

# SAE<sup>®</sup> UPdate

NEWS FOR THE MEMBERS OF SAE

March 2004  
VOL. 21, NO. 3

## Delphi and SAE agree to expand technical library into global knowledge center at prominent Chinese University

SAE and Delphi Corp. announce the expansion of their relationship in the Delphi Tsinghua Institute (DTI) in Beijing, China. Delphi and SAE first entered into a five-year agreement with Tsinghua University in June of 1999 to develop the comprehensive DTI-SAE technical library on the Beijing campus.

Under the new memorandum that will begin in June of 2004, the

expanded facility will be called the "DTI-SAE Global Knowledge Center." The new and expanded facility will include a full-time staff person, SAE books, technical papers, and standards, and the provision of space and personnel for education and technical training programs.

"Delphi is proud to extend the commitment we made with Tsinghua University and SAE almost five years ago," said Donald Runkle, Delphi Vice Chairman, Lean Enterprise, and Chief Technology Officer. "The DTI-SAE Knowledge Center will bring the Chinese market an excellent



Present at the DTI-SAE Global Knowledge Center signing event were, L-R: Hugh Miller, NeoStones MicroFabrication; Gary Schkade, SAE Manager Strategic Programs; Melissa Mishler, SAE Global Development; Don Runkle, Delphi Vice Chairman and Chief Technology Officer; Eden Chen, China Consultant and SAE Board of Directors Officer; Duane Tiede, SAE 2004 President; Andrew Brown, Delphi Executive Director, Engineering Competency, Product Government Affairs & Partnership; Edward Tao, Apex Consulting; and Bob Chalker, SAE Director Sales and Marketing.

technical resource to develop qualified engineers and technical professionals who can support the phenomenal growth in China's automotive industry."

Duane Tiede, 2004 President of SAE, echoes Runkle's sentiments. "One of the society's primary goals is to provide capable practitioners to the mobility industries in order to prepare for future advancement. Delphi is an ideal partner for us to ensure the DTI-SAE Global Knowledge Center will be a big step in moving China with some strong momentum into the realm of a worldwide

See **DELPHI AND SAE** page 3

## SAE expands services to the automotive community

The automotive industry has seen many predictions for 2004. One prediction that is staying true is that SAE will be introducing a variety of new services and products to its members this year, including the Automotive Resources Institute (ARI). ARI, led by Neil Schilke, Managing Director and 2001 SAE President, and Herb Everss, Director, Business Development, was created to benefit the global automotive community by providing leaders and experts to resolve specific technical and business challenges.

"ARI allows industry leaders and experts to extend their careers, stay involved in the industry, and share their knowledge and expertise," said Schilke. "ARI is bridging the gap between the industry and consultants, creating and fostering mutually beneficial relationships."

With the full support and endorsement of SAE, ARI is assembling and managing a select group of professionals with a broad range of expertise. Individuals will be pre-screened and registered as ARI consultants. Also, the organization is working with automotive companies to identify specific areas of need. By working with both the industry and consultants, ARI can efficiently provide solutions on a project-by-project basis. This service not only streamlines the process of becoming and marketing oneself as a consultant, but also reduces the cost and time for an organization to identify and secure a consultant with appropriate expertise.

"By leveraging the breadth and depth of SAE, ARI is poised to have an immediate



Neil Schilke (left), Managing Director and 2001 SAE President, and Herb Everss, Director, Business Development, will lead SAE's new Automotive Resources Institute (ARI).

impact on the automotive industry as well as SAE members," said Ray Morris, Executive Vice President and Chief Operating Officer, SAE. "This service is another example of how SAE is working within the industry to add value."

Currently, ARI is seeking SAE members who are interested in consulting in the automotive industry, to strengthen its talent pool. In addition, any organization interested in using ARI to address current or future challenges should initiate contact.

ARI is headquartered in the SAE Automotive Headquarters in Troy, MI. For more information regarding ARI, please contact Neil Schilke or Herb Everss at 248.273.4029 or email neilschilke-ari@sae.org or herbeverss-ari@sae.org.

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## SAE launches new Web site

SAE is pleased to announce a redesign of its Web site—www.sae.org. In addition to a new, modernized look and feel, the site has been restructured to more clearly present the organization's purpose, resources, products, and services. This new look and navigation structure should make it faster and easier for you to find what you need on the site.

Some features of the new site include:

- Direct access to specific industry information via separate automobile, aerospace, heavy-duty, and motorsports "homepages" that users can bookmark as their gateway into SAE's Web site
- Streamlined navigation elements that provide easier access to the products and services you need on the job
- A centrally located search function

- Easy one-click access to committees and forums
- Personalized interaction made easier with an updated interface for your MySAE account
- Featured SAE magazine articles on SAE's home page to keep you up to date on the latest mobility engineering news
- One-click access to SAE career resources

This new design is based on careful analysis of user feedback and recommendations, as well as industry best practices and an understanding of SAE's evolution since the last site redesign.

If you haven't already done so, please take a moment to visit the new SAE Web site at www.sae.org.



Leading Our World In Motion 1905-2005

## SAE CENTENNIAL

## Howard Marmon: SAE's eighth President



Howard Marmon, considered by many of his peers and automotive historians to have been a superb engineer, was SAE President in 1913 at the age of 34.

Howard Marmon was an engineer from a family of engineers. His father designed and built flour milling machines and farm equipment in the 1800s. His brother Walter was trained as an engineer and would become an early partner with Howard in the fledgling automobile business.

Upon graduation with an M.E. from The University of California—Berkeley,

Marmon returned to the family business in Richmond, IN, and soon discovered that however profitable flour milling equipment might be, it didn't hold his interest for long.

Marmon built his first car in 1902 with an air-cooled V-twin engine, and overhead valves. His second car, in 1903, had an air-cooled V4. By 1904, the company found itself immersed in the automobile business, selling six cars. Production increased to 25 cars in 1905, and Marmon began trying different engine configurations.

After an experimental V6, and a V8, he stuck with conventional water-cooled, inline designs for practicality. New Marmons were introduced in 1909, among them the Model 32, which also came in a racing version called the Marmon Wasp because of its yellow color and long, pointed tail. The Wasp established Marmon as a reliable and fast competition machine by winning

the first Indianapolis 500 in 1911, driven by Ray Harroun.

Marmon was elected President of SAE in 1913. His tenure was highlighted by the creation of the Research Division of the SAE Standards Committee. At the 1913 meeting in which Marmon took office, the hot-topic technical discussion was titled "With the motor starter, lighting plant, and ignition possible in one unit, will the magneto be discarded?" Marmon continued to design and build popular cars through the 1920s, but his crowning achievement among autophiles everywhere came in 1931—the stunningly beautiful, highly advanced V16, a car of awesome performance and impeccable styling. The timing couldn't have been worse. Luxury cars of any kind were a tough sell in the Great Depression. By mid 1933, Marmon was in bankruptcy, with 86 Sixteens delivered and no more orders on the books.

Howard Marmon's bad business timing in no way obscures his engineering genius and sense of style. SAE awarded Marmon its annual design award in 1931, and any one of the 400 Marmon Sixteens that were built will always command staggering prices at vintage automobile auctions around the world.



Marmon's 16-cylinder luxury car debuted at the onset of the Great Depression.

## MESSAGE FROM THE PRESIDENT

## The year in review

This being my last chance to communicate with you as SAE President, I wanted to say to each member that I appreciate so much the opportunity you gave me to serve our society and profession this year. A special thanks also to my company, DaimlerChrysler, for all of the special arrangements they made to allow me to devote full time to SAE, and allow my wife to accompany me on all of the trips, while paying for all of the expenses. My administrative assistant at DaimlerChrysler, Diane Marcoux, was invaluable in coordinating with SAE staff on all of the flight arrangements, hotel accommodations, expense reports, etc. No one could do this job without such wonderful support.



Throughout the world (we traveled to 15 different countries as well as many sites in the U.S.), we found SAE is held in high esteem, and we were treated royally. The SAE staff did a tremendous job of planning all of the trips so that we accomplished something meaningful for the society while boosting the local societies. We continued the practice of promoting collaboration with other societies serving the mobility community and signed six new MOUs (Memorandum of Understanding) outlining our joint agreements. We were very impressed by our SAE Brasil and SAE India affiliates, where major Congress-type meetings were organized and executed with high quality. We also strengthened our ties with the U.S. Military Transportation and Logistics activities and, at their request, converted all of their mil specs into SAE Standards.

The Board of Directors this year approved an agreement between SAE and the Convergence Transportation Electronics Association. This agreement accomplished two key things: created the Convergence Transportation Electronics Program Office and established joint operation of the Convergence Conference & Exhibition. We also converted the Service Technicians Society (STS) into a Program Office to continue this effort at a lower cost. We elected Richard Schaum to be the first Automotive Vice President, complementing the work of our Aerospace Vice President, Bob Spitzer. A major effort was launched to reinvigorate our ground vehicle standards activity and create a consultant "Institute" at the Automotive Headquarters, both benefiting from the leadership of Neil Schilke and others. For the first time since adopting "Policy Governance" about 12 years ago, the Board has begun a major re-write of the Ends Policies, which describe the results (what benefit, for whom, at what cost) the society is trying to achieve. And, we have an active committee planning our 100th Anniversary in 2005, with a lot of commemorative products already available. The Board also agreed to finally get our fiscal year and terms of office to be consistent with the calendar year, which will eliminate a lot of confusion and clarify goals for the staff. We have also decided to move the World Congress into April for more favorable weather in Detroit and away from overlaps with the European auto shows. The staff has developed new TechKnowledge products and TeleWebcasts to help members get technical knowledge with minimum time commitment, and we have moved to much more electronic delivery and communication with an enhanced Web site—www.sae.org.

All of this rapid change—and we think, progress—owes a great deal to the SAE Staff led by Ray Morris. He has been a great colleague and mentor this year.

Hope to see you all at Congress.

Jack E. Thompson

## UPdate

March 2004 Vol. 21, No. 3

Published by the Society of Automotive Engineers to enhance communications with and among members on nontechnical issues. Members living outside North America have access to the issue via the SAE website.

**Jack E. Thompson**, President

**Raymond A. Morris**, Executive Vice President and Chief Operating Officer

**Antenor R. Willems**, Executive Director

**Jennifer L. Newton**, Editor

SAE UPdate (ISSN 0742-972X) is edited and published monthly under the auspices of the SAE Publication Committee at the offices of the Society of Automotive Engineers, Inc., 400 Commonwealth Dr., Warrendale, PA 15096-0001, USA, phone: 724.776.4841, fax: 724.776.9765, Web site: www.sae.org. Periodical rate postage paid at Warrendale, PA, and additional entry point. POSTMASTER: Send address changes to above address. Subscription rate is \$5, included in the annual membership dues.

