

New "OEM/Supplier Park" contributes to record number of OEMs at SAE 2006



The SAE 2006 World Congress—April 3-6, 2006, in Detroit, MI—will have a record five automotive manufacturers represented. The 2005 event, shown here, featured three OEMs—DaimlerChrysler, Ford, and General Motors.

An unprecedented number of car manufacturers will exhibit their advanced technology and vehicles at SAE International's 2006 World Congress set for April 3-6, 2006, at Cobo Center in Detroit, MI. Confirmation that Toyota will join host company BMW, DaimlerChrysler, Ford, and GM as an exhibitor was received by SAE executives at the recent International Motor Show in Frankfurt, Germany.

"Toyota's confirmation brings us to an early realization of a pair of strategic goals," said David L. Amati, SAE International Global Automotive Business and Automotive Headquarters Director. "First, in the history of the SAE World Congress, there never have been more than three OEMs exhibiting at any one time; as of right now,

See SAE 2006 WORLD CONGRESS, p. 5

Powertrain Conference sheds light on potential fuel sources

Attendees at the SAE International Powertrain Conference, held September 7-9 in Toronto, Canada, came to the consensus position that in response to the grim outlook for current world transportation fuel supply and cost, priority focus must be placed on vehicle and powertrain efficiency, and the U.S. must move quickly to develop new fuel supplies. This has been reinforced by Ford Chairman Bill Ford's letter to President Bush seeking a national energy summit meeting of all related interests.

Among the long-term opportunities for new fuel supply are large U.S. oil reserves contained in deposits of U.S. shale oil, reported by the U.S. Bureau of Land Management (BLM) to total more than 2 trillion bbl. The most attractive deposits, about 1 trillion bbl, are reportedly found in the Colorado-Utah-Wyoming Green River Basin. A Rand Corp. study estimates the energy contained in U.S. shale to be three times greater than in Saudi oil.

Shell Oil indicates U.S. shale oil recovery makes business sense with oil market prices in the \$25 to \$30/bbl range and that because of its very high quality, it can be easily refined into gasoline or naphtha, diesel, and JetA. Shale energy content is one third natural gas and two thirds oil.

The BLM reports it has received 19 requests from organizations seeking nominations for research into methods for recovery

of shale-based gas and oil on leased land. Seventy-two percent of shale oil land is controlled by the BLM. From the research results into methods of oil and gas recovery and protection of the environment, the BLM will establish regulations for commercial oil shale leasing in 2007.

Shell is now seeking a 160 acre section from the BLM for construction of a large-scale demonstration and research facility that the firm hopes will determine commercial viability of its system by 2010. A Shell spokesperson says the firm does not yet have a certain path to a production process.

Other firms both small and large are pushing ahead with different recovery systems, some based on in-situ methods and others on variations of the system employed years ago that excavated shale then crushed and heated it for removal of the oil in a processing plant. This method was expensive and was dropped when world petroleum prices fell well below shale oil cost.

It is evident that with growing world petroleum supply and price gyrations compounded by weather-related disruptions of major U.S. oil recovery and refining operations, that U.S. automotive engineering planners have a major stake in efforts to develop affordable and stable transportation fuel supplies.

New member benefit provides free attendance to one of three leading industry events

Beginning with the SAE 2006 World Congress, members will have the opportunity to attend any one of SAE's three main industry events for free. Implemented by the SAE Engineering Meetings Board and approved by the SAE Board of Directors at its July meeting, this new benefit will allow members to choose from either the World Congress, the 2006 Commercial Vehicle Engineering Congress & Exhibition, or the 2006 General Aviation Technology Conference & Exhibition (alternating after 2006 with the biennial AeroTech Congress & Exhibition).

In order to take advantage of this new benefit, each member will be required to pre-register online for his or her desired event at a cost of \$99 on or before the

deadline. Before completing the pre-registration process, members will have an opportunity to apply their \$99 discount, which will then yield them a gratis conference registration. Members who do not register by the pre-registration deadline will be able to apply their \$99 discount to the \$199 on-site registration fee; however, this will result in members having to pay a \$100 registration fee.

The \$99 member benefit will be tracked through the SAE Web site, will be valid only once during each calendar year, and will not be refundable or transferable to the purchase of other products or services. Both SAE members and affiliate members will be eligible for this new member benefit, which

will save members a minimum of \$199 when compared to the non-member fee.

Free attendance at SAE congresses and conferences will still apply to organizers, authors, session chairs, planning committee members, exhibitors, and executive committee members.

Launching with the SAE 2006 World Congress, member registration fees will be implemented for all SAE conferences as approved by the SAE Engineering Meetings Board and the SAE Board of Directors.

For updates on this new benefit, visit www.sae.org/membership or contact SAE Customer Service at 877-606-7323 (724-776-4970 outside the U.S. and Canada).

EDITORIAL

2006 Congress taking shape

With the news that a record five Automotive OEMs will be represented at SAE's 2006 World Congress, enthusiasm for the April 3-6 event is at an unusual high for this time of year. With host company BMW and Toyota joining DaimlerChrysler, Ford, and General Motors as exhibitors all indications point to the 2006 edition of Congress being improved and expanded over previous years.

The theme of next year's event—"Driving Innovation Through Partnerships"—is one that is becoming increasingly important in the automotive industry. SAE 2006 World Congress General Chairperson Dr. Burkhard Göschel stressed that in his keynote address at the 2005 SAE Congress and provided a glimpse of what to expect at the 2006 event.

"Partnerships provide the required freedom to set [global] standards in our fields of core competence," said Göschel. "We focus corporate resources on fields of development that contribute to strengthening the brand and differentiating it from the competitors. Partnerships offer us access to further innovations and provide the opportunity to rapidly integrate them into our vehicle concepts."

The importance placed on partnerships at the event is visibly evident through the addition of the "OEM/Supplier Park." The concept, which surrounds the booth of each automotive OEM with its major suppliers, is paying immediate dividends through increased exhibitor interest.

More than half of the exhibit space is already sold, with Aisin, DuPont, FEV Engine Technology, IAV Automotive Engineering, Kolbenschmidt Pierburg, and Motorola also already committed.

"The SAE Congress and Exhibition was a great avenue for us to introduce our total powertrain capabilities and expertise to the North American market," Paul Klapproth, Director of Communications and Marketing, Kolbenschmidt Pierburg, said of the 2005 event. "This successful introduction was a useful tool in initiating discussions to further develop our business in this market."

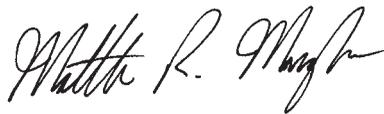
The 2006 technical session program is also off to a fast start, with more than 2300 technical paper abstracts received. After a peer review process, final selections will begin being posted to the SAE Web site in November.

Host company BMW identified target technology areas for the papers to address, including hydrogen internal-combustion engines and hydrogen car design, nanotechnology for automotive applications, advanced production technologies, and mechatronics.

More than 800 of the 2300 abstracts were offered in two general areas: materials and body engineering. The remaining 1500 submissions deal with advanced electronics, propulsion, and materials; emission-control, chassis, and military vehicle technology; safety; and environmental sustainability.

The 2005 Congress attracted close to 36,000 delegates from 47 countries, and preliminary indications suggest that the 2006 event will draw similar attention.

As SAE 2006 World Congress approaches, look for more Congress-related news and information in *SAE Update*.



MESSAGE FROM THE PRESIDENT

Building relationships across borders

So far this year, I have had the opportunity to visit six overseas countries. Each visit resulted in extremely important contacts for SAE at the highest levels of government, academia, and industry. From the Moscow Aviation Institute and meeting with the Chairman of Autovaz in Russia to meetings with the South Africa Auto Component and Car Manufacturers Association, I have been impressed with the willingness of these individuals to meet with SAE and the high level of respect given.

But the importance of these trips really struck home when we visited Japan and Korea in August. Two very significant events happened on this trip that provided me with a vision for technical trends worldwide. The first was in Japan.

SAE International has had a long and close relationship with JSAE (SAE of Japan). We had numerous meetings with key individuals (including the Chairman of Toyota, Dr. Shoichiro Toyoda), all of whom expressed a deep willingness to harmonize standards together. JSAE assigned one of its experts to work with our experts on choosing standards on which to commonize. I advised the JSAE leadership that this was one of my focus areas, and that I would personally follow up with the team assigned to this initiative. I believe it is the responsibility of engineers and engineering societies to take leadership in this area. If we don't, then who will?

The second significant event was at the International Pacific Conference on Automotive Engineering in Korea. This was hosted by the Korean Society of Automotive Engineers (KSAE) in conjunction with a FISITA (International Federation of Automotive Engineering Societies) Board meeting. I was surprised by and impressed with the high level of participation and interest from around the world at this conference. The auto industry really is "humming" in the Asia-Pacific

region, and I had the privilege of meeting with the SAE Presidents from Indonesia, Vietnam, Japan, Korea, and Australia; senior executives from Nissan, Honda, Toyota, GM Daewoo, and Hyundai; top university educators; governors and ministers; and presidents of companies.



Another area that also impressed me during this visit was how the Asian companies are leading the world in hybrid technology. Their designs are state-of-the-art, and I witnessed this firsthand. Part of the reason for this tremendous innovation seems to be the considerable involvement of industry and government leaders in joint efforts with the universities to develop multiple solutions.

It was very clear to me that business is all about relationships, and it is vitally important to stay connected with all of the key players. I was very pleased that SAE was an active participant in this important conference.

SAE recognizes the importance of this geographic area to the mobility industry, and I am happy to announce that the next conference will be held in 2007 and hosted by SAE. The conference name will be changed to the Asia Pacific Automotive Engineering Conference. SAE staff members are working on verifying the location of this event, and these details will be posted on the SAE Web site (www.sae.org) as soon as they are confirmed.

As always, I am interested in hearing your feedback. Please e-mail me at troberson@sae.org to share your thoughts on the content of this article.



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Renew your membership before October 31

Check your SAE membership card. If you have an expiration date of October 31, now is the time to take action and renew for 2005. If you have not already done so, here are your options:

Automatic renewal: This feature is perfect if you do not want to receive membership renewal reminders every year. You give authorization for SAE to charge your credit card each year at renewal time and we renew your membership automatically. Plus, you will save \$10 on your membership dues every year you are in the Automatic Membership Renewal Program.

Renew online: This is a fast, easy way to renew, and you save money, too. Reduce your dues from \$90 to \$85 by renewing on the SAE Web site at www.sae.org/renew. Payments online are by credit card only, and VISA, MasterCard, American Express, and Discover are accepted. To

ensure your privacy, your membership renewal will be processed on our secure server. You will need your login ID and password. Call 724-776-4970 or e-mail customerservice@sae.org for ID and password help.

