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Thad Starnier, a researcher at MIT, displayed eyeglasses with a computer screen embedded in the lens.

Eye-Opening Gizmos

Computer researchers show off their latest inventions and ideas

By Jamie Beckett
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Some of technology's most creative thinkers gathered in Silicon Valley yesterday to describe and show off their latest ideas, which ranged from a talking couch that tells you when your nap is over to a pair of eyeglasses that double as a computer screen.

Companies that usually see themselves as competitors — including Microsoft, Xerox, IBM, Hewlett-Packard, Apple and IBM — sent researchers to the New Paradigms in Computing annual conference at IBM's Almaden Research Center in San Jose.

Some researchers showed off their latest gizmos, while others just talked about them.

Gordon Bell, who helped invent Digital Equipment Corp.'s successful VAX minicomputer, described a "guardian angel" that you'd wear on your wrist that would have sensors to keep track of blood pressure, heart rate, insulin levels and would alert you when something goes awry.

Bell, who is now working at Microsoft's San Francisco research lab, is working on a "cyber admin" that would catalog everything you read and could call up anything from fragments of memory.

Brewster Kahle, inventor of the landmark WAIS program for finding documents on the Internet, described the newest invention of his San Francisco-based company, Alexa: an intelligent Internet navigator intended to learn from users.

Ted Selker, the IBM fellow who organized the event, talked about a world where tiny computers are everywhere, all responding to humans' needs or wants — keeping clothing comfortable and doing blood tests

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Arthur, a prototype of a bionic bunny with a vocabulary of 4,000 words, was on display.

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without finger pricks.

His contributions yesterday included the talking couch and a "digital coach" exercise machine that prodded a user on with a drum beat and the voice of a Arnold Schwarzenegger-like trainer urging, "Come, let me pump you up."

Barbara Hayes-Roth, known for her work in artificial intelligence, demonstrated software agents being developed by her San Jose-based startup, Extempo. A dog named Max and a wizard named Merlin were among the characters Extempo designed to make working with a computer more like working with a person.

Thad Starnier, a researcher at the Massachusetts Institute of Technology media lab, showed off the funny, thick eyeglasses that also work as a computer screen.

"They're actually fashionable frames from France," noted Starnier, who has been wearing the computer glasses for the past two months.

The glasses are connected by a cord to a hand-held keyboard called the Twiddler, which is the size and shape of a hot dog bun. Starnier carried the keyboard in one hand and carried a credit-card-size computer with a Pentium pro-



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Rajat Paharia demonstrated the digital trainer. A drink pops out of the machine when your workout is done.

cessor in the other.

Using the computer and looking into a tiny screen embedded in the glasses, Starnier can take notes, read and answer e-mail, search the Internet — essentially do most anything you can normally do with a computer.

"There's no reason you have to

have a desktop machine," said Starnier.

"The desktop and laptop will go away because this is much better for your eyes and hands."

The central theme of the conference was pervasive computing — a world in which computers are

seamlessly integrated into daily life.

But not all of the computer scientists in the crowd were enthusiastic about this prospect: several had concerns about invasions of privacy and one raised the specter of computers being "incredibly intrusive and invasive everywhere."