



Career Cornerstone News

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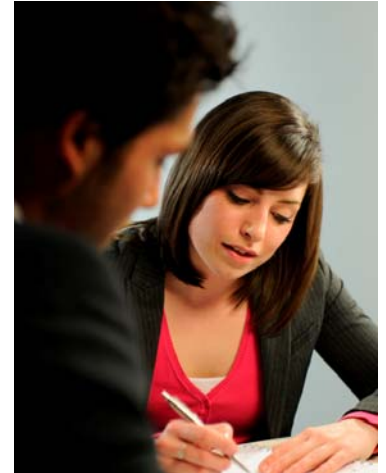
PSM Degree Holders Find High Job Placement

The Council of Graduate Schools has released its first Professional Science Master's (PSM) Student Outcomes Survey, documenting initial hiring outcomes for 2010-11 graduates and perceived satisfaction with the PSM degree. The PSM is a new graduate degree designed to allow students to pursue advanced training in science or math, while also developing workplace skills. Most PSM programs require a final project or team experience, as well as a "real-world" internship.

"The results of this survey confirm the value of Professional Science Master's degrees to both

degree holders and employers given that 82% of PSM graduates had jobs soon after receiving their degrees," said Debra W. Stewart, CGS President.

This new report includes data on the reasons students enrolled in PSM programs, their experiences and satisfaction with them, their current employment status, salaries, and the perceived value of a PSM degree. Among the findings, of those in new jobs, 38% secured that employment because of their PSM internship. Also, over 55% of those employed earned \$50,000 or more in annual salary.

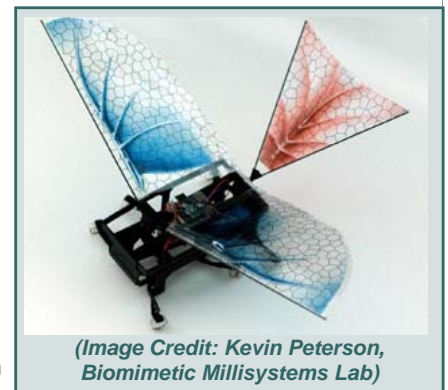


Also, of those who were working, 88% were working in a job that is closely or somewhat related to their field of study. Find out more about PSM degrees at www.careercornerstone.org/degrees/psm.htm.

Robotic Roach Gets Wings

Engineers at the University of California, Berkeley have outfitted a six-legged robotic bug with wings in an effort to improve its mobility. First unveiled by Fearing Ron Fearing, professor of electrical engineering and head of the Biomimetic Millisystems Lab at UC Berkeley and graduate student Paul Birkmeyer in 2009, DASH (Dynamic Autonomous Sprawled Hexapod) is a lightweight, speedy robot made of inexpensive, off-the-shelf materials, including

compliant fiber board with legs driven by a battery-powered motor. With its new motorized flapping wings, DASH+Wings' running speed nearly doubled, going from from 0.68 meters per second with legs alone to 1.29 meters per second. The robot could also take on steeper hills and the flapping wings improved the lift-drag ratio, helping DASH+Wings land on its feet instead of just plummeting uncontrolled. Its small size makes it a



(Image Credit: Kevin Peterson, Biomimetic Millisystems Lab)

candidate for deployment in areas too cramped or dangerous for humans to enter, such as collapsed buildings. More info: <http://robotics.eecs.berkeley.edu>.

K-12 Online Learning Trends for 2011

Keeping Pace 2011, a report on online education trends, was recently released and tracks significant changes this year. According to the report, growth within single district programs -- run by one district for that district's students -- is outpacing all other segments.

Several years ago, state-level and statewide schools and programs were driving most online learning activity. That is no longer the case; now the bulk of activity is at the district level. A second important area of growth is among consortium programs, as districts choose to combine resources to

create cost effective online opportunities.

Another new trend is that most district programs are blended, instead of fully online. That means that some aspect of the online course is offered in a traditional classroom environment. The reason for blending online and face to-face learning is simple: Districts are often serving their own students, who are local, so there is limited need to bridge large distances. Even when the district is providing an online course with a remote teacher, the local school often provides a computer lab,



facilitator, or other on-site resources that may define the course as blended instead of fully online. Find out more about online education at www.careercornerstone.org/online.htm.

Degree Profile: Computer Science

The rapid and widespread use of computers and information technology has generated a need for highly trained workers proficient in various job functions. These computer specialists include computer scientists, database administrators, and network systems and data communication analysts. Job tasks and occupational titles used to describe these workers evolve rapidly and continually, reflecting new areas of specialization or changes in technology, as well as the preferences and practices of employers.

Computer scientists work as theorists, researchers, or inventors. Their jobs are distinguished by the higher level of theoretical expertise and innovation they apply to complex

problems and the creation or application of new technology.

The areas of computer science research range from complex theory to hardware design to programming-language design. Some researchers work on multidisciplinary projects, such as developing and advancing uses of virtual reality, extending human-computer interaction, or designing robots. They may work on design teams with electrical engineers and other specialists.

Computer scientists and database administrators hold about 29,000 jobs in the U.S. Median annual earnings of computer and



information scientists is about \$97,000 in the most recent data. According to the U.S. Department of Labor Statistics, computer scientists and database administrators are projected to be one of the fastest growing occupations over the next decade.