Renew by mail: If you have not yet received a renewal notice in the mail, call 877-606-7323 to request one. Complete your membership renewal form and mail it along with payment—either credit card or check—in the envelope we provide.

Renew by phone: Call 877-606-7323, or 724-776-4970 outside the U.S. and Canada, and an SAE Customer Service Representative will assist you.

Renew by fax: Fax your completed form and credit card payment information to 724-776-0790. To prevent duplicate charges, please refrain from also mailing the completed form to headquarters.

COMMERCIAL VEHICLE VIEWPOINT

An exciting/productive first year

This is one of an ongoing series of communications that I am sharing with you as one of the leaders in the commercial vehicle sector of SAE.

It has been one year since I was elected to serve as SAE Commercial Vehicle Vice President. During that time, I have been fortunate to meet many of you involved with SAE, making new friends and business acquaintances. As an engineer and as a Caterpillar Vice President, I have a great deal of interaction with engineers who design our earthmoving and engine products. This exposure, along with interactions with other engineers throughout the commercial vehicle industry, provides a strong basis for strategic input to SAE.

There have been numerous highlights for me during the last year, but perhaps nothing topped early June when Caterpillar was proud to host more than 1000 students representing more than 100 teams who competed in the SAE Mini Baja 100 competition at Caterpillar's Tinaja Hills Training Center near Tucson, AZ. I know all of the teams worked long and hard to design and build their cars, and it was great to see how SAE gives these students the opportunity to apply what they learn in the classroom in such a competitive, real-world atmosphere.

We certainly think our facility was an ideal location for this fantastic event, and I hope the participants and everyone who visited with us during the Mini Baja 100 had a great time competing and getting to see and learn firsthand about Caterpillar and the products we make.

People and Technology Making a Difference

Earlier this year, I wrote to you about my belief that there is a need for professional societies and that SAE is ideally positioned to play a leadership role for the commercial vehicle industry. This leadership involves more than just the design

of vehicles. For example, recently, the attention of the world has focused on the Gulf Coast region of the United States as Hurricane Katrina and Hurricane Rita have caused widespread damage and destruction in this area. As an organization, SAE has helped raise funds for hurricane relief, most recently as part of an event at the Texas Motor Speedway. I am also certain the SAE members individually have contributed to hurricane relief efforts in the communities where they work and live.

Those donations and contributions play an important role in the continuing recovery efforts for those working to rebuild their lives following these hurricanes. Machines and other technology developed by SAE members have also played a vital role in the recovery and clean-up efforts all along the Gulf Coast region.

Make your plans now for the 2005 SAE Commercial Vehicle Congress and Exhibition, which will be held in the Chicago area November 1-3. This event brings together both the truck and off-highway sectors under one roof to discuss and display technology and future challenges of the industry. More than 3200 engineers and practitioners will network and learn together during the week. Volvo Truck North America is the lead for this year's event and has done an outstanding job in planning and preparation.

In closing, I remain willing and excited to hear from our members and will commit to making SAE as critical in the next 100 years as it has been in the last 100.

Thank you for your continued support!



Mark R. O'Neil

Please let us know what you think

For the past 3½ years, SAE has been working with J.D. Power to acquire comprehensive customer feedback and to measure customer satisfaction.

The results of the 2003 and 2004 surveys were positive. More than 76% of the respondents were either satisfied or very satisfied, and 92% intended to renew their membership. Equally as important, a number of improvement opportunities were identified as a result of the surveys. The Strategic Planning Committee has reviewed the surveys, and together with SAE staff has devised plans and actions to address those areas that needed to be improved.

Members are asked to complete the electronic survey they will be receiving in October. The feedback generated by these surveys allows SAE decision-makers and staff to ensure that all of your objectives are met.

Compared to other surveys J.D. Power has done, SAE has achieved a very acceptable rate of return; however, all members are strongly encouraged to complete the questionnaire so a better understanding of improvement opportunities can be attained.

ARI CONNECTION

Where have all the experts gone?

When was the last time you went to find the answer to a question from Joe Doaks, only to find out he has retired? And not only that, he took his experience and expertise with him when he left. Your company is undergoing cost and headcount reductions, so you try not to replace the departed. But now, the knowledge deficit. What's a company to do? Since misery loves company, take comfort in knowing that you are not the only organization experiencing similar problems in today's marketplace.

As a matter of fact, the Bureau of Labor and Statistics forecasts a shortage of 10 million skilled workers across the U.S. in the next five years due to baby boomer retirement. This translates into a shortage of 30-million workers in the next 15 years. Companies need to re-think how they do business and prepare for this type of shortage. Here is the good news; ARi is positioned to play a key role in keeping the industry going by gathering these lost resources and redirecting them where they are needed to help companies like yours.

ARi now has 50 registered consultants and more than 200 areas of expertise with more than 21 successful industry projects. Clients and potential clients continue to be impressed with the depth and breadth of ARi's expertise and quality personnel. Here are just a few of the areas available:

- Ferrous and non-ferrous metals, plastics, and ceramics

- Alternative fuels and hybrids
- Engines and energy systems
- Geometric dimensioning and tolerancing
- Electronic module and subsystem design
- Hybrid systems.

With our SAE International affiliation and only a year-and-a-half under our belts, ARi is already receiving strong support from the industry. Dave Cole says, "The auto industry will be affected dramatically by this trend of boomer retirements. One important way we can deal with the expected significant shortage of skilled people is by facilitating the connection between industry retirees and automotive manufacturers and suppliers with technical personnel needs. In this context, ARi is an important part of SAE. I believe ARi is off to an excellent start with its outstanding leadership team. Its role will grow exponentially as the boomer crisis accelerates."

Bob Mull adds, "ARi offers an efficient means of connecting the needs of the OEMs and suppliers with available people resources. This is a great opportunity for fast and efficient matching of people to needs."

By the way, we know where to find Joe Doaks; he's working for us.

Managing Director
Neil Schilke

SAE International

SAE MEMBER BENEFITS

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SAE WORLD CONGRESS

EMB looks to '06 World Congress

It is my pleasure to be the Engineering Meetings Board (EMB) Chair. I follow a long line of excellent EMB Chairs and members. With their counsel and your commitment, I hope to live up to their accomplishments.

The EMB is one of the operating boards reporting to the SAE Board of Directors. We have the awesome responsibility to provide continuing professional development programs in the form of seminars, conferences, symposia, and other educational activities for the membership. My vision for the EMB is simple: Governance to ensure high quality and relevant programs for engineering professionals.

The SAE World Congress, our flagship automotive event, has been undergoing a transformation. You have seen the addition of management and business panels in the Technology and Innovation Theaters and other exciting features. For 2006, you will

see this continue, as well as new elements to improve the SAE World Congress.

The technical program is the heart and soul of the event. How can it not be? Hundreds of authors and organizers work countless hours to make it the success that it is. In this column, and in future articles, you will get a taste of technologies showcased at the SAE World Congress. I hope these will inspire you to not only attend the sessions but also seek out these technologies on the exhibit show floor. We have made a concerted effort to bring these companies together for your benefit.

Please bookmark the SAE World Congress Web page (www.sae.org/congress) and visit often to see the new and exciting things planned for 2006.

Dr. David Cameron
General Motors Corp.
Chairman
Engineering Meetings Board

Alternative-fuel research growing in importance

Fuel demand for sustaining the transport sector has grown several fold in the last decade, and this rate of growth is further expected to grow and put additional pressure on the environment and create a shortage of petroleum fuels worldwide.

By 2050, world population will be 8-10 billion, with 80% of people living in urban areas with an average income between \$15,000 and \$25,000. The energy demand in 2050 will be 2-3 times that of the present demand per capita. The challenge for various countries is to follow a flat trajectory of growth in fuel demand. Several fuels have to be considered in order to undertake import substitution for diesel and other petroleum fuels. No single fuel can sustain the transport sector in the foreseeable future. Some of these fuels are discussed below briefly.

Compressed natural gas (CNG): CNG is a fuel that is available in abundance and is an under-utilized resource of transportation fuel, which can be tapped for sustaining transport in several major cities of the world. CNG needs a separate distribution network involving pipelines and filling stations, which are capital intensive. The economic viability of this fuel is possible when a large number of vehicles use this fuel for a given transport system. However, there are serious concerns related to emission of fine-particles and their adverse health effects, which need to be investigated thoroughly.

Liquefied petroleum gas (LPG): LPG is a very successful transport fuel in several countries around the world. It is quite popular and is widely used as a transport fuel, especially in small urban centers and semi-urban areas.

Biodiesel: This is a bio-oils based, carbon-neutral fuel produced in farms that has the potential of partially substituting mineral diesel. A host of vegetable oils (edible and non-edible) are grown in different regions of the world; hence, the biodiesel program should be based on the locally available surplus vegetable oils in that particular agro-climatic region. The existing distribution network of diesel can be used for this fuel, and in fact biodiesel can be blended with petro-diesel at the fuel storage depot. Localized production of biodiesel will eliminate fuel transportation-related costs and will strengthen the agriculture-based economies.

Gas To Liquid (GTL): GTL technology can be used for production of liquid fuels (such as

diesel) from natural gas. Use of this technology makes sense in the current environment, if there is "stranded" gas. This technology can also be used for production of liquid fuels from biogas, but there are significant challenges. Extremely high quality diesel with 75-80 cetane number, zero sulphur and aromatics, odorless, colorless, non-toxic, and biodegradable fuel can be produced using this technology. The product will deliver emissions benefits, for pure and blended fuel, and its performance is well established for existing engine technology. GTL fuel has clear benefits over conventional diesel in NOx and SO2, and is neutral on CO2.

For the past several years, the SAE World Congress has been featuring at least one full-day session on alternative fuels for compression ignition (CI) engines. Several interesting papers covering different aspects of using alternative fuels for CI engines have been presented in the past. These alternative fuels include natural gas (CNG as well as LNG), LPG, Di-Methyl Ether (DME), Emulsified Fuels, Oxygenates fuels, Biofuels such as Biodiesel, straight vegetable oils, primary alcohols (Methanol and Ethanol), Hydrogen, and GTL fuel.

The 2006 World Congress has several interesting articles in store. Sixteen paper offers have been received covering a wide range of topics including:

- Onboard fuel classifier for adaptive engine control system
- Mustard-seed-driven off-highway engine performance and emission control
- Multi-zone modeling of oxygenated fuels for CI engines
- Development of DME engines for heavy-duty trucks
- Dual-fuelling of engines with biodiesel and LPG, and
- Combustion and emission of biodiesel operated engine.

Papers contributed to this session are being received from the U.S., India, Italy, South Korea, Japan, United Kingdom, Finland, and China, reflecting the amount of research worldwide in the area of alternative fuels.

