

## PACE Program Growth

The PACE Program experienced tremendous growth in 2001 and early 2002, bringing the total number of deployed institutions to 18, with a total contribution value to date of more than \$1.2 billion U.S.

### PACE GROWTH IN THE U.S.

Four additional U.S. Institutions joined the ranks of the PACE Program. Kettering University was announced as a PACE Institution in July 2001, receiving an initial in-kind contribution valued at more than \$88 million. This was the largest in-kind educational contribution in Kettering's history.

"We consider this an investment in our future," said Joseph Spielman, GM Vice President and General Manager, Metal Fabricating Division. "This allows Kettering to have access to the entire spectrum – from design to engineering to simulation to manufacturing – everything that GM currently uses."

Kettering President James E. A. John said the university prides itself on its commitment to cooperative education and its strong connection to industry and technology.

"These are the tools of the future, and that is the heart and soul of this institution," John said. "The PACE donation will help to ensure Kettering's long tradition of preparing the top technical and managerial leaders of the future."



Mechanical Engineering major Emmet Butler works at the computer with (from left) Lori Hall and Jessica Rai. Kettering University is located in Flint, Michigan.

Professor of Mechanical Engineering Paul Zang says the selection of Kettering as a PACE school brings students there up to speed with today's automotive technology: "In terms of cars, this equipment we've received from PACE is like moving from a Geo Metro to the Avalanche."

Northwestern University, deployed in December 2001, became the sixth U.S. PACE Institution.

"Students who graduate with PACE-enhanced skills will have a large market of job opportunities to choose from," said Ed Arlin, President, Global GM Account for EDS PLM Solutions. "Of course we would like your first choice to be a PACE partner like GM, EDS or Sun Microsystems. But the beauty of this contribution is that it has no limits. No limits – which is also what students will have as graduates from the exceptional Northwestern University."

Prairie View A&M University, a comprehensive, public, land-grant university and member of the Texas A&M University System, is one of the nation's top producers of African-American engineers. "We're very pleased to be a part of this program and grateful for the mutually beneficial and strategic relationships we will be developing with all of the PACE partners," said Prairie View President Dr. Charles A. Hines.

"By the time these students graduate, they will be among the most experienced and highly skilled graduates to enter the work force," said Jerry Gibbs, GM Executive Director of North America Product Development Quality. "Companies such as ours will turn to them for innovative ideas and the know-how to deliver excellent products."

Virginia Tech, deployed in February 2002, has ambitious plans for the PACE Program. "The in-kind contribution from PACE will enable us to take our educational leadership to the next level by providing all our students with top-of-the-line CAD/CAM/CAE software systems free of

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# PACE Program Growth

charge on their privately owned PCs," said Dr. Jan Helge Bøhn, Director of the Virginia Tech CAD Lab and Associate Professor of Mechanical Engineering.

"The significance of this infrastructure upgrade will become even more evident as we begin to engage our students in joint 24/7 design and product realization projects across time zones, with, for instance, students at the other PACE Institutions around the globe."

## PACE GROWTH IN MEXICO

Four renowned engineering institutions in Mexico were deployed as part of the PACE Program on August 13, 2001. Mexican President Vicente Fox was on hand at the media event celebrating the PACE educational contribution of more than \$283 million to the Instituto Tecnológico Autónomo de México (ITAM), Tec de Monterrey-Mexico City campus, Tec de Monterrey-Monterrey campus and the Universidad Iberoamericana.

The deployments vastly expand the PACE Program in Mexico from two schools to six. (The Instituto Politécnico Nacional (IPN) and Tec de Monterrey-Toluca campus were deployed as PACE schools in February 2000.)

President Fox spoke at the PACE media event about his administration's educational initiatives. He said that the goals of PACE are in line with his vision for the direction of higher education in Mexico.



"Never before in the history of humanity has the development of technology advanced at this velocity," Fox said. "I believe these tools the students will now have access to will stimulate their imaginations and encourage our communities to reach new heights."



## PACE GROWTH IN CANADA

PACE further broadened its North American reach in December 2001 with the deployment of three Canadian institutions in the province of Ontario. The University of Toronto, the University of Waterloo and Queen's University received a total in-kind contribution of \$116 million from the PACE Program.

"Canadian universities are joining a growing international community of leading institutions participating in the PACE Program," said Everett Anstey, President of Sun Microsystems of Canada. "Implementation of infrastructure in Canadian classrooms today means innovation in our factories tomorrow."

Phil Taylor, President of EDS PLM Solutions Canada, lauded the impact the contribution will have on students from the three institutions. "Graduates from U of T, UW and Queen's will be highly skilled and able to 'hit the ground running' when joining an employer in any sector," he said.

