



## 1 Breathing life back into language

The last fluent speakers of the Myaamia – or Miami – language passed away during the mid-20th century, around the same time Native American linguist Daryl Baldwin was born. Today, thanks to the efforts of Baldwin, his family and other linguists and language preservationists, the Myaamia language is again taking its rightful place as a vibrant and visible symbol of identity and cultural pride for the Miami Tribe of Oklahoma. Baldwin is now set to lead the 2017 National Breath of Life Archival Institute for Indigenous Languages, a workshop supported by an award from NSF's Documenting Endangered Languages program. Find out more in this [NSF discovery](#) story.



## 2 Community college students: NSF wants your ideas

NSF and the American Association of Community Colleges (AACC) announced the third annual Community College Innovation Challenge. It invites teams of community college students, along with a faculty mentor and community/industry partner, to submit innovative solutions to real world problems. This year's challenge themes are "Maker to Manufacturer," "Energy and Environment," and "Security Technologies." Read about the competition in this [special report](#).



## 3 Strategy aims to position the U.S. at the Artificial Intelligence frontier

NSF Director France Córdoba issued a statement of support for the recently released White House National Artificial Intelligence Research and Development Strategic Plan.

The plan defines a framework to identify and pursue scientific and technological needs in the field of artificial intelligence and to track the progress and maximize the impact of research and development investments. "The National Science Foundation funds a significant amount of fundamental research in artificial intelligence at U.S. academic institutions," the statement begins. Read the [entire statement](#).



## 4 What's there to learn about a shark's bite?

Plenty, according to NSF-funded researchers at the University of Washington. In the first study of its kind that mimics how sharks attack prey, the team discovered that different types of sharks chop their prey differently and that some species teeth dull more rapidly than others. Testing a shark's bite is one of three stories in the new episode of the "Science Now" video series. Also covered: using crowd sourcing to help create high quality test questions and new computational tools for detecting cancer. See the full [episode](#).



## 5 NSF awards \$44 million in new grants for genomic research on a range of plants

NSF's Plant Genome Research Program (PGRP) has awarded new grants totaling \$44 million. The program has accelerated "basic knowledge in plant genomics," according to James Olds, NSF assistant director for Biological Sciences. "These awards will continue to break new ground in understanding the biological principles needed to solve environmental and food security challenges today and in the future." Read about the 2016 PGRP awards in this NSF [news release](#).



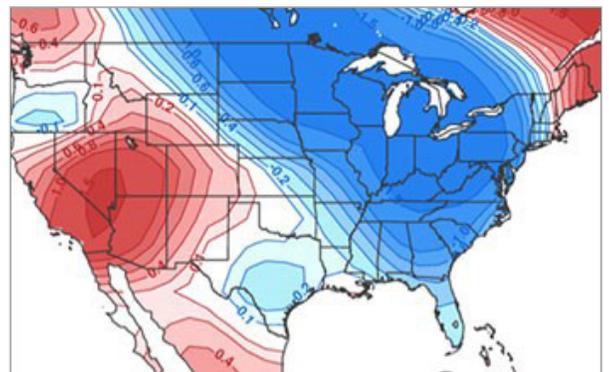
## 6 Food and fear: Modeling animal trade-offs shaped by landscape complexity

NSF-supported ecologists in the Lemhi Valley, a high desert sagebrush steppe environment in eastern Idaho, are taking a comprehensive approach to studying the pygmy rabbit. The team, including a group of research students, gathers data from tracking collars and imagery from unmanned aerial vehicles to help generate maps that show where the rabbits spend their time. The goal: understanding how the mammals use and shape this critical landscape. What the researchers learn could inform future decisions involving land management and restoration of these types of ecosystems. Find out more in this recent [Science Nation episode](#).



## 7 Is a cold winter ahead for the Eastern U.S.?

Much of the Eastern United States could be in for a colder than normal winter, while the Western states could see warmer than normal temperatures. That's according to a preliminary forecast by NSF-supported researchers whose model is based on October Siberian snow cover, sea-level pressure anomalies and several other factors. Find out more in the update of the [special report](#), Predicting Seasonal Weather: Fall Predicts Winter.



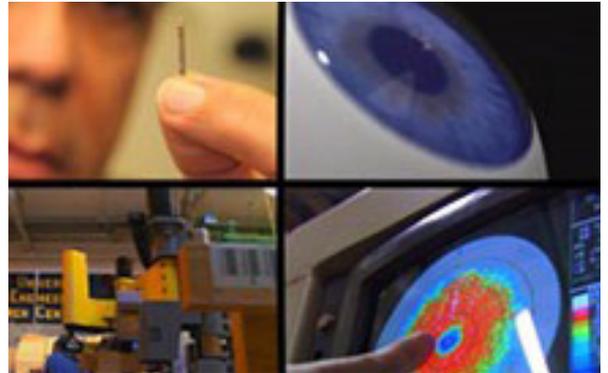
## 8 NSF awards \$5.9 million to broaden participation in academic workforce

NSF announced \$5.9 million in funding for three new alliances consisting of 14 partner universities as part of NSF's Alliances for Graduate Education and the Professoriate (AGEP) program. Each award is for five years and will support the alliances as they develop, reproduce, implement and study models that can transform pathways for historically underrepresented minorities to careers as professors in science, technology, engineering and mathematics (STEM). Read about the 2016 AGEP alliances in this [NSF news release](#).



## 9 Creating knowledge to transform our future

Did you ever use a CD, cellphone, barcode, that thing they call the Internet? Maybe a touchscreen, LED lights, a web browser, GPS. Ever get an MRI, do a Google search, check a weather forecast? Every one of these things was improved on, or made possible by, fundamental research supported by NSF. This video provides a brief look at how NSF-supported fundamental research helps drive the nation's economy, enhance security, advance knowledge to sustain global leadership and transform the future. It's available for viewing and downloading from the [NSF Toolkit page](#).



## 10 Measuring the security vulnerabilities of 3-D printing

In episode 65 of NSF's "Science360 Super Science" show, the co-editors explore how a smartphone can hack a 3-D printer by measuring leaked energy and acoustic waves. Despite features such as encryption and watermarks, researchers at the University at Buffalo have found there are still security unknowns associated with 3-D printers that leave intellectual property vulnerable. However, the team says, there are a few simple solutions to make 3-D printing more secure. View the video in the [NSF Multimedia Gallery](#), on [Science360](#) and on [NSF YouTube](#).

