

FACT SHEET: Lifting America's Game in Climate Education, Literacy, and Training

"If you believe, like I do, that something has to be done on this, then you're going to have to speak out. You're going to have to learn more about these issues... You've got to educate your classmates, and colleagues, and family members and fellow citizens, and tell them what's at stake." -- President Obama, June 2014, Remarks at the University of California-Irvine Commencement Ceremony

Under President Obama's Climate Action Plan, important steps have already been taken to cut carbon pollution, prepare for the impacts of climate change, and lead international efforts to fight this global challenge. Continued progress into the future will depend on ensuring a climate-smart citizenry and a next-generation American workforce of city planners, community leaders, engineers, and entrepreneurs who understand the urgent climate-change challenge and are equipped with the knowledge, skills, and training to seek and implement solutions.

That's why today, in support of the Obama Administration's steady efforts to address climate change, the White House Office of Science & Technology Policy (OSTP) is launching a new Climate Education and Literacy Initiative to help connect American students and citizens with the best-available, science-based information about climate change.

The Initiative is kicking off with a roundtable discussion at the White House, convening key leaders in the education community from government, academia, philanthropies, non-governmental organizations, and the private sector to discuss ways to enhance climate education in the United States. The discussion will focus on planned and potential efforts to: increase learning opportunities about climate change for students; equip educators with science-based information and resources; enhance climate-related professional development and training; and engage citizens through place-based and informal climate education.

Through the Climate Education and Literacy Initiative, the Obama Administration is asking leaders across sectors to step up and help lift our Nation's game in climate education. In response to an initial call to action made in October, more than 150 activities, projects, and ideas were submitted by individuals and organizations across the country, from more than 30 states. These included a diverse array of innovative approaches being implemented in K-12 classrooms, on college and university campuses, and in zoos, parks, aquariums, and museums to educate and engage students and citizens of all ages. Today's launch includes a number of exciting new commitments by Federal agencies and outside groups.

Administration Commitments:

Equipping National Park Service employees with climate-relevant resources. The National Park Service (NPS) is developing a National Climate Change Interpretive Plan to better serve the employees, volunteers, partners, and concessionaires who engage with the more than 270 million individuals who visit the Nation's 401 National Parks annually. To be completed by the end of 2015, the Plan will guide NPS in providing interpretive services related to climate change as the nation celebrates the NPS Centennial in 2016. Specifically, the Plan will assist NPS interpretive managers and practitioners in the creation and delivery of effective climate-change messages in the programs and exhibits across all National Parks.

Providing training to senior Federal leaders. The Office of Personnel Management (OPM), the Environmental Protection Agency (EPA), the National Oceanic and Atmospheric Administration (NOAA), the Department of the Interior (DOI), and the U.S. Army Corps of Engineers are spearheading a new "*Climate Change for Senior Executive Leaders*" program. Based on a pilot held in October 2014, new courses will be offered in 2015, with the goal of training 100 Senior Executives from the Federal Government over the coming year. In addition, a new "Climate-LEAD" course will be piloted in 2015 in partnership with OPM's Leadership Education And Development Program; this course will educate future climate-change leaders in the General Schedule (GS) ranks across Federal agencies. Collectively, these trainings will equip the Federal Government's leaders with the information and skills they need to understand and address climate change through their positions and programs.

Convening regional climate-science workshops for educators. In 2015, NOAA will sponsor five regional workshops for a total of 400 formal and informal educators, providing opportunities to interact with climate experts and visit climate-science facilities to explore the technological innovations that have revolutionized Earth-system research. Workshops will focus on the regional impacts of climate change, as highlighted in the Third National Climate Assessment. The series will start in Silver Spring, MD with a NOAA Climate Modeling and Simulation Workshop for Educators to showcase tools and hands-on, interactive strategies that can be used in classrooms to meaningfully foster understanding and critical thinking around society's climate challenges. Other workshops will take place in Seattle, WA, St. Petersburg, FL, Boulder, CO, and Chicago, IL.

Leveraging digital games to enhance climate education. NOAA and other science agencies will collaborate to harness the promise of educational games and interactive media to enhance understanding and awareness of climate-change impacts and solutions. As part of this effort, in 2015, NOAA and partners will organize a competition bringing together game developers, scientists, and educators to create new game prototypes that allow players to learn about climate change through science-

based, interactive experiences. Promising prototypes may be made available for teachers and students to use in the classroom.

