# PLM Knowledge 21

Empowering knowledge for 21st century engineers

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## In this issue:



# Siemens PLM Software invests in ASU to help engineering students better prepare for joining workforce

Ira A. Fulton Schools of Engineering Dean Deirdre Meldrum and engineering professor Jami Shah (holding plaque) with Hulas King, (far left) director of GO PLM & Global Community Relations at Siemens PLM Software and Dave Shook, senior vice president and managing director, Americas, Siemens PLM Software at ceremony to announce a record-setting in-kind grant to ASU.

TEMPE, Arizona – Arizona State University (ASU) will enrich its engineering education and provide students more advanced preparation to enter the workforce through an in-kind software grant from Siemens PLM Software to ASU's Ira A. Fulton Schools of Engineering announced today.

Siemens PLM Software, a business unit of the Siemens Industry Automation Division, is a leading global provider of product lifecycle management (PLM) software and services.

With a commercial value of nearly US $245 million, it is the largest in-kind grant in the university's history.

The grant was made through the Siemens PLM Software Global Opportunities in

*Continued on page* 10

# Transatlantic dual bachelor's degree programs in mechanical engineering between an American and two European universities

Manfred J. Hampe, Technische Universität Darmstadt
**Jan Helge Bøhn, Virginia Tech, Blacksburg, VA**
Lars Hagman, KTH Stockholm

The ATLANTIS project joins the European Union and the United States of America in an unprecedented endeavor to foster international education on the undergraduate level. Technische Universität Darmstadt (TUD), Germany, Kungliga Tekniska Högskolan (KTH), Stockholm, Sweden, and Virginia Polytechnical Institute and State University (Virginia Tech), Blacksburg,VA, will jointly establish Dual Bachelor of Science Programs in Mechanical Engineering between 2007 and 2010. The objective of the project is to produce highly competent graduates in the field of Mechanical Engineering (BSME) that are uniquely prepared to successfully engage and excel in the new global engineering economy. Another objective is to demonstrate that graduation is possible without delaying graduation to the extent that it delays the start of a consecutive master's program. Thus, the study program will be 4 years for students from Virginia Tech and 3 years and a few months for students from TUD and KTH. The language of instruction will be German for students staying at TUD, English for students staying at Virginia Tech, and Swedish or English for students staying at KTH.

The program consists of two transatlantic dual BSME degree programs: VT-TUD and VT-KTH. The third combination TUD-KTH is basically an intra-European exchange and not considered here. The general model for these two dual degree programs is that (1) the students complete their introductory courses at their home universities; (2) they spend a summer at the third university that they will not receive a degree from; and (3) they spend their final year (senior) at the second university that they are receiving a degree from. «

TECHNISCHE UNIVERSITÄT DARMSTADT

Virginia Tech

KTH VETENSKAP OCH KONST

# Art Center College of Design joins prestigious Partners for the Advancement of Collaborative Engineering Education (PACE)

## Corporate alliance of automotive industry leaders provides technology support to academic institutions


**Art Center College of Design is awarded a special plaque commemorating the college's membership in the PACE alliance. (Pictured from left to right: Bryan Nesbitt, Vice President of Design, General Motors North America; Frank L. Ellsworth, Interim President, Art Center College of Design; and** Stewart Reed, Chair, Transportation Design Department, Art Center College of Design)

**PASADENA**, California – February 24, 2009 – Art Center College of Design has been selected as one of the first art and design colleges to join the prestigious Partners for the Advancement of Collaborative Engineering Education (PACE) alliance. The PACE corporate alliance includes General Motors; Autodesk; EDS (an HP Company); HP; Siemens PLM Software; and Sun Microsystems. PACE was formed in 1999 to support academic institutions worldwide with computer-based engineering tools to prepare designers, engineers and analysts with the skills to compete in the automotive industry of the future.

According to PACE officials, Art Center's inclusion in this program signals the automotive industry's increasing recognition of design's importance in shaping the evolution of vehicles and their use in the future.

Acknowledging the honor, Art Center's Interim President Dr. Frank L. Ellsworth said, "Sincere thanks to PACE for including Art Center College of Design in this very distinguished and valuable partnership. The leading-edge software that PACE can provide our students is vital to their education experience and to their professional potential. By recognizing the value of a design education and design research, PACE is imbuing a new generation of innovators with the creative skills necessary to collectively transform the industry."

