Summary of the 2018 White House State–Federal STEM Education Summit

Product of

THE WHITE HOUSE

OFFICE OF SCIENCE AND TECHNOLOGY POLICY

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*"**Skills in STEM**—including, in particular, computer science...open the door to jobs, **strengthening the backbone of American ingenuity,** driving solutions to complex problems across industries, and improving lives around the world."*

— President Donald J. Trump

Background

Focus on Science, Technology, Engineering, and Mathematics (STEM) Education, including Computer Science, is of paramount importance to America's future workforce and is the foundation to develop the necessary skills for the jobs that will allow the United States to continue to remain the global leader in today's competitive landscape.

The Trump Administration has prioritized STEM Education by highlighting key goals that are both transparent and achievable. By forging stronger connections for students between the worlds of education and work; focusing on innovation and entrepreneurship; integrating computer science principals; and improving access to STEM programs for all Americans, including women, minorities, persons with disabilities, and people in rural areas, the Trump Administration has underscored the importance of STEM Education to the development of the future American workforce.

On June 25 and 26, 2018, The White House Office of Science and Technology Policy (OSTP) hosted a first-of-its-kind State-Federal STEM Education Summit to highlight the Trump Administration's commitment to STEM Education by convening stakeholders to help inform the development of the upcoming Federal 5-Year STEM Education Strategic Plan (the Plan), which is required by the America COMPETES Act of 2010. OSTP joined the National Science Foundation and 16 other Federal agencies for this two-day event.

Photo Courtesy of Melanee Kate Thomas

*"Top-down approaches to STEM Education can often yield wonderful ideas,
but it's at the State and community level where the momentum happens. State leaders
know best what kinds of programs will work in their communities, and where they need the
power of the Federal government to help drive success in this field."*

–Dr. Jeff Weld, Senior Policy Advisor and Assistant Director, STEM Education, OSTP

The State-Federal STEM Education Summit brought together more than 200 STEM leaders from all 50 States, all five territories, and several tribes, including officials from governors' offices, K-20 educators, workforce and industry representatives, State policy experts, and non-government organization executives. No Administration has previously sought this scale of State, local, and tribal input when developing a national STEM Education plan.

The Summit attendees heard from Advisor to the President Ivanka Trump, Deputy Assistant to the President for Technology Policy Michael Kratsios, U.S. Secretary of Education Betsy DeVos, National Aeronautics and Space Administration (NASA) Administrator Jim Bridenstine, Smithsonian Institution Secretary David Skorton, National Science Foundation (NSF) Director Dr. France Córdova, and NSF Chief Operating Officer Joan Ferrini-Mundy on how STEM Education has positive impacts on tomorrow's workforce, as well as how states can best leverage Federal resources to continue fostering a strong STEM Education pipeline in their respective communities. Attendees also participated in robust breakout sessions to discuss the Federal role in supporting excellence in STEM Education to inform the development of the new Plan.

The Trump Administration is committed to bettering the Nation's STEM Education agenda, as will be reflected in the upcoming 2018-2023 Plan so that States will be well-equipped to prepare future generations for the jobs of the future.

Key Takeaways

Key takeaways from the Summit:

- **Forging stronger connections for students between education and work.** Work-based learning for students in STEM K-20 Education, including apprenticeships, internships, cooperative education, and mentorships, is possible through the external partnerships that support school and workplace collaboration. These partnerships may involve the certification and credentialing of programs at the K-20 levels and beyond. Attendees discussed ways to unite stakeholders across communities and regions to promote STEM careers supporting economic development in the Skilled Technical Workforce sphere and beyond.

- **Focusing on innovation and entrepreneurship.** Preparing today's learners for the jobs of the future and empowering America's workforce is an imperative at the forefront of the Trump Administration's agenda. Attendees discussed strategies and methods to engage all Americans in cutting-edge programs that focus on innovative ways to encourage entrepreneurship for future generations.

