

December 16, 2021

The President  
The White House  
1600 Pennsylvania Avenue NW  
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Dear President Biden,

We write as scientists and engineers who are gravely concerned about the risks posed by nuclear weapons.

We know you share our concerns. The on-going Nuclear Posture Review (NPR) is an opportunity for you to reduce the risk of nuclear war by reducing the US nuclear arsenal and its role in US security and changing the policies governing its use.

This is a pivotal moment. The United States must dampen the renewed nuclear arms race with Russia and China. It also needs to demonstrate that it is fulfilling its obligation under the Nuclear Non-proliferation Treaty (NPT) to take steps towards disarmament.

We urge you to incorporate the following steps into your NPR:

**1. Declare that the United States will not use nuclear weapons first.**

In 2017, you stated “...it's hard to envision a plausible scenario in which the first use of nuclear weapons by the United States would be necessary or make sense.” During your presidential campaign, you stated that “the sole purpose of the US nuclear arsenal should be deterring—and if necessary, retaliating against—a nuclear attack.”

We urge you to declare that the United States will not use nuclear weapons first under any circumstances, and would consider using nuclear weapons only in response to a nuclear attack on itself or its allies. Making this “no-first-use” pledge is essential to reducing the role of nuclear weapons. By making clear that the United States will never start a nuclear war, it reduces the likelihood that a conflict or crisis will escalate to nuclear war. In addition, it demonstrates the US commitment to the NPT by making clear that the sole purpose of US nuclear weapons is to deter the use of nuclear weapons by others, which is an essential prerequisite to nuclear disarmament.

**2. Modify the president's authority to order the use of nuclear weapons.**

As president and commander in chief, you have sole authority to order the use of US nuclear weapons. Although we have confidence in your judgment, history indicates that giving this awesome responsibility to a single person is unwise.

We urge you to modify the process for ordering the use of nuclear weapons to require that one or more officials concur with a presidential order before it is carried out. This would be an

important safeguard against a possible future president who is unstable or who orders a reckless attack.

This process need not delay decision-making. The Federal Emergency Management Agency tracks the officials in the presidential line of succession (and could track any other designated officials), and the military could communicate with them as quickly as with the president.

### **3. Reduce the number of deployed strategic nuclear weapons to 1,000.**

We urge you to commit to reducing the arsenal to fewer than 1,000 deployed missile warheads and bombers in your NPR. These reductions will increase US national security. They will slow the spiraling nuclear arms race with Russia and China and help fulfill the NPT obligation to take steps toward disarmament.

Under the 2010 US-Russian New START agreement, both countries can deploy up to 1,550 strategic (long-range) weapons. In 2013, following a Pentagon assessment of threats and capabilities, President Obama announced that the United States could maintain its security while reducing its arsenal by a third, to about 1,000 weapons, even if Russia did not follow suit.

The US deployed arsenal is already well under New START limits. As of July 2021, it contained 46 bombers, 400 warheads on silo-based intercontinental-range ballistic missiles (ICBMs), and 911 warheads on submarine-launched ballistic missiles (SLBMs), for a total of 1,357.

### **4. Cancel the program to replace existing ICBMs and instead extend their lifetimes.**

The current Minuteman III (MMIII) ICBMs will reach the end of their nominal lifetime beginning in 2030. As the Air Force itself acknowledges, there are no technical barriers to extending the MMIII lifetime for at least another 20 years. Missiles routinely go through life-extension programs; the Navy is extending the lifetime of the Trident D5 SLBMs to 95 years.

Yet, beginning in 2029, the United States intends to replace the MMIII missiles with new Ground Based Strategic Deterrent (GBSD) missiles. The Air Force plans to build roughly 650 GBSD missiles and to keep 400 deployed, at a cost of some \$100 billion. This program represents an enormous commitment to maintaining the current US nuclear arsenal for many decades to come.

Under a future arms agreement, the United States would likely decide to deploy fewer ICBMs, or perhaps eliminate them in favor of SLBMs. A 20-year delay in replacing the MMIII would give the United States greater clarity about the future of the ICBM force.

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We also urge you to consider eliminating silo-based ICBMs. To compensate for their inherent vulnerability to a Russian nuclear attack, the Air Force maintains ICBMs on alert, ready for launch in minutes if the United States detects an incoming Russian attack. This would force a US president to make the most important of all decisions, about whether to launch a nuclear retaliatory attack, in a few minutes. It also creates the risk of a mistaken launch in response to a false warning. ICBMs provide no military capability that is not provided by SLBMs at sea, and there would be no pressure to use SLBMs quickly in response to warning of an incoming attack because they are invulnerable.

