

**Press Release
For Immediate Release**

CONTACT:

Lynn Seay or Kelley Denny

prwerks

412-918-0094

lseay@prwerks.com

kdenny@prwerks.com

**System on a Chip Curriculum achieves 4 year milestone utilizing
innovative collaborative design training model for three Pennsylvania
universities**

- *Over 80 certificates awarded to graduate student participants*
- *Program supported by technology industry leaders CADENCE and OKI*
 - *Rigorous "Silicon Boot Camp" a required part of program*

Pittsburgh, PA – July 12, 2005 -- The Technology Collaborative (TTC), a statewide economic development organization that supports the growth of Pennsylvania's world-class digital technologies, robotics and cyber-security industries, today announced that its multi-University System on a Chip (SoC) Certificate program has concluded its fourth year and is certifying 21 new SoC designers. Initiated in 2002 and coordinated under the auspices of the Digital Sandbox design center, this program has certified eighty nine students to date.

The Digital Sandbox is an infrastructure project that sustains the hands-on laboratory environment required for the Technology Collaborative Education and Training programs to function effectively. Through the Digital Sandbox, the TTC has funded a virtual SoC design facility that supports SoC design and education activities at the University of Pittsburgh, the Pennsylvania State University, and Carnegie Mellon University.

This virtual SoC design support facility provides "industrial strength" hardware, software, EDA tools, workflows, and technical support staff to all three TTC member universities. This enables students and faculty users at each school to create real-world designs for

modern semiconductor process technologies, and thus, enhance university-industry interaction and improve the quality of graduating engineers.

Rob Rutenbar, Jastras Professor of Carnegie Mellon University's School of Electrical and Computer Engineering, assumed leadership of the Digital Sandbox capstone design course in Fall 2005, and worked closely with the students and faculty at each university to identify ways in which to streamline and improve the course. He commented, "I am pleased to say that the Spring 2005 semester was very successful across all three schools and yielded an excellent range of SoC designs, despite the new course organization and new tool flow. In fact, the feedback from our students has been overwhelmingly positive, which we anticipate will generate increased enrollment in the program in 2005-2006."

The 2004-2005 curriculum offered a significantly enhanced experience to its students, due to a number of key factors that were addressed in the development and evolution of this program over the past four years. Specifically:

- Students from each of the three universities worked on design projects that shared a signal processing theme of speech and face recognition, attending common lectures via web-conferences.
- Students worked with and effectively used a new chip design tool, Cadence SOC Encounter, made available by TTC member CADENCE Design Systems, which offers increased speed, higher capacity, simpler operation and tight integration.
- Students used .16um industrial cell design library and technology rules made available for University use by TTC member OKI Semiconductor.
- Students shared a seven week "Silicon Boot Camp," during which they were refreshed on basic RTL skills and exposed to advanced ASIC design concepts to ensure that all three classes were operating at similar proficiency levels.

"Teaching in the context of modern SoC design requires an extensive set of software tools and design libraries, as well as a design flow that is configured to efficiently run within a local computing environment. This infrastructure is expensive for each school to

independently develop and maintain, and our vision of the Digital Sandbox was to create and share a common infrastructure between the TTC's three member universities," commented Dr. David Landis, Vice President of Education and Training for TTC. "We have achieved our goal, and the capstone SoC design class and Digital Sandbox infrastructure continues to evolve to stay relevant to industry, cost-effective for the Universities, and engaging for the students"

"The Digital Sandbox is an exemplary program that provides tangible value for our industry as it trains the chip designers, system engineers, and embedded software developers of tomorrow," stated Fred Samandari, Director of OKI Semiconductor Design Center in Pittsburgh.

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About The Technology Collaborative

Formed in December 2004 as the result of a merger between The Pittsburgh Digital Greenhouse and The Robotics Foundry, The Technology Collaborative's mission is to help increase Pennsylvania's technology-based economy by developing collaborating industry clusters that leverage the region's world-class assets in Advanced Electronics, Cyber Security, and Agile Robotics. TTC is helping to create an ideal environment for business expansion by leveraging the region's existing high-tech base, and combining it with resources and support from local universities, private foundations, regional development organizations, federal, state, and local government, and industry. They enable regional economic growth by utilizing a "business friendly" environment to attract new companies to the region, help local companies grow, and foster start-ups. For more information, visit www.techcollaborative.org.

About OKI Semiconductor

Building on Oki's century-long commitment to communications technologies and markets, Oki Semiconductor designs and markets a broad line of advanced integrated circuits for telecommunications, network, automotive, computer and consumer products. Oki's product lines include telecommunications, RF, laser, networking, speech synthesis, ASIC, microcontroller and memory devices, offered in a variety of creative packages. Founded in 1977 and headquartered in Sunnyvale, Calif., Oki Semiconductor is a division of Oki America Inc., which is a subsidiary of Oki Electric Industry Co, Ltd. Oki has ISO-9000-certified manufacturing facilities in Japan and Thailand.