*"There's no question that early exposure and ongoing access to courses in the
STEM fields helps students on a path to success in careers and life. As I visit schools across
the nation, I see state and local leaders rethinking school to better prepare students.
We need more of these innovations, and that's why we are pleased to support expansions
of STEM offerings through our grant programs."*

–Betsy DeVos, U.S. Secretary of Education

- **Integrating Computer Science principals across the educational experience.** On September 25, 2017, President Donald J. Trump signed a [Presidential Memorandum](#) directing Secretary of Education Betsy DeVos to allocate at least $200 million to STEM Education and Computer Science programs. Attendees discussed how to integrate Computer Science education into classrooms across the Nation to better prepare today's learners for the jobs of tomorrow.

- **Improving access of STEM programs for all Americans**. STEM Education is inclusive. By working to improve access to STEM programs for underrepresented and underserved groups, America can close the labor gap that persists between good jobs and qualified workers. We must ensure that all of today's learners, from curious Kindergartners to re-skilling retirees, have access to high-quality STEM and Computer Science courses. Attendees discussed opportunities to harness the talent and full potential of students, educators, and advocates by prioritizing high-quality educational programs and relevant postsecondary education to achieve goals and turn dreams into realities.

*"NASA is proud that its missions provide so many opportunities for STEM engagement
with students at all levels. We look forward to taking America back to the Moon and Mars
with the strong direction of the President's space policy directives and inspiring generations
to come with the spirit of our Nation's accomplishments and leadership in space. Our work
and our engagement with millions of students through live downlinks with astronauts aboard the
International Space Station and frequent interactions with students around the world are helping
influence a new generation of exploration leaders to make their own giant leaps."*

–Jim Bridenstine, NASA Administrator

Proceedings

A Conversation with Senior Administration Officials: STEM Education and the Trump Administration

To kick off the event, Advisor to the President Ivanka Trump and Deputy Assistant to the President for Technology Policy Michael Kratsios discussed the importance of STEM Education to the Trump Administration and the role the Federal government plays in promoting and improving access to STEM Education across America. Discussion topics included:

- President Trump's executive actions on [STEM Education funding](#) and [Apprenticeships](#)

- How improving access to technology, such as high speed internet, will help prepare all Americans for the jobs of the future
- Promoting inclusion in Computer Science for underserved populations
- Lifelong learning and what that means for the future of work
- Working to include States, local, and tribal communities in setting the National STEM Education strategic agenda
- The role that the private sector plays in boosting STEM Education toward workforce readiness
- How all industry sectors – from manufacturing to healthcare to finance to construction to technology and more – will benefit from a STEM-ready workforce

Photo Courtesy of Steven G. Zylstra, Arizona Technology Council

"At present, less than half of our K-12 schools offer a single Computer Science class – a troubling reality considering the increasingly important role of technology skills in our modern economy. This Administration is addressing this gap aggressively. Last September, the President signed a memorandum directing the Secretary of Education to prioritize STEM and computer science education and allocate a minimum of 200 million dollars of annual grant funding toward high quality STEM and Computer Science education. We call on State leaders to apply for these grants and help put our students on pathways towards in-demand and lucrative careers!"

–Ivanka Trump, Advisor to the President

STEM Education Programs and Priorities at Federal Agencies: A Panel Discussion with the U.S. Department of Education, NASA, NSF, and the Smithsonian Institution

Dr. Jeff Weld, OSTP's Senior Policy Advisor and Assistant Director, STEM Education, moderated a panel discussion with U.S. Secretary of Education Betsy DeVos, NASA Administrator Jim Bridenstine, NSF Chief Operating Officer Joan Ferrini-Mundy, and Smithsonian Institution Secretary David Skorton. The panelists discussed the importance of STEM Education in America today, the role STEM Education plays in each of their missions, and programs and resources available within their Departments and Agencies that State, local, and tribal STEM leaders could leverage to achieve their goals. Panelists answered questions from the audience, covering topics that included how each Agency or Institution is striving to engage more women and other underrepresented groups in the STEM workforce.