Sincerely,

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Paula Eaton, MD  
Medicine/Medical Research  
Retired

Susan Edelstein, PhD  
Life Science  
Yale University

Peter Egan, PhD  
Biology  
Retired

Robert L. Elgin, PhD  
Physical Science  
Retired

Heather Elizondo Vega, MD  
Medicine/Medical Research

Wallace Elton, PhD  
Earth Sciences  
Retired

Antoinette S. Emch, PhD  
Public Health  
University of Florida

Louisa K. Emmons, PhD  
Physical Science  
National Center for Atmospheric  
Research

Judy A. Enenstein, PhD  
Medicine/Medical Research  
University of Minnesota, retired

Paula Enstrom, MPH  
Public Health  
Sarah Bush Lincoln Health  
Center

Eileen Entin, PhD  
Social Sciences  
Independent Consultant

Sheryan Epperly Chester,  
MA/MS  
Biology  
Retired

Mark Escajeda, MD  
Medicine/Medical Research  
University of California, San  
Francisco

Alexander C. Esche, MA/MS  
Mathematics  
Indiana

Joseph Evelyn, MA/MS  
Engineering  
Retired

Nikta Fakhri, PhD  
Physical Science  
MIT

Tawnya Farris, MPH  
Public Health  
Health Center

Rosemary Faulkner, DPH  
Biology  
Cornell University Medical  
College

Steven R. Federman, PhD  
Physical Science  
University of Toledo

Tracy Feldman, PhD  
Ecology  
St. Andrews University

John Felton, PhD  
Social Sciences  
Retired

John Felton, PhD  
Social Sciences  
Retired

William R. Ferrell, PhD  
Engineering  
University of Arizona

Stephen J. Ferry, MA/MS  
Engineering  
Raytheon Corporation

Steve Fetter, PhD  
Physical Science  
School of Public Policy,  
University of Maryland

Manuel E. Fiadeiro, DPH  
Earth Sciences  
Scripps Institute of  
Oceanography

Jessica Fielden, MD  
Medicine/Medical Research

Michael Fischer, PhD  
Computer Science  
Yale University

Caroline Fisher, PhD  
Social Sciences  
Retired

Patricia Flood, MA/MS  
Earth Sciences  
Pace University

Wes K. Foell, PhD  
Engineering  
University of Wisconsin,  
Madison

Mike Follman, MA/MS  
Social Sciences  
Retired

William J. Forrest, PhD  
Physical Science  
University of Rochester

Patricia G. Foschi, PhD  
Earth Sciences  
San Francisco State University

John Fowler, PhD  
Physical Science  
California Institute of  
Technology, retired

Carl Franck, PhD  
Physical Science  
Cornell University

Cherryl Friedman, MD  
Medicine/Medical Research  
Retired

Mark G. Friesen, PhD  
Physical Science  
University of Wisconsin,  
Madison

Charles A. Fritsch, PhD  
Engineering  
Bell Laboratories, retired

Charles M. Fry, PhD  
Engineering  
Institute of Electrical and  
Electronic Engineers

Philip Ganter, PhD  
Ecology  
Retired

Jenene G.G. Garey, PhD  
Life Science  
Retired

Steven D. Gary, MA/MS  
Earth Sciences  
University of Montana

Timothy Gaudin, PhD  
Biology  
University of Tennessee,  
Chattanooga

Peter Gegenheimer, PhD  
Biology  
University of Kansas

Gary Giachino, PhD  
Chemistry  
Retired

Martha Gilmore, PhD  
Social Sciences  
University of California, Davis

Valerie R. Gizinski, MA/MS  
Biology  
Sonoma State University

Charles T. Glatt, PhD  
Social Sciences  
Retired

Warren M.M. Gold, MD  
Medicine/Medical Research  
University of California, San  
Francisco

Lori Goldner, PhD  
Physical Science  
University of Massachusetts,  
Amherst

Peter J. Gollon, PhD  
Physical Science  
Retired

Mark Gomelsky, PhD  
Biology  
University of Wyoming

Ron Goodman, PhD  
Biology  
VA Medical Center, Baltimore,  
retired

Charles Goodwin, PhD  
Computer Science  
University of Toledo

Bonnie Gorman, MA/MS  
Public Health  
MAPA

Al Goshaw, PhD  
Physical Science  
Duke University

Eugene L. Gottfried, MD  
Medicine/Medical Research  
University of California, San  
Francisco