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SAE International™

"The premier society dedicated to advancing mobility engineering worldwide"

Introducing the

## SAE Commercial Vehicle Engineering Congress and Exhibition

October 26-28, 2004

Donald E. Stephens Convention Center  
Chicago Metro Area

This dynamic new event is the **ONE** place that will bring together professionals from the diesel engine, construction, truck, and agricultural engineering industries.

This Congress and Exhibition is presented by SAE International:

- A membership organization representing 83,000 mobility engineering professionals from around the world including 18,000 members in the truck, bus, and off-road industries.
- An organization with a strong history of presenting conferences and exhibitions that hit core engineering market niches.
- Publisher of thousands of technical standards and papers used worldwide by OEMs and suppliers.
- Publisher of the globally respected AUTOMOTIVE ENGINEERING INTERNATIONAL magazine and the industry-specific SAE OFF-HIGHWAY ENGINEERING magazine, which reaches 20,000 engineering professionals in the truck and off-road industries.

For up to the minute program and exhibition information visit [www.sae.org/comvec](http://www.sae.org/comvec)

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## WASHINGTON REPORT

## SAE co-sponsors second annual Engineering Research &amp; Design Symposium

By Doug Read, Managing Director, SAE Washington, D.C., office

The second annual Engineering Research & Design Symposium will be held on Capitol Hill in downtown Washington on March 8-9, 2004. The event, at the Holiday Inn on the Hill, is intended to raise awareness of the growing shortfalls in federal R&D spending that affects the engineering community. Besides SAE, this event will be co-sponsored by The American Institute of Chemical Engineers (AIChE), the American Society of Civil Engineers (ASCE), the American Society of Mechanical Engineers (ASME), the Institute of Electrical and Electronic Engineers (IEEE), and the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE).



Doug Read

The program is intended to take the mystery out of the bureaucratic process and will provide a "heads-up" on the affect of the FY '05 federal budget on the engineering profession, information on federal R&D priorities, and an overview of how the federal R&D funding will impact the economy, technology jobs, and national security.

Speakers will include: John Marburger III, Director, White House Office of Science and Technology Policy (OSTP); David Trinkle, Program Examiner, Science and Space Programs, Office of Management and Budget (OMB); Kei Koizumi, Director, R&D Budget and Policy, The American Association for the Advancement of Science (AAAS); David Goldston, Chief of Staff, House Science Committee; Bill Bonvillian, Legislative Director, Senator Joseph Lieberman's office; Shirley Ann Jackson, President Rensselaer Polytechnic Institute; and Rep. Sherwood L. Boehlert (R-NY), Chair House Science Committee.

Technology tracks focusing on specific agency R&D priorities will take place on the second day for The National Science Foundation, NASA, the National Institute for Standards and Technology (NIST), DoD, Department of Homeland Security, as well as the Departments of Transportation and Energy, and the Environmental Protection Agency (EPA).

Additional information can be found at [www.engineeringpolicy.org](http://www.engineeringpolicy.org).

#### DOT announces proposal for reforming federal fuel efficiency program

A proposal for strengthening a federal program aimed at increasing fuel efficiency, improving safety, and protecting the nation's economy was announced recently by U.S. Department of Transportation Secretary Norman Mineta.

The Department's National Highway Traffic Safety Administration (NHTSA) issued an advance notice of proposed rulemaking seeking public comment on a host of Corporate Average Fuel Economy (CAFE) reforms aimed at revising and modernizing fuel economy standards to balance America's need for better fuel efficiency while maximizing auto safety and maintaining a healthy economy.

In April, the agency successfully increased fuel economy standards for light trucks for model years 2005-2007, the greatest increase in fuel economy standards in 20 years.

"This marks the beginning of an important national dialogue on how best to reform CAFE," said Secretary Mineta. "We can and must work together to save more fuel, increase passenger safety and protect American jobs." The advance notice of proposed rulemaking, which will be published in the Federal Register, includes several reform options that are based, in

part, on recommendations by the National Academy of Sciences made in July 2001.

Among the Administration's reform options are revising the structure of light truck standards to reduce manufacturers' incentives to lower vehicle weight, which, according to NHTSA research, can increase occupant vulnerability in certain crashes. Another would look at modernizing existing regulatory definitions (developed in the 1970s) that distinguish passenger cars from light trucks to reflect today's modern and significantly different vehicle fleet.

The proposal also would look at setting fuel-economy standards for some or all vehicles weighing between 8500 and 10,000 lbs, a category that currently does not have to comply with CAFE standards. The advance notice will be on the NHTSA website at [www.nhtsa.dot.gov/cars/rules/CAFE/rulemaking.htm](http://www.nhtsa.dot.gov/cars/rules/CAFE/rulemaking.htm).

#### Science committee chair applauds Mars success and President Bush's Space Policy

The House Science Committee Chairman Sherwood Boehlert (R-NY) recently provided his comments on the successful landing of NASA's Mars Rover, Spirit. Chairman Boehlert stated, "I want to applaud NASA, the Jet Propulsion Laboratory (JPL), and Dr. Stephen Squyers of Cornell and his team for a spectacularly successful landing on Mars. This mission is a reminder to us all of the amazing work that goes on at NASA and its partners. Everyone from the engineers involved in planning and design to Administrator Sean O'Keefe deserve an ovation for the hard work that went into this important mission.

"The successful landing was no accident. In the wake of previous failures, NASA's space science program and JPL thoroughly reviewed their procedures and changed

their ways of doing business. NASA is now reaping the fruits of those efforts, which were no doubt traumatic at the time. All of NASA should see that experience as a model. The Mars mission also demonstrates the continuing value of NASA's science missions, which can provide enormous scientific benefits at a relatively low cost. I continue to believe that space science and earth science should be the agency's top priorities."

In addition, Chairman Boehlert recently released the following statement on President Bush's upcoming announcement on space policy:

"I'm eager to hear the President's vision for a revived human space flight program and I look forward to getting the details next week. I applaud the President for focusing on this issue at a critical time in the history of the American space program. I appreciate the meeting we had with Vice President Cheney in the fall, as well as my ongoing conversations with NASA Administrator O'Keefe and other Administration officials regarding the future of space policy.

"I believe the United States needs a new vision for human space flight and that the human space flight program should be continued. I look forward to serious discussion about what the precise nature of that program should be, and I know there are a wide variety of opinions on our Committee and in the Congress about that. Any decisions on the future of manned space flight must be made in the context of budget realities, the continuing need for the reforms called for by the Columbia Accident Investigation Board, and the need to keep NASA's unmanned space programs at the robust and productive level that has borne such remarkable fruits just this past week."

#### DELPHI AND SAE continued from page 1

automotive force. The Chinese industry and the Chinese quality of life in the future depend on having technically prepared Chinese engineers ready to make their industry thrive for the long term."

Delphi Tsinghua University was established in 1996 and offers approximately 70 courses in areas including lean manufacturing, automotive engineering, and leadership management. Since 1996, DTI has conducted more than 14,300 weeks of training for

automotive and non-automotive companies throughout China.

Tsinghua University is one of the top-ranked colleges in all of China, and the Tsinghua graduate school has been recognized nationally, ranking first in the National Evaluation of Graduate Schools. The university has 30,000 students, and its Mechanical Engineering school offers 18 masters programs, 16 doctoral programs, and hosts three National Engineering centers.

#### Registration process change at 2004 Congress

A new registration process is in place for the SAE 2004 World Congress. This year, all categories of attendees—including members, participants, committees, and boards—must register. Attendees can pre-register by February 13 to avoid onsite registration lines.

This change will enable SAE to better manage data, help adopt a more targeted approach to marketing, and

ultimately provide members with improved products and services.

For advance registration, visit the SAE 2004 website at [www.sae.org/congress](http://www.sae.org/congress), or call SAE Customer Service at 877.SAE.CONG (724.772.4027 outside U.S./Canada). SAE/STS members attend this conference free, and non-members pre-registering by February 13 can save up to \$250.

SAE International™

"The premier society dedicated to advancing mobility engineering worldwide"

## Government/ Industry Meeting

May 10-12, 2004  
Loews L'Enfant Plaza Hotel • Washington D.C.

Each year over 600 technical authorities from government, industry and academia assemble to address the most pressing issues in ENERGY—alternative powertrains, hydrogen, energy policy update; THE ENVIRONMENT—diesel emissions, climate research, ITS role in reducing pollution; and SAFETY—crashworthiness, crash avoidance, harmonization...key areas where technology and policy significantly affect one another. This year's theme, Government/Industry: Partners for Progress, focuses on that strong connection.

Keynote speakers include:

John H. Davis, Producer/Host/Creator, MotorWeek (invited)  
Jeffrey W. Runge, Administrator, NHTSA (invited)  
Thomas G. Stephens, Group Vice President, GM Powertrain

Fuel Cell Plenary Session panelists include:

Richard Moorer, Deputy Assistant Secretary for Technology Development, U.S. DOE (invited)  
John Heywood, Director, Sloan Automotive Laboratory, MIT  
Richard Zalesky, President, Hydrogen Business Unit, ChevronTexaco Technology Ventures Company  
Larry Burns, Vice President R&D, GM (invited)

High visibility sponsorship and tabletop display opportunities are available!

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## SAE FOUNDATION

### Congress Foundation Lounge provides haven to relax and regroup

The SAE Foundation Lounge at SAE's World Congress has become a destination for contributor members. It's an area where they can make phone calls to the office, have one-on-one meetings, network, and just take a break from the hectic pace of activity at Cobo.

"The Foundation Lounge is one way we can thank our many contributors," said Veronica Meury, Director, SAE Foundation. "Finding a quiet spot to gather your thoughts and make a few phone calls can be a challenge at Cobo. The Foundation staff is on hand to make our contributors comfortable and to extend our gratitude to them for all they do to support our many educational programs."

In addition, you can learn more about *A World In Motion* on Wednesday,

## SAE FOUNDATION

for Science and Technology Education

March 10, 2004 from 10:00 to 11:00 a.m., when Kathleen O'Connor Byrnes, K-12 Education Manager, presents an interactive demonstration about this program.

The SAE Foundation Lounge is open from 8:00 a.m. to 5:00 p.m., Monday through Thursday, March 8-11. The lounge is located in Congress Central W260.

