A fine kettle of fish?

The following is part 20 in a series on the National Science Foundation's Long-Term Ecological Research (LTER) Network. Visit parts one, two, three, four, ....

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Starving the beast

As any good Star Trek fan knows, Mr. Spock was a "green-blooded Vulcan" because his hemoglobin was copper-based, unlike our iron-based human cells. But even humans have a little bit of copper in their blood.

Now, a new paper based on research funded by the National Science Foundation (NSF) explores the role copper can play in feeding -- or starving -- cancer.

For the past 20-30 years, researchers have known tumor cells need nutrients to grow, and copper was a favorite.

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Climate can grind down mountains faster than they can rebuild

For the first time, researchers have attempted to measure all the material leaving and entering a mountain range over the course of more than a million years.

They've discovered that erosion caused by glaciation during ice ages can, in the right circumstances, wear down mountains faster than plate tectonics can build them.

The study, conducted by Integrated Ocean Drilling Program (IODP) researchers and led by scientists from the University of Texas at Austin, the University ...

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Big Data to individualize management of chronic diseases

Groundbreaking effort for health care to help doctors diagnose and treat chronic diseases more quickly and accurately

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Superhero boom inspires new contest, science learning

A brand-new competition, awarding finalists the opportunity to present their entries at the 2016 USA Science & Engineering Festival and compete for cash prizes, opens today for high school students interested in science, engineering and superpowers. *Generation Nano: Small Science, Superheroes* is sponsored by the National ...

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Generation Nano Challenge

NSF and NNI aim to promote an understanding and appreciation of nanotechnology and STEM careers in high school students by inviting them to design an original superhero with nanotechnology-enabled gear.

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Low-oxygen 'dead zones' in North Pacific linked to past ocean warming

A new study has found a link between abrupt ocean warming at the end of the last ice age and the sudden onset of low-oxygen, or hypoxic, conditions that led to vast marine dead zones. Results of the research, which was funded by the National Science Foundation (NSF), are published today in the journal *Nature*. "This works tackles a long-standing debate about what causes expansion of Oxygen Minimum Zones, also known as dead zones, in the oceans," said Candace Major, a ...
10 ways advanced computing catalyzes science

When researchers need to compare complex new genomes, or map new regions of the Arctic in high-resolution detail, or detect signs of dark matter, or make sense of massive amounts of functional MRI data, they turn to the high-performance computing and data analysis systems supported by the National Science Foundation (NSF). High-performance computing (or HPC) enables discoveries in practically every field of science -- not just those typically associated with supercomputers like ... 

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At the intersection of neuroscience and art

There is a neural orchestra inside your head. The music comes from tiny electrical signals produced by millions of neurons in the brain, always playing and often changing, depending on what the brain is processing. Listen to the orchestra, and you'll gain insights into fundamental neural activity and how it differs across individuals. Researcher Jose "Pepe" Luis Contreras Vidal is listening and he's doing so from outside the confines of his University of Houston ...

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NEON begins to monitor changing ecology of the U.S.

The National Ecological Observatory is the most comprehensive, long-term effort ever to record what’s happening to the land, air and living things

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National Science Board to meet Nov. 18-19

The National Science Board (NSB) will meet Nov. 18-19 to address science and engineering policy of interest to the National Science Foundation (NSF). Members of the media and the public are invited to open portions of the meeting, which will also be webcast. Public sessions of the meeting, located at NSF headquarters, include:

**Wednesday, Nov. 18**

[Click here for more information](

Texas Academy of Medicine, Engineering and Science of Texas (TAMEST)

[Click here for more information](

Crash test simulations expose real risks

More than 33,000 Americans die in motor vehicle crashes annually, according to the Centers for Disease Control and Prevention. Modern restraint systems save lives, but some deaths and injuries remain—and restraints themselves can cause some injuries. "Crash-test dummies" help engineers design safer cars, but provide only limited information about forces the body experiences during impact. Computer models of vehicle crashes, on the other hand, provide more sophisticated information ...

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A 'clear path' to solar power

Engineers are designing new transparent solar panels that could be retrofit to existing glass-covered buildings

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Imagine you’re a researcher working outdoors in a New Orleans summer. It’s 100 degrees, and you’re going door-to-door in neighborhoods where people have grown tired of being studied by outsiders in the decade since Hurricane Katrina. And in the best-case scenario--on a very good day--you wind up handling a bunch of disease-carrying rats.

That’s what Tulane University molecular ecologist Michael Blum and his research team do and have done for six months in each of the last three ...

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