Lisa Lofland L. Gould, MA/MS  
Ecology  
NC Native Plant Society

Tim R. Gould, MA/MS  
Engineering  
University of Washington

Lise Grace, MA/MS  
Environmental Science  
National Park Service

Joseph Graves Jr., PhD  
Biology  
North Carolina A&T Technical  
University

Judith Green, PhD  
Life Science  
Retired

Joshua Greene, PhD  
Social Sciences  
Harvard University

Brian A. Gregg, PhD  
Public Health  
National Renewable Energy  
Laboratory

Laura Grego, PhD Physical Science MIT	Todd T. Hahn, MA/MS Computer Science Texas Instruments	Aram Harrow, PhD Physical Science MIT
Georgia Griffin, DO Medicine/Medical Research McLaren	Christopher L. Hall, MD Medicine/Medical Research Retired	John W. Hartwell, PhD Engineering Retired
Roger Griffioen, PhD Physical Science Retired	Robert Hall, PhD Social Sciences The Newman School	M. Zahid Hasan, PhD Physical Science Princeton University
David Grinspoon, PhD Physical Science Planetary Science Institute	Joseph Halpern, PhD Mathematics Cornell University	Jeanette Hassin, PhD Social Sciences Consultant
Lisbeth Gronlund, PhD Physical Science MIT	Paul Halperin, PhD Physical Science USciences	Bruce Hawkins, PhD Physical Science Smith College
Tina Grosowsky, MA/MS Public Health Elders Climate Action MASS	Robert M. Hamm, PhD Social Sciences Retired	William Hay, PhD Earth Sciences University of Colorado, Boulder
Cheryl Gross, MA/MS Environmental Science Retired	Peter J. Hansen, PhD Chemistry University of Iowa	Steven Hayashi, MA/MS Computer Science MIT
Matthias Grosse Perdekamp, PhD Physical Science University of Illinois at Urbana Champaign	Stephen Hanzely, PhD Physical Science Youngstown State University	Randall Hayes, PhD Medicine/Medical Research Agnosia Media, LLC
Gary Growth-Marnat, PhD Social Sciences Pacifica Graduate Institute	Tim Hargrave, PhD Social Sciences Central Washington University	Evan B. Hazard, PhD Biology Bemidji State University, emeritus
Felicitio D. Guerrero Jr., PhD Life Science USDA-ARS, retired	Patricia P. Harlow, PhD Biology Retired	Carolyn Heath, PhD Biology Fullerton College, emeritus
Tor Guimaraes, PhD Social Sciences Tennessee Tech University	Linda Harrell, MA/MS Biology Retired	Linda A. Heath, MA/MS Biology University of Akron
Hoshin Gupta, PhD Earth Sciences University of Arizona	Fred A. Harris, PhD Physical Science University of Hawaii	Richard O. Heck, MD Medicine/Medical Research Retired
Michael Haas, PhD Chemistry USDA, retired	James S. Harris, PhD Engineering Stanford University	Donald Helm, PhD Engineering Retired

Johanna Heureaux-Torres, PhD  
Engineering  
University of Michigan, Ann Arbor

Martin Hilbert, PhD  
Social Sciences  
University of California

Michael L. Hinshaw, MA/MS  
Social Sciences  
Ball State University

Don Hnatowich, PhD  
Chemistry  
UMass Medical School, retired

Rob Hoeffler, MA/MS  
Medicine/Medical Research

Emily Hoffman, PhD  
Economics  
Western Michigan University

Robert Hoffman, MD  
Medicine/Medical Research  
University of California, Los Angeles

Richard Hogaboom, MA/MS  
Physical Science  
NU/BC

Elizabeth F. Howell, MD  
Medicine/Medical Research  
University of Utah

Missy Howse-Kurtz, PhD  
candidate  
Social Sciences  
Lake Michigan College

Edward Hubbard, PhD  
Social Sciences  
University of Wisconsin, Madison

Scott A. Hughes, PhD  
Physical Science  
MIT

Stephen Hunt, MA/MS  
Life Science  
University of Alabama, Birmingham

Leroy Hushak, PhD  
Economics  
Retired

Robin Dyan Ikeda, MA/MS  
Biology  
Chaffee College

Michael Iltis, PhD  
Mathematics  
University of Wisconsin, Madison

John Ivens, PhD  
Social Sciences  
Rutgers University

Nicole Jacobs, PhD  
Environmental Science  
Colorado State University

Trudy Jacobs, DVM  
Medicine/Medical Research

Karen Jacques, PhD  
Social Sciences  
Retired

David E. Jaffe, PhD  
Physical Science  
National Laboratory

Robert Jamieson, DPH  
Ecology  
Independent Consultant

Susanne Janecke, PhD  
Physical Science  
Utah State University

Pablo Jarillo-Herrero, PhD  
Physical Science  
MIT

Jay Jaroslav, PhD  
Computer Science  
MIT

Christopher J. Jensen, PhD  
Ecology  
Pratt Institute

Nancy Johns, MA/MS  
Medicine/Medical Research  
Retired

Clark Johnson, PhD  
Physical Science  
Creative Technology

Jeff Johnson, PhD  
Computer Science  
University of San Francisco

Keith Johnson, MA/MS  
Agriculture  
Iowa State University

Kent Johnson, PhD  
Social Sciences  
Morningside Academy

Andrew Jones, PhD  
Social Sciences  
California State University, Fresno

Bernadette B. Jones, MA/MS  
Education  
University of Rochester

Virginia A. Jones, PhD  
Environmental Science  
Congregation of St. Joseph

William Jones, PhD  
Physical Science  
Princeton University

Martin J. Joye, MD  
Medicine/Medical Research  
Retired

Fazlul Kabir, PhD  
Engineering  
City Council, College Park

Henry S. Kahn, MD  
Medicine/Medical Research  
Emory University School of Medicine