For more information about the Foundation Lounge, contact Ginny Whipple in the Foundation office at 724.772.8593.

## CALLS FOR PAPERS

### 2004 SAE Motorsports Engineering Conference & Exhibition

**Paper abstracts due:** March 25, 2004

**Event date and location:** Nov. 30-Dec. 2, 2004, Dearborn, MI

**Possible paper topics:** Braking; chassis/materials; electronics; engines & transmissions; fuels & lubricants; safety; tires & wheels; and vehicle dynamics.

**Submit abstracts to:** Online submission via [www.sae.org/msec](http://www.sae.org/msec).

### 2005 Noise & Vibration Conference and Exhibition

**Paper abstracts due:** September 27, 2004

**Event date and location:** May 16-19, 2005, Traverse City, MI

**Possible paper topics:** Noise measurement facilities; subjective response; drive-by noise; powertrain/engine: intake/exhaust, drivetrain, structural analysis, and noise assessment development process; powertrain components; instrumentation: systems & sensors, and methods; SEA design; vibro-acoustic analysis; aeroacoustics: sources & models; materials; active noise & holography; squeak & rattle; tire noise & brake systems; mounts & shock absorbers; body/chassis; body interior noise; modeling/structural; vibration and active control; diesel engine noise; standards; and off-road/recreational vehicles.

**Submit abstracts to:** Online submission via [www.sae.org/calendar/nvc/cfp.htm](http://www.sae.org/calendar/nvc/cfp.htm). For questions, please contact Nori Fought at 248.273.2465 or [noiseimg@sae.org](mailto:noiseimg@sae.org).

## PUBLICATIONS

### Updated UNS reference now available online

*Metals and Alloys in the Unified Numbering System*, previously available as a book and CD-ROM from SAE, is now also offered as a web-based subscription. The new *UNS on the Web* product includes new and updated data since the publication of the ninth edition of the book and CD-ROM in 2001.

*UNS on the Web* will be updated quarterly, enabling subscribers to receive the most current UNS numbers, cross-references, and trade names. The web database presently includes 200 new and updated UNS numbers and 3400 updates to cross references and trade names.

The web subscription also includes an enhanced search function, allowing searches by UNS numbers, descriptions, trade names, cross reference organizations

or specifications, and chemical composition. Users can also browse listings via a series of 18 designations for metals and alloys. In total, *UNS on the Web* includes more than 5000 UNS numbers, 7300 trade names, and 13,300 cross-references.

The Unified Numbering Systems for Metals and Alloys (UNS) was developed to provide a means of correlating many different numbering systems used internationally to identify the thousands of metals and alloys in commercial use. It provides the uniformity necessary for efficient indexing, record keeping, data storage and retrieval, and cross-referencing.

*UNS on the Web* is available for \$280 (SAE member price). To begin your subscription, or for more information, call 724.772.7144.

## COMMITTEES & STANDARDS

### G-11 meeting scheduled

The U.S. Army Research, Development, and Engineering Command from Picatinny, NJ, has announced the launch of a new culture-changing initiative as it co-hosts the next SAE G-11 Reliability, Maintainability, Supportability, and Logistics (RMSL) Division and Probabilistic Methods Committee Meeting, March 1-3, 2004 at The Westin in Morristown, NJ. The initiative will look to revolutionize the RMSL aspects of systems engineering and the life-cycle management culture of the U.S. Army and its industrial base.

The meeting will provide an industry/academia/government forum to review RMSL technology; reliability and probabilistic technology; reliability-based design methods; software reliability; and maintainability standards. The U.S. Army and SAE G-11 anticipate 150-250 attendees, with at least 100 existing members, including members with national/international standing.

The event will be highlighted by numerous keynote speakers from the Office of the Under Secretary of Defense, Mark Schaeffer, the Director of Systems Engineering (final commitment expected), as well as the Department of the Army, including the Deputy Chief of Staff for Logistics, Lieutenant General C.V. Christianson. Other distinguished keynote speakers from the Army include U.S. Army TACOM Commanding General, Major General N. Ross Thompson III; the Program Executive Officer (PEO) for Intelligence, Electronic Warfare & Surveillance (IEWS) Edward Bair; and the Program Manager for the Army's Future Combat Systems (FCS), Brigadier General Donald Schenk. Additionally, distinguished speakers from industry, academia, and government labs include Rex Geveden, Deputy Center Director of the Marshall Space Flight Center; David Swain, Executive Vice President and Chief Operating Officer of Integrated Defense Systems, Boeing Co. (invited); and Eric Van Marcke, Distinguished Professor, Princeton University.

Four Strategic Issue Sessions have been arranged to address reliability and probabilistic technology for the Army, industry, and academia. The meeting will

also offer a dual-educational session, which includes at least four hours of educational tutorials taught by several world-renowned pioneers and practitioners in probabilistic technology.

During the event, the Reliability Committee and Probabilistic Methods Leadership Council (PMLC) will launch the National Culture Change planning processes and Roadmap development. The effort is an extension of the Army's Transformation Reliability Improvement Program, or ATRIP, which has the goal of changing the RMSL culture of the Army and its industrial base through advanced tools, methods, technologies, and best practices. Probabilistic technology is one of the technologies viewed by the Army and SAE G-11 as crucial for this culture changing phenomena to succeed.

A new G-11 Reliability Applications Committee, under the lead of David Gorsich from U.S. Army TACOM, will focus on advanced RMSL methods, which will be used for Army ground vehicles and equipment. The committee will address issues of uncertainty, durability, and reliability of ground vehicles. The work will provide value to both the DOD and the automotive industry by working to standardize methodologies and facilitate the commercialization of such applications and products. These new tools are expected to improve the reliability and quality of vehicles, enabling warranty extension for commercial vehicles, and reducing maintenance and logistics issues for both industry and the military.

Participation on any one of these groups within G-11 is open to all. For more information on the Army and National Culture Changing initiatives, contact Bob Kuper at [robert.kuper@us.army.mil](mailto:robert.kuper@us.army.mil); the Reliability Applications Committee, contact David Gorsich at [GorsichD@tacom.army.mil](mailto:GorsichD@tacom.army.mil) or K.K. Choi at [kkchoi@ccad.uiowa.edu](mailto:kkchoi@ccad.uiowa.edu); G-11 technical matters, contact Suren Singhal at [Suren.N.Singhal@nasa.gov](mailto:Suren.N.Singhal@nasa.gov); and for registration for the meeting, contact SAE G-11 Representative Kerri Rohall at [kerrir@sae.org](mailto:kerrir@sae.org). To ensure your active participation, please register immediately by contacting Kerri or go to [shop.sae.org/technicalcommittees/regforms/g-11.shtml](http://shop.sae.org/technicalcommittees/regforms/g-11.shtml).

# SAE International™

"The premier society dedicated to advancing mobility engineering worldwide"

Thousands of achievements. One amazing century.

## Forty ways to celebrate.

SAE 1905 - 2005 SAE International

During the past 100 years, the Society of Automotive Engineers (SAE) has dedicated itself to advancing the engineering of the mobility industry.

In recognition of the society's thousands of achievements throughout the past amazing century, SAE is proud to offer more than 40 commemorative memorabilia items. From baseball caps priced at under \$10 to a beautiful \$160+ leather jacket, all are available to celebrate your affiliation with SAE...and to help you own a piece of SAE history.

Browse the complete line of commemorative items today by visiting [www.sae.org/sae100](http://www.sae.org/sae100) and clicking on the "Memorabilia" tab at the top of the page.

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## MEETINGS UPDATE

## Meetings and symposia schedule

For more information about meetings and symposia, call SAE Customer Service toll-free at 877.606.7323 (724.776.4970 outside the U.S. and Canada). Additional meeting details can be found on SAE's website at [www.sae.org/calendar/meetings.htm](http://www.sae.org/calendar/meetings.htm); symposia details at [www.sae.org/calendar/toptecs.htm](http://www.sae.org/calendar/toptecs.htm).

SAE Ground Vehicle Design & Manufacturing Events		
*SAE 2004 World Congress	March 8-11 2004	Detroit, MI
Frontiers of Automotive Telematic Systems Symposium	April 20-21 2004	Troy, MI
Automotive Dynamics, Stability & Controls Conference and Exhibition	May 4-6 2004	Detroit, MI
Designing Electronic Powertrain Controls	May 4-6 2004	Austin, TX
Government/Industry Meeting	May 10-12 2004	Washington, DC
Nanotechnology - Inner Value Symposium	May 11-12 2004	Pittsburgh, PA
Statistical Energy Analysis (SEA) Symposium	May 11-14 2004	Troy, MI
Highway Vehicle EDR Symposium	June 3-4 2004	Ashburn, VA
Fuels & Lubricants Meeting & Exhibition	June 8-10 2004	Toulouse, France
Digital Human Modeling for Design and Engineering (DHM)	June 15-17 2004	Rochester, MI
Automotive Alternate Refrigerant Systems Symposium	June 29-July 1 2004	Scottsdale, AZ
Homogeneous Charge Compression Ignition Symposium	August 10-11 2004	Berkeley, CA
International Body Engineering Symposium	September 21-22 2004	Troy, MI
Small Engine Technology Conference (SETC)	September 27-30 2004	Graz, Austria
AWD (All-Wheel-Drive) Systems, Security, and Driver Interaction Symposium	Sept. 27-Oct. 1 2004	Ottawa Lake, MI
22nd Annual Brake Colloquium & Exhibition	October 10-13 2004	Anaheim, CA
Convergence 2004	October 18-20 2004	Detroit, MI
DoD Maintenance Symposium & Exhibition	October 25-28 2004	Houston, TX
Powertrain & Fluid Systems Conference & Exhibition	October 25-28 2004	Tampa, FL
SAE Commercial Vehicle Engineering Congress and Exhibition	October 26-28 2004	Metro Chicago Area, IL
SAE Aerospace Design & Manufacturing Events		
General Aviation Technology Conference & Exhibition (GATC)	April 20-22 2004	Wichita, KS
Aerospace Friction Stir Welding Symposium	June 10-11 2004	Albuquerque NM
Digital Human Modeling for Design and Engineering (DHM)	June 15-17 2004	Rochester, MI
34th International Conference on Environmental Systems (ICES)	July 19-22 2004	Colorado Springs, CO
DoD Maintenance Symposium & Exhibition	October 25-28 2004	Houston, TX
Aerospace Manufacturing and Automated Fastening Conference & Exhibition	September 21-23 2004	St. Louis, MO
*Meetings at which SAE seminars will be conducted.		

# Every year a new event

Watch this column  
for the latest developments  
as industry creates  
SAE 2004.