Enhancing energy literacy. Today, the Department of Energy (DOE), along with the American Geosciences Institute (AGI) and the National Center for Science Education (NCSE), is launching the first four videos in a [series](#) highlighting each of the seven essential principles presented in the DOE [Energy Literacy](#) Framework. The Framework seeks to help educators of all disciplines and age groups incorporate a multidisciplinary approach to energy into their lessons and programs. The final three videos are expected by September 2015. In addition, DOE is also announcing the [Spanish-language version](#) of its *Get Current* coloring book, which is part of an ongoing effort to expand educational resources for the growing Spanish-speaking population in the United States.

Harnessing digital platforms to disseminate climate information. In 2015, the National Aeronautics and Space Administration (NASA) [ESTEEM](#) (Earth Systems, Technology, and Energy Education for MUREP-Minority University Research and Education Project) will host a set of online conversations through its “Ask US (Useful Science)” Educator Professional Development series. “Ask US” brings science-based resources to teachers through engaging virtual sessions hosted by NASA’s Digital Learning Network. Last year, the newly launched series reached over 1,200 educators and spanned a variety of sectors, including pre-college education, universities, community colleges, and non-profits. In 2015, five additional “Ask US” sessions will be held, with a focus on connecting educators with findings of the Third National Climate Assessment.

External Commitments:

The Alliance for Climate Education (ACE). Over the coming year, ACE will educate 150,000 high-school students with their assembly program that presents climate science through storytelling, animation, music, and video. ACE will also engage 50,000 of those students through their online and mobile networks. As part of this effort, ACE has committed to align their assemblies and online resources with information from the Third National Climate Assessment and to train 80 high-school students next year as climate leaders through the ACE Action Fellowship. These Fellowships support students in becoming lifelong climate leaders by developing their knowledge of climate science and solutions, growing their public communication skills, and enhancing their ability to take action on local climate issues.

American Meteorological Society (AMS). In Spring 2015, AMS, in partnership with Second Nature and the American College and University Presidents’ Climate Commitment, will prepare 30 faculty members from Minority Serving Institutions (MSIs) to introduce climate-science courses onto their campuses. A series of workshops for MSI professors interested in enhancing coursework around paleoclimate is also

being developed by AMS, the Consortium for Ocean Leadership, the National Science Foundation (NSF) International Ocean Discovery Program, and the U.S. Ice Drilling Program Office, in collaboration with multiple partners from higher education and with support from NSF and Lockheed Martin.

Aquarium of the Pacific, National Aquarium, New England Aquarium, and Seattle Aquarium. Through a partnership called *Visualizing Change: Training and Tools to Support Informal Educators*, the Aquarium of the Pacific, National Aquarium, New England Aquarium, and Seattle Aquarium, which collectively welcome over 5 million visitors annually, are collaborating to use digital platforms and technologies to illustrate impacts of climate change on coasts and oceans. In 2015, new visual narratives on sea-level rise, ocean acidification, extreme weather, and impacts on primary productivity will be launched in pilot phases at these aquariums and other informal education centers throughout the Nation, with the goal of communicating climate information and science through enhanced visitor engagement.

Association of Science-Technology Centers (ASTC). In 2015, ASTC, The Wild Center, and the Alliance for Climate Education, in collaboration with DOE, will hold 10 Youth Climate Summits throughout the United States and five in other areas of the world, directly engaging over 1,000 student leaders. The Youth Climate Summits will provide an opportunity for high-school, college, and university students to gain leadership skills through educational conferences on climate change and sustainability, and to create Climate Action Plans for their own institutions. Selected teams will join together for a major internet-based youth conference at the United Nations Framework Convention on Climate Change's Conference of the Parties (COP) 21 Summit in Paris.

Chicago Botanic Garden. The Chicago Botanic Garden, in collaboration with 11 other community and conservation organizations in the Midwest, is launching the Connecting Climate to Communities Initiative (C3I). With funding from the EPA, C3I will engage diverse audiences in climate actions that build on existing community improvement projects, such as providing training to staff of Chicago-area zoos, supporting the installation by teachers of rain gardens in Northwest Indiana schools to address flooding and increase climate literacy, and more. Through its projects, C3I expects to reach over 5,000 youth, families, and adults and intends to make a collection of case studies and resources available for other organizations interested in place-based, science-based approaches to climate action.