Angela Kantola, MA/MS  
Ecology  
Department of Interior, retired

Miriam E. Katz, PhD  
Earth Sciences  
Rensselaer Polytechnic Institute

Elton Kaufmann, PhD  
Physical Science  
Argonne National Laboratory

Rachel Keen, DPH  
Social Sciences  
University of Virginia

Diane Keeney, PhD  
Life Science  
Cumberland Emerging  
Technologies

George David Kerlick, PhD  
Physical Science  
Boeing

Harry Kershner, PhD candidate  
Social Sciences  
Ontario Institute for Studies in  
Education

Nancy Kingston, MPH  
Public Health  
American Public Health  
Association

John G. Kirk, PhD  
Physical Science  
Retired

John Kirkpatrick, PhD  
Earth Sciences  
Independent Consultant

Daniel R. Kivlahan, PhD  
Medicine/Medical Research  
University of Washington

David H. Klassen, PhD  
Social Sciences  
Retired

David Klein, PhD  
Mathematics  
California State University,  
Northridge

Judith Klinman, PhD  
Chemistry  
University of California,  
Berkeley

Judith Kneller, MA/MS  
Social Sciences  
Founders Education

Christof Koch, PhD  
Physical Science  
Allen Institute

Steve Kohl, MD  
Medicine/Medical Research  
University of California, San  
Francisco, emeritus

John Kolstoe, MD  
Medicine/Medical Research  
Michigan State University

James Kotcon, PhD  
Agriculture  
West Virginia University

Daniel Kozie, MD  
Medicine/Medical Research  
University of Washington

Brett Kraabel, PhD  
Physical Science  
Physical Sciences  
Communication

Jessica L. Krakow, PhD  
Life Science  
University of California, San  
Francisco

Glenn Krakower, PhD  
Medicine/Medical Research  
Medical College of Wisconsin,  
retired

William Kranz, MA/MS  
Computer Science  
MIT; Worcester Polytechnic  
Institute

Bruce Krawisz, MD  
Medicine/Medical Research  
Marshfield Clinic Research  
Institute

James Krist, MA/MS  
Computer Science  
Retired

Carole Kruse, MA/MS  
Chemistry  
SUNY Albany

Lukasz Kurgan, PhD  
Computer Science  
Virginia Commonwealth  
University

Douglas S. Kurtz, PhD  
Mathematics  
New Mexico State University,  
retired

Michael Kutilek, PhD  
Biology  
San Jose State University

Doug La Follette, PhD  
Chemistry  
State of Wisconsin

Frederick K. Lamb, PhD  
Physical Science  
University of Illinois at Urbana-  
Champaign

John Preston Langmore, PhD  
Medicine/Medical Research  
University of Michigan

Driss Larafi, PhD  
Social Sciences  
Ibn Tofail University

Richard LaVal, PhD  
Biology  
Monteverde Bat Jungle

Vinnedge M. Lawrence, PhD  
Biology  
Purdue University

Patricia Leach, MA/MS  
Chemistry  
Texas A& M University-  
Commerce

Kenneth Lederman, PhD  
candidate  
Earth Sciences  
US Bureau of the Census

Christoph Leemann, PhD  
Physical Science  
Department of Energy, TJNAF,  
director emeritus

Barbara Lehman, PhD  
Mathematics  
University of Guelph, retired

Charlotte Lehmann, MA/MS  
Earth Sciences  
University of Maine

Bill Leikam, MA/MS  
Environmental Science  
Independent Consultant with  
Urban Wildlife Research Project

Kent Leung, PhD  
Physical Science  
Montclair State University

Ron Lindsay, MA/MS  
Earth Sciences  
University of Washington

James T. Linnemann, PhD  
Physical Science  
Michigan State University

James J. Lipka, PhD  
Chemistry  
Consultant, retired

Hong Liu, PhD  
Physical Science  
MIT

Jian-Guo Liu, PhD  
Mathematics  
Duke University

Maxine Lobel, MA/MS  
Social Sciences  
Columbia University

James Loehlin, PhD  
Chemistry  
Wellesley College, emeritus

John P. Lorand, PhD  
Chemistry  
Central Michigan University,  
emeritus

George H. Lowe III, PhD  
Physical Science  
Independent Consultant

Rosa S. Lucas, MA/MS  
Medicine/Medical Research  
Retired

Carlos Lugo-Ortiz, PhD  
Biology  
Pontifical Catholic University of  
Puerto Rico

Mac Low, Mordecai-Mark, PhD  
Physical Science  
American Museum of Natural  
History

Darrell MacConnell, PhD  
Physical Science  
Retired

Brian MacWhinney, PhD  
Social Sciences  
Carnegie Mellon University

Jack Mandelman, PhD  
Engineering  
Institute of Electrical and  
Electronics Engineers