The session is being organized by Prof. Gregory Thompson of West Virginia University and Prof. Avinash Kumar Agarwal of Indian Institute of Technology in Kanpur, India.

SAE CENTENNIAL

Special centennial issue of magazines published

The October issues of *Automotive Engineering International (AEI)*, *Aerospace Engineering*, and *SAE Off-Highway Engineering* are accompanied by a special SAE International Centennial Issue, SAE 100 Future Look, featuring contributions from top industry executives on the technologies of the future.

This historical keepsake edition includes more than 75 "SAE 100 Future Look" articles by the industry's top global executives. The special "Future Look" guest editorials have been running in all three magazines since October 2004.

The centennial issue includes such contributions from: Mark Perlick, Vice President, Technology, BorgWarner; Robert T. Alexander, Vice President, Alcoa; George Hamilton, President, Dow Automotive; J.T. Battenberg III, former President, CEO, and Chairman, Delphi; Dr. Akihiko Saito, Executive Vice President, Toyota Motor Corp.; Paul Vikner, President and CEO, Mack Trucks, Inc.; Ian Walsh, Vice President and General Manager, Lycoming Engines; Thomas G. Stephens, Group Vice President, GM Powertrain; and Jim Cashman, President and CEO, Ansys.

Automotive-related subjects include articles on the futures of motorsports, plastics,

diesels, testing, powertrain technology, safety, telematics, interiors, drivetrains, and emissions. Aerospace-related articles include looks at the future of military aviation, commercial aerospace, defense electronics, and turbine technologies. Off-Highway-related articles cover the future of agricultural technologies, advanced computing, construction equipment, electronically networked systems, hydraulics, and more.

"So much more is on the mobility engineering horizon, and so many achievements have yet to be dreamed of, executed, and realized," writes SAE Executive Vice President Raymond A. Morris in the issue's "Focus" article. "SAE will be here to represent transportation engineers, serve the mobility industry, and thereby enhance the global population's standard of living for centuries to come."

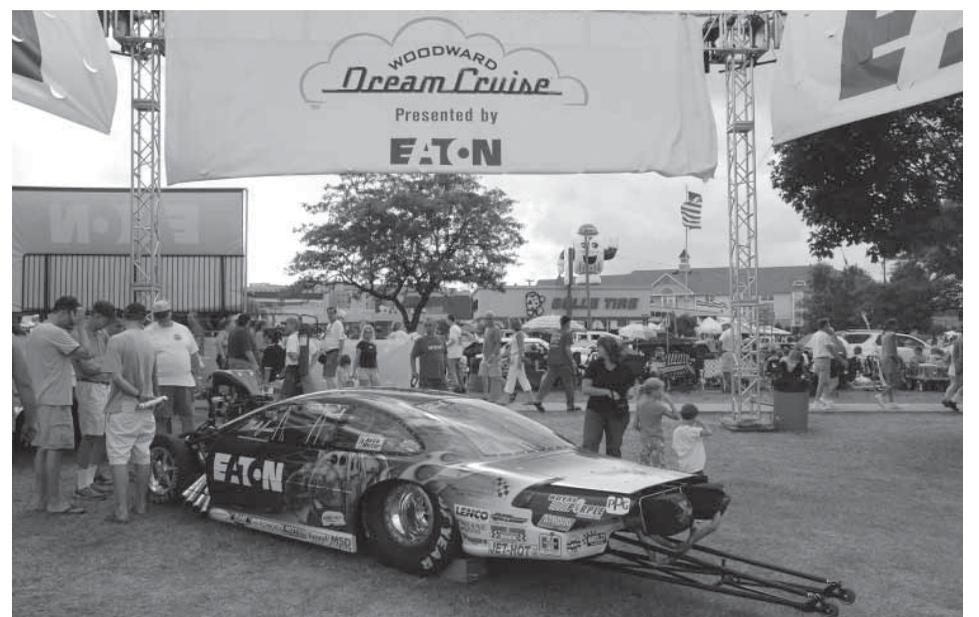
Mailed to the circulations of all three SAE magazines, the special centennial issue will also be available at many of this fall's SAE events such as the Powertrain and Fluid Systems Conference and Exhibition, the Aerotech Congress and Exhibition, and the Commercial Vehicle Congress and Exhibition.

Detroit Section event celebrates SAE's 100th anniversary

SAE's Detroit section celebrated the society's 100th anniversary at a special event August 20. More than 350 attendees gathered at the Pontiac Silverdome for a celebration that included an enormous birthday cake featuring the SAE 100 logo.

Eaton manned a "ride-and-drive," in which members could test drive a number

of special vehicles on two courses set up in the Silverdome. Shuttles also ran from the celebration to the 11th annual Woodward Dream Cruise, the largest car celebration in the nation. The cruise featured 40,000 muscle cars, street rods, and custom, collector, and special-interest vehicles.



SAE's Detroit section celebrated the society's centennial in conjunction with the Woodward Dream Cruise. One of the event's sponsors, Eaton, hosted a "ride-and-drive" at the Pontiac Silverdome.

Become a Company Representative

Help spread information about the benefits of SAE by becoming a Company Representative at your workplace. Company Reps are SAE ambassadors who serve as information resources for SAE members and nonmembers. Receive important SAE information first and be responsible for signing up new members, routing timely SAE notices, supplying necessary forms, and answering questions that your co-workers may have about SAE programs and activities. Company Reps receive early SAE news appropriate to their industry, as well as up-to-date membership materials to help them spread the word.

If you'd like to serve as a Company Rep at your work site, call 724-772-7138, fax 724-776-3393, or e-mail companyrep@sae.org.

COMMITTEES & STANDARDS

G-10 holds summer meeting in Washington, D.C.

Aerospace Behavioral Engineering Technology (ABET) Committee G-10 held its summer meeting August 8-12, 2005, in Washington, D.C. The group of 60 members focused its efforts on documents related to charting, flight deck design, airborne laser systems, realistic training, and unmanned aircraft (UA).

G-10 recently formed a new subcommittee on UA with a focus on human factors. The group came to SAE because SAE was seen as the best fit for it to develop standards in a timely manner. The UA subcommittee has begun developing its first document.

G-10 has recently published the following documents:

- **ARP5293**—Safety Considerations for Lasers Projected in the Navigable Airspace
- **ARP5589**—Human Engineering Considerations for Design and Implementation of Perspective Flight Guidance Displays.

G-10 is focusing its efforts on the development of the following documents:

- **ARP5056**—Flight Deck Design Process
- **ARD50105**—Human Engineering Issues for Enhanced Synthetic Vision Systems
- **ARP5598**—Laser Visual Interference—Pilot Operational Procedures
- **ARP5289A**—Electronic Aeronautical Symbols
- **ARP5814**—Pilot Training for Traffic Alert and Collision Avoidance Systems.

The next meeting of G-10 is scheduled for February 2006 in the Orlando, FL, area.

G-10 holds meetings twice a year. For information on any of these projects or to participate on this committee, please contact Becky Lemon at 724-772-4083 or lemon@sae.org.

SAE International to certify vehicle air conditioners for environmental performance

While a certification program is currently available to test for leak tightness of motor vehicle air conditioners—SAE J-2727—a certification of energy efficiency will be available as soon as an SAE technical standard is approved in 2006. SAE certification will carry the acronym "I-MAC" in reference to Improved Mobile Air Conditioning.

"I-MAC certification will reward manufacturers for technical innovation that saves fuel, improves reliability, and protects the environment for future generations," said Jack Pokrzywa, Director of SAE Automotive Headquarters Operations. "SAE International is proud to support industry in improving the environmental performance of vehicle air conditioning technology."

SAE certification supports the goals of the Mobile Air Conditioning Climate Protection Partnership to reduce refrigerant greenhouse gas emissions by at least 50% and to reduce the greenhouse gas emissions of fuel use to power air conditioning by at least 30%.

The U.S. Department of Energy's Renewable Energy Laboratory (NREL) estimates that more than 5% of gasoline used in the U.S. is for vehicle air conditioning and that refrigerant emissions contribute a comparable amount to global warming.

The J-2727 certification will be conducted in a similar manner to the Certified Power program SAE recently implemented for the automotive industry. In that program,

engine manufacturers determine horsepower from tests verified by a third-party witness to be in accordance with the SAE test standard.

The SAE I-MAC certification program will be guided by an international board of advisors, including representatives of vehicle manufacturers, component suppliers, and environmental authorities.

In order to assure successful operation of the certification process, the following experts will serve on an interim technical board:

- Stephen O. Anderson, U.S. Environmental Protection Agency
- Ward Atkinson, SAE Climate Control Technical Committee
- Denis Clodic, Ecole des Mines de Paris
- Paul Hughes, California Air Resources Board
- Rowland Hwang, Natural Resources Defense Council.

"SAE and the mobile air conditioning industry are moving forward to help protect the climate," said Ward Atkinson, Chair of the Interior Climate Control Technical Committee. "With industry and governmental collaboration, our SAE mobile air conditioning system activities have included cooperative research programs, and development of new technical standards meeting these new environmental goals."

Dodge Viper engine receives SAE horsepower certification

The Dodge Viper not only has power under the hood, but "SAE J1349 Certified Power" to add to its list of credentials.

The 2006 Viper's engine was certified through SAE International's Engine Power Test Code—Engine Power and Torque Certification (J1349). The Viper's engine has been certified at 510 hp (380 kW) at 5600 rpm.

In addition to DaimlerChrysler's Dodge Viper, engines from General Motors vehicles also have been certified.

Engine certification is based on a series of self-certification tests conducted by the manufacturer that are witnessed and verified by an SAE-qualified observer. The

procedure for certification is outlined in SAE's standard J2723; the actual horsepower testing procedure is described in J1349. Engine manufacturers are free to cite power and torque figures derived from testing conducted outside the scope of the SAE standards, but in those cases they may not claim those figures are "SAE J1349 Certified Power."

Nine other engines have been certified under SAE J1349, including the 2006 Chevrolet Corvette Z06, 2006 Cadillac XLR-V, and the 2006 Pontiac G6. The full list of certified engines can be accessed by visiting www.sae.org/certifiedpower.



The 2006 Dodge Viper has been certified under SAE standard J1349 to achieve 510 hp (380 kW).

SAE International and ZVEI agree to develop common automotive standard

A more efficient qualification process will be one of the benefits when SAE International and ZVEI—the German Electrical and Electronic Manufacturers' Association—develop a new qualification standard for semiconductors.

When finalized, the "Robustness Validation" standard should aid in discovering the physical limits of semiconductors used in automotive applications and will form the basis of risk analysis. In addition to determining a product's true robustness, the validation methods may allow engineers to determine acceleration factors, as well as address shortcomings in the design and/or manufacturing of the device. Experts believe this standard will increase automotive electronic systems' quality levels and

reliability; the result could be reduced warranty costs.

