



Career Cornerstone News

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Inside this issue:

<i>Engineers Create Fix for Broken Jaws</i>	1
<i>Contests for Earth Science Week 2008</i>	1
<i>New Wind Power Partnerships</i>	2
<i>Degree Profile: Science Technician</i>	2
<i>New Careers in Nursing Scholarship Program</i>	3
<i>Grads With Internships Have Job Market Edge</i>	4
<i>Idaho Student Spends Summer at NASA</i>	4

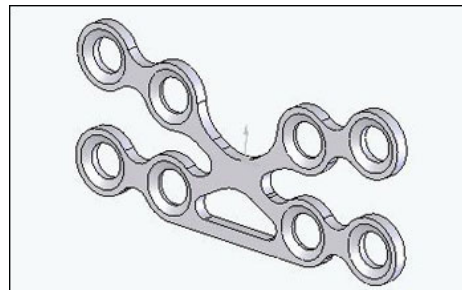
Engineers Create Fix for Broken Jaws

It didn't start out as an engineering problem. It started as a patient problem. Jon Wagner, a head and neck surgeon at the University of New Mexico Hospital, sees over 400 broken jaws a year. Traditionally Wagner and other trauma surgeons repair jaws using heavy titanium plates, which are bent to bridge the breaks with a combination of heavy tools and brute force.

The plates are fixed to the jawbones with screws, usually inserted through the mouth. It is an invasive process and up to 20 percent of the patients have serious enough complications to require a follow-up surgery.

The mechanics of the process bothered Wagner so he went across campus to talk to the mechanical engineers.

Associate Professor of Mechanical Engineering Tariq Khraishi and his graduate student, Scott Lovald, understood that what Wagner needed was smaller, better-designed plates the surgeons could use with confidence, knowing that there was good science behind them. The two ran simple experiments on a computer using a finite element modeling program. They developed new plates and



A drawing of the improved plate.
Credit: Scott Lovald

have recently received FDA approval for their new plate designs which are significantly smaller and lighter than the one Wagner uses now in the operating room. More information is at www.me.unm.edu.

Find out more about career paths for mechanical engineers and surgeons at www.careercornerstone.org.

Contests for Earth Science Week 2008

The American Geological Institute (AGI) is sponsoring three national contests in conjunction with Earth Science Week—October 12-18, 2008. This year's theme is "No Child Left Inside."

All U.S. residents are encouraged to enter "Earth Science Beyond your Front Door" the 2008 photography contest. This contest asks people to explore the geologic world through the camera.

Students grades K-5 who enter the Visual Arts Contest "Studying our Earth" should show

themselves as an earth scientist actively studying our planet, through drawing or painting.

The Essay Contest, open to students in grades 6-9, is themed "Earth Connections." Entrants are asked to discuss the interconnected geologic processes that take place in their community and how those processes in turn affect them. Earth Science Week is organized annually by AGI with support from a



number of other geoscience organizations. Find out more at www.earthsciweek.org.

Find out more about career paths in the geosciences at www.careercornerstone.org.

New Wind Power Partnerships

The U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) recently announced several projects that will enhance the nation's ability to realize the full potential of wind power across the United States.

The projects include: a new wind turbine blade test facility to be constructed in Texas; a partnership between NREL, DOE, and a state consortium led by University of Houston; a just-signed agreement with Siemens Power Generation to locate and test a commercial-scale wind turbine at NREL's National Wind Technology Center; and, a new Siemens research and

development facility in Boulder, CO, which will work closely with NREL on advanced wind power technologies.

"The projects announced today demonstrate the shared commitment of the federal government and the private sector to achieve 20 percent wind energy by 2030," DOE Assistant Secretary Alexander Karsner said.

"The U.S. wind industry grew by an astounding 45 percent in 2007," said NREL Director Dan Arvizu. All of these projects will



help facilitate the continued rapid growth of the U.S. wind industry.

Find out more about the energy industry and career paths for those employed in it, including those in science, technology, engineering, mathematics, and computing at www.careercornerstone.org.

Degree Profile: Science Technician

Science technicians use the principles and theories of science and mathematics to solve problems in research and development and to help invent and improve products and processes. However, their jobs are more practically oriented than those of scientists. Technicians set up, operate, and maintain laboratory instruments, monitor experiments, make observations, calculate and record results, and often develop conclusions. They must keep detailed logs of all of their work. Those who perform production work



monitor manufacturing processes and may ensure quality by testing products for proper proportions of ingredients, for purity, or for strength and durability.