Kyle Mandli, PhD  
Mathematics  
Columbia University

Victoria Marcello, PhD  
Social Sciences  
Private Practice

Philip A. Marrone, PhD  
Engineering  
Leidos

Gail R. Marsh, PhD  
Medicine/Medical Research  
Duke University

Leslie B. Marshall, PhD  
Biology  
Retired

Richard Marston, PhD  
Earth Sciences  
Retired

Gary Martin, PhD  
Engineering  
Cisco Systems

Rutilio Martinez, DPH  
Economics  
University of Northern  
Colorado, retired

Andrew Mashintonio, PhD  
Ecology  
Kutztown University

Kathy Mason, PhD  
Social Sciences  
Retired

Jerry Masurat, PhD  
Biology  
Retired

Albert R. Matheny, PhD  
Social Sciences  
University of Florida, retired

Stefan Maus, PhD  
Physical Science  
University of Colorado, Boulder

Gloria McClintock, MA/MS  
Education  
Burlingame School District,  
retired

Gordon McCurry, PhD  
Earth Sciences  
McCurry Hydrology, LLC

Jonathan McDowell, PhD  
Physical Science  
Center for Astrophysics,  
Harvard and Smithsonian

Hugh McElwain, MA/MS  
Mathematics  
Virginia Commonwealth  
University

Frederick R. McKeethan, MD  
Medicine/Medical Research  
Peace Action

Matthew McKinzie, PhD  
Physical Science  
Natural Resources Defense  
Council

Mitchell Dan McKirnan, PhD  
Medicine/Medical Research  
Renova Therapeutics

Howard J. Mead, MA/MS  
Computer Science  
Iowa State University

L Delta Merner, PhD  
Environmental Science  
Union of Concerned Scientists

Sarah Merrill, PhD  
Social Sciences  
University of Texas Rio Grande  
Valley; South Texas College,  
retired

Peter Meyers, PhD  
Physical Science  
Princeton University

Robert Michaelson, PhD  
Chemistry  
Retired

Eric Michelsen, PhD  
Physical Science  
University of California, San  
Diego

David Mikkelsen, PhD  
Physical Science  
Princeton University

Scott Milam, MA/MS  
Engineering  
Toyota, retired

Mario Milch, MD  
Medicine/Medical Research  
Kaiser Permanente

Elizabeth Milford, MA/MS  
Ecology  
University of New Mexico

Don H. Miller, PhD  
Chemistry  
Retired

Marvin Miller, PhD  
Physical Science  
MIT

Norman Carlisle Miller, PhD  
Physical Science  
Rensselaer Polytechnic Institute

Edward L. Mills, MA/MS  
Computer Science  
University of Washington

James Mills, PhD  
Earth Sciences  
Retired

Marija Minic, MA/MS  
Biology  
University of Leeds

Anuruddh Misra, MD  
Medicine/Medical Research  
University of San Francisco

David Mitchell, PhD  
Earth Sciences  
Desert Research Institute

James R. Monroe, MA/MS  
Earth Sciences  
Mt. Diablo Unified School  
District

Elizabeth Moore, MA/MS  
Physical Science  
National Institute of Standards  
and Technology, retired

Henry Morgen, MA/MS  
Engineering  
Independent Consultant, retired

Richard Morse, PhD  
Biology  
Retired

Chris Moser, MA/MS  
Earth Sciences  
Oregon State University

Larry S. Moss, PhD  
Mathematics  
Indiana University,  
Bloomington

Berndt Mueller, PhD  
Physical Science  
Duke University

Erik M. Mueller, PhD  
Engineering  
National Transportation Safety  
Board

William J. Mullin, PhD  
Physical Science  
University of Massachusetts,  
Amherst

Arthur R. Murdoch, PhD  
Chemistry  
University of Mount Union,  
retired

Charles Murphy, MD  
Medicine/Medical Research  
Identity Medical Group

Chris Murray, PhD  
Earth Sciences  
Pacific Northwest National  
Laboratory, retired

Dan Murray, MA/MS  
Earth Sciences  
Portland State University

Richard Nadler, MA/MS  
Social Sciences  
NY Board of Education



David Nagel, MA/MS  
Earth Sciences  
Moss Landing Marine  
Laboratories

John W. Negele, PhD  
Physical Science  
MIT

Nicola Nelson, MA/MS  
Engineering  
Missouri School of Mines

Wales Nematollahi, PhD  
Biology  
Science and Technology  
Corporation

Edward Nichols, PhD  
Social Sciences  
State University of NY; PA  
State System of Higher  
Education

Gerald A. Nielsen, PhD  
Agriculture  
Montana State University

Michael Niemack, PhD  
Physical Science  
Cornell University

Sharon Ann Nolting, MA/MS  
Social Sciences  
Manhattan Institute for  
Psychoanalysis