The Climate Literacy and Energy Awareness Network (CLEAN). By Summer 2015, over 50 new resources, including classroom activities, experiments, visualizations, and videos will be added to the [CLEAN Collection](#) – a free, online catalogue of over 625 scientifically and educationally reviewed climate and energy education materials. The CLEAN Collection is led by TERC, the Cooperative Institute for Research in Environmental Science at the University of Colorado Boulder, the Science Education

Resource Center at Carleton College, and NOAA. As part of this effort, NOAA and DOE are working with CLEAN to align these online resources with the Next Generation Science Standards (NGSS).

Cooperative Institute for Research in Environmental Sciences (CIRES) and the University of Colorado, Boulder. Through the Tribe's Eye project, co-led by tribal community partners and education experts from the Cooperative Institute for Research in Environmental Sciences (CIRES), tribal college students from the Navajo Nation and their instructors will use photography to tell a story about how environmental and climatic changes affect their lives on the reservation. University of Colorado Boulder science graduate students and a professional photographer will mentor the students throughout the project. In addition, CIRES, together with the Western Water Assessment program, is announcing a new four-week Massive Open Online Course (MOOC) on "Water in the Western United States," starting Spring 2015. This free, online course features water researchers discussing the importance of water to society and the changing physical, climatic, social and legal aspects of water management in the Western United States. The course is expected to reach over 10,000 students.

Earth Day Network (EDN). In honor of the 45th anniversary of Earth Day, and recognizing that climate change is one of the greatest threats currently facing the planet, the EDN is announcing that the theme of the 2015 Earth Week (April 18-25) is "*It's Our Turn to Lead,*" with a focus on climate education. During this week, EDN and partners will work with their 100,000 K-12 Earth Day coordinators at schools across the country to provide climate-science-based curricula, posters, and other products to engage students and educators. EDN will also collaborate with the World Bank's Connect4Climate program to facilitate the extension of this work to other countries around the world.

Green Schools Alliance. The Green Schools Alliance is announcing a new initiative to empower K-12 teachers with the skills needed to implement climate and conservation projects at their schools. This pilot program will invite up to 50 teachers from across the country to participate in the first Educator Climate & Conservation Colloquium (EC3) and Global Resilience & Environmental Educational Educators Network (GREEN) Educator Certification program through a partnership with the U.S. Fish and Wildlife Service's National Conservation Training Center. Educators from public and independent schools will receive training on a variety of campus sustainability, green building, and wildlife conservation issues in order to better serve their schools and communities.

Los Angeles (LA) Unified School District. Today, the LA Unified School District, the second-largest school district in the Nation, is joining the Green Schools Alliance, making a commitment to address climate and sustainability issues through its operations and education programs. With the membership of the LA Unified School

District, the Green Schools Alliance now includes the three largest school districts in the country (along with NYC Department of Education and Chicago Public Schools). The LA Unified School District will join other Alliance schools in setting, meeting, and implementing sustainability and climate goals, including efforts to reduce energy and water use, increase waste diversion rates, and engage the next generation of innovators through experiential learning.

Maryland and Delaware Climate Change Education Assessment and Research (MADE-CLEAR) Program. The MADE-CLEAR program, a partnership led by the Maryland and Delaware state university systems and funded by NSF, is enhancing climate education and literacy in the mid-Atlantic region. In 2015, MADE-CLEAR will provide training for master educators to guide colleagues in teaching climate science in classrooms and nature centers. In addition, MADE-CLEAR will conduct climate-education workshops for pre-service teachers (undergraduate students studying to become teachers) at universities in Maryland and Delaware. These workshops will connect future educators with climate-science content and standards-based model lessons, to support integration of this new topic into their middle- and high-school classrooms.

Museum of Science in Miami. The Patricia and Phillip Frost Museum of Science in Miami is partnering with the University of Miami – Rosenstiel School of Marine and Atmospheric Science on a new course to provide climate-communications training to scientists. Through the course, scientists will develop and present demonstrations and activities that explain concepts relevant to the Museum’s scientific content, including South Florida’s changing ecosystems and climate change. In 2015, up to 50 students will participate in this course, with the goal of expanding the program to other universities in South Florida over the coming years. This course will enhance the ability of scientists to discuss environmental issues throughout their careers, including through interactions with visitors to the Museum.

