

March 30, 2017

The Honorable John Culberson 2161 Rayburn House Office Building Washington, D.C. 20515

The Honorable José Serrano 2354 Rayburn House Office Building Washington, D.C. 20515 The Honorable Richard Shelby 304 Russell Senate Office Building Washington, D.C. 20510

The Honorable Jeanne Shaheen 506 Hart Senate Office Building Washington, D.C. 20510

Dear Chairman Culberson, Ranking Member Serrano, Chairman Shelby and Ranking Member Shaheen:

The Coalition for Aerospace and Science (CAS) is an alliance of prominent industry, university, and science organizations united in our support for robust and sustained federal investments in the National Aeronautics and Space Administration (NASA). As a group, we believe that increasing federal support and maximizing the efficiency and effectiveness for this vital agency will help ensure our nation's scientific, industrial, and academic leadership long into the future. As you allocate funding for Fiscal Year (FY) 2018, we urge you to build on the strong bipartisan support established in FY 2016 by providing NASA with at least \$20.48 billion for FY 2018 - a five percent increase above the amount provided by the House Appropriations Committee for FY2017.

Strong funding, a balanced portfolio of missions and research, and policies that encourage innovative collaborations are essential to our nation's leadership in space and Earth sciences, groundbreaking technology development, and expanding the frontiers of human exploration. NASA's long history of transformative advances in science and technology have positioned the U.S. as a world leader across many fields, driving strong U.S. exports, supporting jobs, and drawing the best and brightest students to American universities. As the nation addresses new problems and challenges, robust support for NASA is critical to fostering a 21st century economy and restoring America's global scientific and technological leadership.

Our recommendation echoes that of over 500 organizations from all fifty states representing American industry, higher education, science, and engineering recognized in the landmark statement *Innovation: An American Imperative* (attached). These principles urge Congress to enact policies and investment in areas that ensure the United States remains the global innovation leader.

Every member of CAS has unique concerns and requests. However, the entire coalition is united in our support and advocacy for the NASA's critical research, missions, and programs. As NASA-wide stakeholders, we respectfully request that within the topline request, Congress take note of the following specific opportunities for progress:

HUMAN EXPLORATION AND SPACE OPERATIONS

The Coalition requests strong continued support for the **Orion Multi-Purpose Crew Vehicle and Space Launch System** (SLS) programs. For America to continue to make progress in human exploration, it is vital to ensure these programs have the resources needed to build upon the significant progress already achieved on both SLS and Orion. Consequently, for FY18, we request \$2 billion for SLS including at least \$300 million for the SLS Exploration Upper Stage, \$1.35 billion for Orion, and \$635 million for Exploration Ground Systems. These levels of funding will allow completion of these systems on a schedule that will enable the first crewed Orion mission no later than 2021. CAS recognizes that NASA is currently studying the feasibility of launching a crew around the moon on the first Orion/SLS launch, which could impact funding requirements if approved. Meeting these funding requirements is also essential to enable the type of international partnerships for human exploration that have made the International Space Station (ISS) such a success.

Additionally, CAS requests that Congress builds upon priorities outlined in the bipartisan NASA Transition Authorization Act of 2017 (P.L. 115-10) by providing competitive funding for human factors research. This includes priorities related to the interaction of autonomous systems anticipated in future long-duration crewed missions, updated mission control design, improving the behavioral health and performance of astronauts, and other research areas outlined and executed by the agency's Human Systems Integration Division.

Regarding other parts of the **Human Exploration and Operations Directorate**, CAS recommends \$1.56 billion for the ISS, including for commercial cargo resupply. For the Commercial Crew program, which is important both to restore independent US access to the ISS and to increase the amount of science performed on it, CAS recommends \$1.74 billion. In addition, to support a new deep space habitat in preparation for future long duration missions, CAS requests \$110 million.

SCIENCE

The Coalition requests at least \$5.9 billion to fund NASA's **Science Mission Directorate**. Maintaining a balance across this portfolio is necessary to ensure the U.S. remains globally competitive in all fields of science.