- **Congress Parking Made Easier with Advance Parking Reservations**

We've lessened your parking headaches at SAE 2004 with three convenient options from SAE and the Detroit Municipal Parking Department. Select parking facilities at or near Cobo Center will accept advance parking reservations at a cost of \$15/day. Visit the Congress web site at <http://www.sae.org/congress/parking> for details.

- **SAE Honors Convocation Luncheon**

Help honor engineers who have contributed to the advancement of automotive engineering by purchasing your ticket for the SAE Honors Convocation Luncheon taking place Tuesday, March 9. Dr. Jack E. Thompson, 2003 SAE President, will be presiding.

- **Record OEM and Supplier Participation**

SAE 2004 World Congress features the largest technical program in history, with more than 1500 papers scheduled to be presented. A record number of these presentations - approximately 50% - will be from representatives of the industry's OEMs and major suppliers, including 25 of the top 30 suppliers.

Number of Papers authored by OEMs:

439 - up 35% from 2003

Number of Papers authored by Suppliers:

221 - up 21% from 2003

- **New Registration Process for Congress**

This year, all attendees must register for Congress (including members, participants, committees, boards). Make the most of every technology-filled minute and skip registration lines at Cobo Hall by registering before the event. Visit <http://www.sae.org/congress/about/register/>

## SAE 2004

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March 8-11, 2004  
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## AWARDS

## Tickets available for Honors Convocation Luncheon

Help honor engineers who have contributed to the advancement of automotive engineering by purchasing your ticket for the SAE Honors Convocation Luncheon. SAE's 2004 Fellow Grade inductees will be recognized as well as several other distinguished award recipients. The luncheon is scheduled for Tuesday, March 9, 2004 from 11:30 a.m. to 1:30 p.m. at Cobo Center, First Level, W1-52.

Tickets are \$27 each or \$270 for a table of ten and can be conveniently ordered online at [www.sae.org/congress/specialevents/honors-convocation.htm](http://www.sae.org/congress/specialevents/honors-convocation.htm).

For questions about the Honors Convocation Luncheon, please contact Lori Pail, Awards & Scholarships Program Office at 724.772.8534 or [lorile@sae.org](mailto:lorile@sae.org).

## Charlotte E. Wiley to receive 2004 SAE Women Engineers Committee (WEC) BREED Award for Women's Leadership

Charlotte E. Wiley of Cummins Power Generation has been selected to receive the 2004 SAE/WEC BREED Award for Women's Leadership in the field of engineering. The award will be presented during the Honors Convocation at the SAE World Congress in Detroit on March 9, 2004.



Charlotte E. Wiley

The WEC/BREED Award is designed to honor women in the mobility industry based on the contributions they make both professionally and personally. It recognizes women who have demonstrated outstanding performance in several key areas including providing leadership, contributing technical or engineering achievements in the mobility industry, and displaying innovation and uniqueness in achieving corporate and personal goals.

Wiley is a mechanical engineer/technical advisor with Cummins Power Generation where she is involved with a major Six Sigma Project. She has 25 years of mechanical engineering, team leadership, and technical project management

experience at major corporations, including General Motors Fuel Systems Division, MDT Biologic Co., Xerox, Safetran Systems, Boston Scientific SCIMED, and Carl Zeiss. Career milestones include her work at General Motors Fuel Systems Division in designing and delivering to production three major new fuel systems: the Rochester Products closed loop carburetor, the Rochester Products/Robert Bosch port fuel injection system, and the Rochester Products maxi throttle-body injection system. During her time at Xerox, she won an award for an invention proposal to detect and prevent illegal use of the color copier system. She also led the pre-charge erase subsystem team in the implementation of significant new photoreceptor lighting technology.

Wiley has been an active member of SAE for 25 years. She has served on both the Western New York Section Board and Twin Cities Section Board. In May 2002, she attended the national Section Officers Leadership Seminar when she returned to Minneapolis to serve as the local chairperson for the 2002-2003 program year.

Wiley has a bachelor's degree in mechanical engineering from Rochester Institute of Technology.

## Benjamin Loop receives the 2002 Charles M. Manly Memorial Medal

Benjamin Loop is the recipient of the 2002 Charles M. Manly Memorial Medal. Loop was presented with the award at the 2003 Aerospace Congress & Exhibition in September.



Benjamin Loop

This annual award, established in 1928, recognizes the author(s) of the best paper relating to theory or practice in the design or construction of, or research on, aerospace engines, their parts, components, or accessories, at a meeting of the society or its sections during the calendar year. The award commemorates the contributions made by Charles M. Manly, SAE's President in 1919, to the field of aeronautical engineering.

Benjamin Loop is currently a Ph.D. student at Purdue University. His ongoing research focuses on practical methods of applying Lyapunov theory to stability analysis of large-scale nonlinear systems. Additional research interests include electric machines, power electronics, applied control, genetic algorithms, and nonlinear system analysis. Previously, he worked as a consultant for P. C. Krause and Associates, concentrating on the modeling and control of an unmanned aerial vehicle power system, and feasibility studies of electric-field based machines.

Loop is a student member of IEEE. He received a bachelor's degree with highest distinction and a master's degree in electrical engineering from Purdue University in 2000 and 2002, respectively.

## Yasuhiro Matsui to receive the 2002 Ralph H. Isbrandt Automotive Safety Engineering Award

Yasuhiro Matsui, a researcher in crash safety with the Japan Automobile Research Institute, has been selected to receive the 2002 Ralph H. Isbrandt Automotive Safety Engineering Award. The award will be presented on March 9, 2004 during the Honors Convocation at the annual SAE World Congress in Detroit, MI, USA.



Yasuhiro Matsui

This award, established in 1972, recognizes individuals for their outstanding contribution to SAE literature, which advances the field of automotive safety engineering. The award honors the late Ralph Isbrandt, 1967 SAE President, who contributed significantly to automotive safety engineering, and

inspired young engineers to seek a career in mobility engineering.

Matsui is being recognized as the lead author, along with co-authors Adam Wittek and Atsuhiko Konosu, for the SAE technical paper "Comparison of Pedestrian Subsystem Safety Tests Using Impactors and Full-Scale Dummy Tests."

Since joining the Japan Automobile Research Institute in 1994, Matsui has contributed to the development of test methods and tools to assess vehicle aggressiveness as a means to improve the safety performance of the frontal vehicle structure. The research is intended to find ways to reduce the number and severity of pedestrian injuries in traffic accidents.

Matsui received his doctorate in engineering from the Graduate School of Engineering of Nagoya University in Japan.

## 2004 Auburn Lady Tigers SAE-WEC Mini Baja Challenge winners



The SAE Women Engineers Committee (WEC) recently sent congratulations to Cathy Hill (team leader), Brittany Consuegra, Rachel Achorn, Ololade Ayanwale, Becky Pugh, Courtney Barnett, Emily Johnson, and Renee Smeya of Auburn University for winning the SAE Challenge to Women Mini Baja Team Leaders Award. A check for \$1000 was sent to their SAE Faculty Advisor, Peter Jones, along with the notification. More details on the award can be found by accessing [www.sae.org/students/minibajadocs.htm](http://www.sae.org/students/minibajadocs.htm).

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## Designing Electronic Powertrain Controls Symposium

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## AWARDS

## Recipients of the 2003 Henry Ford II Distinguished Award for Excellence in Automotive Engineering announced

SAE is pleased to announce that a team of engineers led by Hari M. Agrawal, Senior Technical Specialist with Ford Motor Co., has been selected to receive the 2003 Henry Ford II Distinguished Award for Excellence in Automotive Engineering. Team members are Ramamohan Potukutchi and Parambakatoor R. Perumalswami, both of Body Durability at Ford Motor Co., and Pingsha Dong, Research Leader and Technical Director of the Center for Welded Structures Research for Battelle Memorial Institute. The award will be presented on March 9, 2004, during the Honors Convocation at the annual SAE World Congress in Detroit, MI.

This award, established in 1988, recognizes an individual or team who uses their engineering skills to achieve product or manufacturing process contributions that have had the greatest positive effect on the passenger car, truck, and bus industries. The award, funded by Ford Motor Co., honors the memory of Henry Ford II and the enormous impact he had on the automotive industry.

The recipients are being recognized for their accomplishment in developing and implementing a unique CAE durability prediction method for MIG and laser welds, a method currently used by Ford Motor Co. and several of its subsidiaries in vehicle development.

**Hari M. Agrawal** has been with Ford for more than 25 years, holding both research and design positions with a focus on durability and fatigue. Prior to joining Ford, he worked as a Project Engineer for Fruehauf Corp. in Detroit, MI; Blitz Corp., Chicago, IL; and Eureka Auto Radiator Products in Chicago, IL. He is an active member of SAE and serves on its Fatigue Design and Evaluation Committee. Agrawal has been recognized by Ford with 17 different awards, including the prestigious Henry Ford Technology Award by Ford Motor Co. A resident of Farmington Hills, MI, Agrawal received his bachelor's degree in mechanical engineering from the University of Jodhpur in India. He also has a master's degree in mechanical engineering from Illinois Institute of Technology in Chicago, IL.



*Hari M. Agrawal*

**Parambakatoor R. Perumalswami** has been with Ford Motor Co. for more than 25 years in management of CAE development, training, consulting, and applications. He has made significant



*Parambakatoor R. Perumalswami*

contributions in automotive body and chassis structures, and has taught finite element structural analysis, both at Ford and at several U.S. universities. Perumalswami received a B.E.C.E. degree with honors from the University of Madras in India. He also holds a doctorate in structural engineering from the University of Minnesota.

**Ramamohan Potukutchi** has more than 15 years of experience in structural analysis of automotive and aerospace (metallic and composite) structures. His achievements include the development of variationally correct higher order transverse deformable finite elements and significant contributions to the design of composite wings for India's most prestigious aviation project, LCA – Light Combat Aircraft. He has also received Ford Motor Co.'s VEV (Vehicle Evaluation and Verification) Achievement Award. A resident of Sterling Heights, MI, Potukutchi has a doctorate in aerospace engineering from the Indian Institute of Science in Bangalore, India.



*Ramamohan Potukutchi*

**Pingsha Dong's** research interests include design and analysis methods for welded structures, advanced computational procedures for welding/joining process simulations, fatigue/fracture behavior of welded structures, and residual stress and distortion mitigation techniques. He has published more than 150 papers in peer-reviewed archive journals and conference proceedings and has received numerous awards for his work. In addition, he serves as editor or reviewer for a number of international archive journals. Since 1994, he has been elected as the U.S. Delegate to International Institute of Welding (IIW) to Commissions X on Fatigue and Fracture Control of welded structures. Dong has both bachelor's and master's degrees in welding engineering from Harbin Institute of Technology in China. He also has a master's degree and doctorate in mechanical engineering from the University of Michigan in Ann Arbor.