As part of the new relationship with PACE, Art Center will receive computer-based engineering and design software, hardware, technology and training that will enhance Art Center's art and design programs. The College has already received six HP workstations, five space navigators and three Cintiq Tablets. Art Center's membership in PACE places the College in the distinguished company of more than 46 prestigious universities around the world, including the Massachusetts Institute of Technology, the University of Michigan, and universities in Australia, Brazil, Canada, China, Germany, India, Mexico, Sweden and South Korea. "The inclusion of Art Center College of Design in the PACE consortium is important as it reinforces the role design plays in the automotive industry, and the leadership role that Art Center plays in educating tomorrow's design professionals," said Joe Astroth, Autodesk's Vice President of Learning and Education. "Autodesk is very enthusiastic about participating in this partnership and providing students with access to the latest 2D and 3D design technologies." "Siemens PLM Software strives to develop meaningful and lasting partnerships that provide significant value for academic institutions, students, and displaced workers in our global communities," said Ed Arlin, Senior Vice President, General Motors, Siemens PLM Software. "We will continue to work closely with Art Center College of Design to enrich its design engineering programs and positively impact its ability to develop top-notch engineers and technologists. Today's leading manufacturers compete on the basis of time to market, product cost, quality and innovation. We are glad that the students will have the opportunity to gain hands-on experience with virtual collaboration technology that supports these objectives." «

### About Art Center

Art Center College of Design is a global leader in art and design education. Since its founding in 1930, Art Center's alumni continue to have a profound impact on popular culture and important issues in society today. Located in Pasadena, California, Art Center offers undergraduate and graduate degrees in a wide variety of art and design disciplines, as well as public programs for all ages and levels of experience. «

More: *www.artcenter.edu*

## Did you know about PACE competitions?

As part of its commitment to encourage students to use digital data in the product development and analysis processes, critical to engineering practices, PACE provides student design competitions in courses within PACE Institution curricula.

Students work on teams to design a project using PACE-donated software and present their final project to a team of industry judges from PACE Partner and PACE Contributor representatives. The competitions can represent a single PACE Institution or be in collaboration with other PACE Institutions. «

More: *www.pacepartners.org*


Contact PACE

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# Regional productivity

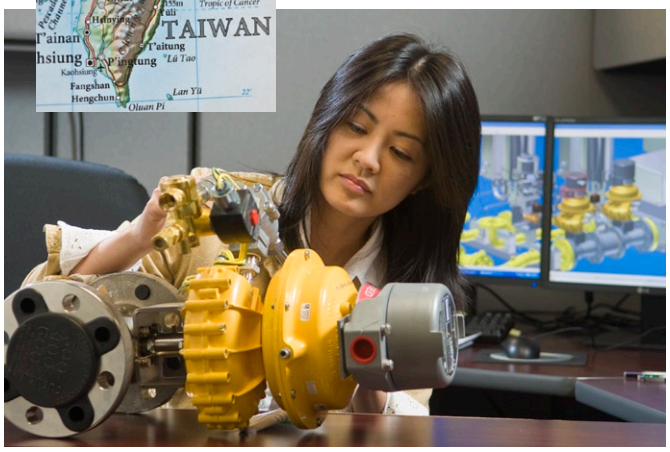
## Chung Yuan Christian University receives in-kind software grant valued at US $35 million from Siemens PLM Software

**TAIPEI CITY, Taiwan** – July 13, 2009 – Siemens PLM Software, a business unit of the Siemens Industry Automation Division and a leading global provider of product lifecycle management (PLM) products and services, announced an in-kind software and services grant with a commercial value of US $35 million to Chung Yuan Christian University (CYCU) to help strengthen the university's development of a mechanical mold design navigation system and training courses.

The in-kind software grant, made through Siemens PLM Software's Global Opportunities in Product Lifecycle Management (GO PLM™) Program, is expected to benefit nearly 1,000 students. It will help improve the training standards for students in the mold and molding design field, and establish a next-generation mold design development system and a knowledge management platform integrating IT and technical expertise.

The in-kind software grant includes NX™ software, Siemens PLM Software's digital product development solution which includes computer-aided design, manufacturing and engineering (CAD/CAM/CAE) applications. CYCU has been commissioned by well-known information and communication companies to develop a mold design navigation system with the NX solution. Via the intellectualized mold, the system can accelerate multi-layer reviews of mold design, including a feasibility analysis of mold manufacturing, a computer-aided system of mold development and design, automatic establishment and management of online statements, and mold design management.

