NESCAUM

www.nescaum.org

Northeast States for Coordinated Air Use Management

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Arthur N. Marin, Executive Director

June 29, 2017

The Honorable Richard Shelby
Chairman
Committee on Appropriations
   Commerce, Justice, Science, and
   Related Agencies Subcommittee
United States Senate
Washington, DC 20510

The Honorable Jeanne Shaheen
Ranking Member
Committee on Appropriations
   Commerce, Justice, Science, and
   Related Agencies Subcommittee
United States Senate
Washington, DC 20510

The Honorable John Culberson
Chairman
Committee on Appropriations
   Commerce, Justice, Science, and
   Related Agencies Subcommittee
U.S. House of Representatives
Washington, DC 20515

The Honorable José Serrano
Ranking Member
Committee on Appropriations
   Commerce, Justice, Science, and
   Related Agencies Subcommittee
U.S. House of Representatives
Washington, DC 20515

Dear Senator Shelby, Senator Shaheen, Representative Culberson, and Representative Serrano:

The Northeast States for Coordinated Air Use Management (NESCAUM) writes to you out of
our deep concern with the National Oceanic and Atmospheric Administration's (NOAA's)
FY2018 budget request[1] to close its Air Resources Laboratory (ARL) and reduce funding for
other important services.[2] NESCAUM is a multi-state association providing technical and policy
support to our member state air quality agencies in Connecticut, Maine, Massachusetts, New
Hampshire, New Jersey, New York, Rhode Island, and Vermont. It is our firm belief that
NOAA's request to close ARL will undermine the ability of our organization and our state
agencies to fully assess accidental or intentional toxic substance releases, as well as past and
future air pollution events. As a result, the closure of ARL will greatly hinder state efforts to
protect public health and safety. We urge you to support full funding for the continued existence
of the ARL and other important NOAA services.

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[1] FY2018 NOAA Budget Summary, available at http://www.corporateservices.noaa.gov/nbo/fy18_bluebook/FY18-
BlueBook.pdf.
[2] FY2018 NOAA Budget Summary, *see* p. 29.

NESCAUM Members:
Connecticut Bureau of Air Management, Anne Gobin
Maine Bureau of Air Quality Control, Marc Cone

Massachusetts Bureau of Waste Prevention, Christine Kirby
New Hampshire Air Resources Division, Craig Wright
New Jersey Division of Air Quality, Francis Steitz

New York Division of Air Resources, Steve Flint
Rhode Island Office of Air Resources, Laurie Grandchamp
Vermont Air Pollution Control Division, Heidi Hales

In its budget request, NOAA indicates that in closing the ARL, it will "no longer support upgrades to the Hybrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) model, a particle model that has emergency response applications, including tracking mercury deposition and anthrax bioterrorism." The ARL's closing will also end its "research on air chemistry, mercury deposition, and atmospheric dispersion of harmful materials." It is evident from NOAA's own descriptions that the ARL's work has important application to homeland security by providing states with the capacity to track and predict the spread of extremely harmful substances released to the air that can cause serious harm to large numbers of people living downwind.

This is not hypothetical. For example, HYSPLIT tracked the spread of radioactive isotopes released from the 2011 Fukushima Daiichi nuclear disaster in Japan, and had been applied earlier to track the continued dispersion and fallout of radioactive cesium from the Chernobyl nuclear reactor accident. The use of HYSPLIT is not limited to radioactive releases, but has important applications in other situations, such as accidental or intentional releases of toxic pollutants and biohazards, and tracking the spread of health-damaging wildfire smoke plumes. These potentially catastrophic events pose grave public health dangers in which timely predictions of contaminated air movements are of fundamental importance to state efforts in informing and protecting the public. Without HYSPLIT, states would lose this capability entirely, and essentially be left blind in their efforts to predict and respond to serious unfolding events.