The Coalition requests Congress provide ample funding in order for the **Planetary Science Division** to adhere to the priorities set by the Planetary Science Decadal Survey. We applaud Congress' past support for exploring Europa, which the scientific community has determined offers one of the most promising extraterrestrial habitable environments in the solar system. Sufficient funding is necessary to ensure the Europa Mission can meet its expected launch date in the early 2020's. Beyond the Europa mission, the Coalition supports ongoing missions on Mars and elsewhere, as well as continued funding for future Discovery and New Frontiers missions in order to meet development milestones.

CAS requests robust funding for the **Earth Science Division** to ensure continued support for key missions and programs. Missions within this division improve our understanding of Earth's complex and dynamic system. The Coalition supports the goals of Earth science missions, including: the Pre-Aerosol, Clouds, and Ocean Ecosystem (PACE); Surface Water and Ocean Topography (SWOT); Climate Absolute Radiance and Refractivity Observatory (CLARREO); Orbiting Carbon Observatory-3 (OCO-3), Deep Space Climate Observatory (DSCOVR); and a 2020 launch date for the NASA-ISRO Synthetic Aperture Radar (NISAR) missions. Among many outcomes, these missions will help us monitor oil spills, predict space weather events, and measure how bodies of water change over time.

Funding for this division supports the launch of Landsat 9 as early as 2021 and Landsat 10 in approximately 2029, as well as funding to increase the capabilities and uses of multi-spacecraft constellations of very small scientific satellites. Additionally, CAS requests Congress supports Venture Class missions and Earth Science Research and Analysis (R&A) - two key programs that fund research on universities across the United States - at \$199.6 million and \$322.6 million, respectively.

Finally, the National Academies is mid-way through the development of its second ESAS decadal survey, which will identify science priorities and the missions that will enable them through 2027. Like the Astronomy and Astrophysics Decadal Survey released in 2010, this report will be considered reflective of the scientific community's assessment of the field of Earth science and the questions that will drive new discoveries. The Coalition requests continued, robust funding for the Division in FY2018 and beyond to meet the forthcoming consensus-based objectives.

The Coalition requests \$720 million to support the **Heliophysics Division (HPD)**. This amount is vital to improve our understanding of the Sun-Earth relationship and mitigate the harmful impacts of a space weather incident. Such an event has the potential to impose catastrophic damage to the United States' electric grid and poses a threat to America's national security. For example, NASA's Advanced Composition Explorer (ACE) mission monitors solar activity that may harm sensitive space- and ground-based assets.

This requested amount will implement key community priorities outlined in the Space Weather Action Plan and 2012 Decadal Strategy for Solar and Space Physics. This includes a two-year cadence of alternating Heliophysics Small Explorer (SMEX) and Mid-sized Explorer (MIDEX) missions. A solicitation for a MIDEX mission has not been issued since FY2011, and a subsequent one is not slated for release until FY2019. The Heliophysics community was encouraged by the release of a SMEX solicitation in July 2016, but is concerned that funding shortfalls resulting from further stagnation in the Division's budget will hinder timely delivery of the mission and further jeopardize the prospects of implementing a higher cadence of these competitive missions. This amount is also needed to accommodate a necessary increase for the Solar Probe Plus mission as it enters its peak development phase without incurring a seven percent cut to other programs within the Heliophysics Division.

Robust support for the **Astrophysics Division (APD)** will allow for continued progress on the Astronomy and Astrophysics Decadal Survey priorities, which includes a launch of the Wide Field Infrared Survey Telescope (WFIRST) by 2024. This start date will allow for greater overlap with

James Webb Space Telescope, enable WFIRST to impact dark energy and exoplanet science sooner, and will save \$300 million over the mission lifetime.

The Coalition also requests \$76 million for APD's R&A account. Typically, R&A is conducted on data from satellites, probes, and telescopes that NASA builds, launches, and operates, but can also include the massive amount of information that remains after a mission is over.

