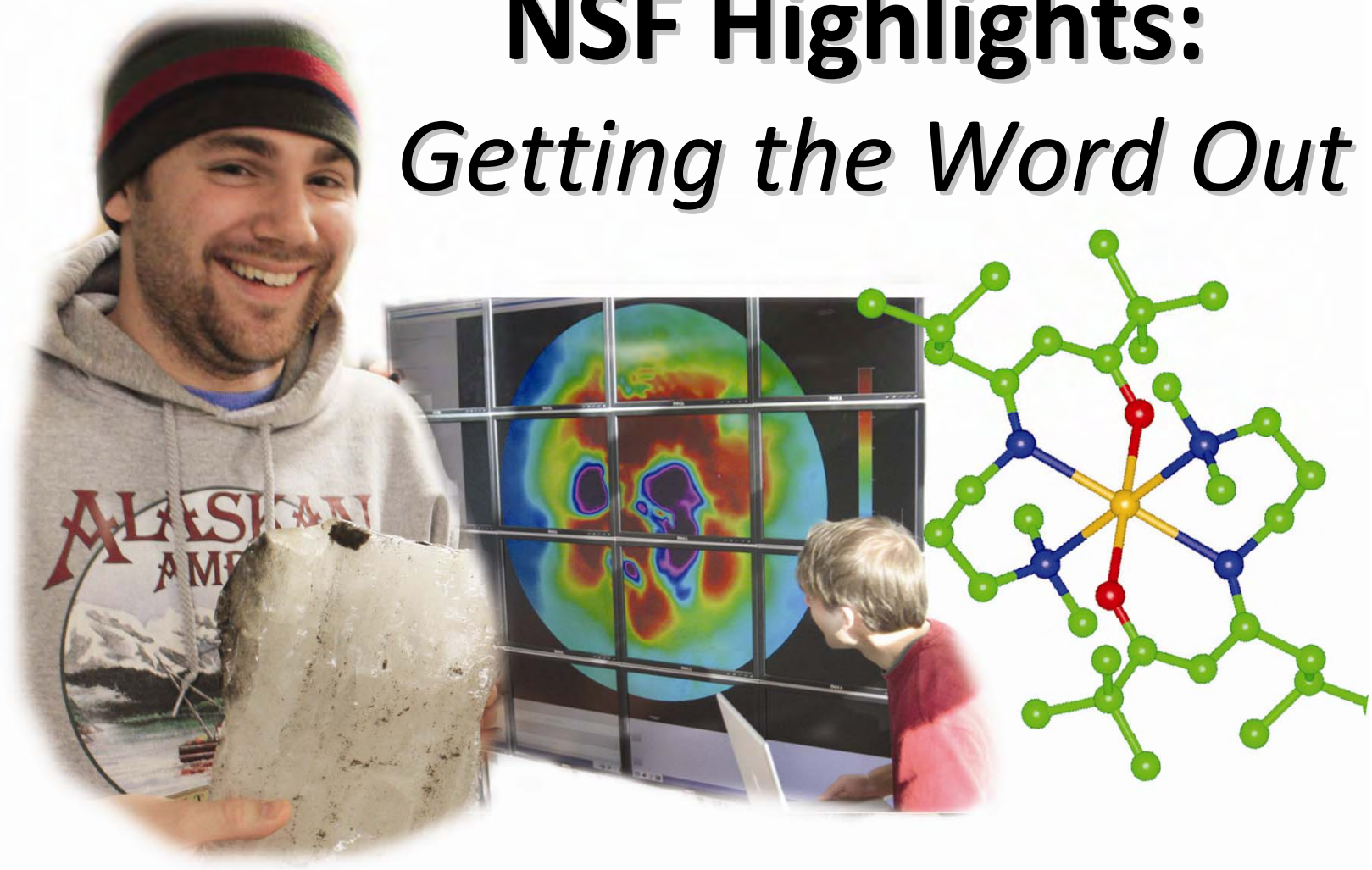
NSF Highlights:
Getting the Word Out



Karen Sandberg & Amber Jones
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National Science Foundation