"We are pleased to be partnering with the German Electrical and Electronic Manufacturers' Association to develop this important standard," said Raymond A. Morris, Executive Vice President and Chief Operating Officer of SAE International. "Such collaboration results in increased reliability for the consumer, as well as cost savings and improved efficiency for the global automotive industry."

As an initial step toward collaboration on this standard, a Memorandum of Understanding between SAE International and ZVEI recently was signed.

2006 SAE WORLD CONGRESS continued from p. 1

we have five, representing North America, Europe, and Asia. In the larger sense, however, the commitment this particular group of manufacturers has made underscores the value of the SAE World Congress."

Amati regards the implementation of the "OEM/Supplier Park" concept for the SAE 2006 World Congress as a critical contributor to the early successes in obtaining exhibitor and top-tier supplier commitment. "The SAE World Congress has an unwavering focus on delivering cutting-edge technology. The automotive industry traditionally counts on SAE to be the premier event in that regard, but for 2006, the participating OEMs have put their collective stamp of approval on the concept where the auto manufacturer is surrounded by key suppliers

on the exhibition floor. All of the OEMs exhibiting have expressed to me their desire to see strong support from the global suppliers in this regard," he explained. "They see the added value of an environment conducive to supporting interactive business relationships."

The SAE World Congress annually brings together OEMs, suppliers, government officials, and academic professionals from around the world to create an international forum providing value-added opportunities to exchange business and technical knowledge for advancing the passenger-car and light-truck industry. In 2005, the four-day SAE World Congress attracted 35,908 registered delegates from 47 nations globally; U.S. attendees represented 48 states.

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SAE UPdate now available online

Current and past issues of SAE UPdate are now available online to all SAE members and student members. Files of past issues back to March 2003 are available in PDF (Portable Document Format). Adobe Acrobat is needed to view the files.

The link to UPdate will appear in several places on the SAE Web site:

- In your MyMember Info page after you log on
- On the SAE Membership page in the "Member-Only Resources" box
- On the UPdate main page at <http://store.sae.org/update.htm>
- On the front page of Student Central at <http://students.sae.org>.

CALL FOR AWARD NOMINATIONS

Environmental Excellence in Transportation (E2T) Award

Description: This award recognizes an individual or group of individuals who through ingenuity and dedication make significant innovations in reducing the environmental impact caused by the transportation industry. These achievements may occur in motorized vehicles for land, sea, air, and space in the areas of fuels, alternative propulsion methods, fuel usage, materials, energy usage, manufacturing methods, logistics support, as well as in education, training, and improving public awareness. The key criteria for recognition are innovation, originality, demonstrated significant favorable impact on the environment, and improvement over any existing technologies, methods, and public acceptance.

Nomination deadline: October 15, 2005

Submission: Visit www.sae.org/news/awards/list/e2t.

Heinz C. Prechter Award for Automotive Excellence

Open to: Students at Kettering University and University of Michigan-Ann Arbor

Description: This award recognizes a graduate engineering student, or team of students, from Kettering University or the University of Michigan-Ann Arbor for developing an entrepreneurial idea that will positively impact the automotive industry. The recipient(s) will receive \$10,000 in seed money to help alleviate expenses associated with the execution of their entrepreneurial idea. Applicants will be judged on the basis of the creativity, ingenuity, and practicality of the entrepreneurial idea and how it will positively impact the automotive industry.

Nomination deadline: October 31, 2005

Submission: Visit www.sae.org/news/awards/list/prechter/.

Barry D. McNutt Award for Excellence in Automotive Policy Analysis

Description: This award recognizes individuals who have made outstanding contributions to the development of improved federal automotive policy. Government policy is an increasingly important and complex influence on the ability of the mobility community to serve humanity. Through this award, SAE recognizes the importance of sound policy analysis and inspires members of the mobility community in government, industry, and elsewhere to strive for excellence.

Nomination deadline: January 15, 2006

Submission: Visit www.sae.org/news/awards/list/mcnutt/.

William R. "Bill" Adam Formula SAE Grant

Open to: Rookie Formula SAE teams

Description: This award provides funding to a Formula SAE rookie team to assist with the development of its project. Applicants must be registered for the competition held in Detroit, MI, at the time of application. Teams that have never competed or have not competed in the last five years are considered rookie teams.

Application deadline: January 15, 2006

Submission: Visit <http://students.sae.org/awdscholar/awards/adamfsae>.

William Littlewood Memorial Lecture

Open to: Civil air transportation professionals

Description: This award provides for an annual presentation and recognizes a

distinguished leader in the field of civil air transportation. The objective of the lecture is to advance air transport engineering and to recognize those who make personal contributions to the field.

Nomination deadline: February 1, 2006

Submission: Visit www.sae.org/news/awards/list/littlewood.

Henry O. Fuchs Student Award

Open to: College students working in the field of fatigue research and applications

Description: This award promotes the education of engineering students in the area of fatigue technology. The winning student will be required to discuss his/her work related to the field of fatigue research and applications in the form of a half-hour presentation, with time for questions and answers, at the SAE Fatigue Design and Evaluation Committee meeting in spring 2006.

Nomination deadline: February 28, 2006

Submission: Visit <http://students.sae.org/awdscholar/awards/fuchs>.

Cliff Garrett Turbomachinery Engineering Award

Description: This award promotes engineering developments and the presentation of SAE papers on turbomachinery engineering. SAE administers an annual lecture by a distinguished authority in the engineering of turbomachinery for on-highway, off-highway, and/or spacecraft and aircraft uses.

Nomination deadline: March 31, 2006

Submission: Visit www.sae.org/news/awards/list/garret.

Sid Olsen Engineering Manager Award

Open to: Off-highway professionals

Description: This award recognizes an outstanding engineering manager in the off-highway industry who demonstrates capabilities in field-proven products and/or services, successful protégés, development of outstanding teams, unquestioned integrity, charismatic leadership, and creation of a supportive environment allowing a customer/product focus.

Nomination deadline: May 1, 2006

Submission: Visit www.sae.org/news/awards/list/olsen/.

Clarence L. (Kelly) Johnson Aerospace Vehicle Design and Development Award

Open to: Aerospace design & development engineers

Description: This award recognizes an individual or team that has had a distinguished career involving significant contributions in the innovative design and development of advanced aircraft and/or spacecraft. Nominations will be judged primarily for the technical value and originality of the contributions that have expanded the knowledge of aerospace engineering.

Nomination deadline: May 1, 2006

Submission: Visit www.sae.org/news/awards/list/johnson/.

Franklin W. Kolk Air Transportation Progress Award

Open to: Air transportation professionals

Description: This award recognizes an individual or team for unique and outstanding contributions to air transportation and/or contributions to the work of the aerospace technical committees in developing aerospace standards, specifications, technical reports, and data through cooperative research. Selection is based on originality and

value of the contribution, the impact and influence on the progress and development of air transportation, and peer recognition.

Nomination deadline: May 1, 2006

Submission: Visit www.sae.org/news/awards/list/kolk/.

Marvin Whitlock Award

Open to: Aerospace professionals

Description: This award recognizes an individual or team for significant technical contributions and/or innovation related to operational availability of aircraft. Operational availability includes areas such as repair, design, tooling, maintenance practices, logistics, inspection, modification, and safety.

Nomination deadline: May 1, 2006

Submission: Visit www.sae.org/news/awards/list/whitlock/.

AEM Outstanding Young Engineer Award for the Off-Highway Industry

Open to: Off-highway or powerplant industry engineers

Description: This award recognizes a young engineer who demonstrates outstanding leadership skills, teamwork, integrity, innovation, community involvement, and participation in SAE activities. Candidates should be nominated by their managers or supervisors.

Nomination deadline: May 15, 2006

Submission: Visit www.sae.org/news/awards/list/outstanding/youngoh.htm.

MEMBER UPDATE

Members on the move

George Hamilton (Aff'00), President of Dow Automotive, has been named to the Board of Trustees at the College for Creative Studies in Detroit, MI, and will serve until 2008.



George Hamilton

Joe Palazzolo (Mbr'94) has joined Magna Powertrain, a division of Magna International. He will be responsible for overseeing the mechanical design and development of new all-wheel-drive systems, concepts, and integration into applications.

Ken Wesseln (Aff'05) was appointed President of Buhrke Industries, a manufacturer of precision metal stampings and assemblies for the automotive, appliance, and electronics industries. He previously served as Vice President of Sales.



Paul T. Glessner

Paul T. Glessner (Mbr'02) has been appointed Chief Aerodynamicist at XCOR Aerospace at the Mojave Spaceport in Mojave, CA.

Simon A. Garner (Aff'98), Sales and Marketing Director of Stanadyne, has been named to the Board of Directors of the Association of Diesel Specialists and will serve a term through 2007.

Don Whitsitt (Aff'99) has been promoted to Executive Vice President of Aisin World Corp. Whitsitt, who previously served as Senior Vice President, is responsible for sales and sales-related functions in addition to quality and logistics.



Don Whitsitt

Gary P. Tomchick (Asc'03), former Director of OE Sales, has been promoted to Assistant Vice President of OE sales in Aisin World Corp.'s Powertrain Division. Tomchick will oversee the Engine and Drivetrain Group for North American sales.



Gary P. Tomchick

Tom Brown (Mbr'05) has been hired by Aisin World Corp. as Director of OE Sales where he will represent Aisin products to the Big Three and forklift and heavy-duty truck industries.



Tom Brown

Richard F. Gorski (Asc'97) has been named Director of North American Customer Sales at Aisin World Corp. Gorski is responsible for Big Three product and systems sales of a broad range of products, including engine, chassis, body, and drivetrain.



Richard F. Gorski

AWARDS

Parent named Aerospace Engineering Leadership Award recipient

Marc Parent, Group President, Simulation Products for CAE, has been selected as this year's recipient of the SAE Aerospace Engineering Leadership Award. Parent was honored October 5, 2005, during the SAE 2005 AeroTech Congress & Exhibition in the Dallas/Fort Worth Airport area, TX.



Marc Parent

This award, established in 1992, annually honors an individual at the corporate official level for outstanding leadership contributions to the field of aerospace engineering—those individuals who have applied

their leadership skills to make contributions that have had great positive impact on the aerospace community.

Parent joined CAE in February 2005. He was formerly Vice President and General Manager at Bombardier Aerospace. During his 20-year career with Bombardier Aerospace, Parent held a number of senior management positions in engineering, product development and management, and operations at Bombardier facilities in Montreal, Toronto, and Tucson, AZ.