For example, R&A opportunities are used to analyze data from Kepler, a telescope that searched for planets orbiting other stars. While the mission ended almost four years ago, scientists today still sift through data and continue to make new discoveries. In this way, the initial taxpayer investment continues to provide the basis for discoveries years after the mission itself has ended. Nevertheless, while NASA's overall budget has grown, APD's R&A account has remained relatively flat, especially when taking inflation into account. This funding affects thousands of researchers, including many at universities and colleges with world-renowned astronomy programs working to increase our nation's knowledge base in astronomy and astrophysics.

EDUCATION

The Coalition requests continued support for NASA education programs. NASA plays a pivotal role in encouraging young people to pursue science, technology, engineering and mathematics (STEM) disciplines. CAS requests \$45 million for the **Space Grant College and Fellowship Program** and supports a statutory cap of five percent of the allocated funds designated as administrative fees assigned to NASA. This program funds nearly 4,000 fellowships and scholarships for students in all 50 states and the District of Columbia who are pursuing a STEM career, allowing them to participate in NASA aeronautics and space projects.

TECHNOLOGY

CAS requests at least \$796 million for the **Space Technology Mission Directorate (STMD).** Robust investments in this directorate are necessary to develop the technologies and capabilities needed to achieve current and future NASA missions.

STMD represents an important component of NASA-wide innovation and technology development, and is the primary vehicle for bringing new technologies to market. Such promising innovations include the Laser Communications Relay Demonstration program, scheduled for a test in 2020 and expected to break new ground in optical communication technology. This is NASA's next premier optical communication demonstration, with the potential to revolutionize the way we send and receive data, video and other information. Other innovations with multi-directorate implications include the demonstrations of Solar Electric Propulsion technologies vital to future deep space human and robotic exploration missions.

The requested amount will also enable the Directorate to expand the number of Space Technology Research Institutes (STRI). These institutes will complement STMD's existing individual investigatororiented programs with larger multidisciplinary research collaborations led by universities. STRIs strengthen NASA's connection to the academic community and empower universities to advance fundamental research and technology development in areas of interest to NASA and the aerospace community. In addition, STRIs will contribute to the nation's future economic competitiveness by helping to develop the high-skilled workforce necessary for ensuring our continued leadership in research and development.

The Coalition remains concerned that the recent unfunded transfer of the RESTORE-L program threatens to impact the Directorate's exciting technology development programs, including grants to engineers and researchers at many of our universities and small businesses. As such, CAS requests \$796 million for the Directorate to ensure the Directorate remains a strong technological backbone for the Agency. Within that amount, CAS requests that Congress provide a \$5 million increase to the Directorate's Technology and Innovation Division for NASA's successful Technology Transfer Program, which has seen a 76 percent reduction in its budget over the last ten years.

AERONAUTICS

The Coalition requests at least \$712 million for the **Aeronautics Research Mission Directorate.** This directorate provides research that is vital to the well-being of our nation's air transportation system and the aviation industry. Additionally, the Coalition supports NASA's efforts to safely integrate Unmanned Aircraft Systems in the national airspace, allowing us to harness the potential of this technology.

Thank you for your consideration of our funding requests. We hope you will consider CAS as a resource as you work to craft FY2018 appropriations.

Member Organizations:

Aerospace Industries Association American Astronautical Society American Astronomical Society American Geophysical Union Association of American Universities Association of Public and Land-grant Universities American Society of Agronomy **Boston University** Consortium for Ocean Leadership **Crop Science Society of America Geological Society of America** Human Factors and Ergonomics Society Lockheed Martin Corporation New Mexico State University Northrop Grumman Corporation The Planetary Society

Purdue University Raytheon Company Soil Science Society of America SPIE - the international society for optics and photonics Washington State University Woods Hole Oceanographic Institution University Corporation for Atmospheric Research University of Arizona University of Colorado – Boulder University of Maryland – College Park University of Maryland – Baltimore County University of Michigan University of New Hampshire University of Washington University of Wisconsin – Madison

INNOVATION: AN AMERICAN IMPERATIVE

A call to action by American industry, higher education, science, and engineering leaders urging Congress to enact policies and make investments that ensure the United States remains the global innovation leader.