Audiences include…

… federal/state policymakers

… industry

… general public

A highlight shows…

… outcome of a NSF-supported project

… transformative results

… impacts/benefits to society, industry, science, engineering

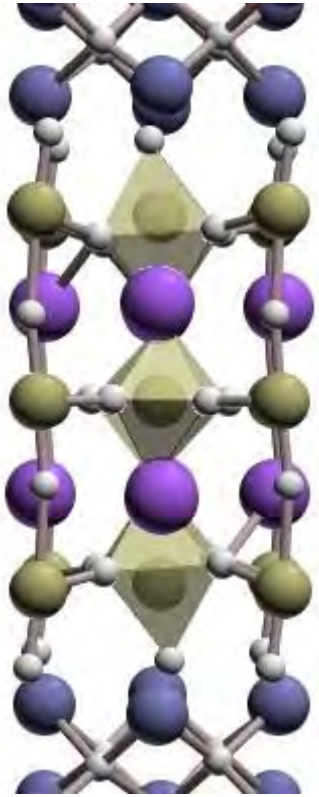
A good highlight…

… describes the outcome and impact

… uses language **anyone** can understand

… includes illustrations **anyone** can understand

Example (MPS/DMR)



TITLE ***Ceramic Catalysts Improve the Conversion of Sunlight to Hydrogen***

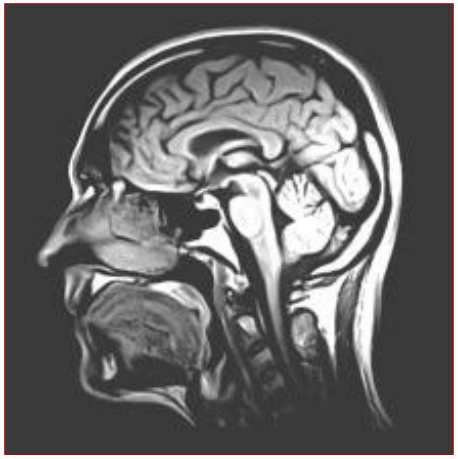
OUTCOME *Researchers in New York have shown they can produce hydrogen from sunlight more efficiently by changing the chemical structure of a ceramic catalyst.*

IMPACT *The development of more efficient ceramic catalysts could lead to smaller and more cost-effective solar conversion devices for use in a hydrogen-based energy system.*

EXPLANATION *Ceramic photocatalysts use sunlight to promote the decomposition of water into hydrogen and oxygen, providing a rich source of hydrogen for alternative energy systems. Current ceramic catalyst materials are not very efficient. However, layered crystal structures allow greater manipulation of the catalytic…etc.*

Example (ENG/CBET)

TITLE	***Imaging With Fluorescent Molecules Promises To Help Detect and Treat Cancer***
OUTCOME	*A team of Vanderbilt University researchers has developed a new molecular imaging technique that identifies cancerous brain cells. In the future, the new imaging technique may improve the ability to detect cancer cells and target them for treatment.*
IMPACT	
EXPLAN-ATION	*Diseased brain cells show increased levels of the translocator protein (TSPO). The Vanderbilt researchers developed synthetic molecules that bind with the TSPO and light up when imaged…etc.*