Mike J. Noone, DPH  
Physical Science  
Consultant

Katja Nowack, PhD  
Physical Science  
Cornell University

ReNae Starr Nowicki, PhD  
Earth Sciences  
University of South Florida

Leslie Nyiri, MA/MS  
Public Health  
Duquesne University

Lee O'Brien, PhD candidate  
Ecology  
Colorado State University

Sean O'Connell, PhD  
Biology  
Western Carolina University

Horst Onken, PhD  
Biology  
Wagner College

James B. Orlin, PhD  
Computer Science  
MIT

Nicholas C. Orrick, MA/MS  
Engineering  
Sierra Club

Michael Overton, PhD  
Computer Science  
New York University

Jose Pablo Ortiz Partida, PhD  
Climate Science  
Union of Concerned Scientists

Sharon Paltin, MD  
Medicine/Medical Research  
Long Valley Health Center

Morton B. Panish, PhD  
Chemistry  
Bell Labs, retired

Adina Parsley, MD  
Medicine/Medical Research  
Retired

George Pate, PhD  
Social Sciences  
Capella University

Charles H. Patterson, DVM  
Medicine/Medical Research  
Private Practice

Joshua Pearce, PhD  
Engineering  
Michigan Tech

Maxim Perelstein, PhD  
Physical Science  
Cornell University

Janet Perlman, MD  
Medicine/Medical Research  
University of California, San  
Francisco

Robert Allen Petersen, MD  
Medicine/Medical Research  
Boston Children's Hospital

Alan S. Peterson, MD  
Medicine/Medical Research  
Lancaster General Health

Chris Peterson, PhD  
Earth Sciences  
University of Hawaii

Steven Peterson, PhD  
Chemistry  
Naval Research Center

Gary Pischke, MA/MS  
Earth Sciences  
Institute of America, retired

Kristina Pistone, PhD  
Earth Sciences  
Bay Area Environmental  
Research Institute

Alan Podber, MA/MS  
Social Sciences  
NYC Medical Reserve Corps

William Podulka, PhD  
Physical Science  
Cornell University

Deborah Polk, PhD  
Social Sciences  
University of Pittsburgh

Stephen Pollaine, PhD  
Physical Science  
Lawrence Livermore National  
Laboratory

Alan Poplawsky, PhD  
Biology  
University of Idaho

John D. Potter, PhD  
Medicine/Medical Research  
Fred Hutchinson Cancer  
Research Center

Elizabeth Pottorff, MA/MS  
Physical Science  
State of Colorado, retired

David Powell, PhD  
Mathematics  
Auburn University

Stewart Prager, PhD  
Physical Science  
Princeton University

Bobby J. Presley, PhD  
Earth Sciences  
Texas A&M University

Theresa Pretlow, PhD  
Medicine/Medical Research  
Case Western Reserve  
University School of Medicine

Lou Priem, MD  
Medicine/Medical Research  
Bassett Healthcare

Joel Primack, PhD  
Physical Science  
University of California, Santa  
Cruz, Emeritus

Larry Raffalovich, PhD  
Social Sciences  
University at Alban, SUNY,  
retired

Paul Ranney, PhD  
Social Sciences  
St. Mary's University and  
School of Metaphysics

Saul Rappaport, PhD  
Physical Science  
MIT

A.Ravi Prakash Rau, PhD  
Physical Science  
Louisiana State University

James Rauner, PhD candidate  
Physical Science  
University of Notre Dame

Robert P. Redwine, PhD  
Physical Science  
MIT, Emeritus

David Reichmuth, PhD  
Engineering  
Union of Concerned Scientists

Sarah Reinhardt, MPH  
Public Health  
Union of Concerned Scientists

Kenneth Reiszner, PhD  
Chemistry  
REAL, Inc.

James Renegar, PhD  
Mathematics  
Cornell University

John Renfrew, PhD  
Life Science  
New Mexico University

Rod Repke, MA/MS  
Biology  
State of California, retired

Adam Resnick, MA/MS  
Engineering  
General Atomics Aeronautical  
Systems, Inc.

Joel Roberts, PhD  
Mathematics  
University of Minnesota

Rick Robertson, PhD  
Physical Science  
University of Illinois Urbana-  
Champaign

Alan Robock, PhD  
Earth Sciences  
Rutgers University

Michael Rodman, PhD  
Earth Sciences  
Retired

John Rogers, MS  
Engineering  
Union of Concerned Scientists

Andrew A. Rosenberg, PhD  
Science Policy  
Union of Concerned Scientists

Jean C. Roy, MA/MS  
Computer Science  
University of Southern  
California

Sam Ruthforth, PhD  
Ecology  
Retired

Bill Russell, PhD  
Physical Science  
Rutgers University

Nerissa Russell, PhD  
Social Sciences  
Cornell University

Phyllis Safman, PhD  
Education  
University of Utah

Robert St. Marie, PhD  
Social Sciences  
American Psychological  
Association

Pedro Salas, PhD  
Physical Science  
Green Bank Observatory

Ehsan Samei, PhD  
Physical Science  
Duke University

Timothy Sanders, PhD  
Physical Science  
Occidental College, retired

Alison Sanders-Fleming,  
MA/MS  
Education  
Lincoln-Sudbury Regional High  
School, retired

