President Joe Biden’s Science and Technology Agenda

AIP Assembly
March 25, 2021

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Baker Institute for Public Policy
Rice University
President Biden's Science Advisor - Eric Lander

- Outstanding research credentials
- Expertise in biosciences – mathematician, geneticist
- Human Genome Project (Whitehead Institute)
- Administrative leadership experience (Broad Institute)
- Knowledge of White House – Co-chair PCAST (Obama)
- First science advisor (Dir. OSTP) to sit on Cabinet
- Willing to speak out!
Eric Lander’s OSTP-PCAST Team

- Deputy Director for Science & Society - Alondra Nelson
- Deputy Director for Climate and Environment – Jane Lubchenco
- Deputy Director for National Security – Jason Matheny
- Chief of Staff Kei Koizumi
- Co-Chairs of PCAST Frances Arnold & Maria Zuber
- Assistant Directors and Staff
President Biden’s List for Eric Lander

1. What can we learn from the pandemic about what *is* possible—or what *ought to be possible*—to address the widest range of needs related to our public health?

2. How can breakthroughs in science and technology create powerful new solutions to address climate change—propelling market-driven change, jump-starting economic growth, improving health, and growing jobs, especially in communities that have been left behind?

3. How can the United States ensure that it is the world leader in the technologies and industries of the future that will be critical to our economic prosperity and national security, especially in competition with China?

4. How can we guarantee that the fruits of science and technology are fully shared across America and among all Americans?
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2. How can breakthroughs in science and technology create powerful new solutions to address climate change, propelling market-driven change, jump-starting economic growth, improving health, and growing jobs, especially in communities that have been left behind?

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4. How can we guarantee that the fruits of science and technology are fully shared across America and among all Americans?
Policy making is a noisy business!

President & Vice President
WH Staff
WH Executive Offices (OSTP, OMB, NSC ...)

“Cabinet” (Department Secretaries)

Federal Departments & Independent Agencies

Congress
House and Senate Committees & Subcommittees & Staff

Lobbyists x,y,z
MEDIA CNN
consumers
special Interests

Lobbyists x,y,z
MEDIA TALK RADIO
consumers
special Interests

Big Money

MEDIA FACEBOOK
consumers
special Interests

Big Money

MEDIA FOX
consumers
special Interests

Big Money

MEDIA MSNBC
consumers
scientific societies

Big Money

industry

Big Money

industry

scientific societies

Big Money

Industry

Fossil Fuels

Religious Groups

Gun rights

AARP

MEDIA TWITTER

Gun rights

Religious Groups

Lobbyists x,y,z

MEDIA YOUTUBE

Lobbyists x,y,z

TALK RADIO

Big Money

environmental activists

Big Money

environmental activists

Big Money

universities

Nationalists

women’s rights

Populists

GLBTQ rights

Human rights
Suggestions for the Science Advisor

- Define the “S&T niche” in the president’s agenda – and a “navigation” plan
- Start making friends – West Wing, Cabinet, agencies, (Congress)
- Develop specific interagency initiatives – with the NSTC and OMB
- Encourage PCAST to review and support initiatives and other strategies
- Influence OMB and agencies in planning annual agency budgets
- Cooperate with NSC and other policy councils
- Develop international partnerships in support of U.S. priorities
- Represent the president on S&T matters – Congress – public – international
It’s important to be close to the West Wing and Oval Office - but not too close!

- President’s parking place
- west wing
- oval office
- Neal’s parking place
- OSTP
Reasons for Optimism - Policy Makers are Noticing

- Biden Administration’s Priority on S&T
  - Elevation of OSTP Director to Cabinet
  - Ambitious agenda – challenges to Eric Lander
- Congress
  - Endless Frontier Act (EFA) – NSF & NIST
  - RISE and other bills
- Advocacy - Two Examples
  - S&T Action Plan – recommendations for federal R&D
  - Salon Group – recommendations for Congress – EFA
- A time of crisis – a “pandemic moment” – and “China moment”!
The Endless Frontier Act
(Bipartisan & Bicameral)