National Environmental Education Foundation (NEEF). The National Environmental Education Foundation is developing a free online “*Extreme Weather 101*” course for release in early 2015 to equip individuals, families, and communities with the information they need to understand the links between climate change and extreme weather, anticipate extreme weather events, and take steps to prepare in order to protect life and property. NEEF will work with NOAA and interagency collaborators to draw upon information, data, and tools from the Third National Climate Assessment, climate.gov, and elsewhere. The course is being developed with a Social Innovation Grant from Udemy and will be published through the Udemy online platform.

The Ocean Project. In January 2015, The Ocean Project, an initiative to advance conservation in partnership with aquariums, zoos, and museums around the world, will release a new study based on a survey of 11,000 Americans about their perceptions

related to oceans, climate change, and environmental concerns. Leveraging years of previous survey and analysis work, this report will provide findings and strategic recommendations to help institutions across the country tailor their programs, exhibits, and outreach efforts to inspire informed action to combat climate change. Collectively, U.S. aquariums, zoos, and museums engage with and educate more than 250 million annual visitors.

Philadelphia Zoo. Today, recognizing the crucial role of zoos in informing social discourse, the Philadelphia Zoo, which welcomes over 1.3 million visitors annually, is announcing a new effort to document the connection between onsite energy-saving messaging and visitors' at-home energy-saving behavior. This project, which is supported by PECO, the largest electric and natural gas utility in Pennsylvania, and The Ocean Project's Innovation Solutions+ Grant Program, will complement and build upon hands-on "Save Energy to Save Wildlife" activities already in place at Philadelphia's KidZooU: Hamilton Family Children's Zoo and Faris Family Education Center.

Second Nature and the American College and University Presidents' Climate Commitment (ACUPCC). ACUPCC, a signature program of the nonprofit Second Nature, represents over 680 colleges and universities committed to pursuing carbon neutrality, achieving sustainability, creating robust climate action plans, and rigorously reporting greenhouse-gas emissions. Building on the ACUPCC, in May 2014, Second Nature launched a new network of partners, focused specifically on building climate resilience on campuses. Nearly [50 colleges and universities](#), including Agnes Scott College, Central Community College, Portland State University, University of Arizona, and others, have already committed to join this partnership, and over the coming year approximately 100 additional signatories are anticipated. Partners will conduct assessments and planning in key climate-vulnerable sectors, such as energy, water, infrastructure, and transportation. They will also work closely with their surrounding communities to accelerate and enhance education, research, and activities that advance understanding of climate-related risks and design positive futures.

University of California, Irvine (UCI). In January 2015, the Global Sustainability Resource Center will host UCI's first retreat for undergraduate students enrolled in the Global Sustainability Minor - enabling approximately 40 students to build their skills in strategic questioning, community visioning, action planning, and climate communication. The Resource Center will lead a similar training in Spring 2015 with high-school students in the Anza Borrego desert region, and in Summer 2015 with incoming students through UCI's Summer Institute for Sustainability Leadership. At the grade-school level, UCI's Water Partnership for International Research and Education H2Outreach, a graduate student-led educational program, will design an interactive activity to turn more than 700 local elementary-school students into water engineers and scientists for a day in Spring 2015, teaching them about environmentally friendly ways to manage water in the face of a changing climate.

USA National Phenology Network (USA-NPN). USA-NPN, a partnership of the University of Arizona, the U.S. Geological Survey, and other institutions, encourages people of all ages and backgrounds to observe and record phenology, the timing of events like leafing and blooming of trees, as a way to discover and explore the nature and pace of our dynamic world. In 2015, the more than 4,000 active observers contributing to the USA-NPN *Nature's Notebook* will receive near-real-time predictions of leaf-out dates for target tree species in their area and will be asked to help evaluate the accuracy of these predictions by reporting actual conditions on the ground. The collected citizen-science data will be analyzed and used to help improve predictive models of the onset of spring under current and future climate scenarios.

Will Steger Foundation. The Will Steger Foundation is launching a series of events through *Minnesota Stories in a Changing Climate*, a project funded through Minnesota's Environment and Natural Resources Trust Fund and focused on sharing climate-relevant knowledge of local experts and the stories of individual experiences. Beginning in March 2015, twelve public forums and four educator workshops will be held across the State of Minnesota to help share stories and credible information about climate change. These events are expected to reach over 2,500 individuals and will include discussions and information based on best-available science, including the Third National Climate Assessment and research from Minnesota universities and state government agencies. In addition, through this project, and in partnership with Twin Cities Public Television, a new television documentary and a website featuring local stories and other resources will be developed.

###