The Ontario Minister of Colleges, Training and Universities, the Honourable Dianne Cunningham, was also on hand for the triple deployment. "Canadian engineering programs are already recognized for producing

skilled high-quality graduates," she said. "We thank GM, EDS, EDS PLM Solutions and Sun Microsystems for this contribution which will enhance Ontario's reputation by adding expertise with the computer-aided design and solid modeling tools of today and tomorrow."

University of Toronto President Robert Birgeneau remarked on the potential impact of the PACE contribution. "Leading global companies need access to a source of highly qualified engineers to grow and prosper. This contribution by the PACE partners will ensure that our graduates have knowledge of the most technologically advanced computer-aided design and engineering methodologies available," Birgeneau said. "This combination of advanced knowledge for engineers and research innovation will serve to strengthen Canada's position as a leader in the auto industry."



PACE event group picture taken in the office of Robert Birgeneau, President of the University of Toronto.

## PACE GROWTH IN CHINA

PACE began its global outreach this June with the program's first deployment in the Asia-Pacific region. Shanghai Jiao Tong University (SJTU) received an initial in-kind contribution of hardware, software and services valued at more than \$222 million U.S. Participants in the media event and daylong celebration in Shanghai included China's Secretary General from the Ministry of

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# GM de Mexico to Provide Vehicle Parts to Mexican PACE Institutions



## Build & Test

Students at the six PACE Institutions in Mexico will soon have their hands on automotive parts donated by GM de Mexico's Build and Test

Laboratory, thanks to a team effort coordinated by Karla Reyes, the PACE Administrator for Mexico. Each school is slated to initially receive two automotive engines and one transmission.

All six PACE Institutions in Mexico will receive the parts: Instituto Tecnológico Autónomo de México (ITAM), Universidad Iberoamericana, Instituto Politécnico Nacional (IPN), ITESM – Campus Toluca, ITESM – Campus Estado de México and ITESM – Campus Monterrey. Two of these institutions received automotive parts from GM de Mexico in 2001, and this additional contribution

demonstrates GMM's and PACE's continuing support of the engineering curriculum.

"The integrated package of PACE vehicle and powertrain parts and projects mentored by GMM Engineers for the Mexican universities to work on, provides the students the opportunity to get a firsthand experience of life in an automotive company, while still undergoing their education," said Bill Beaumont, Chief Engineer for GM de Mexico.

"This can be invaluable to the student in making the correct career choice and will also provide an industry with graduates who have basic understandings about working in the industrial environment – a definite win-win."

Build and Test Manager Miguel Rivero believes the donations will benefit GM over time. "We want to have a strong relationship with the source of our human resources for the future," Rivero said. "Giving them these parts today will familiarize them with our products and make them stronger engineers in the future."

"The relationship GM de Mexico has with academic institutions here is considered by many to be the strongest in the automotive industry in Mexico," Rivero added. "We are excited about this opportunity to continue building on that strong relationship with the PACE Institutions." □

## Five PACE Pioneers Recognized

PACE recognized five of the PACE Program's pioneers at a ceremony at Michigan State University in November. PACE Executive Sponsors Jerry Elson (GM) and Ed Arlin (EDS PLM Solutions) were on hand to present awards to MSU College of Engineering faculty and staff members, Bob Chalou, Jackie Carlson, Steve Foley and Fred Hall, and to Dr. Janie Fouke, Dean of the College of Engineering.

Chalou, a specialist in MSU's Department of Mechanical Engineering, was recognized for his numerous contributions to the growth of the PACE Program, including the creation of his textbook, *Engineering Design Modeling with Unigraphics*, published in 2001.

"Unigraphics has dramatically changed the way students approach their design education at Michigan State University," Chalou said. "Without our involvement with the PACE

partnership, our 3-D Solid Modeling capabilities would be very limited.

"We are currently finishing up our third year as a PACE Institution and are excited to report that our students now look to the tools that have been made available through PACE as the tools of choice for the numerous projects that are part of the curriculum."

Carlson, Foley and Hall were each recognized for their contributions to the PACE hardware distribution process. In the initial growth phase for PACE, the College of Engineering at MSU served as the staging area for Sun workstations as they were being sent to PACE Institutions around the world. PACE has recently transitioned this role to CARDS Engineering, based in Dearborn, Michigan.

Dr. Fouke also received a PACE award for her commitment to the program's vision and for implementing the program throughout the College of Engineering at MSU.