*Pingsha Dong*

Retrieve additional information on this award at [www.sae.org/awards/ford.htm](http://www.sae.org/awards/ford.htm).

## Jack D. Benson to receive the 2003 Edward N. Cole Award for Automotive Engineering Innovation

Jack D. Benson has been selected to receive the 2003 Edward N. Cole Award for Automotive Engineering Innovation. Benson will be presented with the award on May 11, 2004, during the monthly meeting of the Detroit Section of SAE.



*Jack D. Benson*

This award, established in 1978, annually recognizes an SAE member whose innovative design is described in an SAE paper or whose lifetime of accomplishment is judged to be a significant achievement in automotive engineering. Judgment is based upon the value of the work as an original innovative contribution, not upon the application of some development or invention already known. The award honors the memory of Edward N. Cole, former President and Chief Operating Officer of General Motors Corp., and the inspiration he provided to others in the engineering profession by his continuing search and drive for product innovation. The award is made possible through a fund originally established by contributions from General Motors Corp., SAE members, and other employees and retirees who were associated with Mr. Cole.

Benson worked for General Motors from 1964 to 1998, when he retired from his

position as a Research Fellow and Manager of the Gasoline Section of the Fuels and Lubricants Department at General Motors Research and Development Center. Benson currently serves as President of Automotive Fuels and Emissions Consulting Services in Michigan. During his more than 35 years in the industry, Benson made numerous significant accomplishments in the areas of automotive engines and fuels, and vehicle emissions and performance. His achievements are recognized around the world. They have resulted in significantly reduced vehicle emissions, fuels blended for lower emissions, and improved vehicle operation.

Benson has authored or co-authored more than 50 technical publications. He received General Motors' Charles L. McCuen Award for Extraordinary Accomplishment in Research in 1987 and 1991, and the General Motors Presidents Council Award in 1998. In 1997, the American Society of Mechanical Engineers awarded Benson the Sochiro Honda Medal for "outstanding achievement and a series of significant engineering contributions in the field of personal transportation." He was elected an SAE Fellow in 1993.

Benson has bachelor's and master's degrees in mechanical engineering from the University of Michigan.

## William C. Brubaker to receive 2004 Bill Agnew Award for Outstanding A World in Motion Volunteers

William C. Brubaker has been selected as the first recipient of the Bill Agnew Award for Outstanding A World in Motion (AWIM) Volunteers. Brubaker will be presented with the award during the opening address at the 2004 SAE Government/Industry Meeting on May 12, 2004, in Washington, D.C.

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 who has assisted a teacher integrating the AWIM program and must have participated in classroom activities during the current academic year. The award honors William G. Agnew, retired from General Motors Research Laboratories, for his work in establishing and continued support of the AWIM program.

Brubaker's career spanned 25 years with Martin Marietta in military and commercial aircraft work, three years with Bellcomm on the Apollo and Skylab programs, and 20 years with the National Highway Traffic Safety Administration



*William Brubaker works with a group of middle school students on the AWIM Program.*

(NHTSA) where he helped develop crash protection standards for passenger cars and school buses. Since his retirement from NHTSA, he received a citation in recognition of his superior achievement in developing the technical and legal foundation for improved side-impact crash protection for passenger cars.

Brubaker is a member of the American Institute of Aeronautics and Astronautics (AIAA), and has been an SAE member for 21 years. He established the AWIM Program in Maryland, and has conducted 286 AWIM sessions. Brubaker has a bachelor's in aeronautical engineering from Tri-State College. He is a licensed professional engineer in the State of Maryland.

## AWARDS

## Gary L. Boyd receives the 2002 Wright Brothers Medal

Gary L. Boyd has received the 2002 Wright Brothers Medal. Boyd was presented with the award at the 2003 Aerospace Congress & Exhibition (ACE) in September 2003.



Gary L. Boyd

This award, established in 1927, annually recognizes the author(s) of the best paper(s) relating to the invention, development, design, construction, or operation of an aircraft and/or spacecraft presented at a meeting of SAE or any of its sections. Consideration is given to the value of the author's contribution to the state of the art in furthering flight technology, whether it pertains to aircraft or spacecraft systems or their parts, components, subsystems, or accessories. The award honors Orville (an early SAE member) and Wilbur Wright, the first successful builders and operators of heavier-than-air flying equipment.

Boyd is President and Owner of Ceramic Engineering Consulting (CEC), Inc. His work focuses on advanced ceramic component and ceramic to metallic component (hot and cold) engine section attachment designs, FEM/FEA analysis,

NASALeRC's CARES Ceramic Reliability analysis, precision metallic and ceramic component prototype and production manufacturing, and iterative ceramic component design/development through engine and rig testing and evaluation. He has also provided technical direction and financial management for the DOE-sponsored Advanced Gas Turbine (AGT-101), and the Advanced Turbine Technology Applications Project (ATTAP).

During his career, Boyd has consulted with AlliedSignal Propulsion Engines and APU's, Solar Turbines, Inc., Hughes Missile Systems Co., Tokyo Electron, Inc., RMB Miniature Bearings, and other companies and programs to design, analyze, test, and develop a variety of ceramic-related components and systems for turbine engines and related products including turbine blade attachments, high-speed internal seals, high temperature measurement probe systems, and robotic welder ceramic components.

Boyd is a current member of SAE. He has an Airframe and Powerplants (A&P) License and an Airline Transport Pilot (ATP) License. He graduated from Texas A&M University with a bachelor's degree in mechanical engineering and one in materials science.

## Narayan Yoganandan to receive 2004 Arnold W. Siegel International Transportation Safety Award

Narayan Yoganandan of the Medical College of Wisconsin has been selected to receive the 2004 Arnold W. Siegel International Transportation Safety Award. Yoganandan will be presented with the award on March 9, 2004, during the Honors Convocation at the annual SAE World Congress in Detroit, MI.



Narayan Yoganandan

This award, established in 1987, recognizes outstanding international research, innovation, and contributions to crash injury protection, biomechanics, and design for all mobility vehicles for land, air, sea, and space. The award honors Arne Siegel, SAE Fellow, whose pioneering crash injury research began in 1954 at the University of California-Los Angeles.

Yoganandan is Professor and Chairman of biomedical engineering in the Department of Neurosurgery at the Medical College of Wisconsin in Milwaukee. He is also Adjunct Professor of biomedical engineering at Marquette University in Milwaukee. He teaches courses in impact biomechanics, trauma, crash reconstruction, and mathematical modeling, and has presented more than 150 invited lectures worldwide, including numerous national briefings.

A researcher and author, Yoganandan's studies focus on the biomechanics of trauma to the head, face, neck, spine, chest, abdomen, pelvis, and extremities using experimental and computer

modeling. He has been teaching and training clinicians in these areas for more than 15 years. He has published more than 500 scientific papers, including over 150 peer-reviewed journal articles and more than 40 book chapters. Yoganandan is on the editorial board of several clinical and engineering journals, and serves as a reviewer for numerous journals. He is also the senior editor of two recent books: *Frontiers in Head and Neck Trauma: Clinical and Biomechanical*, and *Frontiers in Whiplash Trauma*, published in 1998 and 2000, respectively, by the IOS Press, Amsterdam, The Netherlands, and distributed by the SAE.

Yoganandan is a Fellow of the Association for the Advancement of Automotive Medicine. He has served as chairman or reviewer of grant review committees for agencies including the National Institutes of Health, the Centers for Disease Control, the National Science Foundation, the Department of Defense, and the Department of Education, and has served as a member on several of these agencies' national advisory committees. He has also served as a consultant to the Consumer Product Safety Commission.

Yoganandan received his doctorate in biomedical engineering from Marquette University in Milwaukee, WI. He completed his master's degree in structural engineering at the Indian Institute of Science in Bangalore, and bachelor's degrees in mathematics and in civil engineering at Mysore University, India, as class valedictorian.

## 19th Cliff Garrett Turbomachinery Engineering Award Lecture to be held during SAE 2004 World Congress

Plan to attend the 19th Cliff Garrett Turbomachinery Engineering Award Lecture held during the SAE 2004 World Congress on Wednesday, March 10, 2004, from 4:00-5:00 p.m. at Cobo Center in Room M2-30.



Steven D. Arnold

The lecture, titled "Turbocharging Technologies to Meet Critical Performance Demands of Ultra-Low Emissions Diesel Engines," will be presented by author Steven D. Arnold, the SAE 2003 Cliff Garrett Turbomachinery Engineering Award Recipient.

Over the past decade, the dramatic improvements in power density, responsiveness, and low emissions in both turbodiesel passenger vehicle and commercial vehicle engines have demanded significant alterations to the basic architecture of turbochargers. The emissions legislation already enacted worldwide, but not yet in force will demand further reaching changes to the basic concept of turbocharging. This paper will explore the complex linkage between the aerodynamic machine (the turbocharger), the positive displacement machine (the engine), and their new role as feed-gas generators for aftertreatment devices. The divergence in requirements between passenger vehicle and commercial vehicle applications reveals that significantly different technologies will be required for the different market segments.

Arnold graduated from the University of New Mexico in 1976, and began his association with turbomachinery in the aerospace industry working on gas turbines for AiResearch Manufacturing Co. Subsequent positions with MTI (Stirling Engines) and Schwitzer, Warner-Ishi, and Garrett (turbochargers) increased the focus on turbomachinery.

In addition to turbomachinery, engines have been a passion for Arnold. From 1976 to 1986, he road-raced Grand Prix motorcycles on the U.S. national circuit and developed his own unique racing machine. He joined Garrett in 1995 as Director, Commercial Vehicle Product

Engineering, and has fathered a number of new products—the Advanced Variable Nozzle Turbine (AVNT), the Integral EGR pump (IEGR), and the Low Speed Turbocharger (LST). Arnold was awarded the 2002 Honeywell Senior Leadership Award for Innovation for taking the AVNT from concept to production. The AVNT achieved 300,000 units' annual sales volume in 2003. Arnold and the AVNT team also received the 2000 Honeywell Quest for Excellence Award.

Arnold's current role as Director of Innovation and New Concepts brings together his expertise in turbomachinery and passion for engines. His work is focused on understanding the needs and requirements of upcoming generations of engines, inventing and validating new boosting concepts synergistic with those requirements. He is currently working on several new concepts and has numerous patents pending in addition to the 13 patents granted.

