOD basic research (6.1) program, our institutions support sustained funding for critical programs such as the Multidisciplinary University Research Initiative, which supports teams of faculty conducting research in high priority fields that cross typical scientific disciplines; the National Defense Science and Engineering Graduate Fellowships program, which provides fellowships for doctoral students pursuing a degree of interest to the DOD; and the Minerva Initiative, the Department's premier social science research program that deepens understanding of the social, cultural, and political forces affecting areas of strategic importance to the U.S.

Defense Advanced Research Projects Agency (DARPA)**FY 2019 Request:** \$3.4 billion, same as President's budget request**FY 2017 Enacted:** \$2.87 billion

The Defense Advanced Research Projects Agency (DARPA) funds high-risk, high-reward research that can lead to innovative applications for the warfighter. DARPA is known for its willingness to fund ambitious research, leading to game changing technologies such as GPS and the Internet.

ENERGY AND WATER DEVELOPMENT AND RELATED AGENCIES

Department of Energy (DOE) Office of Science

FY 2019 Request: \$5.85 billion

FY 2017 Enacted: \$5.4 billion

Dear Colleague: Circulated by Reps. Randy Hultgren (R-IL), Ben Ray Lujan (D-NM), Lee Zeldin (R-NY), and Bill Foster (D-IL)

Contact: Andrew Mooney (Hultgren), Levi Patterson (Lujan), Matthew Scott (Zeldin), or Samantha Warren (Foster)

The DOE Office of Science is a key funder of discovery-based and use-inspired basic research in fields including physics, chemistry, materials science, environmental science, advanced scientific computing, biology, and applied mathematics. Massachusetts universities and scientific organizations received more than \$65.8 million in DOE Office of Science funding in fiscal year 2017, with major awards from every part of the Office. Massachusetts scientists also take advantage of world-class user facilities at ten DOE National Laboratories funded through the Office of Science.

DOE Advanced Research Projects Agency-Energy

FY 2019 Request: \$350 million

FY 2017 Enacted: \$306 million

ARPA-E supports early-stage energy technologies with transformational potential in order to lessen our reliance on energy imports, reduce energy-related emissions such as greenhouse gases, and improve energy efficiency. The full request would allow the agency to hold competitions in 7 or 8 new areas. Twenty-two awards are currently being executed by Massachusetts' teams or have been selected for awards, including some at each of our universities. Thirty-eight additional awards have already completed their projects in the agency's first decade of operation. We estimate ARPA-E projects have collectively brought well over \$150 million in federal funding to bear on advanced energy technology development in the Commonwealth.

DOE Office of Energy Efficiency and Renewable Energy

FY 2019 Request: \$2.25 billion

FY 2017 Enacted: \$2.09 billion

The Office of Energy Efficiency and Renewable Energy funds research, development, and implementation programs aimed at improving the energy efficiency of homes, buildings, and industrial processes (including five ManufacturingUSA Institutes with Massachusetts members); developing clean and efficient new vehicles and transportation systems; and developing affordable renewable energy technologies such as wind, solar, and geothermal. Massachusetts universities and companies working towards a low-carbon energy future received over \$15 million in EERE R&D awards in FY2017 and have received over \$12 million so far in FY2018, helping to make Massachusetts and New England leaders in the clean energy revolution.

INTERIOR, ENVIRONMENT AND RELATED AGENCIES

National Endowment for the Humanities (NEH)

FY 2019 Request: \$155 million

FY 2017 Enacted: \$150 million

Dear Colleague: Generally circulated by Reps. David Price (D-NC) and Leonard Lance (R-NJ)

Dear Colleague: Generally circulated by Sen. Tom Udall (D-NM)

NEH provides support for humanities research, such as history, preserving endangered languages and cultures, and literature. NEH programs stimulate creativity and innovation, helping us better understand social and international dimensions of complex questions.

National Endowment for the Arts (NEA)

FY 2019 Request: \$155 million

FY 2017 Enacted: \$150 million

NEA provides support for Americans to participate in and engage with the arts across a wide variety of media and programs, including exhibits, concerts, readings, and other performances. This commitment to the arts—through state, local, and public-private partnerships—shares the benefits of these programs with every district in every state.

Environmental Protection Agency (EPA) Science and Technology

FY 2019 Request: \$753 million

FY 2017 Enacted: \$724 million

EPA's Science and Technology (S&T) programs provide the foundation for credible decision-making to safeguard human health and ecosystems from environmental pollutants. EPA supports research in a number of areas, including air quality, chemical safety, climate change, water and homeland security, among others. The agency's budget – including the budget for its S&T programs – has steadily eroded over the past decade. As a consequence, EPA is now in the preliminary stages of planning a consolidation of some offices and functions that include eliminating the National Center for Environmental Research (NCER), which provides extramural funding to institutions in the Commonwealth for high-quality research in exposure, effects, risk assessment and risk management. We respectfully urge Congress to begin reversing the years-long decline in EPA S&T funding and direct EPA to maintain NCER. The requested funding represents a 4% increase overall, which would provide small real growth above inflation.

TRANSPORTATION, HOUSING AND URBAN DEVELOPMENT AND RELATED AGENCIES

Federal Aviation Administration (FAA)

A13.a - Environmental Energy:

FY 2019 Request: \$16.013 million

FY 2017 Enacted: \$16.013 million

A13.b - NextGen-Environmental Research-Aircraft Technologies, Fuels and Metrics

FY 2019 Request: \$27.174 million

FY 2017 Enacted: \$27.174 million

Aviation is a vital part of the US economy and the associated manufacturing activities supporting the industry are the largest single component of the U.S. manufacturing economy. However, to facilitate long-term global growth of aviation, U.S. airlines must continue to look at ways to reduce the impact of aviation noise and act as environmental stewards through enhanced operations, advanced airframe design, as well as cost effective alternative jet fuels. This ongoing environmental research, conducted by universities in Massachusetts and around the country, is crucial to ensure aviation's continued growth and economic vitality.