"CYCU is dedicated to developing a streamlined, quality driven design process in the mold design field by adopting advanced design tools and methods. We have an established knowledge management platform to automatically gather and reutilize the existing mold design and molding knowledge, so that the manpower and technological investment previously accumulated can exhibit greater values," said Professor Chen Shia-chun, Dean of Engineering College of CYCU. "Through the in-kind software grant from Siemens PLM Software, we will further extend our practical experience into a wider range of teaching and research fields for teachers and students in mechanical engineering to really grasp the pulse of the state-of-the-art technology. Not only is this conducive to strengthening students' training intensity, it can help enhance our school's academic research status in the mold and molding design field. NX provides the opportunity to develop a knowledge management platform and a next-generation mold design system that feature high quality, reasonable cost, fast speed and good service."

"We are honored to partner with CYCU to provide industry leading PLM solutions as the training tool for mold design talent in the university and its graduate institutes," said Yin-chun Chuang, general manager of Siemens PLM Software, Taiwan. "We hope that through this in-kind software grant students will have the opportunity to gain a better understanding of how computer-aided engineering tools can noticeably boost the management efficiency of the entire design process. With the knowledge management database taking shape, we also expect to pass down the valuable experience to develop greater values of innovation." «

# Youth development

## Huntsville Center for Technology student wins silver medal in the national SkillsUSA Technical Drafting Competition

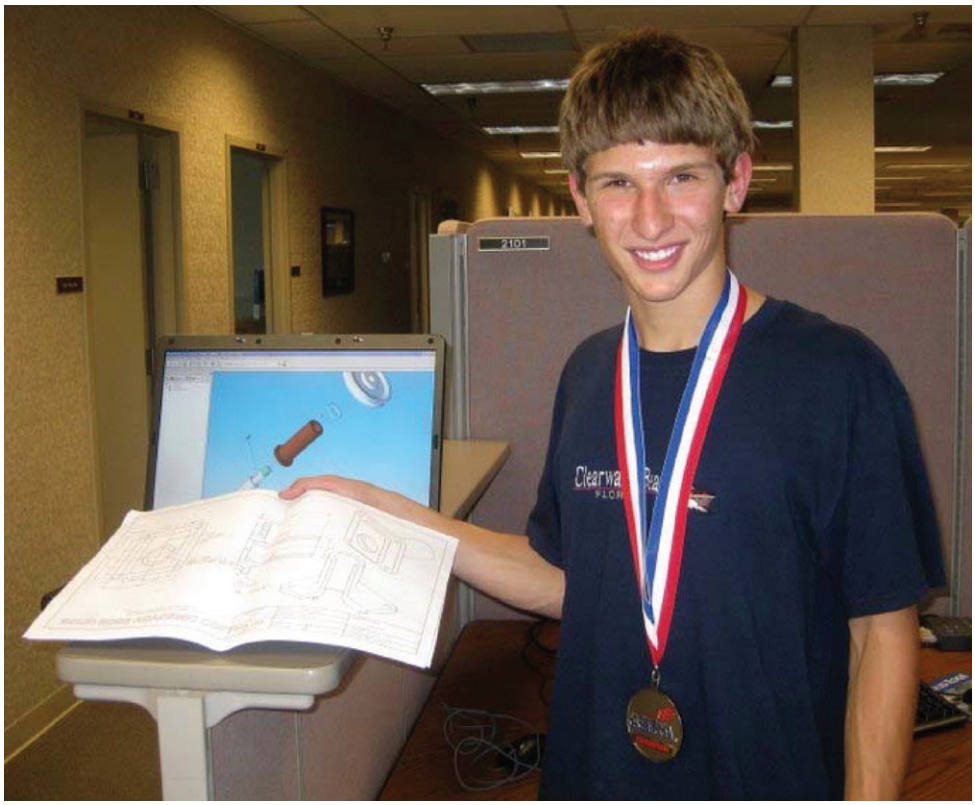
**HUNTSVILLE, Alabama** – Isaac Wasilefsky, SkillsUSA Technical Drafting Silver Medalist from Huntsville Center for Technology (HCT), used the modeling and customization capabilities of Siemen PLM Software's Solid Edge® product to help him place second in this prestigious national competition. Isaac competed in the SkillsUSA Technical Drafting challenge against 44 contestants representing the top drafting high school students from the 50 states and U.S. Territories.