Photo Courtesy of Melanee Kate Thomas

Day Two: Working Sessions at NSF

The second day of the State-Federal STEM Education Summit took place at NSF with a keynote address from NSF Director Dr. France Córdova.

Attendees participated in a series of three breakout sessions during day two of the State-Federal STEM Education Summit. Attendees discussed the impact of the 2013-2018 Plan, emerging trends and priorities in STEM Education and how they can inform the development of the upcoming 2018-2023 Plan, and the Federal role and responsibility in supporting State, local, and tribal STEM Education programs.

"To develop the future STEM workforce essential to keeping our position as a global leader, we must have patient, persistent federal investment in STEM education. NSF is working with the White House and our other partners in government, seeking to make sure that every American student receives quality STEM education – that no matter their intended profession, they have the tools they will need to thrive in an increasingly science- and technology-driven society. Because the next innovations and discoveries can come from anywhere."

–Dr. France Córdova, NSF Director

Panel Discussion on Agency Resources Available to States

Jake Steel, a White House Fellow with the Domestic Policy Council, moderated a discussion with NASA Associate Administrator for Education Mike Kincaid, NSF Acting Assistant Director for the Directorate for Education and Human Resources Jim Lewis, U.S. Department of Education Principal Deputy Assistant Secretary and Acting Assistant Secretary of Elementary and Secondary Education Jason Botel, Smithsonian Science Education Center Director Carol O'Donnell, and U.S. Department of Labor Special Assistant Bronte Wigen. The focus of the panel was to provide attendees with knowledge of current STEM resources available to States and localities through each Agency. Augmenting the information shared by panelists, attendees were also provided a compilation of resource briefs from a variety of Federal agencies to share with their constituents within States.

Next Steps and Conclusion

In accordance with the America COMPETES Reauthorization Act of 2010, the 2018-2023 Plan will provide the strategy for implementing STEM Education across the United States. This plan will provide short and long term goals, and specify the approaches Federal agencies will use to validate and ensure the efficacy of their respective STEM Education programs.

This National strategy will be a culmination of the insights gained from Federal Agencies, educators, and industry representatives, among other stakeholders and policy makers. This plan will support Americans preparing for jobs of the future and advance innovative job training programs.

The Trump Administration will continue to advocate for STEM Education across the Nation and looks forward to continuing collaboration with stakeholders to ensure the United States remains the world leader in science, technology, engineering, mathematics, and to ensure economic prosperity for generations to come.

Appendix A: State–Federal STEM Education Summit Agenda

State-Federal STEM Education Summit
June 25 and 26, 2018
Agenda

Monday, June 25, 2018: The White House

- Arrival and Introductions
- Group Photo
- Welcome Remarks
    - Jeff Weld, Senior Policy Advisor and Assistant Director, STEM Education, The White House Office of Science and Technology Policy
- In conversation: STEM Education and the Trump Administration
    - Ivanka Trump, Advisor to the President
    - Michael Kratsios, Deputy Assistant to the President for Technology Policy
- Panel discussion: STEM Education programs and priorities within Federal Agencies
    - Secretary Betsy DeVos, U.S. Department of Education
    - Secretary David J. Skorton, The Smithsonian Institution
    - Administrator James Bridenstine, NASA
    - Chief Operating Officer Dr. Joan Ferrini-Mundy, National Science Foundation

Tuesday, June 26, 2018: The National Science Foundation

- Opening Keynote: Dr. France Cordova, Director, National Science Foundation
- Working session 1: Impact of current (2013-2018) Federal 5-Year STEM Education Strategic Plan on State, local, and tribal STEM programs and policies
- Working session 2: Trends and priorities in Federal STEM Education
- Panel discussion: Federal resources available to States: Experts from the U.S. Department of Education, U.S. Department of Labor, NASA, National Science Foundation, and the Smithsonian Institution
- Working session 3: Federal role in supporting State STEM Education
- Final remarks, next steps