Equally important to our states is the use of HYSPLIT and other ARL web services on a daily basis for the following purposes:

- Trajectory forecasts (derived from weather forecast model output) that are used to inform our daily air quality forecasts and air quality health advisories;
- Stability forecasts that are used to help interpret air monitoring data and to determine the ideal times for special monitoring studies; and
- Archived backward trajectories that are used extensively for air quality research.

These ARL capabilities are important tools for states to use that simply are not available elsewhere, and would be prohibitively expensive, as well as needlessly redundant, for states to replicate.

In addition to the ARL, there are additional tools and resources provided by NOAA that states routinely use, but are slated for reduced support. These include Numerical Weather Prediction

Modeling,[3] the National Centers for Environmental Information: Regional Climate Centers,[4] and the Geostationary Operational Environmental Satellites-R (GOES-R) Series program.[5] These comprise an important set of resources for states in providing weather warnings and forecasts, climate data for effective adaptation planning, and tracking of smoke and dust plumes.

We note that NESCAUM and its member agencies are not the only entities to be adversely affected by NOAA's budget requests. These, along with other proposed cuts to the science-based activities of other federal agencies, have generated concern among a large number of professional scientific associations, research universities, and others actively engaged in our country's science and technology enterprise that has driven so much of our nation's innovation and economic growth. We enclose their May 24, 2017 joint letter to Congress with our letter.

In summary, we strongly oppose NOAA's requests to discontinue the ARL and diminish support for other programs important to state planning needs. The ARL and other NOAA services are a successful example of federal support for state efforts, and ceasing or reducing their operations removes not only a cost-effective set of tools for states to use, but also greatly handicaps state efforts in responding to serious catastrophic events that gravely endanger public safety. We urge your support for continuing these efforts in the FY2018 budget.

Sincerely,

Paul J. Miller
NESCAUM Deputy Director and Chief Scientist

Enclosure: May 24, 2017 letter to Congress

cc: Members of U.S. Senate Committee on Appropriations, Commerce, Justice, Science, and
        Related Agencies Subcommittee
        Members of U.S. House Committee on Appropriations, Commerce, Justice, Science, and
        Related Agencies Subcommittee
        The Honorable Bob Corker, U.S. Senate

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[3] FY2018 NOAA Budget Summary, *see* p. 37.
[4] FY2018 NOAA Budget Summary, *see* p. 44.
[5] FY2018 NOAA Budget Summary, *see* pp. 44-45.

The Honorable Mike Crapo, U.S. Senate
The Honorable Dean Heller, U.S. Senate
The Honorable James E. Risch, U.S. Senate
The Honorable Ben Cardin, U.S. Senate
The Honorable Catherine Cortez Masto, U.S. Senate
The Honorable Chuck Fleischmann, U.S. House of Representatives
The Honorable Mike Simpson, U.S. House of Representatives
The Honorable Steny Hoyer, U.S. House of Representatives
The Honorable Ruben J. Kihuen, House of Representatives
Craig McLean, Assistant Administrator for Oceanic and Atmospheric Research, NOAA
Dr. Gary Matlock, Deputy Assistant Administrator for Laboratories and Cooperative Institutes, NOAA
David Holst, Acting Chief Financial Officer/CAO, Office of Oceanic and Atmospheric Research, NOAA

May 24, 2017

Senator Mitch McConnell   Senator Charles Schumer
Senate Majority Leader   Senate Minority Leader
U.S. Senate   U.S. Senate

The Honorable Paul Ryan   Minority Leader Nancy Pelosi
Speaker of the House   Democratic Leader
U.S. House of Representatives   U.S. House of Representatives

Dear Congressional Leaders:

The undersigned U.S. science and engineering, medical and health, and higher education organizations
urge you to reject the Administration-proposed cuts to science as you begin to craft the fiscal year (FY)
2018 appropriations. We urge you once again to prioritize these investments and provide sustainable and
robust investments in scientific research.

The drastic cuts to NIH, NSF, DOE, USDA, EPA, NOAA, NIST, USGS, portions of DOD and NASA,
and other agencies would cripple the science and technology enterprise, severely harming discovery
science programs and critical mission agencies alike.