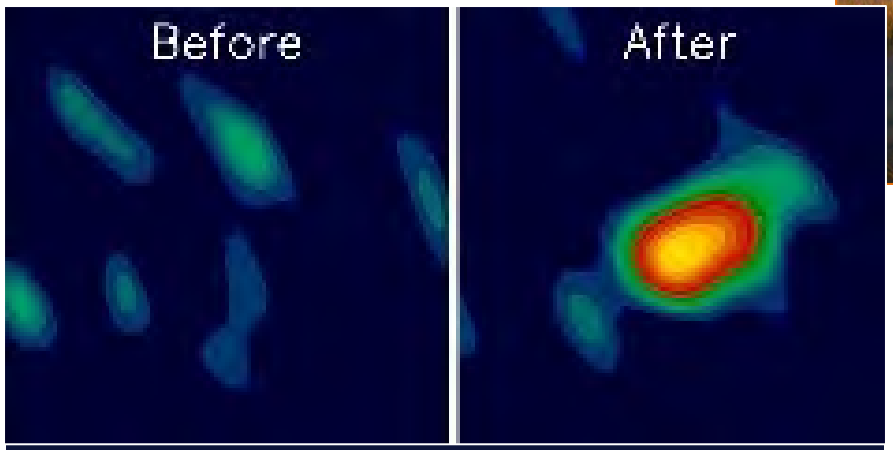
When writing a highlight…

1.DO write short, straightforward sentences that articulate a single point. **DON'T** use long sentences with multiple clauses.

2.DO use simple language. **DON'T** use complicated scientific terminology.

3.Do write for a public audience. **DON'T** write the way you do when publishing in science journals. The public is interested in high-level impacts/benefits, not deep science.

Draw in viewers with…



Adaptive Optics Improves Radio Astronomy

Questions

Contact your NSF program officer

OR

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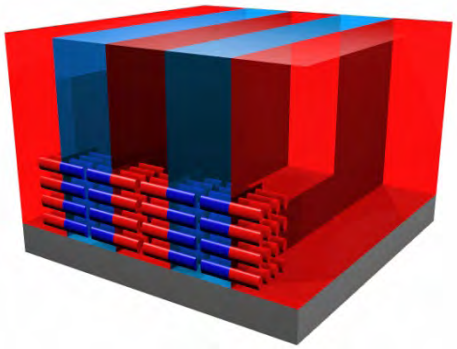
ksandber@nsf.gov / aljones@nsf.gov

OPTIONAL SLIDES

Example (MPS/CHE):



TITLE: *Researchers Produce More Efficient Solar Cells*

OUTCOME: *Researchers at South Dakota State University have designed, synthesized and fabricated inexpensive, efficient solar cells that convert sunlight into electricity.*

IMPACT: *Improved solar cells could make widespread alternative energy use more practical and more affordable for Americans.*

ADDITIONAL INFORMATION: *Current solar cells use less than 10 percent of the sunlight that strikes their surface, making them very inefficient. Diane Hinkens' cells are made from two different organic polymers that allow electrons to travel through their structures and produce electricity more efficiently….etc.*

Example (ENG/ECCS):

TITLE: *Robotic Fish Uses Artificial Muscles*

OUTCOME: *Michigan researchers developed a robotic fish using artificial muscle materials.*

IMPACT: *The fish could serve as an environmental data collection platform by adding communication, navigation, and environmental monitoring sensors.*

ADDITIONAL INFORMATION:

Xiaobo Tan, of Michigan State University, modeled, designed, and constructed a 'fish' that uses electro-active, ionic polymer metal composites for locomotion. Similar to muscle tissue, the composites change shape when a voltage is applied. The fish fins are integrated with a control system to provide the rotobic fish with energy-efficient, fish-like maneuverability.

Example (GEO/AGS):

TITLE: *Air Pollution: Tiny Particles Have Big Health Impacts*

OUTCOME: *NSF-funded researchers from the University of Minnesota and National Center for Atmospheric Research have shed new light on the formation of atmospheric nanoparticles.*

IMPACT: *A growing body of evidence suggests that atmospheric nanoparticles -- particles between 3 and 50 nanometers, about the size of a simple virus -- can pose a major health threat. Understanding the genesis, growth, and amounts of these particles can provide vital information on local and regional threats to human health by urban pollutants.*

ADDITIONAL INFORMATION:

Air pollution causes significant human health and environmental problems. In megacities with populations in excess of 10 million, these impacts are magnified. During a 2006 study in Mexico City, researchers found particles smaller than 10 nanometers forming at unexpectedly dramatic rates. Once inhaled, nanoparticles can translocate from the lungs to the rest of the body….etc.