Find out more about careers in computer science at www.careercornerstone.org/compsci/compsci.htm.

Report Praises STEM Associate Degrees

A new report from the Georgetown University Center on Education and the Workforce shows that 65 percent of Bachelor's degrees in STEM (science, engineering, technology and mathematics) occupations earn more than Master's degrees in non-STEM occupations. Similarly, 47 percent of Bachelor's degrees in STEM occupations earn more than Ph.D.s in non-STEM occupations.

Furthermore, even people with only STEM certificates can earn more than people with non-STEM degrees; for instance certificate holders in engineering earn more than Associate's degree-holders in business and more than Bachelor's degree-holders in education.

"STEM provides choice for people both immediately after school and at mid-career, allowing people to transition to different and oftentimes more lucrative career pathways, including management and healthcare that provide long-term stability and excellent wages," says Anthony P. Carnevale, the Center's director and the report's

lead author. The report details STEM earnings by occupation, race, sex, and education level, and finds:

- ◆ For women and minorities, STEM is the best equal opportunity employer.
- ◆ The pay gap in STEM between women and minorities and white men is smaller in STEM than in any other occupation.
- ◆ STEM pays more than most jobs at each level of education, and at the graduate level is exceeded only by a small sliver of managerial and healthcare occupations.
- ◆ Over 70 percent of STEM workers at the high school or some college level make more than the average for workers in all other occupations at the same education level. More



than two-thirds of Associate's degree-holders in STEM make more than the average for all Associate's degree-holders.

- ◆ Workers majoring in STEM in college earn more than all other majors over their lifetimes, even if they work in non-STEM occupations.

The full report is available at <http://cew.georgetown.edu/stem>.

Find out more about associate degrees and STEM careers at www.careercornerstone.org/degrees/assocdegree.htm.

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

Can Any Surface be a Touchscreen?

OmniTouch, a wearable projection system developed by researchers at Microsoft Research and Carnegie Mellon University, enables users to turn pads of paper, walls or even their own hands, arms and legs into graphical, interactive surfaces.

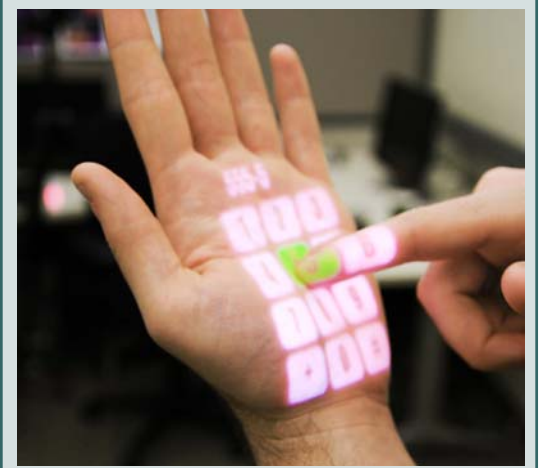
OmniTouch employs a depth-sensing camera, similar to the Microsoft Kinect, to track the user's fingers on everyday surfaces. This allows users to control interactive applications by tapping or dragging their fingers, much as they would with touchscreens found on smartphones or tablet computers. The projector can superimpose keyboards, keypads and other controls onto any surface, automatically adjusting for the surface's shape and orientation to minimize distortion of the projected images.

"It's conceivable that anything you

can do on today's mobile devices, you will be able to do on your hand using OmniTouch," said Chris Harrison, a Ph.D. student in Carnegie Mellon's Human-Computer Interaction Institute. The palm of the hand could be used as a phone keypad, or as a tablet for jotting down brief notes.

The device currently includes a short-range depth camera and laser pico-projector and is mounted on a user's shoulder. But Harrison said the device ultimately could be the size of a deck of cards, or even a matchbox, so that it could fit in a pocket, be easily wearable, or be integrated into future handheld devices.

The optical sensing used in OmniTouch allows a wide range of interactions, similar to the



(Image Credit: Carnegie Mellon University)

capabilities of a computer mouse or touchscreen. It can track three-dimensional motion on the hand or other commonplace surfaces, and can sense whether fingers are "clicked" or hovering.

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

Salary Offers Jump 6% for 2011 Grads

The overall average salary offer to Class of 2011 graduates has risen 6 percent over last year's average, according to a new survey published by the National Association of Colleges and Employers (NACE). NACE's Fall 2011 Salary Survey report shows the overall average salary offer to a bachelor's degree graduate rose from \$48,288 for the Class of 2010 to \$51,171 for the Class of 2011. As a group, those earning computer-related degrees saw their overall average salary soar 9.6 percent from \$58,189 to \$63,760. The overall average offer for those majoring specifically in computer science jumped 9.3 percent to \$66,084, while information sciences and systems majors saw their average salary offer increase by 5.9 percent to \$55,619. The average salary offer to engineering majors as a group rose 2.8 percent over last year's average of \$58,669 to \$60,291. The average salary offer to petroleum engineering graduates grew 7.1 percent to \$82,740, making it the highest-paid major in this report. Also ranking on the highest-paid list, chemical engineering graduates saw their average salary offer increase 1.8 percent to \$66,058. Computer engineering graduates posted a healthy 4.1 percent increase to their average salary offer, bringing it to \$62,849. Find out about current salary ranges for all STEMM fields at www.careercornerstone.org/salary.htm.