Appendix B: State-Federal STEM Education Summit Attendee List

State-Federal STEM Education Summit Attendees
June 25 and 26, 2018
Attendee List

Alabama

- Nick Moore, Alabama Workforce Council
- Paul Morin, Auburn University
- Brenda Terry, Alabama Mathematics, Science, Technology, and Engineering Coalition for Education

Alaska

- Greg Cashen, Alaska Department of Labor and Workforce Development
- Michael Johnson, Alaska Department of Education & Early Development
- Mary Pete, College of Rural and Community Development, Kuskokwim Campus

Arizona

- Sandra Watson, Arizona Commerce Authority
- Steve Zylstra, Arizona Technology Council

Arkansas

- Stephen Addison, University of Central Arkansas Cyber Security Program
- Steve Guntharp, Arkansas Department of Workforce Services
- Anthony Owen, State Director of Computer Science Education

California

- Vince Stewart, California STEM Network

Colorado

- Katy Anthes, Commissioner of Education
- Hannah Parsons, National Cybersecurity Center
- Stephanie Veck, Colorado Workforce Development Council

Connecticut

- Matt Fleury, Connecticut Science Center; Board of Regents
- Rachel Manzer, Winchester CT Public Schools; CT Stem Workforce Committee
- Robert Trefry, Connecticut Technical Education System; State Board of Education

District of Columbia

- Maya Garcia, DC Office of the State Superintendent of Education
- Katia Grigoriants, Carnegie Academy for Science Education; DC STEM Network
- Mila Yochum, DC Office of Out of School Time Grants; Youth Outcomes, DC Office of the Deputy Mayor for Education

Delaware

- Tariq Hook, ZipCode Wilmington
- Luke Rhine, CTE and STEM Delaware Department of Education (K-12)
- Paula Swain, Incyte

Florida

- Michelle Dennard, CareerSource Florida
- Hershel Lyons, Florida Dept. of Education – Division of Public Schools
- Steve Millaway, TechFarms Capital

Georgia

- Felicia Cullars, Georgia Department of Education
- Cayanna Good, Governor's Office of Student Achievement

Hawaii

- Ian Kitajima, Oceanit
- Scott Murakami, University of Hawaii Community Colleges
- Leslie Wilkins, Maui Economic Development Board

Idaho

- David Hill, Idaho State Board of Education; STEM Action Center Advisory Board
- Wendi Secrist, Idaho Workforce Development Council
- Marilyn Whitney, Education Office of the Governor

Illinois

- Michael Lach, University of Chicago
- Julie Mueller, Universal Technical Institute-Lisle
- Sean McCarthy, Illinois Department of Commerce and Economic Opportunity
- Jose Torres, Illinois Mathematics and Science Academy

Indiana

- J. Mark Howell, Conexus Indiana
- Katie Jenner, Madison Consolidated Schools
- Danny Lopez, Governor's Workforce Commission
- Jennifer McCormick, State Superintendent of Public Instruction
- Holly Stachler, Indiana Department of Education

Iowa

- Sarah Derry, South Central Iowa STEM Region Manager
- Cindy Dietz, STEM Advisory Council; Rockwell Collins
- Linda Fandel, Education Advisor to Governor Kim Reynolds

Kansas

- Diane DeBacker, Kansas Department of Commerce
- Martha McCabe, Kansas City STEM Alliance
- Stacy Smith, CTE/IPS; Kansas State Department of Education

Kentucky

- Laura Arnold, Kentucky Department of Education
- Beth Davisson, Kentucky Chamber of Commerce Workforce Center
- Kim Menke, Toyota Motor Engineering and Manufacturing North

Louisiana

- Calvin Mackie, STEM NOLA, Center for the Innovative Training of Youth
- Sonia Perez, AT&T Louisiana
- Susana Schowen, Louisiana STEM Advisory Council

Maine

- Jon Amory, Baxter Academy
- Rob Caron, Caron Engineers
- James Ritter, Maine State Librarian