The students were given a total of 7 hours to design a pulley assembly from the automotive industry. An engineering change order was given at lunch and students had the afternoon to make the design changes and complete the drawings. The drawing had to be printed on a B size drawing sheet. Using Solid Edge's modeling and drafting capabilities, Isaac was able to successfully complete his design, finishing almost an hour earlier than the allocated time. Isaac noted that "Solid Edge allows me to streamline the work process through customization features such as the use of hotkeys." A strengh of Solid Edge is the software's flexibility and ease-of-use. According to Mike Evans, his drafting instructor at HCT, "Solid Edge is so user friendly. The students learn three dimensional concepts very quickly."

SkillsUSA is a national organization for public high school and college/ postsecondary technical students enrolled in trade, technical and skilled service profession instructional programs. The top students at the state level qualify to compete in the national contest. In the technical drafting competition, Isaac, a high school junior, competed against 35 students at the state level to advance to the national level. Next year he hopes to bring home the gold!

SkillsUSA is a partnership of students, teachers and industry representatives, working together to ensure America has a skilled work force. It helps each student excel.

SkillsUSA is a national nonprofit organization serving teachers and high school and college students who are preparing for careers in trade, technical and skilled service occupations, including health occupations. It was formerly known as VICA (Vocational Industrial Clubs of America). «



SkillsUSA silver medalist winner, Issac Wasilefsky.

Learn more:

SkillsUSA
*www.skillsusa.org/*

SkillsUSA Competition 2009

Congratulations to all who competed in the SkillsUSA competition!

## 2009 top supporters of the engineering programs of the historically black colleges and universities and minority serving institutions

**BALTIMORE**, Maryland – January 2009 – The seventh annual survey conducted by *US Black Engineer & Information Technology* (USBE & IT) magazine presents the 2009 Top Supporters of Historically Black Colleges and Universities (HBCUs) and minority-serving institutions. The deans of the ABET-accredited HBCU and minority institutions completed the survey. America's future in the market place depends heavily on the development of students from minority-serving institutions, which are dedicated to producing the best scientists, technologists, mathematicians and engineers. Competition in the new global marketplace demands that we deploy top talent in technical careers. We applaud the efforts of the 2009 top supporters, who remain committed to minority institutions.
In completing the annual survey, the institutions considered the following factors: support for infrastructure modernization and enhancement, research, participation on advisory councils, faculty development opportunities, scholarships, student projects, stipends, co-ops and career opportunities.

Some of the institutions invited to participate in the survey were: University of Puerto Rico, University of Texas at El Paso, University of Texas – Pan American, Colorado State University – Pueblo, Alabama A&M University, Florida A&M University, Hampton University, Howard University, Jackson State University, Morgan State University, North Carolina A&T State University, Prairie View A&M University, Southern University and A&M College, Tennessee State University and Tuskegee University.

*USBE & IT* magazine will salute the top corporate organizations and government agencies in the Deans Edition of the magazine in May 2009, and they will be recognized during the 2010 Black Engineer of the Year (BEYA) Science, Technology, Engineer and Math (STEM) Global Competitiveness Conference. To view the entire list, visit *www.blackengineer.com*.

Career Communications Group, Inc. (CCG) produces the annual BEYA STEM Global Competitiveness Conference and the National Women of Color Science, Technology, Engineering and Math (STEM) Awards Conference. In addition, CCG publishes *US Black Engineer & Information Technology*, *Women of Color* and *Hispanic Engineer & Information Technology* magazines.

CAREER COMMUNICATIONS GROUP'S
2009 TOP SUPPORTER OF HBCUs

## Dysart Unified School District receives in-kind software grant from Siemens PLM Software valued at US $35 million

### Software investment helps Arizona students prepare for future careers

**PLANO, Texas and PHOENIX, Arizona** – June 2, 2009 – Siemens PLM Software, a business unit of the Siemens Industry Automation Division and a leading global provider of product lifecycle management (PLM) software and services, announced an in-kind software grant with a commercial value of US $35 million to Dysart Unified School District to enrich their engineering curriculum and provide training for students preparing to enter the workforce. «

# ASU receives in-kind software grant – *continued from page 1*

Product Lifecycle Management program – called GO PLM™ – and includes engineering software, student/instructor training and specialized software certification programs.

ASU graduates with training on such industry-leading design software are more attractive to prospective employers.

"Advanced tools such as the PLM software are essential to preparing our engineers for the challenges they will face in an increasingly complex and global economy. They will be able to meet demand for designing and analyzing systems that transcend traditional boundaries," said Deirdre Meldrum, dean of the Ira A. Fulton Schools of Engineering.