Example (EHR/DUE):

TITLE: *Community College Students Discover Rare Mushroom*

OUTCOME: *In June 2007, a group of students from Dallas Country Community College, Eastfield, Texas, discovered the rare mushroom Hygrophorus chameleon in the Big Thicket National Preserve.*

IMPACT: *The expedition illustrated that genuine scientific discoveries can be made by students at the community college level.*

ADDITIONAL INFORMATION:

The students who made the discovery were assisting U.S. National Park Service researchers in collecting data for the All Taxa Biodiversity Inventory. The expedition was part of Eastfield College's "Project Pathways: Broadening Access and Success for STEM Students."… etc.

Example (OPP/ARC):

TITLE: *Scientists Measure Environmental Impact of Arctic Wildfires*

OUTCOME: *A study of a 2007 fire on the Alaskan tundra suggest that increasing numbers of fires in tundra areas could significantly disrupt ecosystems and atmospheric balance.*

IMPACT: *Such knowledge helps scientists accurately asses the environmental risk of widespread wildfires.*

ADDITIONAL INFORMATION: *In 2007, a huge wildfire struck the tundra of Alaska. The blaze created a unique opportunity to observe the response of a pristine landscape to a major disturbance. The following spring, scientists measured the environmental impact of the fire on the large swath of land and on the atmosphere high above the burned area….etc.*

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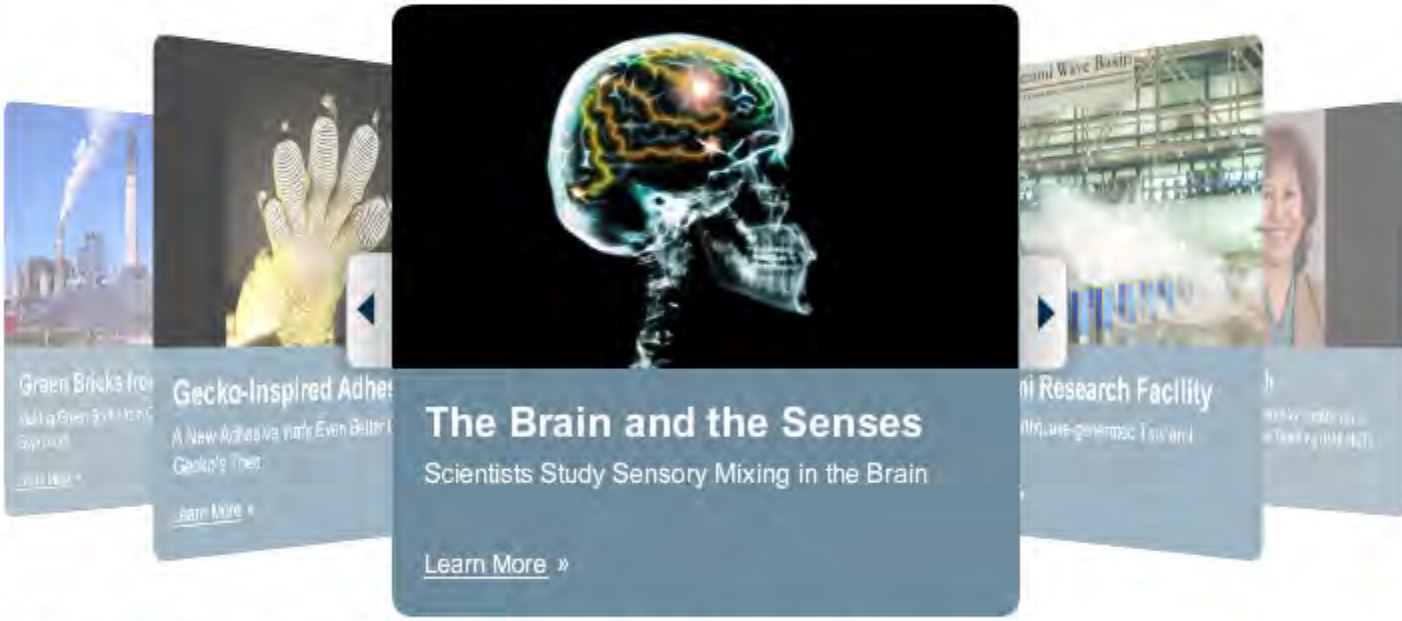

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