Maryland

- Justin Hartings, Maryland State Board of Education
- Diane Peters, Office of the Secretary, Maryland Department of Labor, Licensing & Regulation
- Cassie Shirk, Office of the Governor

Massachusetts

- Fran Colantonio, Colantionio Construction
- Erin Hasimoto-Martell, Department of Elementary and Secondary Education
- Stacey Roman, Commodore Builders

Michigan

- Kat Owsley, Bosch Community Foundation
- Michelle Ribant, Michigan Department of Education (MDE)
- Megan Schrauben, MiSTEM Network

Minnesota

- Tesha R. Alston, TLR Agonist Platform
- Kelly Hansen, Park Industries; Governor's Workforce Development Board
- Doug Paulson, Minnesota Department of Education

Missouri

- Travis Fitzwater, Missouri House of Representatives
- Hal Higdon, Ozarks Technical Community College
- Ryan Stauffer, Missouri Chamber

Mississippi

- Domenico Parisi, National Strategic Planning & Analysis Research Center
- Laurie J. Smith, Education & Workforce Development
- Shelley Songy, Oak Grove High School

Montana

- Jessica Anderson, 2016 Montana Teacher of the Year
- Dan Carter, ExxonMobil Buildings
- Pam Haxby Cote, Montana Department of Commerce

Nebraska

- Cory Epler, Teaching and Learning
- Mark Moravec, Chief Industries
- Bradley Pierce, Nebraska Department of Economic Development

New Hampshire

- Taylor Caswell, NH Department of Business and Economic Affairs
- Julie Charron, DEKA Research & Development Group
- Dean Kamen, DEKA Research & Development Group
- Terry Wolf, NH House Education Committee

New Jersey

- Rose Kirk, Verizon

New Mexico

- Claire Chase, Mack Energy Corporation
- Feng Hou, Central New Mexico Community College
- Julia Wise, NM Economic Development Department

New York

- Joseph Dragone, Capital Region Board of Cooperative Education Services
- Jill Lansing, Empire State STEM Learning Network

Nevada

- Kelly Barber, Washoe County School District; Nevada STEM Advisory Council
- Brian Mitchell, Governor's Office of Science, Innovation and Technology
- Mark Newburn, Vizics / Nevada STEM Advisory Council

North Carolina

- Lisa Rhoades, NC Science, Mathematics, and Technology Education Center
- Marti Skold-Jordan, U.S. Community Partnerships, GlaxoSmithKline
- Napoleon Wallace, Secretary for Rural Economic Development & Workforce Solutions, NC Department of Commerce

North Dakota

- Kerri Briggs, National Math and Science Initiative, ExxonMobil
- Mark Owens, House Education Committee, North Dakota House of Representatives
- Wayde Sick, North Dakota Career and Technical Education Department

Ohio

- John Klipfell, Believe in Ohio
- Holly Lavender, Ohio Department of Education
- Heather Sherman, Ohio STEM Learning Network

Oklahoma

- Becki Foster, Oklahoma Department of Career and Technology
- Nathaniel Harding, Governor's Council on Workforce and Economic Development; Antioch Energy
- Ken Parker, NextThought

Oregon

- Larua Foley, Oregon Department of Education
- Shalee Hodgson, Future Ready Oregon
- Janeen Sollman, State Representative

Pennsylvania

- Jamie Bracey, Temple University
- Sunanna Chand, Remake Learning
- Katie Henry, Birdbrain Technologies

Rhode Island

- Linda Larsen, Southeastern New England Defense Industry Alliance
- Simone Palmer, Rhode Island Department of Elementary and Secondary Education

South Carolina

- Bill Kirkland, University of South Carolina
- Elisabeth Kovacs, SC Department of Commerce
- Tom Peters, South Carolina's Coalition for Mathematics & Science, Clemson University

South Dakota

- Brian Maher, Sioux Falls School District
- José-Marie Griffiths, Dakota State University