Our nation knows what it takes to innovate: a sustained commitment to scientific research, a world-class workforce, and an economic climate that rewards entrepreneurship and innovation. As the most dynamic and prosperous nation in the world, the United States has long benefitted from policies and investments that have promoted innovation and in turn driven productivity and economic growth, bolstered American trade, ensured our health and national security, and safeguarded the American dream. Our leadership is now at risk because of years of underprioritizing federal scientific research investments and policies that promote innovation.

Now is not the time to rest on past success. As noted by the American Academy of Arts and Sciences in its 2014 Report *Restoring the Foundation: The Vital Role of Research in Preserving the American Dream,* "There is a deficit between what America is investing and what it should be investing to remain competitive, not only in research but in innovation and job creation." Competitor nations are challenging our leadership by copying our playbook for success. At the same time our nation's support for scientific research and innovation is stagnating. If these trends continue, other countries will soon surpass the United States as the global innovation leader.

We must heed the warnings in the *Restoring the Foundation* report and other salient reports of the past decade and act decisively. In particular, Congress must:

Renew the federal commitment to scientific discovery

by ending sequestration's deep cuts to discretionary spending caps and providing steady and sustained real growth in funding of at least four percent for basic scientific research at: the National Science Foundation, the National Institutes of Health, the Department of Energy's Office of Science, the Department of Defense, NASA, the National Institute of Standards and Technology, USDA, and NOAA;

Make permanent a strengthened federal R&D tax credit

as a part of comprehensive tax reform to encourage more private-sector innovation investment here in America instead of in competitor countries;

Improve student achievement in science, technology, engineering, mathematics (STEM)

through increased funding of proven programs and incentives for science and math teacher recruitment and professional development;

Reform U.S. visa policy

to welcome and keep highly educated international professionals, particularly those holding STEM degrees from U.S. universities;

Take steps to streamline or eliminate costly and inefficient regulations

and practices governing federally funded research to help unburden researchers to focus more time on conducting research and training the next generation of scientists, engineers, health care professionals, and business leaders;

Reaffirm merit-based peer review

as the primary mechanism major federal agencies should employ in making competitive scientific research grants to ensure the most effective use of taxpayer dollars; and

Stimulate further improvements in advanced manufacturing

through support for programs aimed at accelerating manufacturing innovation and new federal-industry-academic partnerships.

We, the signatories, urge support for these actions to keep the United States the global innovation leader. We stand ready to do our part.

a m Samuel R. Allen Chairman & CEO John Deere

M AN

11 10 1



Marillyn A. Hewson Chairman, President, & CEO Lockheed Martin Corporation

//omen augustin

Norman R. Augustine Co-Chair Restoring the Foundation

Charles O. Holliday

Chairman Royal Dutch Shell plc

atya **W**adella CEO Microsoft

Wes Bush Chairman, President & CEO Northrop Grumman





Jay Timmons President & CEO National Association of Manufacturers

Kenneth C. Frazier Chairman & CEO Merck & Co., Inc

W. James McNerney, Jr. Chairman of the Board & CEO The Boeing Company

Academy of Radiology Research Acoustical Society of America Ad Hoc Group for Medical Research Advanced Informatics and Medical Solutions LLC Adv. Technical Intelligence Assn. Aerospace Industries Association Agricultural & Applied Economics Association Aizoon Technology Consulting AJES LifeSciences, LLC Alabama Agricultural and Mechanical University Alpha – 1 Biologics AMD