> "This gift from Siemens PLM Software aligns with our vision of leading engineering education and research that sparks innovation, and enables engineers to improve the quality of life."
>
> *Deirdre Meldrum, Dean*
> *Ira A. Fulton Schools of Engineering*

"This gift from Siemens PLM Software aligns with our vision of leading engineering education and research that sparks innovation, and enables engineers to improve the quality of life," Meldrum said.

"Today's leading manufacturing and technology companies compete on the basis of time to market, product cost, quality and innovation," said Dave Shirk, executive vice president of Global Marketing for Siemens PLM Software. "It's quite clear that today's best students in top programs, like the program at ASU, benefit through opportunities to gain experience with technology that supports these objectives."

ASU now joins other leading universities with which Siemens PLM Software has similar academic partnerships or has made similar in-kind grants, including the Massachusetts Institute of Technology (MIT), the University of California at Berkeley, Michigan State University, Brigham Young University, Rutgers, Virginia Tech, Carnegie Mellon and Purdue.

ASU graduate student Adam Dixon said training on Siemens PLM Software's technology "will make ASU engineering grads more marketable. It will definitely open more doors."

"Many companies use the software because of its superiority," said Dixon, who is studying engineering design and works in ASU's Design Automation Lab. "Having access to this innovative technology will give us a clear advantage in the workforce."

Jami Shah, a professor in Ira A. Fulton Schools of Engineering and director of the Design Automation Lab, said Siemens PLM Software "has an extremely generous academic license program. Siemens PLM Software realizes the important responsibility industry has in contributing to higher education."

"Our mechanical and aerospace engineering graduates go to work for major engineering companies that use these kinds of high-end computer-aided design and finite element analysis software packages," Shah explained. "This is why it's important to instruct students with tools such as Siemens PLM Software's NX software."


> "The software is a great teaching tool because it makes everything transparent," Shah said. "It clearly shows the student how the results of any design work or engineering analysis were computed. You can see and control the workings of the software packages."
>
> *Jami Shah, Professor and Director*
> *Ira A. Fulton Schools of Engineering and Design Automation Lab*

"We've used Siemens PLM Software's state-of-the-art software products for nearly 25 years," he said. The academic license program allows students to use engineering software analysis packages such as NX, I-deas® and Nastran to perform critical engineering tasks such as stress and failure simulation, vibration and dynamics analyses and thermal analyses.

"The software is a great teaching tool because it makes everything transparent," Shah said. "It clearly shows the student how the results of any design work or engineering analysis were computed. You can see and control the workings of the software packages."

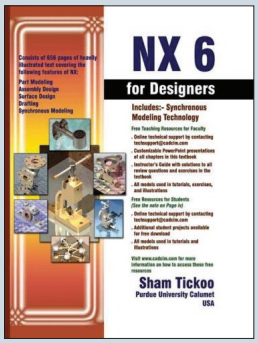
Troy Howe, a senior studying mechanical and aerospace engineering, said the computer-aided design program "has been invaluable to my progress."

Howe uses the program at work to build three-dimensional models and drawing schematics.

"My training in class gave me the confidence and ability to complete my projects quickly and accurately," he said. "It has helped me draw praise for the quality of my work. So I'm looking forward to next semester when I'll take the advanced computer-aided engineering class with the new PLM software." «

# Student/faculty resource center

## Courseware development / conferences / classes and textbooks all here




*NX 6 for Designers*
Prof. Sham Tickoo
» *www.cadcimtech.com/*


*Solid Edge ST*
Prof. Sham Tickoo
» *www.cadcimtech.com/*

## Congratulations to Dr. John Devitry as GO PLM's first curriculum winner

### Look for Dr. Devitry curriculum materials on Solid Edge and NX soon on the GO PLM website

Learn more:

*www.plm.automation.siemens.com/en_us/about_us/goplm/app/resource_center.shtml*

## Announcing the 2009 Siemens PLM Software call for curriculum materials

Are you an instructor using Siemens PLM Software products in your classroom?

Do you have new teaching methods and innovative instructional materials that make it easier for your students to learn, design and draft PLM concepts?

Share the curriculum materials you use to integrate our products in your courses, and a Dell laptop could be yours.

- Class outlines
- PowerPoint presentations
- Tips and techniques
- Reference materials
- Sample lab projects
- Sample exams
- Textbooks
- Syllabus

Submission requirements include:

- All files on CD or DVD
- Instructor's name, school, mailing address, email address and telephone number
- All files in English
- Cover sheet with course number and description of class

A Dell laptop will be awarded to the instructor providing the best overall set of curriculum materials in the following categories:

- University or college class
- Community/technical college 2-year class
- High school technology class «