Lynn Bechtel, GM's University Relations Team Coordinator (URTC) for MSU in the area of engineering, attended the award ceremony held on campus. "As the pioneering academic institution for the PACE partner-

ship, the commitment and leadership of the College of Engineering at Michigan State have strengthened the PACE Program structure and led to successful partnerships at other academic institutions," Bechtel said.

Erik Goodman, who serves as a PACE Faculty Representative at MSU, has witnessed the effect PACE has had there thus far.

"Each year since MSU's participation in the launch of the PACE Program has seen an expansion and intensification of the PACE impact on our engineering curriculum," Goodman said. "The sophistication of today's juniors and seniors, who have now been exposed to Unigraphics for nearly their entire college careers, is much greater than we had projected at the launch of the program. They see and use these tools in design, analysis and manufacturing classes, and in student projects as well, throughout their degree programs."

"The tools provided through the PACE Program are enabling us to prepare engineers for the real world with a far better understanding of the processes used in the workplace and better conceptual preparation for future developments to come." □

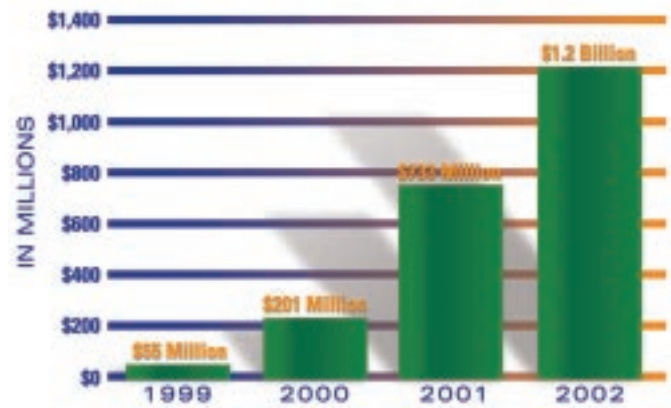
Science and Technology, Shi Dinghuan; Shanghai Vice Mayor Yan Junqi; senior executives from GM, EDS and Sun Microsystems; and administrators, faculty and students from SJTU and its sister institution, the University of Michigan. A highlight of the day was a visit to the new PACE Center established at SJTU, where two groups of first-year students presented their engineering projects.

"We are pleased to be a part of the PACE Program and appreciate its support of Chinese higher education and promotion of cooperation between the institutions and enterprises worldwide," said SJTU President Xie Shengwu. "The trust of the PACE partners in SJTU and the establishment of the PACE Center at SJTU will further develop SJTU's educational capabilities, and lay another solid foundation for improving the application of its internationalization strategy, as well as establishing a world-class and open-minded international education and scientific research base."

More information about PACE Deployment at Shanghai Jiao Tong University will be featured in the next issue.

*PACE has selected an additional six universities in the U.S. and Canada for deployment in 2002, with plans in place to expand to institutions in Europe in the near future. □*

## PACE Donations to Date



## Activity Corner



**PACE Meeting Day Scheduled**  
**Upgrade to UG V18**  
**Sun Server Offer**  
**2002 Faculty Visits**  
**New Orientation Packets**  
**PACE Decals Available**

- ◆ PACE is hosting a meeting day for all PACE Institutions on Thursday, July 25, 2002, at the GM Technical Center in Warren, Michigan. This one-day forum will provide an opportunity for faculty and administrators from PACE Institutions to meet and exchange information and ideas with each other as well as with the PACE Industrial Partners and Contributors. For more information, contact Elaine Chapman-Moore at [elaine.chapman-moore@gm.com](mailto:elaine.chapman-moore@gm.com)
- ◆ GM is upgrading to Unigraphics Version 18 this spring, and all PACE Institutions should do likewise by this fall. Periodically you will receive upgrade packages from EDS
- ◆ PLM Solutions, but PACE requires that you maintain the same version that GM is currently using. If you're interested in upgrading a subset of your licenses, you may request the right to do so using the Petition for Exception form, available from Elaine Chapman-Moore ([elaine.chapman-moore@gm.com](mailto:elaine.chapman-moore@gm.com))
- ◆ Sun Microsystems is making available to PACE Institutions its Cobalt Qube 3 server hardware and iPlanet server software. For more information or to request the PACE application form for this offer, contact Elaine Chapman-Moore at [elaine.chapman-moore@gm.com](mailto:elaine.chapman-moore@gm.com)
- ◆ PACE will host Faculty Visits this summer on the following dates: July 22–24, and August 19–21, 2002. Contact Sara Patel ([sara.patel@gm.com](mailto:sara.patel@gm.com)) for more information and to register for any of these visits. NOTE: the July visit is being planned to coincide with the timing of the PACE Meeting Day (July 25, 2002) mentioned above
- ◆ An updated PACE Information Guide is now available. Contact Elaine Chapman-Moore ([elaine.chapman-moore@gm.com](mailto:elaine.chapman-moore@gm.com)) if you have never received this packet or if you received a guide prior to March 2002
- ◆ PACE decals are now available for the workstations in your PACE lab! Contact Sara Patel ([sara.patel@gm.com](mailto:sara.patel@gm.com)) with your requests for decals