Julie L. Sando, PhD  
Medicine/Medical Research  
Retired

Alvin Saperstein, PhD  
Physical Science  
Wayne State University,  
emeritus

Michael Saunders, PhD  
Computer Science  
Stanford University

Matt Schalles, PhD  
Medicine/Medical Research  
Carnegie Mellon Neuroscience  
Institute

Roberta Schear, PhD  
Social Sciences  
Retired

Hank Schlinger, PhD  
Life Science  
California State University

Rick Schmelzer, MD  
Medicine/Medical Research  
University of Wisconsin  
Medical Foundation

Anita Schmidt, MA/MS  
Social Sciences  
Anita Schmidt Counseling Inc.

Christoph Schmidt, PhD  
Physical Science  
Duke University

Lawrence Schulz, MA/MS  
Engineering  
University of Illinois

Jacob Schwartz, PhD  
Physical Science  
Princeton University

Matt Schwartz, MD  
Medicine/Medical Research  
My Health 360

Peter Schwartz, PhD  
Physical Science  
California Polytechnic State  
University

Marlene Schwarz, DPH  
Engineering  
Industrial

Thomas Schwarz, PhD  
Physical Science  
University of Michigan

Frank Sciulli, PhD  
Physical Science  
Columbia University

Fredrick J. Seil, MD  
Medicine/Medical Research  
Oregon Health and Science  
University

Jennifer Selgrath, PhD  
Ecology  
Stanford University

Geeta M. Shaw, MD  
Medicine/Medical Research  
Retired

Kacie Shelton, MA/MS  
Engineering  
Jet Propulsion Lab/Caltech

Joel D. Shore, PhD  
Physical Science  
Rochester Institute of  
Technology

Peter Sigmann, MD  
Medicine/Medical Research  
Medical College of Wisconsin,  
retired

Roger Smith, MA/MS  
Engineering  
Washington State University

Copley H. Smoak, MA/MS  
Biology  
Conservancy of SW Florida

Michael I. Sobel, PhD  
Physical Science  
Brooklyn College, CUNY

Joshua E.S. Socolar, PhD  
Physical Science  
Duke University

Robert Socolow, PhD  
Physical Science  
Princeton University

Mary L. Sohn, PhD  
Physical Science  
Florida Tech

Philippa H. Solomon, PhD  
Chemistry  
Retired

Barbara Sorkin, PhD  
Biology  
National Institutes of Health

Robert Sothorn, PhD  
Biology  
University of Minnesota

Barbara Southard, MA/MS  
Medicine/Medical Research  
SUNY; Radford University;  
Virginia Tech

Dylan K. Spaulding, PhD  
Earth Sciences  
University of California, Davis

Susan A. Starr, MA/MS  
Biology  
Eastern Michigan University

Derek Steele, PhD  
Engineering  
Minnesota State Colleges and  
Universities

MaryRuth Stegman, PhD  
Public Health  
Retired

Richard Steiger, PhD candidate  
Computer Science  
MIT Alumni Association, ACM

Richard Stein, PhD  
Medicine/Medical Research  
University of California

Steve Sternberg, PhD  
Engineering  
University of Minnesota, Duluth

Glenn R. Stewart, PhD  
Biology  
California State Polytechnic  
University, Pomona

John Stewart, PhD  
Social Sciences  
University of Hartford

Michael Stock, PhD  
Biology  
Retired

Jeffrey Story, MA/MS  
Earth Sciences  
New Jersey Department of  
Environmental Protection

Alan J. Stultz, MA/MS  
Computer Science  
New Jersey Institute of  
Technology

Mark Suchyta, PhD candidate  
Social Sciences  
Michigan State University

Stevie Sugarman, MA/MS  
Social Sciences  
Earth Evolution

Susan Sugarman, PhD  
Social Sciences  
Princeton University

Barbara Sullivan-Watts, PhD  
Environmental Science  
University of Rhode Island

Jeremy Sutherland, PhD  
candidate  
Biology  
Penn State University

Anne Swanson, PhD  
Chemistry  
Sonoma State University,  
emeritus

Mark H. Swoiskin, MD  
Medicine/Medical Research  
University of California, San  
Francisco

Mauro Tambasco, PhD  
Physical Science  
San Diego State University

Regi Teasley, PhD  
Social Sciences  
Retired

Stephen Tettelbach, PhD  
Ecology  
Long Island University

Burton Thelander, MA/MS  
Social Sciences  
The Joint Commission

David Thomas, MD  
Medicine/Medical Research  
Fred Hutchinson Cancer  
Research Center

