



Calhoun: The NPS Institutional Archive
DSpace Repository

Faculty and Researchers

News Articles Collection

2011-10

NPS Faculty, Researchers Promote Computer Science in, Beyond Local Community

Naval Postgraduate School Public Affairs Office; Carrillo, Leonard
Monterey, California: Naval Postgraduate School

Downloaded from NPS Archive: Calhoun



Calhoun is a project of the Dudley Knox Library at NPS, furthering the precepts and goals of open government and government transparency. All information contained herein has been approved for release by the NPS Public Affairs Officer.

Dudley Knox Library / Naval Postgraduate School
411 Dyer Road / 1 University Circle
Monterey, California USA 93943

<http://www.nps.edu/library>


[About NPS](#)
[Academics](#)
[Administration](#)
[Library](#)
[Research](#)
[Technology](#)
[Services](#)

NPS Faculty, Researchers Promote Computer Science in, Beyond Local Community

[NPS](#) > [About NPS](#) > [News](#)

Article By: MC1 Leonardo Carrillo

With computer technology well entrenched in every aspect of life, and cybersecurity a critical component of national security, the demand for computer science professionals has grown dramatically. Unfortunately, student interest lags the demand.

Recognizing this challenge, the Naval Postgraduate School's Cebrowski Institute has been actively developing a comprehensive program to promote computer science (CS) in diverse age groups and communities. As part of this effort, the institute recently hosted guest lecturer Dr. Tim Bell, the founder of CS Unplugged, an interactive educational program designed to teach young people the principles of computer science through simple, compelling lessons.

Bell, an Associate Professor of Computer Science and Software Engineering at the University of Canterbury in New Zealand, delivered an entertaining presentation to students at Hartnell College and local middle schools in Salinas, Calif.

Without using a computer, Bell taught binary code and other complex CS concepts through fun and engaging exercises, methods that he has implemented in classrooms worldwide over the past 20 years.

The CS Unplugged presentation is only a small part of a National Science Foundation (NSF) sponsored research project called "Field Guide for the Science of Computing."

"We're trying to rethink the way we present the field of Computing," said Principal Investigator, Dr. Peter Denning. Denning is also the Computer Science Chair and Director of the Cebrowski Institute. "We want to spark the interest of students and inspire them to follow the path of science."

Sparking young people's interest was one of the reasons why Bell developed CS Unplugged. He said that one of the challenges in promoting CS is that many times students don't understand what it is, they think it is about fixing computers, or programing, or information technology. And while he understands that not all students will choose a CS career, he hopes, at least, to help people be better informed about the field.



Dr. Tim Bell, founder of Computer Science (CS) Unplugged talks to students after going through a "Network Maze" at Hartnell College in Salinas, Calif. to demonstrate they way data gets sorted in a computer network.

"The goal isn't to make every single one of them say 'I want to be a computer scientist,'" reaffirmed Bell. "This program enables us to show them what CS really is so when they think of careers, they have a better idea ... some might think it is more interesting then they thought."

Inspired by the field guides boy and girl scouts use to guide them through their outdoor skills, the computing science field guide would serve as a resource for computer science students. Denning sees the field guide as only part of a larger project to develop a network of Computer Science youth groups, and is working with the Association for Computing Machinery (ACM) to develop this concept.

Joe Welch, a computer information systems instructor at Hartnell College in Salinas, experiences this issue first hand. He praised the Cebrowski institute for their collaboration and for bringing Unplugged to Hartnell and Salinas.

He emphasized the importance of reaching out to the community and infusing the students with love for science. "We want these students to know that they can succeed in some of these very difficult subjects," he added.

Hartnell student Rudy Garcia was already in love with computing. The CS Unplugged presentation showed him the concepts he had learned in other classes in a simpler and different perspective. He saw how it sparked the interest of other students.

"The presentation was awesome," said Garcia. "I've taken other computer courses but I really liked the way he [Bell] presented things, very simply and without a computer."

This feedback and the partnership with Hartnell College and other local institutions have proven to be invaluable for the project's goals.

"We work closely with local teachers, meeting regularly to develop training plans and activities that can be implemented in these schools," said Deputy Director of the Cebrowski Institute, Sue Higgins. "They help us understand what's attracting these students to computer science. We wouldn't be able to do this without the local community."

Developing these types of partnerships, Denning says, has a simple, and seminal, goal. "It's about helping the younger generations get interested," said Denning. "We want to recover the magic and beauty of computer science."