# EDS Offers

## E-Factory Suite of Tools to Pace Institutions

In a move that broadens the PACE lineup of products and services, EDS PLM Solutions announced in April that it will make available its E-factory suite of software for all PACE Institutions.

Armed with this software, PACE Institution students will now have access to the same software GM engineers use to quickly create accurate 3-D factory layout models, effectively analyze factory layouts for material handling efficiency and deliver 3-D factory layout views to improve design communication.

"Access to these digital tools allows us to provide realistic environments for our classes and team projects," said Robert Mitchell, Dean of Engineering at the University of Missouri-Rolla. "We can now collaborate with university and industry partners on interesting and relevant educational experiences. It's no wonder our student interest in manufacturing is growing rapidly."

"Since its inception, PACE has provided product development software to participating institutions," said Jerry Elson, Vice President and General Manager of GM's Vehicle Operations. "With EDS's additional contribution of the E-factory solutions, the PACE Institutions will now be able to better teach, and conduct research on, computer-aided manufacturing topics. They can simulate the factory floor, study ergonomics through math-based tools and collaborate with GM

content experts on projects that utilize the identical tools that we use in manufacturing our products."

E-factory delivers a robust family of solutions that enables enterprises to manage preproduction manufacturing information by associating product, process, plant and resource definitions through integral process planning and a range of digital manufacturing applications. The suite includes the following E-factory products:

- ◆ Factory CAD
- ◆ Factory Flow
- ◆ Factory View
- ◆ Jack
- ◆ Associated toolkits for Motion Capture Occupant Packaging and Task Analysis



"By using the E-factory software, students will gain valuable experience with digital manufacturing tools," said Ted McFadden, Vice President of Manufacturing Planning at EDS PLM Solutions. "These are the same world-class tools that are providing significant benefits to our customers, including the world's largest manufacturers."

In addition to the E-factory software suite, EDS PLM Solutions also provides PACE Institutions with Unigraphics®, Teamcenter™ Engineering and Solid Edge® software. □

# Mechanical Dynamics, Inc. and PACE Partners

## Announce an Increase in the ADAMS Training Benefit for PACE Institutions

Mechanical Dynamics, Inc. and the PACE partners are pleased to announce that the ADAMS training benefit for PACE Institutions has been substantially increased in North America.

◆ Both the institutional ADAMS point of contact as well as the PACE Institution Administrator are now eligible for one free training course per year (any course of their choosing). Though this training is supplied free of charge to only those individuals, it doubles the number of faculty

who can attend, compared to the previous policy.

- ◆ The cost for other university affiliates (faculty, staff and students) has been reduced to only \$75 per day – just enough for MDI to cover meals and materials. (Previously, the cost was 50% of the regular training charge.)
- ◆ For more information and to register, visit: [http://support.adams.com/services/training/us\\_register.shtm](http://support.adams.com/services/training/us_register.shtm)

◆ MDI is also expanding its free Summer Faculty Training series. This summer, they will repeat their two traditional offerings in Ann Arbor, Michigan (U.S.):

- ADAMS Faculty Training: July 15-19
- ADAMS/Car Training: July 31-August 2
- Also, they have added two new offerings:
- Dynamic Designer Faculty Training: July 29-30
- Summer Drop-In Hours for SAE Students: Thursdays, 3–9 p.m., all summer long

For more information and to register, visit: <http://university.adams.com/>.

For other information on ADAMS, contact the University Program at Mechanical Dynamics at [university@adams.com](mailto:university@adams.com). □

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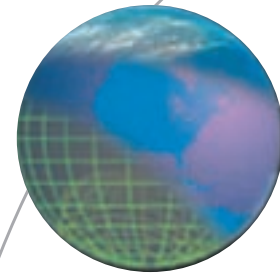
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# PACE

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We welcome your comments. Please send questions, comments and article suggestions to Sara Patel, PACE Marketing Coordinator and Editor, *PACE In Action*, GM Knowledge Center, MC 480-303-110, 6442 E. 12 Mile Road, Warren, MI 48090-9000; e-mail: sara.patel@gm.com; phone: (586) 947-2386; fax: (586) 947-2715.