Dorothy Tompkins, MD  
Medicine/Medical Research  
Retired

Linda Thompsen, MA/MS  
Medicine/Medical Research  
Pennsylvania State University;  
University of Oregon

Lawrence H. Thompson, PhD  
Biology  
Lawrence Livermore National  
Laboratory, retired

Devin Thor, MA/MS  
Earth Sciences  
California State University,  
Northridge

Edward Thornton, PhD  
Chemistry  
University of Pennsylvania

Grant Tiefenbruck, PhD  
Engineering  
A.C.E. Design LLC

Maury Tigner, PhD  
Physical Science  
Cornell University

Larry S. Tobacman, MD  
Medicine/Medical Research  
University of Illinois College of  
Medicine

Michael Todd, PhD  
Engineering  
Cornell University

John Tooker, MD  
Medicine/Medical Research  
American College of Physicians

Kate Transchel, PhD  
Social Sciences  
California State University

Stavros Tripakis, PhD  
Computer Science  
Northeastern University

Ariana Tsiattalos, MA/MS  
Ecology  
New Jersey Department of  
Environmental Protection

Sharon Tkacz, PhD  
Social Sciences  
Retired

Walter B. Tucker III, MA/MS  
Earth Sciences  
US Army Cold Regions  
Research and Engineering  
Laboratory, retired

James Uleman, PhD  
Physical Science  
New York University

A.Galip Ulsoy, PhD  
Engineering  
University of Michigan

Stuart Umpleby, PhD  
Social Sciences  
George Washington University

Cyrus Umrigar, PhD  
Physical Science  
Cornell University

Jerry D. Unruh, PhD  
Chemistry  
Celanese Corporation, retired

Jerrold J. Van Hook, PhD  
Physical Science  
Pennsylvania State University

Robert Vanderbei, PhD  
Mathematics  
Princeton University

Andrew Vanderburg, PhD  
Physical Science  
Princeton University

Mark Van Etten, MD  
Medicine/Medical Research  
Retired

Marc P. Vayssières, DPH  
Ecology  
Retired

Elizabeth Vitale, PhD  
Ecology  
Psychotherapy Partners, LLC

Frank N. von Hippel, PhD  
Physical Science  
Princeton University

John Wakefield, PhD  
Earth Sciences  
Leeds University

Greg Walker, PhD  
Life Science  
University of California  
Riverside

Henry Walker, PhD  
Computer Science  
Grinnell College

David J. Walsh, MA/MS  
Physical Science  
US Navy

Dennis Walsh, MA/MS  
Biology  
College of William and Mary

Barbara H. Warren, MD  
Public Health  
Physicians for Social  
Responsibility

D. Randolph Watts, PhD  
Physical Science  
University of Rhode Island

Judith Weis, PhD  
Biology  
Rutgers University

Edmund Weisberg, MA/MS  
Public Health  
Johns Hopkins University

David B. Mark Welch, PhD  
Biology  
Marine Biological Laboratory

William C. Wells, PhD  
Physical Science  
Washington University

Paul West, PhD  
Chemistry  
Tolmar

Nick R. White, PhD  
Physical Science  
University of Oxford; College of  
William and Mary

Adam Wilkins, PhD  
Biology  
Institute of Theoretical Biology,  
Humboldt University of Berlin

Robert Williamson, PhD  
Computer Science  
Department of Veterans' Affairs

Sam Wilson, MA/MS  
Environmental Policy  
Union of Concerned Scientists

Marian Wineman, MA/MS  
Engineering  
WR Consulting

Rachel Wood, MA/MS  
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University of Wisconsin

Harry W. Woodcock, PhD  
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Alison Woomert, PhD  
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Chapel Hill

Sarah Workman, PhD  
Ecology  
Retired

F. Scott Worman, PhD  
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Missouri State University

David Wright, PhD  
Physical Science  
MIT

Victoria Wu, PhD  
Social Sciences  
Palo Alto University

Judson Wynne, PhD  
Ecology  
Northern Arizona University

Boleslaw Wyslouck, PhD  
Physical Science  
MIT

Roman Yampolskiy, PhD  
Computer Science  
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David Yelton, PhD  
Medicine/Medical Research  
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Yinyu Ye, PhD  
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Qingzhu Yin, PhD  
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Matthew Young, MA/MS  
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Ralph Young, PhD  
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Georgia State University

Greg Zahradnik, MA/MS  
Engineering  
ZEngineering

Thad Zajdowicz, MD  
Medicine/Medical Research  
Retired

Ric Zarwell, MA/MS  
Environmental Science  
Education Campaign,  
Allamakee County Protectors

Youxue Zhang, PhD  
Earth Sciences  
University of Michigan

Eric Zimdars, MA/MS  
Engineering  
US Army Corps of Engineers

Bruce Zoecklein, PhD  
Chemistry  
Virginia Tech