Tennessee

- K. Beth Duffield, Rutherford County Chamber of Commerce
- Deborah Knoll, Tennessee STEM Leadership Council; Tennessee Department of Education
- Ann Thompson, Tennessee Department of Economic and Community Development

Texas

- Angela Farley, Dallas Regional Chamber
- Ruth Hughs, Texas Workforce Commission
- Michael Reeser, Texas State Technical College

Utah

- Kimberlee Carlile, Talent Ready Utah, Governor's Office of Economic Development
- Tami Goetz, Utah STEM Action Center
- Sarah Young, Utah State Board of Education

Virginia

- Atif Qarni, Virginia Secretary of Education
- Tina Manglicmot, VA Department of Education
- Zuzana Steen, Manager Micron Technology, Inc.

Vermont

- Janette Bombardier, Green Mountain Power
- Lindsay Kurrle, Commissioner of the Vermont Department of Labor
- Jay Ramsey, Vermont State CTE Director

Washington

- Maud Daudon, Career Connect Washington
- Caroline King, Washington STEM
- Naria Santa Lucia, Washington State Opportunity Scholarship
- Michaela Miller, Office of Superintendent of Public Instruction

Wisconsin

- Ray Allen, Wisconsin Department of Workforce Development
- Kevin Anderson, Wisconsin Department of Public Instruction
- Ted Neitzke, Cooperative Education Service Agency Region 6
- Mark Tyler, OEM Manufacturers; Wisconsin Technical College System

West Virginia

- James Coble, Spring Valley High School
- Alyssa Keedy, West Virginia Department of Education
- Chris Pauley, West Virginia Department of Commerce

Wyoming

- Jillian Balow, Wyoming Department of Education
- Jay Curtis, Park County School District #1

U.S. Territories, Tribal Representatives, Industry and Non-Governmental Organizations

American Samoa

- John Dudinsky, State-Federal Director, American Samoa

Guam

- Mary Okada, Guam Community College
- Michelle Santos, University of Guam School of Education
- Natnan Taimanglo, DOCOMO Pacific, Guam

Northern Mariana Islands

- Emanuel Borja, STEMed CNMI, Northern Mariana Islands
- Gerard Van Gils, 2017 Northern Mariana Islands State Teacher of the Year
- Matthew Deleon Guerrero, Executive Adviser to the Governor, Northern Mariana Islands

Puerto Rico

- Walter Alomar, UPR Governing Board, University of Puerto Rico
- Lucy Crespo, Puerto Rico Science Trust
- Julia Keleher, Puerto Rico Secretary of Education

Tribes

- Esteban Bovo, Miami-Dade County
- Ernest House, CO Commission of Indian Affairs
- Jean Hovland, Bureau of Indian Affairs
- Mary Larson, Salish Kootnai College
- A.J. Not Afraid, Crow Tribe
- La Titia Taylor, Southern Ute Tribe
- Ahniwake Rose, National Indian Education Association

U.S. Virgin Islands

- Vibha Bansal, St. Croix District Secondary School, U.S. Virgin Islands
- Avon Benjamin, St. Thomas/St. John District Mathematics Coordinator, U.S. Virgin Islands
- Marisska Nurse, St. Croix District Primary School Teacher, U.S. Virgin Islands
- Shamika Williams-Henley, STE(A)M Territorial State Director, U.S. Virgin Islands

Industry, Other Government and NGO Attendees

- Jessica Adelshire, Boston Scientific
- Pat Barnes, John Deere Corporation
- James Brown, STEM Coalition
- Wes Hall, STEMx
- Johnathan Holifield, Executive Director, White House Initiative on Historically Black Colleges and Universities
- Jan Morrison, Teaching Institute for Excellence in STEM (TIES)
- Lori Pickel, Sciences Program Manager, DODEA Schools
- Aimee P. Viana, White House Initiative on Educational Excellence for Hispanics
- Ted Wells, STEM Connector
- Jennifer Zinth, Education Commission of the States