



Career Cornerstone News

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Apple Re-imagines Textbooks for the iPad

Apple recently announced a partnership with three top K-12 textbook publishers (Houghton Mifflin Harcourt, McGraw-Hill, and Pearson) that opens the door to students accessing text books on an iPad. But, it won't be your ordinary textbooks because they'll include video, three-dimensional graphics, and photo galleries, and much more. An advantage is also that iBooks textbooks can be kept up to date, don't weigh down a backpack and never have to be returned. And best of all, most textbooks are expected to be less than \$15. The new iBooks 2 app is available as a free



download from the App Store. Some U.S. districts are already starting to convert to electronic textbooks.

Some of Pearson's high school textbooks have already been re-imagined for the iPad. Miller & Levine Biology, Algebra 1 and Environmental Science: Your World, Your Turn are available today,

with Chemistry, Geometry and Algebra 2 following soon.

And, iBooks Author is also available as a free download from the Mac App Store so that anyone with a Mac can create iBooks themselves -- whether it is a textbook, a cookbook, or a photography book -- and publish them to Apple's iBookstore.

Hydrogel Helps Third Degree Burns

Johns Hopkins researchers have developed a jelly-like material and wound treatment method that, in early experiments on skin damaged by severe burns, appeared to regenerate healthy, scar-free tissue. The new treatment has not yet been tested on human patients. But the researchers say the procedure, which promotes the formation of new blood vessels and skin, including hair follicles, could lead to

greatly improved healing for injured soldiers, home fire victims and other people with third-degree burns.

Third-degree burns typically destroy the top layers of skin down to the muscle. They require complex medical care and leave behind ugly scarring. But the Johns Hopkins team reported that their hydrogel treatment promoted the development of new blood vessels and the regeneration of complex



(Image Credit: Johns Hopkins University, Will Kirk/HomewoodPhoto.jhu.edu)

layers of skin, including hair follicles and the glands that produce skin oil. More details are at www.jhu.edu.

“Rebound Rumble” Robotics Game Unveiled

The 21st FIRST (For Inspiration and Recognition of Science and Technology) Robotics Competition season launched recently with the kickoff of a new robotics game called “Rebound Rumble.” Inventor Dean Kamen founded FIRST in 1989 to inspire an appreciation of science and technology in young people. FIRST designs accessible, innovative programs to build self-confidence, knowledge, and life skills while motivating young people to pursue opportunities in science, technology, and engineering. The 2012 “Rebound Rumble” robotics game is played between two Alliances of three teams each. Each Alliance

competes by trying to score as many of the basketballs in the hoops as possible during the two-minute and 15-second match. Balls scored in higher hoops score teams more points. Team Alliances are awarded bonus points if they are balanced on bridges at the end of the match.

Participating in programs and competitions, such as FIRST, is a great way for precollege students to get hands on experience and



(Image Credit: FIRST, Adriana M. Groisman)

explore what it might be like to be an engineer, mathematician, or scientist. For a list of programs, visit www.careercornerstone.org/pcprogproj.htm.

Degree Profile: Geoscience

Geoscientists study the composition, structure, and other physical aspects of the Earth, and the Earth's geologic past and present by using sophisticated instruments to analyze the composition of earth, rock, and water. Many geoscientists help to search for natural resources such as groundwater, minerals, metals, and petroleum. Others work closely with environmental and other scientists to preserve and clean up the environment.

Geoscientists usually study and work in one of several closely related geosciences fields, including geology, geophysics, and hydrology. Geologists study the composition, processes, and history of the Earth. They try to find out how rocks were formed and what has happened to them

since their formation. They also study the evolution of life by analyzing plant and animal fossils. Geophysicists use the principles of physics, mathematics, and chemistry to study not only the Earth's surface, but also its internal composition, ground and surface waters, atmosphere, oceans, and magnetic, electrical, and gravitational forces. Hydrologists study the quantity, distribution, circulation, and physical properties of water and the water cycle. And, within all these major geoscience fields, there are numerous subspecialties.

A bachelor's degree is adequate for a few entry-level positions, but most geoscientists and hydrologists need a master's



degree. Geoscientists hold about 33,600 jobs in the United States, and according the U.S. Department of Labor, the median income for geoscientists is \$79,160. Find out more about careers in the geosciences at www.careercornerstone.org/geosciences/geosci.htm.

Yale Researchers Find “Extinct” Tortoise

Dozens of giant tortoises of a species believed extinct for 150 years may still be living at a remote location in the Galápagos Islands, a genetic analysis conducted by Yale University researchers reveals. The analysis suggests that direct descendants of at least 38 purebred individuals of *Chelonoidis elephantopus* live on the volcanic slopes of the northern shore of Isabela Island -- 200 miles from their ancestral home of Floreana Island, where they disappeared after being hunted by whalers.

“This is not just an academic exercise,” said Gisella Caccone, senior research scientist in the Department of Ecology and Evolutionary Biology and senior author of the paper. “If we can find these individuals, we can restore them to their island of origin. This is important as these animals are keystone species playing a crucial role in maintaining the ecological integrity of the island communities.”

