Outstanding Students Honored at State Capitol

In February, 17 of Cal Poly’s most accomplished students were invited to the state capitol in Sacramento, where they met with San Luis Obispo’s legislative representatives and were officially recognized on the floors of the Senate and Assembly. The group included winners of engineering design competitions, budding business entrepreneurs, scientific researchers, and Congressional interns. The students represented all six of Cal Poly’s colleges.

“It’s great to be recognized for your hard work and to be included in this group of people doing really impressive things,” said John Sekarak, a physics major who worked on a high-profile energy project this year in Italy. “I hope we get to keep doing things like this.” —Larry Peña

PayScale Ranks Cal Poly No. 7 for Return on Investment

Cal Poly ranks No. 7 among the nation’s public universities and No. 33 among all institutions for return on tuition investment, according to a listing from PayScale.com.

The list includes the weighted total cost for a graduate based on in-state tuition rates along with the 20-year net return on investment. For Cal Poly, the total cost is $103,600 and return on investment is $611,700.

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and future leaders our world needs — and to do it at an accessible price.” Cal Poly moved up two spots from its No. 9 ranking on last year’s PayScale ROI list in the public university category and four spots from the No. 37 spot on the overall listing. —Matt Lazier

More than 4,100 graduates joined the ranks of Cal Poly’s alumni June 14 and 15 in this year’s spring commencement ceremonies. Read more at www.calpolynews.calpoly.edu.

Photo by Chris Leschinsky

New Initiative Turns Undergrads into Cybersecurity Warriors of Tomorrow

BY JO ANN LLOYD PHOTOGRAPHY BY BRITTANY APP

It made international news days before Christmas last year: Millions of Target customers’ credit card information was breached while they did business at the nation’s No. 2 discounter, and according to reports, the biggest retail hack in U.S. history could have been prevented.

In the not-too-distant future, Cal Poly computer science and computer engineering students will be equipped to spot, stop and prevent these types of attacks. The university’s new cybersecurity education initiative — which includes the Cybersecurity Center, Cal Poly Northrop Grumman Cyber Lab, cybersecurity curriculum, and a Cybersecurity Council — is preparing students to tackle the ever-increasing challenge of protecting peoples’ and organizations’ online privacy.

Cal Poly’s momentum in cybersecurity education builds upon an already-established interest, initiated through a cybersecurity projects lab for students established with funding from Raytheon. The Cal Poly White Hat club uses the lab to make the Internet a safer place by protecting personal computers, private data and information systems.

Spearheaded by the College of Engineering, the unique initiative seeks to educate all Cal Poly students in issues of cybersecurity. The new cyber lab, the first of its kind in the nation, enables students to study real-world computer security technologies, in a safe and controlled environment.

Funded by the Northrop Grumman Foundation in a partnership, the cutting-edge lab features a direct connection to Northrop Grumman’s Virtual Cyber Lab, allowing students to work directly with the company’s cybersecurity experts and experience emerging challenges in real time.

“This initiative is giving our students virtual access to some of the best resources in the world,” said Cal Poly President Jeffrey D. Armstrong. “It’s yet one more way in which Cal Poly is producing graduates uniquely prepared to meet the challenges of our complex society...
er security while communicating core computer science principles," Peterson said. "Other sections of the class have been shown to help reduce attrition, increase performance, and maintain women and other under-represented populations in CS. I hope to do the same."

Peterson, an expert in secure storage systems and applied cryptography, said he’s not aware of any university offering a course dedicated to security to students in their first quarter.

In the new Cryptography Engineering course, students learn how to build secure systems using cryptography, the science of coding and decoding secret messages. A third class, Malware Research Analysis, was taught in the spring with the help of engineers from McAfee Corp. "They have been extremely generous with their time and resources, sending 10 world-class experts over the course of the quarter to lecture each week," Peterson said.

Cybersecurity is uniquely suited to tap the exponential powers of a polytechnic institution, said Debra Larson, dean of Cal Poly’s College of Engineering. "Learn by Doing in a cyber world is as real-world as it gets," Larson said. "Cybersecurity isn’t just a technical discipline, and it’s not just computer science. It involves business, economics, ethics, philosophy and psychology. It asks all of us to apply diverse knowledge in new ways.

"Similarly, our collaborations reflect the truly polytechnic nature of this initiative. Our relationships span a spectrum of industries, interests and disciplines, which contributes to the relevance of the curriculum we design."

"The Internet is everywhere, which makes our cybersecurity graduates immediately valuable to employers wherever they are," Peterson said. "Whether they work specifically for a security company like McAfee or become an engineer with software giant Google, having a working knowledge of security will make them valuable to that company," he said.

"Internet connectivity is all around us — in cars, refrigerators, electrical systems. Things we thought were safe today can become totally broken and insecure tomorrow." But should that day come, Cal Poly’s students will now be there to help.

When it comes to training young, work-ready engineers in the critical field of cybersecurity, Northrop Grumman CEO Wes Bush believes Cal Poly "gets it." Bush was on campus in January for the dedication of the Cal Poly-Northrop Grumman Cyber Lab, a 32-workstation facility that is the centerpiece of the new Cybersecurity Center. Bush said programs like Cal Poly’s are crucial in meeting the growing challenges of modern life.

"Cybersecurity isn’t just about nation security, it’s about economic security," he said.

Cal Poly students will now be able to receive intensive training in malware, encryption, cyber attacks and cryptography in the new lab, which was built with the support of a $150,000 grant from the Northrup Grummman Foundation and is connected to the defense company’s Virtual Cyber Lab in Virginia. Dale Griffiths, chief scientist at Northrop Grumman’s Intelligence Systems Division, helped configure the lab, which is equipped with specialized software, hardware and television monitors that rotate 360 degrees.

"Cyber threats evolve faster than textbooks," noted Cal Poly President Jeffrey D. Armstrong. "This opportunity is unprecedented in higher education and particularly unheard-of at the undergraduate level. This is much more than a state-of-the-art lab. Cal Poly students will be able to enter the workforce equipped and ready to handle the challenges they’ll face."

Computer science student Jessie Pease, president of the university’s White Hat cybersecurity club, said the lab would help the club fight hacking and "make the Internet a safer place." Pease, a junior who received intensive training in malware, encryption and cyber attacks in the new lab, said with the support of Cal Poly’s Cybersecurity Center, she would like to find a career in the field of cybersecurity.

"I’m glad I will be able to take advantage of the new lab," she said. "Cybersecurity isn’t just about nation security; it’s about economic security," he said.

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