Majority Leader Chuck Schumer (D-NY), Senator Todd Young (R-IN)
Congressmen Ro Khanna (D-CA) and Mike Gallagher (R-WI)

- New Name – National Science and Technology Foundation - NSTF
- New Technology Directorate – “new DARPA-like authorities”
- New Deputy Director for Technology (Senate confirmed)
- New Funding of $100 Billion over 5 years
- New Advisory Board on Technology w/ Congress involved
- New scholarships, fellowships, traineeships
- New initiatives - ”lab to market” centers and workforce
Current NSF Organization

U.S. National Science Foundation (NSF) Org Chart

Office of the Director
Deputy Director
- General Counsel
- International Science & Engineering
- Integrative Activities
- Legislative & Public Affairs
- Diversity & Inclusion

National Science Board
Office of Inspector General

Directorate for Biological Sciences
Directorate for Computer & Info Science & Engineering
Directorate for Education & HR
Directorate for Engineering
Directorate for Finance Management

Info & Resource Management
Directorate for Mathematical & Physical Sciences
Directorate for Geosciences
Directorate for Social Sciences

Office of Diversity & Inclusion
Office of the General Counsel
Office of Integrative Activities
Office of Legislative & Public Affairs
Chief Information Officer

FY2021 budget
$8.5 billion
EFA Proposed NSF Organization

New Directorate of Technology
(Deputy Director for Technology)
FY2025 budget $35 billion
($100 billion over 5 years)

New Technology Advisory Board

FY2021 budget $8.5 billion
Salon Group Paper: “Should the Endless Frontier of Science be Expanded?”
By David Baltimore, Bob Conn, Bill Press, Tom Rosenbaum, David Spergel, Shirley Tilghman and Harold Varmus (published by ‘Science’ on-line)

Recommendations

• Supports the objectives and several elements of the bill
• Recommends against the name change
• Recommends against a new Deputy Director for Technology
• Recommends against a new Advisory Board on Technology
• Recommends additional protection of current directorates budgets

Conclusions

“The recommendations we have made here are significant, but still minor in comparison with the benefits that the proposed Endless Frontier Act would confer on the nation’s research enterprise.”
Letter from former NSF Directors and NSB Chairs:

“We applaud efforts to strengthen American competitiveness in science, technology and innovation by significantly increasing support for research through the bipartisan, bicameral Endless Frontier Act...we are supportive of the spirit of this legislation. We understand that conversations are ongoing and will continue to address important details in this legislation, so we do not wish to elaborate on those details here. We are confident that NSF can meet the goals of this proposed legislation and deliver the expected outcomes if given sufficient resources and discretion in implementation...”


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<th>Former NSF Directors</th>
<th>Former NSB Chairs</th>
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The Perils of Complacency

America at a Tipping Point in Science and Engineering

American Academy of Arts and Sciences & Rice University’s Baker Institute for Public Policy
Co-chairs: Norm Augustine & Neal Lane

ISSUES

- U.S. slipping back in global innovation indicators
- Erratic and eroding federal research support
- U.S. industry focusing on short-term gains, avoiding investments in basic research
- Poor quality of STEM education for large numbers of Americans
- Rapid rise of Asia, especially China, in S&T and Innovation
- Growing deficits and national debt – looming political pushback
RECOMMENDATIONS

- R&D – boost federal research funding by at least 50%
- Budget process – rolling 5-year plan, 2-yr funding cycle and capital budget
- Rules & regulations – review, replace or remove
- Workforce – grow STEM numbers and skills – US & foreign born
- Education – transform quality of pre-K12 education & access for all Americans
- GUI partnership – change laws & regulations and offer incentives
- Universities – restore State funding – Congress repeal tax on endowment
Research Funding Recommendation

Federal Basic Research Funding,
as a percentage of GDP

- Get "back on track" (fast or slow)
- Resume modest real growth
- Business as usual
The Future?

Why are my grandkids smiling?
Thank you!