There are several specialty areas and occupational titles within science technology, including: Agricultural and Food Science Technology, Biology Technology, Chemical Technology, Environmental Science and Protection Technology, Forensic Science Technology, Forest and Conservation Technology, and Geological and Petroleum Technology.

Most science technicians need an associate degree or a certificate in applied science or science-related



technology. Biological and forensic science technicians usually need a bachelor's degree.

Science technicians hold about 267,000 jobs in the United States. They work under a wide variety of conditions. Most work indoors, usually in laboratories, and have regular hours. Find out more about a career as a science technician at www.careercornerstone.org/scitech/scitech.htm.

New Careers in Nursing Scholarship Program

The Robert Wood Johnson Foundation (RWJF) and the American Association of Colleges of Nursing (AACN) have announced the creation of the RWJF New Careers in Nursing Scholarship Program, designed to alleviate the nation's nursing shortage by dramatically expanding the pipeline of students in accelerated nursing programs. Scholarships in the amount of \$10,000 each will be awarded to 1500 entry-level nursing students over the next three years. Preference will be given to students from groups underrepresented in nursing or from a disadvantaged background.

Through the RWJF New Careers in Nursing Scholarship Program, funding will be available to schools of nursing with entry-level accelerated programs at the baccalaureate and/or master's level(s). The program will target many of the issues currently confronting professional nursing education, including providing support for students in accelerated

nursing programs. Accelerated programs offer the most efficient route to licensure as a registered nurse for adults who have already completed a baccalaureate or graduate degree in a discipline other than nursing.

By bringing more nurses into the profession at the baccalaureate and master's degree levels, the new scholarship programs also helps to address the nation's nurse faculty shortage. Data from the U.S. Health Resources and Services Administration show that nurses entering the profession at the baccalaureate level are four times more likely than other nurses to pursue a graduate degree in nursing, which is the required credential to teach.

Furthermore, the program targets the need to recruit students from groups underrepresented in nursing or disadvantaged backgrounds. According to the National Advisory Council on Nurse Education and Practice, diversifying the nursing profession is essential



to meeting the health care needs of the nation and reducing health disparities that exist among many underserved populations. More details about the program are at www.newcareersinnursing.org.

Find out more about nursing and other healthcare fields at www.careercornerstone.org.

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Find out more at www.careercornerstone.org

Grads With Internships Have Job Market Edge

New college graduates looking for a job will likely have an edge over their competition if they have participated in an internship or otherwise gained work-related experience, according to a survey conducted by the National Association of Colleges and Employers (NACE).

Approximately 95 percent of the organizations responding to NACE's Job Outlook 2008 survey said candidate experience is a factor in their hiring decisions. More than

three-quarters are most interested in relevant work experience, but nearly 20 percent give candidates points for any type of work experience. On the question of how the experience is gained, respondents were split.

Slightly more than half of employers told us that they didn't have a preference on how the candidate gets experience, but nearly as many—47 percent—said they prefer candidates to gain their experience through an internship or cooperative education program.

In addition, results of a separate NACE study show that employers are placing more emphasis on internship and cooperative education programs to "grow" their own employees—



looking first to their own interns when they have job opportunities.

According to NACE, not only does participation in an internship make the student a more attractive candidate, but also it can be an avenue to a job.

Find out more about coops and internships along with links to sample programs at companies and universities at www.careercornerstone.org/coopsint.htm.



Idaho Student Spends Summer at NASA

Ryan Sheridan, an engineering student at the University of Idaho, ID, spent much of this past summer at NASA Goddard Space Flight Center in Greenbelt, MD as a participant of the NASA Undergraduate Student Research Program (USRP). NASA-USRP is a 15-week program designed to provide undergraduate students hands-on experience within a NASA environment. While at Goddard Sheridan was surrounded by some of the world's premier scientists and engineers devoted to

research in Earth science, space science, technology, and space communications. During his time at NASA Sheridan was able to gain valuable research experience under the supervision of a NASA mentor. "I have always thought that working for NASA would be a great job," Sheridan said. "The opportunity is ideal for me because of my interest in remote sensing and how the Earth or other planets can be studied." Competitively selected students must have at least a 3.0 grade-point-average and major in engineering, science (physics, chemistry, biology) math, computer science or other areas of interest to the aerospace program. Learn about careers in aerospace engineering, computer science, science, and mathematics at www.careercornerstone.org.