As you are aware and have acted on before, our nation's research enterprise is among the most powerful
engines for American prosperity. One of the consistent areas of bipartisan agreement over the past 70
years has been the importance of the federal government's role in supporting research and innovation.
One example of this bipartisan support is the final FY 2017 omnibus bill that provided critical funding for
federal R&D, and we applaud your support.

As you work to craft appropriations for FY 2018, we ask you to consider the following in your
deliberations:

**America's research and development (R&D) enterprise has made our nation the world's
preeminent, most effective, and sought-after partner for innovation.** It is among the most powerful
engines of American prosperity, producing value far beyond the sum of its individual agencies. History
confirms that a secure, prosperous, and competitive future is found in research across all fields of science
and engineering:

- American physical and life sciences leadership has helped us better understand ourselves and our
  world, enabling us to improve and lengthen Americans' lives, enhance public health, advance food
  safety and security, and enhance quality of life.
- Environmental, agricultural and Earth sciences research has allowed state leaders and managers,
  business owners, and farmers to have access to the best available science for critical decision-
  making that impacts our energy and transportation infrastructure, agriculture sector, and water
  resources management.
- Defense research has improved the effectiveness of our armed forces and our awareness of growing
  threats around the world, and saved lives on the battlefield and once soldiers are home.

- Social and behavioral science research has been critical to respond effectively to disasters; enhance intelligence analysis; understand decision-making and its impact on public health and business investments; improve international relations, and effectively educate the STEM workforce.
- Math and computer science research has made the Internet economy possible and improved cybersecurity.
- Material and engineering sciences have improved energy sources, space exploration, bridges and roads, and enabled countless technologies and products now essential to modern lives.

U.S. investments in science R&D have created millions of jobs in public and private sectors, enhanced state economies, and generated commercial growth. According to a [leading report](#) conducted by the National Academies of Sciences, Engineering, and Medicine, although scientists and engineers only account for over four percent of the nation's workforce, they help create many jobs in other parts of the economy. Scientists' discoveries and insights extend beyond the research laboratory, impacting and employing people in many other sectors, from designers to builders to salespeople to consumers.

Decreased investment would have significant impacts on our country's long-term competitiveness and lead to an American innovation deficit. Many countries are increasing their investments in scientific research, recognizing that it will be a key foundation for 21st century economic growth and global competitiveness. For the period 2000-2013, China's average annual R&D investment growth shot up 17%; South Korea grew 8.3%; Russia 8.2%; Singapore 6.8%; and Germany 3.2%. This compares to 2% growth in the U.S. over that period. Without sustained commitment, this high-functioning engine is at real risk of stalling, harming the well-being of future generations. Once stalled, that process cannot be easily reversed. Attempting to rebuild our world-leading science and engineering enterprise would be expensive and slow, and face new competition from other rising leaders.

We urge America to support its research and innovation infrastructure. This will enable institutions to continue investing in skilled workers and high-technology tools; focus today's scientists on creating tomorrow's discoveries; support and prepare the world's finest future scientists through quality STEM education from K-12 through graduate school; and communicate a clear, hopeful path for today's emerging, diverse young scientists and engineers who will realize tomorrow's breakthroughs and applications.

For many decades, the American people and our economy have reaped the enormous benefits of federally-supported research. It is time again for the bipartisan foresight of U.S. policymakers to prevail in support of research. For FY 2018, we urge you to reject the Administration's proposed cuts to research investments and negotiate increased discretionary spending caps for next year and beyond that will permit sufficient federal research investments and sustain our nation's status as the world's innovation leader.

Thank you for considering our views.