Following the lecture, Arnold will be presented with the 2003 Cliff Garrett Turbomachinery Engineering Award, which consists of a framed certificate, an Atmos Clock, and a \$500 honorarium check. This award promotes engineering developments and the presentation of SAE papers on turbomachinery engineering. The award honors Cliff Garrett and the inspiration he provided to engineers by his example, support, encouragement, and many contributions as an aerospace pioneer. To perpetuate recognition of Mr. Garrett's achievements and dedication as an aerospace pioneer, SAE administers the annual lecture by a distinguished authority in the engineering of turbomachinery for on-highway, off-highway, and/or spacecraft and aircraft uses.

The award is made possible by a contribution from the Garrett Corp. (now a division of Honeywell).

If you are interested in nominating an individual for the SAE 2004 Cliff Garrett Turbomachinery Engineering Award Lecturer, visit [www.sae.org/awards/aero\\_garrett.htm](http://www.sae.org/awards/aero_garrett.htm) for additional award information and a nomination form. Nomination deadline is March 31, 2004.

## Career development opportunities at SAE 2004

If you're looking to hire or be hired, the SAE 2004 World Congress offers several ways to help you network to find the right company or professional to meet your needs.

Learn about succeeding in the automotive industry at the SAE Career Development Session on Tuesday, March 9, 1:30 pm to 3:30 pm, Room W2-65, Cobo Center. Hear valuable tips from featured speakers Steve Dulieu, Director, Human Resources, Product Development, Ford Motor Co.;

John Baylis, General Manager – Administration, Toyota Technical Center; and John Tenerowicz, Vice President, Human Resources, Aerotek.

Stop by the Career Center now located in Congress Central, Room W2-60 and check out the many job postings available and post your resume for free. Those wishing to display their resumes should bring 50 copies directly to the Career Center, open Monday-Wednesday, 8:00 a.m. to 5:00 p.m. and Thursday, 8:00 a.m. to 4:00 p.m.

## MEMBER UPDATE

## Members on the move

**John Nechiporchik** (Aff'98) has been appointed President of Roush's Manufacturing Division.

**Jack Pelton** (Asc'00) has been named President and Chief Executive Officer for Cessna Aircraft Co., where he assumes full leadership responsibility for the business.

## Special acknowledgements

**Philip Malte** (Mbr'84), Professor of Mechanical Engineering at the University of Washington, Seattle, has been named a Fellow of the American Society of Mechanical Engineers.

**Norman McCombs** (Mbr'94), Senior Vice President Air Sep Corp., has been named a Fellow of the American Society of Mechanical Engineers.

**George West Jr.** (Mbr'86), Vice President of Manufacturing at PACCAR Inc., has been elected an At-Large Member of the Society of Manufacturing Engineers' (SME) 2004 Executive Committee.

**Paul Whitcraft** (Mbr'94), Director of Quality Assurance and Engineering at Rolled Alloys, has been elected to the ASTM International's Board of Directors.

**Richard Ziegler** (Mbr'93), Director of the Oak Ridge National Laboratory's Transportation Programs and the National Transportation Research Center User Facility, has been named Chairman of the new regional Alliance for Secure Energy and Transportation.

## In memoriam

**Jack Heyler** (Fel'54) recently passed away. Heyler was instrumental in the formation of the Service Technicians Society. He led many SAE committees dealing in service technology and in particular the development of industry standards for OBD systems. He also



Jack Heyler

established the Jack Heyler Award through the SAE Foundation. This award provides working technicians with travel assistance so they may participate in STS leadership training and leadership opportunities.

**Michael Kollins** (Fel'53) recently passed away. Kollins was author of the four-volume set of *Pioneers of the U.S. Automobile Industry* published by SAE.

## SAE Member Lounge available at the SAE 2004 World Congress

The SAE Member Lounge, located in Congress Central, Room W2-60, is open to all members of SAE and offers a place to relax and revamp for the next Congress activity. An assortment of beverages, sandwiches, and light snacks will be offered daily through the support of SAE's

affinity program providers, including Hartland Insurance, Liberty Mutual Insurance, United Parcel Service, Selman & Co., and Chorus Call. The Member Lounge will be open Monday, Tuesday, and Wednesday 8:00 a.m. to 5:00 p.m., and Thursday 8:00 a.m. to 4:00 p.m.

## SECTIONS UPDATE

## SAE President visits Southern California Section



SAE 2003 President Jack Thompson and his wife Dawn stopped by the DaimlerChrysler booth at the LA Auto Show while visiting the Southern California Section in January.

## March membership renewal time is here

Check your SAE Membership card...if you have an expiration date of March 31, now is the time to take action and renew for 2004. If you have not already done so, here are your options:

**Automatic renewal:** This new feature from SAE is perfect for you 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 SAE will renew your membership automatically. Plus, you'll save \$10 on your membership dues every year you are in the Automatic Membership Renewal program. *See shaded box.*

**Renew online:** This is a fast, easy way to renew, and you can save money, too. Reduce your dues from \$90 to \$85 by renewing on the SAE website. Just log on to [www.sae.org/renew](http://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 SAE's secure server. You will need your login id and password. Call 724.776.4970 or email [CustomerService@sae.org](mailto:CustomerService@sae.org) for id and password help.

You can save time and money by renewing online, but you save even more time and even more money by enrolling in SAE's Automatic Membership Renewal. *See shaded box.*

**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 SAE provides.

**Renew by phone:** Call 877.606.7323 in the U.S. and Canada, 724.776.4970 from other countries, 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, do not also mail the completed form to SAE.

## Save time and money renewing your membership by enrolling in SAE's Automatic Membership Renewal

Save \$10 on your membership every year with Automatic Renewal.

If you never want to receive another renewal notice from SAE, Automatic Membership Renewal—the society's newest renewal feature—is for you. Here's how it works: With your authorization, SAE charges your credit card every year at renewal time and your membership is renewed automatically. You will receive no renewal notices in the mail or by email, which means no forms to fill out and no forms to return. Instead, you will receive notice from SAE that your credit card has been charged and that your membership has been renewed for another year.

There are two very important benefits from Automatic Renewal: First, you will not receive any renewal notices and reminders from SAE, and, second, you will save \$10 on your dues every year you are in the Automatic Renewal program. Of course, you may withdraw from the program at any time and return to the traditional membership renewal process. Call 877.606.7323 for details.

You can save time and money by renewing online, but you can save even more time and money by enrolling in SAE's Automatic Membership Renewal.

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with three convenient options from SAE and the Detroit Municipal Parking Department.

- Advanced parking reservations available at six parking facilities
- Nearly 900 spaces reserved at Joe Louis Arena Garage
- Convenient SAE 2004 shuttle service to Cobo Hall, available from all SAE 2004 participating hotels along with Joe Louis Arena Garage and select suburban malls

SAE 2004 transportation promises to be easier, allowing you to fully experience a week of automotive engineering technology at the World Congress.

For advanced parking reservations, pricing and shuttle schedules along with complete information, visit [www.sae.org/congress/parking](http://www.sae.org/congress/parking).

**SAE 2004**  
World Congress

March 8-11, 2004 - Cobo Hall • Detroit, Michigan USA

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## PROFESSIONAL DEVELOPMENT

### Seminar emphasizes safety design, specification writing

With safety recalls continuing to be a costly problem for companies in the automotive industry, the SAE seminar "Designing for Safety and Developing Accurate Safety Specifications" focuses on how significant cost savings can be achieved through creative design practices.

"Safety has a very high return on investment if companies would look at the real life cycle costs of unsafe products and use creativity in design," said seminar instructor Dev Raheja, author of the books *Product Assurance Technologies: Principles and Practices* and *Creativity: The Art of Doing Right Things Right*.

"Many safety recalls are the result of incomplete, vague, or poorly written engineering safety specifications," said Raheja, an international consultant specializing in design assurance technologies. In the two-day seminar, he

emphasizes techniques for writing clear, accurate safety specifications, as well as design practices that focus on inherent product risks very early in the design process, thereby leading to reduced accidents and lower costs.

In addition to exploring the creative techniques used by many successful engineering managers, seminar attendees will engage in several hands-on activities where they practice balancing intuitive vs. logic-based design considerations.

The "Designing for Safety and Developing Accurate Safety Specifications" seminar will be held April 19-20 at SAE Automotive Headquarters in Troy, MI. It will again be offered on September 23-24. For more information or to register, visit [www.sae.org/seminarinfo](http://www.sae.org/seminarinfo), or call SAE Customer Service at 877.606.7323 or 724.776.4970 (outside U.S. and Canada).

### Internal combustion engine and catalytic converter seminars to be released on CD-ROM

Due to the success of the Diesel Engine Technology e-Seminar, SAE plans the release of two additional e-Seminars (electronically delivered seminars) this spring. The well-established, two-day SAE classroom courses, "The Basics of Internal Combustion Engines" and "Catalytic Converters: Design and Durability," will be available for delivery on CD using full-motion video illustrated with synchronized presentation slides.

The Basics of Internal Combustion Engines e-Seminar featuring instructor William Mark McVea will examine the fundamental characteristics, operational principles, and component applications of modern internal combustion engines—from hydrocarbon fuel ignition to volumetric efficiency. Instructors Ron Heck and Suresh Gulati team up for the Catalytic Converters: Design and Durability e-Seminar. The program will cover topics from the early development of catalytic converters and the key inventions that made them viable to the recent advances in converter technology required to meet the ever stringent

emissions regulations for both light-off and underbody converters.

Convenient, portable, and with content not reliant on live Web connectivity, e-Seminars offer a new way to receive the same instruction without the need to travel to a fixed location and at added expense or to spend time away from the home and office. Preceded by a self-quiz, content is presented in a series of modular topics that allow the student to progress through the course at their own pace. Navigation is granular to a slide so revisiting a specific concept or using the table of contents to select a starting point is easy. A handout accompanies the CD to complete a ready-reference package available whenever a refresher is needed.

Upon conclusion of the course, students have an opportunity to take an online post-test to gauge proficiency in the topics, receive continuing education units (CEUs), and obtain a certificate of completion.

For more information, to view demo clips, or to purchase an SAE e-Seminar, visit [www.sae.org/contedu/distance.htm](http://www.sae.org/contedu/distance.htm).

### SAE Continuing Education and Training Programs earn esteemed authorization status

SAE is proud to announce that its professional development and engineering education programs have earned "Authorized Provider" status, as recognized by the International Association for Continuing Education and Training (IACET).