Parent was honored in 1999 as one of "Canada's Top 40 under 40" leaders and is a recipient of SAE's Forest R. McFarland Award. He holds a bachelor's degree in mechanical engineering from the Université de Montréal at l'École Polytechnique and completed studies at the Harvard Business School's Advanced Management Program.

Patel honored with 2004 Whitlock Award

Jayant "Jay" D. Patel, a Technical Fellow with Boeing Phantom Works, has been selected to receive the 2004 SAE Marvin Whitlock Award. Patel was presented the award at a banquet ceremony October 5 during the SAE 2005 AeroTech Congress & Exhibition.

This award, established in 1988, honors individuals for significant technical contributions and/or innovation related to operational availability of aircraft. Operational availability includes areas such as repair design, tooling, maintenance practices, logistics, inspection, modification, and safety. It acknowledges and commemorates the distinctive management contributions of the late Marvin Whitlock, Senior Vice President-Maintenance and a member of the Board of Directors of United Air Lines.

Patel works in the area of composites and plastics technologies at Boeing. He serves as a corporate adviser for elastomers and has been a leader in the development of state-of-the-art designs, new materials, and process technologies. Patel holds 21 patents, including five Special Inventor Awards, representing industry-standard technologies that have benefited both commercial airlines and military customers. He has performed root cause analysis and developed innovative technical solutions for the resolution of complex in-service airline issues. These

innovative technologies have provided large cost and weight savings to the airlines. Recently, he resolved complex anomalies affecting the Twinjet Air Supply Ducts, Engine Electronic Controls, Minuteman III Missiles, and Satellite Launch-Lock System.

Patel has provided leadership to professional societies, such as SAE, the Society of Advancement of Material and Process Engineering, and the Boeing Technical Excellence Conference, in organizing conferences, sessions, and presentations. He has authored more than 100 technical papers and won industry awards from many companies, including General Electric, Amoco, RMB Products, and Industrial Tube Corp. A founding director of the Southern California Chapter of the American Society of Engineers of Indian Origin, Patel also actively participates in local charitable organizations, providing volunteer service to the Special Olympics, Amelia Earhart Society, Technical Fellowship Council, and the Lakewood City Park. In addition, he volunteers his services by teaching and mentoring students and young engineers.

Patel holds a bachelor's degree in mechanical engineering from the M.S. University of Baroda, India, and was a post graduate research scholar at Drexel University, Philadelphia.

Automotive lighting authority recognized with Colwell Medal

Jeffrey Erion, an automotive lighting consultant with more than 35 years of industry experience, has been named as the recipient of the 2005 SAE Arch T. Colwell Cooperative Engineering Medal. The award will be presented during the Honors Convocation Luncheon at the SAE 2006 World Congress in Detroit, MI, April 3-7.

This award, established in 1976, recognizes an individual for unique and outstanding contributions over a period of time to the work of the technical committees under the SAE Technical Standards Board in developing standards, specifications, technical reports, and data through cooperative research. The award commemorates the contributions of the late Arch T. Colwell, who served as SAE President in 1941.

Erion is being recognized for his contributions to SAE and the automotive industry. He has been an SAE member and major contributor to the development of vehicle lighting and lighting standards for more than 20 years. Today's headlamp styling, employing replaceable bulb and/or HID sources, would not be possible if it were not for his foresight and perseverance. His vision and actions were the catalyst for current-vehicle lighting, in terms of both design and performance.

Erion spent 25 years of his career involved in design and engineering directly related to vehicle lighting. His career began at Ford and continued with Visteon, where he directed the Advanced Lighting Department. Early in his Ford career, he managed the

design and development of the first replaceable bulb (ANSI 9004) and replaceable bulb headlamp systems for Ford's U.S. vehicle platforms, introducing this technology to the United States. In 1984, Erion received the Ford Motor Technology Award for his leadership in developing the first composite aerodynamic headlamp system for the Lincoln Mark VII. He has received numerous other awards for his engineering accomplishments and holds 14 patents.

Erion is a past Chairman of the SAE Lighting Committee, Chairman of the LED Front Lighting Task Force, and has chaired many of the subcommittees of the Lighting Committee over the years. He has served as Chairman of the AAMA Lighting and Visibility Task Group, and participates regularly in both the European industry lighting meetings and the European regulatory meetings promoting harmonization of lighting standards. He is also active with the Motor Vehicle Lighting Council, a consortium of the major vehicle lighting companies in North America that has been established to ensure that accurate vehicle lighting information is presented to the public.

Erion joined the University of Michigan Transportation Research Institute Industry Affiliation Program on Vehicle and Traffic Lighting in 1996, and supports research needs common to the vehicle and motorway industry. He holds a bachelor's degree in production technology from Oregon State University.

Peer recognition ... perhaps the most satisfying recognition that an individual can achieve!

SAE administers more than 50 awards and recognition programs that recognize individuals for outstanding achievements in engineering. Information and nomination forms for SAE awards can be found at www.sae.org/awards.

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Start or Expand your Consulting Career

Three opportunities available:

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| ▶ October 20, 2005
Location TBD
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Automotive
Headquarters
Troy, Michigan | ▶ November 11, 2005
RIT Inn & Conference
Center
Rochester, New York |
|--|--|--|

Thursday, October 20:

Consultants who are interested in networking with other consultants to discuss progress with their consultancy business can attend this session facilitated by Vic Taylor, Turning Point Solutions.

Friday, October 21 & Friday, November 11:

One-day workshops for New Consultants will cover skills and knowledge needed to become a consultant and start a business.

051007

For more information or to register:
www.sae.org/globalsections or contact Customer Service at 877-606-7323.

STUDENT ACTIVITIES

Washington internships open to engineering students

SAE is once again participating in the Washington Internships for Students of Engineering (WISE) program. This program offers third- and fourth-year engineering students, or recent graduates beginning study in an engineering policy-related master's program, the opportunity to spend the summer of 2006 in Washington, D.C. The goal of the program is to groom future leaders of the engineering profession who are aware of and can contribute to the important intersections of technology and public policy.

During the internships, students are under the guidance of a nationally prominent engineering professor. The interns learn how

government officials make decisions on complex technological issues and how engineers contribute to legislative and regulatory public policy decisions. Throughout the 10 weeks, students interact with leaders in Congress, administration, prominent non-governmental organizations, and industry. In addition, each student will research and complete a paper on a current and topical engineering-related public policy issue that is important to one of the seven sponsoring societies.

Interested students should visit the SAE Web site at www.sae.org/students/internships or call Erica Wissolik at 202-785-0017.

AWARDS

Cummins executive to present 2005 L. Ray Buckendale Lecture

Stephen J. Charlton of Cummins Technical Center in Columbus, IN, has been selected to present the L. Ray Buckendale Lecture during the 2005 Commercial Vehicle Engineering Congress & Exhibition, November 1-3, in Rosemont, IL. The presentation, entitled "Developing Diesel Engines to Meet Ultra-low Emission Standards," will take place November 3 in the Caterpillar Technology Theatre.



Stephen J. Charlton

The 2005 Buckendale Lecture is sponsored by Dana Corp. Sponsorship of the lecture rotates among companies within the commercial vehicle industry, including ArvinMeritor, Cummins, Dana, Eaton, and TRW Automotive.

Charlton is responsible for the development of heavy-duty engines at Cummins Technical Center in Columbus, IN, where he is currently leading the development of new heavy-duty products. He has been with Cummins since 1993, initially working on combustion, performance, and emissions. In the late-1990s, he led the development of cooled exhaust gas recirculation technology at Cummins, and since 2000 has led the development of Cummins 2007 EPA heavy-duty products.

Prior to joining Cummins, Charlton was a professor at The University of Bath in the UK, where he taught thermodynamics, fluid mechanics, and diesel engine technology at both undergraduate and graduate levels. There, he developed a significant research program focused on the development of emission controls for small passenger car diesel engines. He started his career with GEC Diesels Limited in the UK in the early-1970s.

Charlton has authored and co-authored more than 75 technical papers and holds several patents on diesel engine technology. He holds a Ph.D. from Aston University in Birmingham, England.

This award, established in 1953, provides for an annual lecture that deals with automotive ground vehicles for either on- or off-highway operation in either commercial or military service. The intent is to provide procedures and data useful in formulating solutions in commercial vehicle design, manufacture, operation, and maintenance.

The award honors L. Ray Buckendale, 1946 SAE President, who, by his character and work, endeared himself to all who were associated with him. Foremost among his many interests was the desire to develop the potential abilities in young people. To this end, the lecture is directed primarily to the needs of young engineers and students with emphasis on practical aspects of the topic.

Pengra presented Kolk Air Transportation Progress Award

Jay John Pengra, retired Senior Design Specialist from Lockheed Martin's Advanced Design Programs in Palmdale, CA, has been selected to receive the SAE Franklin W. Kolk Air Transportation Progress



Jay John Pengra

Award. He was presented the award October 5, 2005, at the SAE AeroTech Congress & Exhibition in Dallas/Fort Worth, TX.

This award, established in 1978, annually recognizes an individual for unique and outstanding contributions to air transportation. SAE founded the award to acknowledge and commemorate the late Franklin W. Kolk's distinctive impact on the advancement of civil air transportation and to the associated work of the society.

Pengra began his 37-year career in the aerospace industry with Lockheed California in 1966, where he directed research on the fatigue enhancement and stress corro-

sion characteristics of high-strength steel alloys principally used on aircraft landing gears. He was later responsible for application of metallic materials on Lockheed Martin's Advanced Design Programs, also known as the "Skunk Works." These programs included the SR 71, U-2, F-117, and the Joint Strike Fighter (JSF) competition.

Pengra is an Honorary Lifetime Member of the SAE Aerospace Materials Division (AMD) and the Aerospace Metals Engineering Committee (AMEC). He has been a member of the AMD Commodity Committees for more than 29 years and was past Chairperson of AMEC for 19 years. While Chairperson of AMEC, the committee was able to increase the participation of representatives from metallic raw material producers and metallic processing sectors. These representatives assisted in making the Aerospace Material Specifications of AMD more user-friendly while maintaining design integrity.

Pengra earned a bachelor's degree in mechanical engineering from Long Beach State College in 1966 and a master's in mechanical engineering from the University of Southern California in 1970.

Dwornick to receive Rumbaugh Outstanding Student Leader Award

Brian Dwornick, a 2005 graduate of Lawrence Technological University (LTU), has been named this year's recipient of the SAE Rumbaugh Outstanding Student Leader Award. Dwornick will be presented with the award during the Honors Convocation at April's SAE 2006 World Congress in Detroit, MI. As part of the award, he will also receive a free SAE lifetime adult membership and a monetary stipend.



