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# Ga. Tech lands research facility

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Three of the biggest names in technology plan to announce today they will start a research center at Georgia Tech to explore ways to expand the reach of a promising new semiconductor design.

Sony Corp., IBM Corp. and Toshiba Corp. compare their new "Cell" microprocessor to a supercomputer on a chip that can handle some applications 10 times faster than traditional computer chips.

The technology that the companies jointly developed in Austin, Texas, over five years at a cost of $400 million is debuting in Sony's new PlayStation3 video game console. The $500 console went on sale in Japan last week and hits U.S. store shelves on Friday.

Now, the companies want to take the Cell technology much further.

With funding from the three Cell partners and additional money from Georgia Tech and outside grants, researchers at Tech's new STI Center of Competence will explore ways to adapt the technology for other industries, including biotech, finance and digital media creation.

Sony, Toshiba and IBM are providing an initial investment of $320,000, while Tech is putting in $230,000 and another $100,000 is coming from a National Science Foundation grant.

At the center, to be located in the school's new Christopher W. Klaus

## RECENT WINS AT GEORGIA TECH

➤ **December 2005:** Tech recruits Jeffrey Skolnick, a well-known scientist in systems biology. His field uses supercomputers to break down information in the genetic code. His IBM supercomputer, housed at BellSouth, anchors the $8.5 million center for the Study of Systems Biology.

➤ **June 2006:** Henrik Christensen, a global leader in robotics research, joins Georgia Tech to create the Robotics and Intelligent Machines Center.

➤ **June 2006:** Bernie Marcus announces a $15 million gift to the Nanotechnology Research Center, an $80 million project to be completed in 2008.

➤ **September 2006:** Georgia Tech's College of Computing implements a new curriculum, which earns a nod from Thomas Friedman in "The World Is Flat."

**Skolnick**

➤ **October 2006:** Georgia Tech, Emory University and Medical College of Georgia receive a multimillion-dollar grant from the National Institutes of Health to start a Nanomedicine Development Center focusing on DNA damage repair. It is the third NIH-funded nanomedicine/nanotechnology center in less than two years.

➤ **October 2006:** The College of Computing debuts its new computing building, a $63 million facility named for Atlanta computer entrepreneur Chris Klaus.

— Compiled by staff writer Andrea Jones. Source: Georgia Tech

# Research: Tech wins center

Advanced Computing Building, researchers will also teach students and outside companies how to program computers and write software for the new type of chip. There will be four faculty members involved in the project.

Landing the center puts Georgia Tech at the forefront of a groundbreaking new type of semiconductor design. David Bader, executive director of the school's high-performance computing program, said he believes the center will be the only one of its kind in the United States.

"We really see this as the future of technology and innovation," Bader said. "This is so high-impact."

## Austin bypassed

In picking Georgia Tech for the Center of Competence, the Cell partners sidestepped Austin as well as other high-tech hubs across the country. In addition to the University of Texas, more than a dozen schools around the country were vying to land the center, according to officials involved.

"Texas universities were absolutely part of the consideration," said Hina Shah, the Austin-based Cell development program director at IBM. But Georgia Tech won out in the end, she said, partly because its curriculum and areas of expertise matched up better with the interests of the three companies involved.

For Georgia Tech, the center is the latest in a series of big wins and increased prominence for the College of Computing.

In part, the school benefited from its extensive programs in high-performance computing, digital media and video game design.

But since the 2002 arrival as dean of Rich DeMillo, the former chief technical officer for Hewlett-Packard Co., the school has redesigned its curriculum to focus less on computer science theory and more on real-world applications.

"In many ways, we found them to be much more grounded about focusing on what's needed, not 10 years from now, but what's needed today and tomorrow," Shah said.

"That made a huge difference."

Masa Chatani, Sony's senior general manager for Cell development, said in a statement that the "collaboration with the College of Computing at Georgia Tech will create in-

Georgia Tech computing director **David Bader** believes the center will be the only one of its kind in the country.

novative applications for Cell processors."

The Cell chip design is only in its infancy and has a lot to prove. The chip isn't expected to make a big dent in the traditional semiconductor market controlled by Intel Corp. and Advanced Micro Devices Inc. anytime soon. Reaching into other markets won't be easy either.

Still, what makes Cell so promising is its potential power, especially when it comes to graphics-intensive programs like video games, broadband Internet video processing and other digital media applications.

Just recently, Intel released its first "dual core" and "quad core" microprocessors that essentially put two or four processors on one chip.

Cell chips have already leapfrogged that capability. The chips in Sony's PlayStation3, for instance, essentially have nine cores — eight unique sub-processors that work in connection with a central processor.

## 16 cores a possibility

Future Cell designs could have as many as 16 sub-processing cores, which could dramatically increase the speed and the number of applications Cell-equipped computers could handle.

"This really is a new era in performance," Jim Kahle, an IBM fellow who oversaw the chip's design in Austin, said in announcing the first Cell chips in San Francisco last year.

Sony has the most riding on Cell. The Japanese giant is counting on the chip to help it regain ground in new technology development that it lost in areas like digital music.

Along with its video game machines, Sony is exploring putting Cell processors into a wide array of products, including personal computers, televisions and mobile phones.

Toshiba plans to use Cell processors in its TV sets and in other products.

IBM already has introduced powerful computer servers based on the design.

The center devoted to semiconductor design will be in the Christopher W. Klaus Advanced Computing Building at Georgia Tech.