This designation is awarded by the IACET Commission, a body that is widely respected in defining and maintaining specific guidelines for providing quality continuing education units (CEUs). IACET has conducted a strict and comprehensive evaluation of SAE's educational processes and programs. This analysis has concluded that SAE is in compliance with proven, research-based criteria created in cooperation with the U.S. Department of Education, and that SAE also demonstrates a strong dedication to high quality standards for continuing education and training.

As an Authorized Provider, SAE can now award the IACET CEU, regarded by many

as the hallmark of quality in continuing education and training.

According to David Cameron, Chairperson of the SAE Continuing Professional Development Group, and Chief Technologist, By-Wire Chassis, General Motors Corp., "The attainment of the IACET Authorized Provider status validates the long tradition of excellence that continuing education and training has had within SAE. This further recognizes SAE as a high quality, value-driven provider of technical educational products in this increasingly competitive environment."

SAE offers a variety of educational opportunities in several formats, including courses presented at the SAE Automotive Headquarters in Troy, MI. For additional information regarding SAE Professional Development and Training programs, contact Kevin Perry at 724.772.7502 or visit [www.sae.org](http://www.sae.org) and select the training option.

## STUDENT ACTIVITIES

### 2004 Clean Snowmobile Challenge scheduled

The SAE Collegiate Design Series: 2004 Clean Snowmobile Challenge is approaching. The event, hosted for the second year by Jay Meldrum, Director of Keweenaw Research Center, Michigan Technological University, located in Houghton, MI, will be held March 15-20.

The Clean Snowmobile Challenge competition is designed to challenge engineering students to re-engineer an existing snowmobile for improved emissions and noise while maintaining or improving the performance characteristics of the original snowmobile. The modified snowmobiles are also expected to be cost effective.

Houghton, MI, specifically the Keweenaw Peninsula, is a snowmobiler's dream and a perfect location to conduct such a collegiate competition. Hence why it is the chosen location of this year's Clean Snowmobile Challenge. Snow is not measured in inches or counted by days here, instead it is

measured in feet and it stays around for months. And the average winter temperature on the Keweenaw Peninsula is a little warmer than what one might expect at approximately 20-30 degrees.

As far as the course goes this year, organizer Jay Meldrum states that at this year's event the endurance race will be run on local snowmobile trails, specifically the trail from Twin Lakes to Copper Harbor (Trail #3), although local snowfall and trail conditions will dictate which trail is used. The remainder of the testing will all be done on the private 500-acre test course using snow packed areas groomed by staff.

For more information, check out the SAE Collegiate Design Series Web site at [www.sae.org/students/csceventinfo.htm](http://www.sae.org/students/csceventinfo.htm), or you can visit the following two Web sites for additional information provided by the organizer: [www.pasty.com](http://www.pasty.com) and [www.mtukrc.org](http://www.mtukrc.org).

## SAE 2004 World Congress SEMINARS

[www.sae.org/congress/seminars/](http://www.sae.org/congress/seminars/)

Some 30+ seminars in core technology areas will be offered in conjunction with the SAE World Congress. Record numbers attended last year's seminars. Ensure your spot. Register by February 27.

Seminars will again be held on-site at Cobo Center—allowing you to experience more of the technology of SAE 2004.

## PROFESSIONAL DEVELOPMENT

### Courses from **SAE**

Detailed course descriptions are available online at [www.sae.org/contedu/](http://www.sae.org/contedu/). To register, complete the online registration form, email [profdev@sae.org](mailto:profdev@sae.org), or call SAE Customer Service toll free at 877.606.7323 or 724.776.4970 (outside the U.S. or Canada).

\*\* One of SAE's 40 most popular seminars.

#### April 2004

##### Troy, MI, USA - SAE Automotive Headquarters

Apr 1-2	Controller Area Network (CAN) for Vehicle Applications **
Apr 5	Current Issues in Using Crash Injury Data
Apr 5	Basic Noise Control
Apr 5-7	Motor Fuel: Technology, Performance, Testing, and Specifications
Apr 6	Noise and Vibration Measurement: Instruments and Facilities
Apr 14-15	Powertrain Selection for Fuel Economy and Acceleration Performance **
Apr 14-16	Fundamentals of Metal Fatigue Analysis **
Apr 19-20	Fundamentals of Engine Oils
Apr 19-20	Designing for Safety and Developing Accurate Safety Specifications
Apr 19-21	Liquid Atomization, Sprays, and Fuel Injection **

Apr 19-21	Geometric Dimensioning & Tolerancing - Level II
Apr 22-23	Adhesive Bonding Technology
Apr 22-23	Design for Manufacturing & Assembly (DFM/DFA)
Apr 23	Engine Cooling Design: A System Engineering Approach
Apr 26	Fundamentals of Sensor Design for Automotive Air Bag Systems
Apr 26-27	Static And Dynamic Sealing **
Apr 26-27	Brakes - Design & Safety **
Apr 28-30	Concurrent Engineering Practices Applied to the Design of Chassis Systems **
Apr 29-30	<b>New!</b> Turbocharging Internal Combustion Engines

This two-day seminar will cover the basic concepts of turbocharging of modern day gasoline and diesel engines. Turbocharger matching and charge cooling, an integral part of the modern-day air management systems will be discussed as well as associated controls that provide opportunities to optimize engine systems for specific applications. The limitations and future possibilities of present day systems, as well as emerging technologies and their impact on engine/vehicle performance will be presented. The seminar will deal more with the turbocharger-engine interface—matching, benefits, limitations, emerging technologies—and not with detailed turbocharger aerodynamics and design.

## 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 [Rebecca Wiley](mailto:Rebecca.Wiley):



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You will be contacted promptly to discuss your ad and to receive details about pricing and deadlines.

Individuals seeking employment may also list their services confidentially in the SAE Resume Database. For details, call Tracy Fedkoe, 724/772-4069, 724/776-1615, [fedkoe@sae.org](mailto:fedkoe@sae.org)

SAE assumes no responsibility for the statements set forth in any listing or the availability or existence of such listed positions. SAE does not review or warrant the qualifications or statements of those responding to a listing.

# UPdate

## SAE

#### Fleet Marketing Manager

Leading equipment supplier in the Commercial Vehicle industry, in the greater Detroit metro area, seeks Fleet Marketing Manager to develop fleet data, contacts and strategy and to provide "Pull-Through" support to grow Company products for North American OE and aftermarket sales. Identify and implement optimal Aftermarket fleet marketing strategy for all company products and services, including retrofit opportunities. This is a "hands on" role with responsibility for client follow-through from corporate purchasing to regional maintenance centers. **Requirements:** BSME/BA (Engineering or Marketing); 7-10 years work experience in heavy vehicle (class 6-8) industry; sales/marketing aftermarket or distribution experience, self-confidence, initiative, team player. Existing client contacts within the industry are needed. Microsoft skills, organizational skills and people sensitivity, willingness to travel (30-50%). OE/Supplier experience in Fleet Marketing/Sales situation, International experience, maturity and sales management experience will also be considered. We offer an outstanding compensation and flexible benefits package, including 401(k) and ESOP. If you are seeking a challenging and rewarding position with a World Class Team, please e-mail your resume to: [WNArecruiting@amstd.com](mailto:WNArecruiting@amstd.com) Equal Opportunity Employer M/F/D/V. Drug Free Workplace and complete background check.

#### APPLICATIONS ENGINEER

Applications Engineer for industrial products company. Develop applications for a thermochemical surface treatment (SBN) for ferrous base engineered components in support of sales of equipment and process chemicals. Demonstrate advantages of SBN processes to technical community through personal contacts and technical documentation. Prepare and make technical presentations to individuals, company engineering groups and technical conference groups. Participate in sales/marketing programs, attend technical conferences/shows/exhibits. Determine the customer engineering problems or application opportunities that can be best served by SBN. Follow up on sales leads. Respond to customer requests from customers or potential customers. Serve as liaison between customer and company on matters regarding SBN applications, sales, installations and service. Solicit customer samples and determine SBN requirements for processing. Determine requirements for testing customer SBN sample parts. Evaluate test results of sample parts, prepare appropriate reports, and communicate with customer. Applicants must have a BS in Metallurgical Engineering and a minimum of five years experience in metals industry. Must be able to travel frequently. Qualified applicants should send resume and salary requirements to: Society of Automotive Engineers, Reference 030, 400 Commonwealth Drive, Warrendale, PA 15096, Attn: Magazine Advertising.

#### U.S. ENVIRONMENTAL PROTECTION AGENCY National Vehicle and Fuel Emissions Laboratory

The U.S. EPA's National Vehicle and Fuel Emissions Laboratory is soliciting resumes for several engineering vacancies. With one noted exception, the engineering jobs described below are located in Ann Arbor, Michigan, a highly desirable community with excellent schools, safe streets, and many cultural, entertainment, and sports opportunities. Salary range for these positions is \$46,870 to \$94,573, with recruitment bonuses possible. Please note that US citizenship is required.

**Hybrid Vehicle Development:** Unique opportunity for highly creative, competitive, and dedicated engineers to help design engines and powertrains for the vehicles of the 21<sup>st</sup> century. Selectees will play a central role with a hands-on engineering team that is developing cost-effective technology for the ultra clean and efficient hydraulic hybrid vehicles of the future—without sacrificing safety, performance, size, pollution control, or affordability. Responsibilities of the team include concept generation, design, development, fabrication, integration, assembly, and testing of cutting edge hydraulic hybrid drive technology for demonstration vehicles.

**Advanced Engine Development:** Highly competent, creative and dedicated engineers to serve with our advanced engine development team supporting our advanced powertrain projects. Selectee will have responsibilities for the efficient operation of several advanced engine testing sites and will engage in design and hands-on engineering for control system development and/or state-of-the-art fuel injection systems design. Development and testing will be applied to demonstration of EPA's clean diesel combustion, multi-cylinder HCCI demonstration engines, and EPA's unique patented free-piston engine technology.

**Advanced Fuels:** Opportunities exist for those with scientific and engineering backgrounds and strong communication and interpersonal skills who are interested in becoming a part of the dedicated team of professionals which will lead the way to improving our nation's air quality by supporting fuel regulatory and technology programs. As a member of the Fuels Center team, there will be opportunities to develop fuel quality standards/regulations, assess and evaluate fuel-related emission control technologies and alternative fuel technologies, such as fuel cells, evaluate fuel effects on emissions, conduct environmental and economic impact assessment of fuel control options, evaluate refinery technology and economic issues, evaluate fuel distribution system issues and implications, and assess the impacts of worldwide fuel markets and imports on EPA programs.