Brian Dwornick

This award, established by Max E. Rumbaugh Jr., SAE Executive Vice President Emeritus, annually recognizes an outstanding SAE student leader, encouraging continued participation in SAE throughout his or her professional career. The award is based on leadership skills demonstrated during the student's senior year of undergraduate studies, and the recipient must be employed

in a mobility-related industry at the time of selection.

Dwornick was nominated by Dr. Badih Jawad, Associate Professor of Mechanical Engineering at LTU, and faculty adviser for both the Formula SAE team and the SAE Supermileage team. "As team leader for the 2005 Formula SAE, Brian motivated his team to build a car capable of finishing the endurance event for the first time in eight years," said Jawad. "Under his keen leadership, the car was completed a full two months before the competition, which is a record among teams for this event."

Dwornick is currently a Project Engineer at Roush Industries in Allen Park, MI. He graduated Magna Cum Laude from LTU in May 2005 with a degree in mechanical engineering. Dwornick was awarded the Mechanical Engineering Service Award at the school for outstanding service to the department, and served as both President of the SAE student chapter and Vice President of the American Society of Mechanical Engineers student chapter during his senior year.

Demmer recognized for AWIM efforts

John J. Demmer of John Deere has been selected as the 2005 recipient of the Bill Agnew Award for Outstanding *A World In Motion* (AWIM) Volunteers. The award is tentatively scheduled to be presented November 10, 2005, at an SAE Section Meeting in Waterloo, IA.

This award, established in 2003, recognizes volunteers who further students' understanding and experience in math and science by helping teachers use the AWIM materials in the classroom. The nominee must be a volunteer that has assisted a teacher integrating the AWIM program and must have participated in classroom activities during the current academic year. The award honors Dr. William G. Agnew, retired from General Motors Research Laboratories, for his work in establishing and continued support of the AWIM program.

Demmer has worked with the AWIM program at St. Patrick School in Cedar Falls, IA, for the past seven years. He coordinates the volunteers, teaches weekly in the classrooms, and has organized panels

and served as the point of contact for the local media. Joanna Seymour, Technology Integration Specialist for St. Patrick School, says of Demmer, "He is the driving force in planning classes, organizing volunteers, and coordinating the culminating event. He helps make AWIM a real-world experience for the students."

Demmer is currently Lead Engineer in John Deere Power Systems' 450 Series Engine Continuous Improvement Department. He is responsible for supervising an engineering team charged with early identification of reliability problems, root cause identification and resolution. In this role, he collaborates with manufacturing and quality engineering, numerous suppliers, and customers. He has been with John Deere since 1979.

Demmer is a member of SAE and the American Society of Mechanical Engineers (ASME). He holds a bachelor's degree in mechanical engineering from the University of Iowa.

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Scholarship money up for grabs

Is your son or daughter a current high school senior planning to pursue a career in engineering or a related science? If so, SAE offers scholarships that can be used at any university that has an engineering program accredited by the Accreditation Board for Engineering & Technology (ABET). SAE also has more than 60 scholarships that are specific to sponsoring universities in the United States. Scholarship amounts range from \$400 to full tuition, and many are renewable if certain criteria are met.

Eligible students must be U.S. citizens, intend to earn a degree in engineering or a related science, be a high school senior at the date of application, and meet minimum GPA, SAT, and/or ACT requirements as explained in the individual scholarship descriptions. Information and applications are available on the SAE Web site at www.sae.org/students/engschlr.htm. The deadline for submitting applications is December 1, 2005.

Information on other scholarship opportunities can be found at www.sae.org/students/scholarships.

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Volunteers needed for driveline committee

SAE is currently seeking volunteers for the Driveline Standards Committee. The committee's goal is to identify the needs, and develop, collect, and disseminate technical information related to vehicle and equipment drivelines. Those interested in volunteering should contact Patrick Kurzeja at patrick.kurzeja@arvinmeritor.com or Cindy Reese at cindyreese@sae.org.

MEETINGS UPDATE

Meetings and symposia schedule

For more information about meetings and symposia, call SAE Customer Service toll-free at 877-606-7323 (or 724-776-4970 outside the U.S. and Canada). Additional meeting details can be found on SAE's Web site at www.sae.org/calendar/meetings.htm; symposia details at www.sae.org/calendar/toptecs.htm.

SAE Ground Vehicle Design and Manufacturing Events		
SAE Commercial Vehicle Engineering Congress & Exhibition	November 1-3, 2005	Rosemont (Chicago), IL
Accident Reconstruction Symposium	November 8-9, 2005	Ventura, CA
SAE Brazil 2005 Congress	November 22-24, 2005	São Paulo, Brazil
SAE Motorsports Engineering Symposium	November 29-30, 2005	Orlando, FL
Hybrid Vehicle Technologies 2006 Symposium	February 1-2, 2006	San Diego, CA
SAE Automotive Dynamics Stability & Controls Conference and Exhibition	February 14-16, 2006	Novi, MI
CAE Applications for Automotive Structures Symposium	November 30-December 1, 2005	Troy, MI
2006 SAE World Congress	April 3-7, 2006	Detroit, MI

* Co-sponsored by SAE and Administered by JSAE and TSAE

SAE India and ARAI explore structural integrity

An SAE Toptech course on "Basic & Advanced Concepts for Assessment of Structural Integrity of Automotive Structures" was held August 16-20, 2005, at the Automotive Research Association of India (ARAI) in Pune. Close to 90 delegates attended the session that was jointly organized by SAE India's Western Section and ARAI in association with the University of Applied Sciences—Esslingen.

SAE India is a premier professional society that serves the mobility engineering community engaged in the design, manufacture, and service of self-propelled vehicles and systems that move on land, sea, air, and space. Its vision is to continuously enrich the knowledge base of practitioners in the mobility industry and institutions in the service of humanity.

Balraj Bhanot, Director of ARAI and Chairman of the SAE India Western Section, inaugurated the Toptech course by lighting the lamp with Lothar Issler, Professor at the University of Applied Sciences—Esslingen, and D. Suresh, Professor at the Vellore Institute of Technology.

"This Toptech course provides a platform for experts, engineering professionals, teaching faculty, and students to interact closely," said Bhanot. He added that assessment of the structural safety and integrity of structures is one of the most important, complex, and demanding subjects in engineering. The future importance of these methods in the automotive industry increases mainly due to the consequent application of advanced materials and manufacturing methods, as well as economic and ecologic pressure to optimize automobiles with respect to lightweight design, safety, and reliability.

A basic concept course was presented in the session's first three days, covering topics such as failures of car structures, design and safety concepts, and nominal stress concepts.

The course concluded with an advanced concepts course, covering basic nominal stress concepts, design based on local stress/strain concepts, and failure assessments based on fracture mechanics approaches.



Close to 90 delegates attended the SAE Toptech on "Basic & Advanced Concepts for Assessment of Structural Integrity of Automotive Structures" on August 16-20 in Pune, India.

Training workshops for organizers, reviewers, and authors

As part of SAE's ongoing program to enhance paper quality, special training programs for session organizers, technical paper reviewers, and authors are now available. These free workshops will be offered via a monthly conference call.

If you are interested in participating, please e-mail paperquality@sae.org, and copies of the PowerPoint presentations and additional details—including the telephone number and passcode—will be sent to you via e-mail prior to the workshop.

You may participate in one or all of the training modules.

For sessions beginning at 7 a.m. Eastern Time (ET), the schedule is:

7 a.m.: author (paper)

7:45 a.m.: author (presentation)

8:30 a.m.: organizer

9:15 a.m.: reviewer

For sessions beginning at 11:30 a.m. ET, the schedule is:

11:30 a.m.: author (paper)

12:15 p.m.: author (presentation)

1 p.m.: organizer

1:45 p.m.: reviewer

Date	Time (Eastern Time)
November 3	7 a.m.
December 1	11:30 a.m.

Program Office plans COMVEC session to report progress

The growing complexity of vehicles and the high costs of warranty resolution are forcing changes in how industry views service and maintenance. One emerging solution is a Serviceability Target Index that is under development by the Service Technology Program Office.

In 2003, the SAE Board of Directors formed the Service Technology Program Office (STPO) to help address service issues and to provide focus within the organization for service and maintenance developers.

The members of SAE's STPO are collaborating on producing an analytical tool to help gauge the effect of designs on service and maintenance of vehicles and vehicle systems.

According to STPO Chairman Mark Pope, "Additional tools are needed to evaluate the complexity of serviceability in order to assist design for serviceability and to more effectively evaluate cost."

The developers think the Serviceability Target Index will aid decision-making by providing an industry-recognized tool that is based on known practices and experiences for not just heavy machinery but also passenger cars, light trucks, recreational vehicles, and over-the-road trucks. By using the index, design may be adjusted to encompass desirable product life-cycle goals such as reduced downtime, extension of maintenance cycles, ease in diagnostics, improvements in diagnostic accuracy, and reduction in labor time to maintain and repair.

A session on the Serviceability Target Index will be held at 8 a.m. November 3 in Room 25 of the Donald E. Stephens Convention Center as part of the Product



Service Technology Program Office Chair Mark Pope of GM-SPO (center) was honored at the SAE 2005 World Congress in April by 2004 SAE President Duane Tiede (left) and 2005 SAE President J. E. "Ted" Robertson with the SAE Noble R. Patterson—Distinguished Section Member Award.

and Life Cycle Management program held during SAE's Commercial Vehicle Engineering Congress.

The STPO provides strategic external input to the Board of Directors of SAE on trends and issues in service technology, fosters communications and collaboration among engineering and service professionals, and provides focus for SAE activities and products related to vehicle service.

The STPO was created to:

- Increase influence and impact in vehicle service technology by using SAE resources,
- Build a base of loyal customers and members,
- Identify and integrate all areas within the staff and volunteer structures of SAE that fit into service technology, and
- Provide current and future customers with a clearly defined entrance into SAE activities that involve service technology issues.

To join the STPO or for more information on the Serviceability Target Index or other STPO programs and opportunities, contact Wayne Juchno at wjuchno@sae.org.

PROFESSIONAL DEVELOPMENT

SAE, Cadpo announce partnership with Lotus Engineering

SAE International and Cadpo, an INCAT International company, have introduced Lotus Engineering as the newest Certified Automotive CAD Delivery Partner in Asia. SAE Automotive CAD Certification is the industry's only international program that provides the standard for developing and measuring automotive CAD skills globally.

"We are pleased to announce this partnership with Lotus Engineering," said Kevin Perry, Manager of Professional Development at SAE International. "Lotus is known worldwide for its automotive engineering expertise. With its strong history in delivering cutting-edge design and engineering solutions both externally to worldwide automotive OEMs as well as internally to

Lotus Cars, they are well-suited to deliver the SAE Automotive CAD Certification program."