On his historic voyage to the

Galapagos in 1835, Charles Darwin observed that the shells of tortoises living on different islands of the chain had different shapes – one of the observations that inspired his theory of natural selection. For instance, the shells of *C.*

elephantopus on Floreana were saddle-shaped while tortoises on other islands had domed-shaped shells. On Floreana, however, the tortoises disappeared because of hunting by whalers and workers at a heating oil factory that had been established on the island.

A team of Yale researchers visiting Volcano Wolf on the northern tip of Isabela Island in 2008 took blood samples from more than 1600 tortoises and compared them to a genetic database of living and extinct tortoise species. An analysis



(Image Credit: Yale University)

detected the genetic signatures of *C. elephantopus* in 84 Volcano Wolf tortoises, meaning one of their parents was a purebred member of the missing species. In 30 cases breeding had taken place within the last 15 years. Since the lifespan of tortoises can exceed 100 years, there is a high probability that many purebreds are still alive, note the researchers. Find out more about careers in biology at www.careercornerstone.org.

Sloan Career Cornerstone Center State Portals

STATE PORTALS

Sloan Career Cornerstone Center



Support from Texas Instruments has made possible a new state pathways through Sloan Career Cornerstone Center resources. Explore local resources, salary data, employment figures, activities, programs and projects, summer camps, and more to help you chart a path to a career in STEMM (science, technology, engineering, mathematics, or medicine).

Find out more at www.careercornerstone.org/states

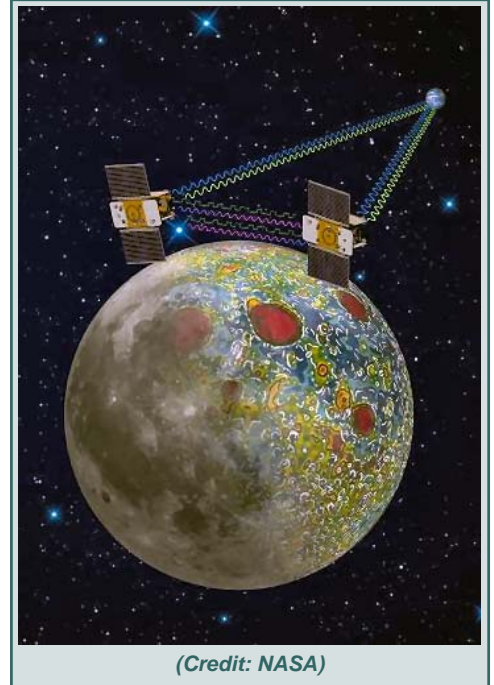
Students Name NASA Lunar Spacecraft

Twin NASA spacecraft that achieved orbit around the moon New Year's Eve and New Year's Day have new names thanks to elementary students in Bozeman, Montana. Their winning entry, "Ebb and Flow," was selected as part of a nation-wide school contest. The names were submitted by fourth graders from the Emily Dickinson Elementary School. Nearly 900 classrooms with more than 11,000 students participated in the contest. Previously named Gravity Recovery And Interior Laboratory, or GRAIL A and B, the washing machine-sized spacecraft begin science operations in March.

"The 28 students of Nina DiMauro's class at the Emily Dickinson Elementary School have really hit the nail on the head," said Maria Zuber, GRAIL principal investigator from the Massachusetts Institute of

Technology. Zuber and Sally Ride, America's first woman in space and CEO of Sally Ride Science in San Diego, selected the names following the contest. The contest invited ideas from students ages 5 to 18 enrolled in U.S. schools. Although everything from spelling and grammar to creativity were considered, Zuber and Ride primarily took into account the quality of submitted essays.

GRAIL (www.nasa.gov/grail) is NASA's first planetary mission carrying instruments fully dedicated to education and public outreach. Each spacecraft carries a small camera called GRAIL MoonKAM (Moon Knowledge Acquired by Middle school students). Thousands of students in grades five through eight will select target areas on the lunar surface and send requests for study to the



(Credit: NASA)

GRAIL MoonKAM Mission Operations Center in San Diego.

Find out more about careers in science and engineering at www.careercornerstone.org.

What Matters in a Resume?



What do employers look for in a resume? Beyond the candidate's ability to meet standard criteria --the "right" major or work experience -- employers are most likely to look for evidence that the candidate is able to work in a team, according to a recent survey conducted by the National Association of Colleges and Employers (NACE). Nearly 80 percent of employers taking part in NACE's Job Outlook 2012 survey said they search for evidence that the potential employee can work in a team, and more than three-quarters indicated they want the resume to show the candidate has leadership abilities and written communication skills. Evidence of problem-solving skills and a strong work ethic round out the top five "soft skills" employers seek on resumes. In fact, says Edwin Koc, NACE director of research, "Overall, results show that the ability to work in a team is the number one soft skill employers seek in their new hires." Consequently, job candidates need to showcase that ability in their interactions with employers, not just on the resume, but in the interview as well. According to NACE, on a resume, employers look for evidence of: 1. the ability to work in a team; 2. leadership skills; 3. written communication skills; 4. problem-solving skills; and 5. a strong work ethic.