**Diesel Retrofit Program:** Opportunities exist (in either Washington, D.C. or Ann Arbor, Michigan) for individuals with a scientific or engineering background and strong communication and interpersonal skills to join the diesel retrofit program. Selectees will become part of a dedicated team of professionals implementing new, innovative voluntary programs designed to reduce emissions from the existing fleet of diesel vehicles and equipment through the installation of pollution-reducing technology and use of clean fuels. Responsibilities of the Diesel Retrofit Team include providing technical expertise and support to state, local, and tribal retrofit programs in assessing the performance of verified emission control technologies and fuels that reduce mobile source air emissions.

**Quality Control:** If you are interested in working in a dynamic setting with a highly energetic and dedicated group of individuals an opportunity exists for a highly competent energetic engineering professional to lead our quality control team. Selectee will act as the leader and expert in the implementation of quality systems, expert in regulatory requirements for emissions testing and audit leader and continuous improvement champion. Responsibilities will include development of correlation programs, design, plan and implement quality control processes and procedures throughout the lab and serve as an external point of contact with respect to quality control practices and procedures.

**Benefits:** Benefits include a stable retirement plan, employer matching of 401(k) contributions, choice among a dozen different health care providers (both HMO and traditional), regular salary increases for inflation and seniority, incentive pay for superior work performance, a merit-based system of promotion to higher levels of responsibility and pay, and a compressed work schedule with flexible starting times and a three day weekend every other week.

**Contact:** Interested engineers and scientists should contact the NVFEL Human Resources Office. For resumes, the mailing address is U.S. EPA, Human Resources Office, 2000 Traverwood Drive, Ann Arbor, MI 48105. The e-mail address is: [GROUP.NVFEL-HRO@epa.gov](mailto:GROUP.NVFEL-HRO@epa.gov) An Equal Opportunity Employer.

## CAREER OPPORTUNITIES

### Put Your Experience To Work...At



# STIHL®

Stihl Incorporated produces power tools and averages over 30 product launches per year. This facility is located along the Atlantic Ocean in the State of Virginia and covers over a half million square feet of manufacturing and warehouse space. Stihl currently has exciting opportunities available at its Virginia Beach complex for the following positions:

#### Unit Manager - Machining

In this position, you will direct and coordinate the manufacturing activities of the Crankshaft, Pistons and Heat Treating Units in compliance with required output and quality standards. The Unit Manager will be responsible for the following:

- Overseeing and participating in the development of performance, efficiency and product quality standards
- Monitoring output and cycle times and working with departmental managers
- Overseeing and participating in daily production operations
- Participating in the development of production plans
- Serve as liaison to manufacturing engineering in the USA and Germany
- Participating in research, development and design

The successful candidate will have a 4-year college degree, and a minimum of 5 years of related experience in high volume production and previous supervisory or management experience.

#### Process Engineer - Machining

The individual in this position will be responsible for conducting manufacturing engineering assignments to develop new methods, tooling and machine designs, cost estimates and for resolving engineering problems in manufacturing. This will include working closely with other departments and fulfilling the following:

- Carrying out approved recommendations to include redesign and alterations
- Developing proposals for automation, mechanization, methods and tooling.
- Preparing cost estimates and estimating savings
- Participating in time and motion studies

The successful candidate will possess a 4-year college degree in a related discipline and four years related experience that includes:

- Hands-on experience with CNC machining processes
- Experience with: OD Grinding, Multi-axis turning, Swiss machining and rotary transfer
- Knowledge of gauge and fixture design
- AutoCAD 200 or Pro/Engineer

Full benefits and compensation package is offered.

Interested candidates may forward resumes to:  
**STIHL Incorporated, 536 Viking Drive,  
 Virginia Beach, VA 23452,  
 Or E-mail: employment@stihl.de.  
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MANUFACTURING ENGINEER  
 Design, develop & execute complete manufacturing process for automotive prototype & precision parts. Utilize knowledge of finite element analysis, gage design, design & process failure mode analysis, geometry, dimensioning & tolerances, design of experiments, & automation/semi automation robotics to reduce & solve manufacturing variation issues from initial design concept through production release & post-production. Need M.S. in ME, 2 graduate-level courses in FEA, & 1 year exp. as mfgng engineer. Need proof of ability to work permanently in the U.S. Submit resume to: Uni Boring Co., Inc., 2280 W. Grand River, Howell, MI 48843, Attn: A. Garcia. Equal Opportunity Employer.

Senior Supplier Quality Project Engineer (multiple openings); 40 hrs./wk.; 7 am-4 pm; \$67,250/yr. Job requires: Bachelor's degree in Mechanical Engineering & 5 yrs. experience in Job Offered or as an Engineer. Job also reqs.: 1) Experience implementing quality control tools; 2) Exp. implementing lean engineering concepts; 3) Exp. implementing advanced product quality planning; 4) Exp. reducing manufacturing costs; & 5) 5 yrs. exp. as an engineer working in manufacturing operations. Exp. reqs. may be met concurrently during the same 5-yr. period. Job duties: Perform quality engineering function in all business matters involving purchasing, engineering, marketing, & supplier manufacturing. Provide technical direction in advanced planning, product development, & current problem resolution. Review & direct changes to supplier manufacturing & quality control systems using lean engineering concepts. Review & approve plans for correction of non-conformance. Provide specific direction to suppliers for product manufacturing cost process & performance improvement. Qualified applicants should send resume & verification of reqs. to: MDCD/ESA, P.O. Box 11170, Detroit, MI 48211-1170, Ref. #212047. Employer Paid Ad.

# HONDA

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At Honda R&D Americas, Inc., you'll be involved in projects that not only excite you, but also turn the heads of an entire industry. Our engineers are designing, testing and using their talents to create the motorcycles/ATVs, automobiles and power equipment concepts of the future. And in the process they rediscover why they chose this profession — the power to turn today's dreams into tomorrow's products. It's a high-performance, highly rewarding opportunity and we invite you to come along for the ride of your life.

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Be part of the excitement. If you are interested in a career at Honda, send your resume to: **Human Resources, Honda R&D Americas, Inc., 21001 State Route 739, Raymond, OH 43067-9705. Fax: 937-645-6337. Email: emp@oh.hra.com.** An equal opportunity employer.

**Honda R&D Americas, Inc.**  
[www.hondaresearch.com](http://www.hondaresearch.com)



Commercial Vehicle Systems LLC

### CAD/CAE Design Engineer

**Responsibilities of Position:** Support engineering design in creation of modules (engineering analysis, create models, drawings, release documentation) for commercial vehicles including driver control module assemblies, dash system mechanical design, fire wall and vehicle support systems; Key activities - Prepare concepts & detailed designs for new products. Perform engineering analysis (FEA, Vibration, tolerance stack-up studies and check layouts. PDM database entry & ECN release documentation. Perform product changes and other duties and responsibilities as assigned; Coordinate work with engineers, other designers, technicians, manufacturing, suppliers and customers in the development and launch of new products. **Experience/Education Required/Sought:** Bachelor's Degree in Mechanical Engineering or Associates with proven experience (emphasis on CAD & Engineering Design Processes); 3+ years CAD/CAE design; experience in automotive environment preferred.

### Engineer - Modules

**Responsibilities of Position:** Define scope and priorities of Program Engineering needs for individual projects; Lead integration, implementation, and launch of new and existing Bendix products on Modules; Organize, coordinate and monitor prototype and field tests; Identify, communicate, refine and disclose new product opportunities; Provide and present Bendix product and program presentations; Interface with Bendix, Knorr, Supplier and Customer organizations to: Identify and communicate current component refinements, next generation product concepts and next generation/platform module and system concept and opportunities; Solve product issues working with product engineering, manufacturing engineering, quality engineering and warranty departments; Assist in developing product specification needs; Be integral to development and refinement of customer/business strategy to grow Bendix content OEM platforms; and Lead the engineering management of customer co-development teams. **Experience/Education Required/Sought:** 8+ years experience in heavy vehicle industry or a related industry; BSEE, BSME, BSEET, BSMET or equivalent; and Six Sigma Green Belt preferred.

### Design Engineer - Air Disc Brake

**Responsibilities of Position:** Fully participate in the high performance "global" air disc brake team with the goal to significantly grow the business through expanded air disc brake application efforts with Axle and Vehicle manufacturer; Apply air disc brake system to axle, suspension systems for vehicle integration on trucks, tractors and trailers including buses; Investigate fit of air disc brake system in all possible vehicle conditions (worn pads and rotors, full steer positions etc.); Design specific components (castings and machining) for manufacturing; Re-create drawings and models from hardware material installed on vehicle (knuckles, shock absorbers, plates, brackets, steer arm etc.); Create new and revised drawings and models to meet customer requirements with release controlled through Matrix; Actively participate in customer design review meetings; Support R&D project for ADB; and Support development of application guidelines, product specifications for air disc brakes; Maintain records in compliance with ISO9000 procedures. **Experience/Education Required/Sought:** Bachelor's degree or equivalent in Mech Engineering; At least 5; preferred 8-10 years of related designer experience; and Six Sigma - Green Belt certification a plus.

### Quality Engineer

**Responsibilities of Position:** Support the Charging PBT & be the quality focal point for Caterpillar, DDC and Cummins. Support the Controls and New Venture PBTs and be the quality focal point for International, PACCAR and Ford; Lead APQP activities on all assigned product line product launches, including activities at suppliers; Interface with customers & BCVS plants to define customer quality requirements and monitor performance; Lead customer Installation Audits for assigned customers; Assist all functional areas and plants with Advanced Quality Planning, problem resolution, prevention and mistake-proofing; Member of Product Management Teams for assigned product lines; Support supplier transitions by assisting in supplier evaluations and APQP activities; and Provide leadership with corrective action and special project teams. **Experience/Education Required/Sought:** Four year Technical/Science/Industrial Management degree; Minimum of 5 years experience in the field of Quality; Six Sigma certification preferred; ASQ certification (CQE, CQA, CQM) preferred; and automotive/truck industry experience a plus.

Qualified applicants contact Steve Melfi: Human Resources Generalist - Talent Acquisition, Bendix Commercial Vehicle Systems LLC, 901 Cleveland Street, Elyria, OH 44035, Phone: 440-329-9121, Fax: 440-329-9198, e-mail: [steve.melfi@bendix.com](mailto:steve.melfi@bendix.com). Bendix Commercial Vehicle Systems LLC is an equal opportunity/affirmative action employer. Learn more about us online at <http://www.bendix.com>.