Lotus will train and certify nearly 300 candidates during the next 18 months in Malaysia. Lotus plans to work internally to certify 800 engineers total.

"Lotus Engineering is proud to be recognized by SAE International and Cadpo as an official certification delivery partner," said Albert Lam, CEO of Lotus Engineering. "We believe their approach to industry-focused CAD certification fills an important gap in the automotive industry today, and we are looking forward to increasing the automotive design skills of engineers throughout Malaysia."

Courses from SAE

Detailed course descriptions are available online at www.sae.org/contedu. To register, complete the online registration form, e-mail profdev@sae.org, or call SAE Customer Service toll-free at 877-606-7323 (or 724-776-4970 outside the U.S. and Canada).

November 2005

Troy, MI, USA - SAE Automotive Headquarters

November 2-3 Piston Ring Design/Materials

November 3-4 **New!** Cost Planning & Improvement

This course is one in a five-course series that leads to a Professional Certificate in Automotive Product Development Management, jointly conferred by SAE and Oakland University's renowned School of Business. This course addresses planning and improving costs during product development. Since 70-80% of a product's costs are committed during product development, it is important that cost-planning and improvement activities begin early in a product's life cycle. Most company's formal finance and accounting systems do not effectively address cost planning and improvement during product-creation processes. This course emphasizes that cross-functional management and information sharing required for effective cost planning and improvement. The focus is on improving costs, not just cost reduction, because the objective of effective cost management is to increase value for customers. Increasing value for customers includes spending money where it provides the most benefit to customers, as well as eliminating waste and reducing costs in areas where they do not add value for customers. The goal is to provide high-value products, not low-cost products, to customers.

November 3-4 Adhesive Bonding Technology

November 3-4 Wet Brake & Clutch Technology

November 7 Basic Noise Control

November 7-8 Metal Corrosion and Its Prevention

November 7-9 **New!** Introduction to Road Vehicle Aerodynamics

Aerodynamic considerations in the design phase of a road vehicle have significant implications for fuel economy, vehicle stability, safety, engine cooling, interior noise, and overall aesthetics. Both governmental regulations and customer requirements for comfort must be taken into consideration. Just as an airplane in flight is subjected to several forces, including lift, drag, and lateral forces, the same is true of ground vehicles, although the lift component is, in general, not as prominent as in flight vehicles. The aerodynamic characteristics of a vehicle are determined by the combination of the vehicle overall shape and the shape and location of its components. This seminar will introduce you to basic aerodynamic principles and tools to evaluate aerodynamic features including wind-tunnel testing, flow visualization, track testing, and computational methods. Testing of scale models, measurement methods, and data interpretation will also be covered. Real-life situations and problems will be discussed, and attendees will have the opportunity to solve problems utilizing skills learned.

November 8 Noise and Vibration Measurement: Instruments and Facilities

November 9 An Introduction to Numerical Methods/Statistical Energy Analysis for Vehicle NVH

November 9-10 Engineering Project Management

November 9-10 Simplified Taguchi/DOE Methods

November 10-11 **New!** Practical NVH Signal Processing Methods

Because signal processing has become a critical tool in optimizing vehicle noise, it is critical for NVH specialists to have a solid mastery

of this technology. One must understand the foundation common to all NVH data-acquisition equipment including digitizing, windows, aliasing, averaging techniques, and common analysis functions such as the power spectrum, transfer function, and coherence. Fundamental concepts such as filtering, modulation, convolution, and correlation are also critical to building competence. Specialized techniques used in rotating machinery such as adaptive resampling and order tracking are also important. Equally valuable are the concepts behind multi-input multi-output signal processing, which extend the two channel concepts into multi-channel array methods. Array-based solutions for force identification, source and path characterization, and data visualization are now commonplace skills that NVH engineers must understand. To provide an applied, real-world focus, most signal-processing concepts are illustrated with computer demonstrations and physical experiments. Case histories are also used to illustrate two common data-intensive NVH tasks: transfer path analysis and CAE model correlation. Each day, the course will close with brief introductions to emerging concepts such as advanced time/frequency analysis and automated pattern recognition.

November 14-15 Fundamentals of Gear Design and Application

November 14-15 Tolerance Stack-Up Analysis

November 14-16 Weibull-Log Normal Analysis Workshop

November 14-16 Fundamentals of Metal Fatigue Analysis

November 14-16 Vehicle Dynamics for Passenger Cars and Light Trucks

November 16-17 **New!** Fundamentals of Truck and Off-Highway Transmission Systems

November 17-18 Controller Area Network (CAN) for Vehicle Applications

November 17-18 Introduction to Failure Modes & Effects Analysis for Product Design & Manufacturing Process Design (Product & Process FMEA)

November 17-18 **New!** Acquiring and Analyzing Data Using Sensors and In-Vehicle Networks

The evolution of personal computers, data-acquisition hardware, and analysis software has provided engineers with the ability to measure and interpret data quickly, make design enhancements, and ultimately move a product to market faster. As in-vehicle networks become increasingly more sophisticated, both in terms of the number of controllers and the speed at which they communicate, they are becoming a virtual gold mine for the test engineer. If the data is already available on the vehicle and can be accessed from the standard OBD connector under the dashboard, the user only needs to add the missing sensors, or possibly none at all. This course will provide you with information on current trends and applications in PC-based data acquisition and analysis. Hardware and software possibilities, as well as relevant technical standards to determine what can practically be acquired from the in-vehicle network and how to combine this with sensor data, will be covered. In addition, a practical guide for analysis and presentation techniques will be covered along with practical, hands-on examples. Students will have the opportunity to utilize a classroom PC with data-acquisition hardware and software to acquire and analyze test data.

November 21-22 Threaded Fasteners and the Bolted Joint

November 21-22 Metal Forming

Orlando, FL, USA - Orange County Convention Center

In Conjunction with the Motorsports Symposium

November 29-30 Hands-on Racecar Suspension Setup In Partnership with Panoz Racing School

November 30 Fundamentals of Aerodynamics Applied to Race Cars

December 2005

Troy, MI, USA - SAE Automotive Headquarters

December 1 A Familiarization of Drivetrain Components

December 1-2 Role of the Seat in Rear Crash Safety

December 1-2 **New!** Vehicle Accident Reconstruction Methods

Automotive accident reconstruction is a process carried out with the specific purpose of estimating in both a qualitative and quantitative manner how an accident occurred. Reconstructions are based on physical data and physical evidence gathered during an accident investigation. To some extent, testimonial evidence is also used. This seminar is devoted to the exposition, use and limitations of the engineering, scientific, and mathematical principles and methods used to reconstruct vehicular accidents. The primary objectives are to help the attendees achieve a high level of understanding of these methods and to immediately begin reconstruction of accidents. The course covers a wide range of topics including uncertainty, impact mechanics, tire mechanics, vehicle-pedestrian impacts, and vehicle dynamics. Most of the calculations can be carried out using commonly available