American Academy of Arts & Sciences American Anthropological Association American Association for Dental Research American Association for the Advancement of Science American Association for the Study of Liver Diseases American Association of Colleges of Pharmacy American Association of Mycobacterial Diseases American Association of Petroleum Geologists American Association of Physical Anthropologists American Association of Physicists in Medicine American Association of Physics Teachers American Association of State Colleges and Universities American Astronomical Society American Chemical Society American Council on Education American Dairy Science Association American Dental Education Association American Educational Research Association American Geophysical Union American Geosciences Institute American Institute for Medical & Bio. Engineering American Institute of Aeronautics and Astronautics American Institute of Chemists American Institute of Physics American Mathematical Society American Meteorological Society American Physical Society American Physiological Society American Phytopathological Society American Political Science Association American Psychological Association American Society for Biochemistry and Molecular Biology American Society for Engineering Education American Society for Microbiology American Society for Nutrition American Society of Agronomy American Society of Animal Science American Society of Plant Biologists American Sociological Association American Veterinary Medical Association Ames Chamber of Commerce Anchorage Economic Development Corporation Ann Arbor/Ypsilanti Chamber of Commerce Applied DNA Sciences, Inc. Applied Materials, Inc Archaeological Institute of America Arizona Nevada Academy of Science (ANAS) Arizona State University Arkansas Research Alliance Arkansas State University ASHRAE ASME Associated Industries of Florida Association for Information Science and Technology Association for Psychological Science Association for Women in Mathematics Association for Women in Science Association of American Geographers Association of American Medical Colleges Association of American Universities Association of American Veterinary Medical Colleges Association of Independent Research Institutes Association of Public and Land-grant Universities Association of Research Libraries Association of University Technology Managers ASTRA, Alliance for Science & Technology Research in America

Auburn University Austin Chamber of Commerce Avanti Biosciences Battelle Bay Area Council **Biocogent LLC** BioForward **Biophysical Society** Biotechnology Industry Organization **Blood Cell Technologies** Boise State University Bonded Energy Solutions Corporation **Boston University** Botanical Society of America Boulder Chamber of Commerce Brandeis University Brides Energy Brookhaven Chambers of Commerce Coalition Brookhaven Technology Group, Inc. Brown University Buffalo Niagara Partnership Buncee, LLC **Business-Higher Education Forum** Business & Industry Association of New Hampshire **CA** Technologies California Institute of Technology California Polytechnic State University California State Polytechnic University, Pomona California State University Maritime Academy The California State University System California State University, Channel Islands California State University, Chico California State University, Dominguez Hills

California State University, East Bay California State University, Fresno California State University, Fullerton California State University, Long Beach California State University, Los Angeles California State University, Northridge California State University, Sacramento California State University, San Bernardino California State University, San Marcos Carnegie Mellon University Cary Institute of Ecosystem Studies Case Western Reserve University Center for Policy on Emerging Technologies Central National Gottesman Inc. Chamber of Business & Industry of Centre County Chemcubed Chem-Master International, Inc. **Chermac Energy Corporation** Chroma Research Labs, Inc. The City University of New York Clearpointe **Cleveland State University Clemson University** Coalition for Aerospace and Science **Coalition for National Science Funding** Coalition for National Security Research Coalition of Urban Serving Universities The College of William and Mary Colorado School of Mines Colorado State University Columbia University Computing Research Association Consortium for Ocean Leadership Consortium of Social Science Associations **Cornell University** Council of Graduate Schools **Council of Scientific Society Presidents Council on Competitiveness** Council on Governmental Relations Crop Science Society of America Delaware State University DII, LLC Duke University Earthquake Engineering Research Institute East Carolina University Ecological Society of America EDUCAUSE **Emory University Energy Sciences Coalition** Energystics, Ltd. Entomological Society of America **EPICenter Memphis** Eugene Area Chamber of Commerce Ewbank Geo Testing, LLC FASS Federation of American Societies for Experimental Biology Federation of Associations in Behavioral and Brain Sciences FertiLab Festo Didactic, Inc. FlightPartner Technologies, Inc. Florida Agricultural & Mechanical University Florida Atlantic Research and Development Authority Florida International University Florida State University Foundation for Science and Disability Frontier Electronic Systems Corp. General Capacitor, LLC Genetics Society of America Geological Society of America George Mason University Georgia Institute of Technology Georgia Regents University Georgia Research Alliance Georgia State University Ghidorah Holdings, LLC Google Graphene 3D Lab Greater Boston Chamber of Commerce Greater Des Moines Partnership Greater Madison Chamber of Commerce Greater Manchester Chamber of Commerce Greater Philadelphia Chamber of Commerce Greater Pittsburgh Chamber of Commerce Greater Port Jefferson Chamber of Commerce Greater Providence Chamber of Commerce Harvard University Hawaii Academy of Science Hepatitis **B** Foundation Hewlett-Packard Company Human Factors and Ergonomics Society Humboldt State University IBM iCell Gene Therapeutics Idaho Academy of Science and Engineering **IEEE-USA** ImmunoMatrix, LLC IMSzema Solutions Indiana University Infineon Technologies Americas Corp. Information Technology Industry Council (ITI) Innovation Associates Innovation New Jersey Institute of Food Technologists **Intel Corporation** International Economic Development Council International Society for Educational Planning International Society for the Systems Sciences International Technology and Engineering Educators Assn. Iontraxx LLC Iowa's Cultivation Corridor Iowa State University Iowa State University Research Park

