

Time to Reboot

A diverse, international group of more than 200 attendees met at the Rebooting Computing Summit to address the problems confronting computer science.

THE CHALLENGES FACING the computing field are well known: enrollment in degree programs has steadily declined since 2001; women and minorities are underrepresented; many K-12 students have a negative perception of computing; and reports say the innovation rate in the field has decreased.

To address these formidable challenges, a group of more than 200 participants from many sectors touched by computing, including business, education, government, engineering, and science, held a three-day Rebooting Computing Summit at the Computer History Museum in Mountain View, CA, last January.

The meeting comes at a critical time for the computing field, says Peter Denning, chairman of the computer science department at the Naval Postgraduate School in Monterey, CA, and organizer of the invitational summit.

“According to the last figures I saw, the total number of computer science students in the pipeline and expected to graduate is about two-thirds of the number of jobs needing to be filled,” Denning says. “These are rewarding jobs, demanding creativity.”

In addition to the inadequate number of computer science students, another disturbing reality is that key meetings of the leaders in science don’t regularly include computer scientists. “Computer science is often not at the table,” Denning says, “and that hurts science badly.”

Denning and a like-minded 18-member team decided that previous workshops and studies devoted to these issues hadn’t produced enough impact. It was time to try something different, so they invited a diverse, international group representing all major sectors of computing to meet, share ideas and find common ground, and take action.

Attendees say the summit succeeded in generating excitement in a com-



Conference organizer Peter Denning, left, and facilitator Ron Fry prepare before the start of the Rebooting Computing Summit, which was held at the Computer History Museum.

munity that’s been frustrated in its efforts to attract young people and collaborators, and report that they’re eager to continue the momentum started at the event.

“The most exciting part of the meeting was getting together with people who all share a passion for computer science and a common goal of working to help revitalize the field,” says Robb Cutler, past president of the Computer Science Teachers Association. The summit fostered connections among people with an interest in K-12 computer science programs, Cutler says.

Tim Bell, associate professor at the University of Canterbury in New Zealand, says the summit brought together many people in an environment that seeded a lot of cooperation. “Not only did I meet people interested in the same kind of project, but there was the energy and impetus to do something cooperative on a global scale,” Bell says.

The summit’s main achievement was the formation of 15 action groups

that will carry out projects in the coming year. These groups include Image of Computing, Defining Computer Science, and K-8 FUNdamentals. Each group created a mission statement and a list of actions they plan to accomplish during the next year.

The Rebooting Computing Web site, rebootingcomputing.org, lists the groups, members, and contact information, and incorporates collaborative tools such as blogs, social networks, and wikis. Denning is encouraged by activity he’s seen since the summit, such as the appearance online of several videos about the conference.

“The loss of attraction to [computing] comes from our being unable to communicate the magic and beauty of the field,” Denning says. “We need to create an appreciation for the elegance and power of what computing can do.”

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