PROFESSIONAL DEVELOPMENT

continued from page 10

- spreadsheet technology suitable for personal computer use. While some computers will be available, attendees are encouraged to bring a laptop computer with Microsoft Excel installed and a calculator to the seminar to provide additional hands-on time.
- December 2 Fundamentals of Automotive All-Wheel Drive Systems
- December 5-7 Advanced Electric Motor/Generator/Actuator Design and Analysis for Automotive Applications
- December 5-7 **New!** Advanced Vehicle Dynamics for Passenger Cars and Light Trucks
- This interactive seminar will take you beyond the basics of passenger car and light truck vehicle dynamics. Advanced theory and practical applications associated with the dynamic performance balance between the powertrain, brakes, steering, suspensions, and wheel and tire vehicle subsystems will be discussed with an emphasis on ride, braking, and handling. Governing state space equations with transfer functions, CAE (computer-aided engineering) solutions, and analysis for both steady and transient conditions will also be covered. Substantial time will be dedicated to the DOE (Design of Experiments) approach to vehicle dynamics including Pareto of main effects (screening DOE) and multi-response optimization (response surface method). Practical workshops using CAE will reinforce the material and provide attendees with hands-on experience. Participants should bring a scientific calculator to participate in the classroom workshops.
- December 5-7 Engineering Effective Team Management and Practice
- December 8-9 Introduction to Brake Control Systems
- December 8-9 **New!** Forensic Analysis of Medical Records in Injury Biomechanics and Accident Reconstruction Studies
- The study of automotive crashes has become an ever-expanding interdisciplinary field. This course is designed to help the various disciplines speak a common language, participate in team reviews, and to make vehicle safety professionals more aware of information that may be available in medical records and the issues that this information may be used to address. Those who attend will be able to help improve the utility and societal benefit of biomechanical/reconstruction field studies. This course focuses on medical records, how to read them, the types of information they contain, and the insights they can provide regarding restraint usage and deployment, injury mechanism, severity and outcome, and the effects of pre-existing conditions. Annotated case studies reveal real-world usage of terminology and abbreviations and illustrate how medical records may be used to understand: impact severity and direction; the effect of intoxication and other pre-existing conditions on crash avoidance, injury severity, and injury outcome; restraint usage; injury mechanisms that involve occupant impacts with the vehicle interior (the so-called second collision) and those that do not; and airbag deployment versus non-deployment.
- December 8-9 Distributed Automotive Embedded Systems
- December 12-13 Selection, Evaluation, and Measurements of Acoustical Materials for Vehicle Interior Noise Study
- December 12-13 **New!** Fundamentals of Statistical Process Control
- As competition for market share increases, so does the need to monitor processes and quality to ensure top-notch products. This hands-on seminar will provide participants with the skills to apply and maintain statistical process control to assist their organizations in the improvement of various processes to achieve higher percentage yield or higher quality products or services. Quality characteristics (process outputs to track), measurement systems, sampling strategies, types of control charts, construction of control charts, and control chart interpretation will be covered. The determination of the key process parameters and controlling them to provide consistent results will improve quality and lower costs, in particular, scrap and rework costs. Statistical theory and depth are kept to a minimum while participants learn how to utilize the tools. Attendees will receive a copy of the Statistical Process Control Manual (SPC-3, 2nd Edition) by the Automotive Industries Action Group.
- December 12-14 Fundamentals of Modern Vehicle Transmissions
- December 12-14 Commercial Vehicle Braking Systems
- December 13-14 Sensors & Actuators: Module 1—Powertrain Applications
- December 14-15 Sensor & Actuator Technology: Module 2—Chassis Applications
- December 14-16 Automotive Coatings: Materials & Applications
- December 14-16 **New!** Statistical Methods for Quality Engineering
- This seminar will help individuals responsible for product or process development and testing to statistically assess the variation of the product or process performance and make effective decisions with confidence. Technical personnel are consistently making changes to product and process designs, and the resultant performance changes need a statistical basis for moving ahead to the cost assessment and release phases. Various continuous and discrete probability functions will be covered with the normal distribution receiving the most emphasis. Other distributions including Weibull, Exponential, Binomial, Poisson, Hypergeometric, and nonparametric comparisons will be covered. Various confidence intervals and tests of comparison, including Z test, Student's t tests, Chi-Square test, F test, and ANOVA for the normal distribution for these probability functions are covered.
- December 15-16 The Basics of Internal-Combustion Engines
- December 15-16 Accelerated Test Methods for Ground and Aerospace Vehicle Development
- December 15-16 **New!** Occupant and Vehicle Kinematics in Rollovers
- The increasing popularity of SUVs, vans, and light trucks over the past decade has contributed to a steady increase of studies addressing rollover crashes and associated injuries. While not the most frequent crash type, rollovers can be a significant contributor to serious injuries and a major factor in fatal crashes. This course on occupant and vehicle responses examines relevancy of rollover field conditions and vehicle responses in currently available studies, and under new test conditions. Additionally, the course provides a review of occupant kinematics and offers a discussion on sensing technologies prior to and during a rollover event.
- December 16 Sensor & Actuator Technology: Module 3—Body Applications
- December 19 The Tire as a Vehicle Component
- December 19-20 **New!** Fundamentals of Automotive Fuel-Delivery Systems
- Key to a vehicle's overall operation is the quality design of its major moving subsystems. Automotive gasoline and diesel fuel-delivery systems in particular must be virtually malfunction-free for all components for the entire vehicle prescribed service life. Fuel systems must be robust and precise enough to store and deliver the appropriate amount of fuel to power the engine. These stringent requirements necessitate a basic understanding of the subsystem working principles, functionalities, and interrelated components. This course provides a basic yet thorough examination of technical issues involved in automotive gasoline and diesel fuel delivery. Participants will acquire a fundamental understanding of the current technology and requirement guidelines and apply some of the principles through an in-class project and exercises. Examples of frequently encountered technical issues of fuel-delivery systems shall also be discussed. The course is designed to encourage discussion, insights, and possible solutions into the engineering problems encountered in the gasoline and diesel fuel-delivery systems and components.
- December 19-20 **New!** Benchmarking for Competitive Advantage
- Benchmarking, a key strategic initiative, is responsible for helping many companies to enhance quality, improve operations, increase performance, stimulate innovation, and achieve best-in-class status. This seminar provides an organizational framework for benchmarking and demonstrates how it can be a tool for change and continual improvement. Four kinds of benchmarking are presented: internal, supplier, competitive, and functional. This hands-on workshop will provide attendees with the tools and methods used to benchmark business and operational processes, products, and services. Utilizing automotive examples, attendees will practice concepts learned that may be implemented to achieve tangible improvements in their own companies.
- December 19-21 Chassis & Suspension Component Design for Passenger Cars & Light Trucks
- December 20 Tire and Wheel Safety Issues
- January 2006**
Troy, MI, USA - SAE Automotive Headquarters
- January 9-10 Diesel Engine Technology
- January 12-13 Managing Integrated Product Development
- January 16-17 Design of Experiments (DOE) for Engineers
- January 18-20 **New!** Hybrid-Electric Vehicles: Control, Design and Applications
- This three-day seminar will cover the fundamentals, design, and special topics of hybrid-electric vehicles (HEVs). In an easy-to-understand format, the course will explain the engineering of HEVs, including the components, design, modeling, and control. Some existing HEV models such as the Toyota Prius, Honda Civic, and Ford Escape will be used as case studies. The course will include lectures, simulations, hands-on examples and design exercises utilizing Ansoft Simplorer software.
- January 20 Introduction to Failure Modes & Effects Analysis for Product Design (Design FMEA)
- January 23-24 Finite Element Analysis for Design Engineers - Hands-on FEA Workshop
- January 26-27 Design for Manufacturing & Assembly (DFM/DFA)
- January 27 Exhaust Flow Performance and Pressure Drop of Exhaust Components and Systems

CAREER OPPORTUNITIES

It's easy to place an advertisement in SAE UPDATE. Simply call with your space reservation and fax--or e-mail and save the typesetting fee!--your ad copy to **Kathy Belles:**



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SAE members can list their qualifications for free in the SAE Resume Database at www.careers.sae.org

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SAE

Development Engineer. Work Sched. 8:00 AM – 4:30 PM 40 hrs/wk. Plan, design, troubleshoot, develop & integrate using UG CAD concept to production driveline architectures & differential systems (with manual transmissions, magnesium transmission cases, automotive axles, clutches, manual gearboxes, & steel propshafts) for heavy duty vehicles & high performance passenger cars. Perform, recommend design changes, troubleshoot, & validate full vehicle driveline & transmission systems testing. Author test & development plans. Run gear shift quality assessment programs & tasks. Validate component designs using DVP&R. Resolve engrg technical problems in design & mfg. 1.5 years undergraduate study, any Engineering or Engineering Technology field. 1 yr exp. in job or in Related Occupation of Design Engineer. One yr of Related Occupation exp must include planning, troubleshooting & integration using UG CAD concept to production driveline architectures & differential systems with manual or powershift transmissions & driveline system (steel or cast iron axles with differential) for heavy duty vehicles, which may be concurrent with Related Occupation experience. Employer Paid Ad. Send resume to Ursula Misangyi, Director, Human Resources, Ricardo, Inc., 40000 Ricardo Drive, Van Buren Twp, MI 48111.

Research Scientist/Department of Electrical and Computer Engineering; will teach graduate and undergraduate courses in electrical engineering, circuits and control systems and conduct research in this area and for design of electrical machines for automotive application. Ph.D. in relevant technical field is required. Potential candidate must have published research findings in refereed journals in the field. Submit letter of application, resume, and names/addresses of three current references to: Malayappan Shridhar, Chair of Electrical and Computer Engineering, Department of Electrical and Computer Engineering, The University of Michigan-Dearborn, 4901 Evergreen Road, Dearborn, Michigan 48128-1491. Applications will be accepted until the position is filled. University of Michigan-Dearborn is an AA/EO institution.

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ITN Product Creation Research Engineer. 40 hrs / wk. Research & engineer engine component design processes from concept design to production including concept CAE, detailed CAD design, CFD simulation & reverse engrg. Research, engineer & develop applications from CAD models constructed from measured data. Research, develop & optimize cutter path tooling, 5-axis numerically controlled Machining of automotive tooling/component Dies & Molds. Research, engineer & develop software applications for generative pattern & stamping die machining using C++ compiler & OpenGL. Create, engineer, research & maintain the strategy for CAD/CAE/CAM to support the end-to-end powertrain product development process & data exchange system. Apply math/engrg concepts to construct CAD models from measured data (shape reverse engrg) – numerical analysis, approximation method, signal processing approach & computational geometry. Apply mathematical concepts to achieve machining of CAD models, operations between CAD models, & for efficiency & stability of operations resolved by math verification. Benchmark reverse engrg software systems & strategies to improve vehicle design quality. Benchmark machining software systems & strategies to improve vehicle manufacturing tool quality. Determine potential value of the new system or component technology, recommend type & amount of investment company should make to achieve maximum benefit within acceptable levels of risk, & follow through on the business relationship to the point of implementation & functional use. Create & manage plans for advance development programs for new technology. Maintain close communications with Engrg, Product Design, & Process Development Teams to identify specific systems & components needed for development & implementation of technology; create strategies to facilitate transfer. Ph.D., Industrial Engrg. 1 year exp. in job or Related Occupation of Research Assistant. 1 year of Related Occupation experience must include benchmarking reverse engrg/machining software systems & collaboration on CAD/CAE/CAM data exchange system, which may be concurrent with Related Occupation experience. Apply to Raymond Wilhelm, Manager, CIMS: 485-08-44, DaimlerChrysler Corporation, 1000 Chrysler Dr., Auburn Hills, MI, 48326.

North Carolina Agricultural and Technical State University Director of Motorsports

A Joint Appointment with College of Engineering and School of Technology

OVERVIEW:

North Carolina A&T State University invites applications and nominations for Director of Motorsports. We seek a dynamic leader who will join a team committed to the University's vision. North Carolina A&T strives to be a leader in learner-centered interdisciplinary programs.

DUTIES AND RESPONSIBILITIES:

The Director of Motorsports will be responsible for the leadership and operation of the University's interdisciplinary motorsports initiatives. The director must provide outstanding leadership; assess needs and coordinate the development of the motorsports vision; collaborate with faculty, staff, students, motorsports industry officials, governmental representatives, and develop strong relationships with alumni and other constituents of the University. The director must be committed to maintaining the highest level of excellence for the integration of the academic and motorsports experiences for students and the potential for motorsports to enrich the experience of all students at the University. The director will be responsible for the quality and integrity of all motorsports programs, program promotion and fundraising, involvement with motorsports legislation, the management of fiscal and human resources, and motorsports facilities. This position will require travel to various motorsports activities, student recruitment, student competitions, tradeshows and other activities. The director will report directly to the deans of the College of Engineering and School of Technology to assure success.

MANDATORY REQUIREMENTS/QUALIFICATIONS:

A master's degree in a motorsports related discipline is required. The successful candidate must have experience in successful fundraising; coordinating interdisciplinary motorsports initiatives; managing an effective marketing program; and developing positive relationships with the community and media. Outstanding interpersonal written and oral communication skills are required. Qualifications should include a minimum of five years of involvement in the motorsports industry at the regional, state, and national levels including sanctioning boards, race teams, race facilities, and corporate sponsors.

APPLICATION PROCESS:

The Search Committee will begin formal review of applications August 12, 2005 and will continue until the position is filled. (The anticipated start date is January 1, 2006.) Interested applicants must submit a letter expressing interest, a current resume, three letters of recommendation, and a brief statement on the role and management of a University level motorsports program.

Application packets should be addressed to:

Mrs. April Cobb, Administrative Assistant
Search Committee for Director, Motorsports
North Carolina A&T State University
1601 East Market Street
Greensboro, NC 27411
acobb@ncat.edu

N.C. A&T COMPLIES WITH THE IMMIGRATION REFORM AND CONTROL ACT OF 1985. WE HIRE ONLY UNITED STATES CITIZENS AND LAWFULLY AUTHORIZED FOREIGN NATIONALS. YOU MUST BE ABLE TO PROVIDE DOCUMENTATION OF EMPLOYABILITY AND IDENTITY BASED ON THE LAW.

A criminal conviction check will be required for any applicant who is selected as a finalist for a position. A criminal record does not necessarily eliminate you from employment with the University. Each conviction will be reviewed with respect to the offense, circumstances, seriousness, and the position for which you apply.

North Carolina A&T State University is a land-grant doctoral/research intensive institution and AA/EEO employer