IPC - Association Connecting Electronics Industries iStart Valley Jasmine Universe, LLC Jefferson Science Associates LLC The Johns Hopkins University Kansas State University Kansas State University Institute for Commercialization Kent State University Kentucky Academy of Science Lambert Construction Company Lehigh University Linguistic Society of America Little Rock Regional Chamber of Commerce Long Island University Louisiana State University Louisiana Tech University Lowell Observatory Maine State Chamber of Commerce Massachusetts Biotechnology Council Massachusetts Institute of Technology Massachusetts Life Sciences Center Materials Research Society Mathematical Association of America Meritage Midstream Services Miami Dade College Miami University Michigan State University Michigan Technological University Micron Technology, Inc Microscopy Society of America Middle Tennessee State University Millennial Materials and Devices Inc. MindWick Mississippi State University Missouri University of Science and Technology MN-SBIR Mobileware Inc. modelizeIT Inc. Montana State University National Alliance for Eye and Vision Research National Association of Colleges and Employers National Association of Geoscience Teachers National Association of Graduate-Professional Students National Association of Marine Laboratories National Center for Science Education National Center for Technological Literacy- Museum of Science National Coalition for Food and Agricultural Research National Council for Science and the Environment National Defense Industrial Association National Ground Water Association National Science Education Leadership Association National Science Teachers Association **NeoMatrix Therapeutics** New Jersey Business and Industry Association New Mexico State University New York University NextThought, LLC North Carolina Academy of Science North Carolina A&T State University North Carolina State University North Dakota State University Northeastern University Northern Illinois University Northwestern University Feinberg School of Medicine **Oakland University** Ohio University The Ohio State University Oklahoma Academy of Science Oklahoma State University Oklahoma State University - College of Engineering **ON Semiconductor ONAMI** Orange County Business Council Oregon State University Pace University Parapsychological Association Penn State University Phillips 66 Phiston Technologies. Inc. Polynova Cardiovascular Inc. Population Association of America Portland State University **Poultry Science Association** PPG Industries, Inc. Prairie View A&M University Principal Financial Group Princeton University Progen LifeSciences QB Sonic, Inc. Qualcomm **RAIN Eugene** Regional Accelerator and Innovation Network Rensselaer Polytechnic Institute **Re-Nuble** Research!America **Rice University** Rochester Institute of Technology Rutgers, the State University of New Jersey SAGE San Diego Regional EDC San Diego State University San Francisco State University San Jose State University Saniteq LLC SchoolSource Technologies, LLC Semiconductor Equipment & Materials International (SEMI) Semiconductor Industry Association Semiconductor Research Corporation Sigma Xi Silicon Valley Leadership Group