Sincerely,

Acoustical Society of America
Alabama Academy of Science
American Academy of Forensic Sciences
American Anthropological Association
American Association for Dental Research
American Association for the Advancement of Science

American Association of Anatomists
American Association of Colleges of Pharmacy
American Association of Geographers
American Association of Immunologists
American Association of Mycobacterial Diseases
American Association of Physicists in Medicine
American Association of Physics Teachers
American Chemical Society
American College of Physicians
American Dairy Science Association
American Educational Research Association
American Forests
American Geophysical Union
American Geosciences Institute
American Institute for Medical and Biological Engineering
American Institute of Aeronautics and Astronautics
American Institute of Chemical Engineers (AIChE)
American Institute of Physics
American Mathematical Society
American Meteorological Society
American Nuclear Society
American Physical Society
American Physiological Society
American Political Science Association
American Psychological Association
American Seed Trade Association
American Society for Microbiology
American Society for Nutrition
American Society of Agronomy
American Society of Animal Science
American Society of Civil Engineers
American Society of Hematology
American Society of Nephrology
American Society of Plant Biologists
American Sociological Association
American Statistical Association
Animal Behavior Society
Association for Computing Machinery
Association for Psychological Science
Association for Research in Vision and Ophthalmology
Association for Women Geoscientists (AWG)
Association of Academic Health Sciences Libraries
Association of American Universities
Association of American Veterinary Medical Colleges
Association of Departments of Family Medicine
Association of Family Medicine Residency Directors
Association of Public and Land-grant Universities

Association of Schools and Programs of Public Health
AVS Science and Technology of Materials, Interfaces, & Processing
Behavior Genetics Association
Biophysical Society
Boston University
Botanical Society of America
Carnegie Mellon University
Coalition for National Security Research (CNSR)
Coastal and Estuarine Research Federation
Cognitive Science Society
Columbia University
Computing Research Association
Consortium of Social Science Associations
Council on Undergraduate Research
Crop Science Society of America
Cystic Fibrosis Foundation
Duke University
Ecological Society of America
FASS
Federation of Associations in Behavioral and Brain Sciences
Foundation for Science and Disability
Geological Society of America
Georgia Institute of Technology
HIV Medicine Association
Idaho Academy of Science and Engineering
Incorporated Research Institutions for Seismology
Institute of Food Technologists (IFT)
Institute of Mathematical Statistics
Kansas Academy of Science
Kentucky Academy of Science
Linguistic Society of America
Medical Library Association
Michigan State University
Michigan Technological University
Microscopy Society of America
Mycobacterial Diseases of Animals MI
National Association for the Advancement of Animal Science
National Association of Geoscience Teachers
National Association of Marine Laboratories
National Conference for Science and the Environment
New York University
North American Primary Care Research Group
North Central Weed Science Society
Oklahoma Academy of Science
OSA (The Optical Society)
Pasadena Chamber of Commerce (CA)

Penn State University

Professional & Scholarly Publishing Division/Association of American Publishers

Psychonomic Society

Research!America

Rochester Academy of Science, Rochester, NY

Rocky Mountain Biological Laboratory

Sigma Xi, The Scientific Research Honor Society

Sjogren's Syndrome Foundation

SoAR Foundation

Society for Behavioral Neuroendocrinology

Society For Biomaterials

Society for Computers in Psychology

Society for Experimental Biology and Medicine

Society for Industrial and Applied Mathematics

Society for Neuroscience

Society for Psychophysiological Research

Society for Research in Psychopathology

Society for Text and Discourse

Society for the Study of Evolution

Society of Behavioral Medicine

Society of Multivariate Experimental Psychology

Society of Teachers of Family Medicine

Society of Toxicology

Soil Science Society of America

SPIE, the international society for optics and photonics

Stony Brook University

The Ohio State University

The Science Coalition

The State University of New York

The Wildlife Society

University Corporation for Atmospheric Research

University of California San Diego

University of Colorado Boulder

University of Delaware

University of Illinois System

University of Iowa

University of Michigan

University of Minnesota, College of Biological Sciences

University of New Hampshire

University of Oregon

University of Pittsburgh

University of Rochester

University of Southern California

University of Virginia

University of Washington

US Dairy Forage Research Center Research and Industry Committee

Vanderbilt University
Washington University in St. Louis
Woods Hole Oceanographic Institution
Yale University

CC: Appropriations Chairs/Ranking Members, Appropriations Subcommittee Chairs