Small Business Technology Council Smith Cybernetics, LLC Society for In Vitro Biology Society for Industrial and Applied Mathematics Society for Industrial and Organizational Psychology Society for Neuroscience Society of the Study of Evolution Society of Toxicology Softheon Soil Science Society of America Sonoma State University South Dakota State University South Dakota School of Mines & Technology Southeastern Universities Research Association Southern Illinois University System SPIE, the international society for optics and photonics SRI International SSTI Stanford University State University of New York Stillwater Chamber of Commerce Stony Brook Building Science, LLC Stony Brook University STS Global Inc. Sulfcrete Sullstice Supporters of Agricultural Research Foundation SURA SynchroPET Syracuse University TargaGenix, Inc. Task Force on American Innovation Teaching Institute for Excellence in STEM Technology Association of Georgia TechVision21 **Temple University** Texas A&M University The Texas A&M University System Texas Instruments Incorporated **Texas State University** Texas Tech University The Coalition for the Life Sciences The Electrochemical Society The Industrial Research Institute The InterTech Group The New England Council The Optical Society The Procter & Gamble Company The Webb Group Theragnostic Technologies Inc. ThermoLift, Inc. The Science Coalition Tri-City Development Council - Tri-Cities, WA TRITEC Real Estate Company, Inc. **Tufts University Tulane University** University Economic Development Association UNAVCO Unique Technical Services LLC United for Medical Research

Universities Research Association University at Albany, State University of New York University at Buffalo, State University of New York University City Science Center University Corporation for Atmospheric Research University Economic Development Association The University of Akron The University of Alabama The University of Alabama at Birmingham University of Alaska University of Alaska Fairbanks University of Arizona University of Arkansas University of Arkansas at Little Rock University of California System University of California, Berkeley University of California, Davis University of California, Irvine University of California, Los Angeles University of California, Merced University of California, Riverside University of California, San Diego University of California, San Francisco University of California, Santa Barbara University of California, Santa Cruz University of Central Florida University of Cincinnati University of Colorado at Colorado Springs University of Colorado Boulder University of Colorado Denver University of Colorado, Anschutz Medical Campus University of Connecticut University of Delaware University of Florida University of Georgia University of Hawaii University of Idaho University of Illinois University of Illinois at Chicago University of Illinois at Urbana-Champaign University of Iowa University of Kansas University of Louisville University of Massachusetts Amherst University of Massachusetts Boston University of Maryland - Baltimore County University of Maryland – Eastern Shore University of Maryland University College University of Memphis University of Michigan University of Minnesota University of Mississippi University of Missouri - Columbia University of Missouri - Kansas City University of Missouri – St. Louis University of Missouri System University of Montana University of Nebraska University of Nevada, Reno University of New Hampshire

University of New Mexico University of North Carolina at Chapel Hill University of North Carolina at Charlotte University of North Carolina at Greensboro University of North Carolina System University of North Carolina Wilmington (UNCW) University of North Dakota University of North Texas University of Notre Dame University of Oklahoma University of Oregon University of Pennsylvania University of Pittsburgh University of Rhode Island University of Rochester University of South Carolina University of South Dakota University of South Florida University of Southern California University of Tennessee University of Tennessee, Knoxville The University of Texas at Austin The University of Texas System University of Toledo University of Vermont University of Virginia University of Washington University of Wisconsin System University of Wisconsin-Madison University of Wisconsin-Milwaukee University of Wyoming University System of Maryland Unmanned Systems Research Institute Utah State University Van Fleet & Associates Vanderbilt University Vascular Simulations LLC Vela Therapeutics LLC Vermeer Corporation Virginia Commonwealth University Virginia Polytechnic Institute and State University Vitatex Inc. Washington State University Washington State University, Tri Cities Washington University in St. Louis Wayne State University Weather Decision Technologies. Inc. Weathernews Inc. Web4Sign Corporation West Virginia University West Virginia State University Western Massachusetts Economic Development Council Western Michigan University Wichita State University Wisconsin Technology Council Woods Hole Oceanographic Institution Yale University Zuznow

This document was issued on June 23, 2015. Additional endorsers continue to be added. Related op-eds, resources and the most up to date list of endorsers may be found at innovationimperative.org

Last updated June 22, 2016