

# SAE UPdate

NEWS FOR THE MEMBERS OF SAE

February 2004  
VOL. 21, NO. 2

## A World In Motion glider competition honors flight centennial

As hordes of spectators flocked to Kill Devil Hills to witness the re-enactment of the Wright Brothers' first flight, there were both cheers and sighs at the Boonshoft Museum of Discovery in Dayton, OH.

"They might not have been able to get the plane off the ground in Kitty Hawk, but we certainly did in Dayton, Ohio," said Linda Hallinan, as student-made gliders coasted across the Atrium at the Boonshoft Museum. Hallinan, a project engineer at Delphi Corp., is also the Dayton section representative for SAE's *A World In Motion* (AWIM) program. She was on hand Dec. 17, 2003, as more than 110 Dayton students gathered to compete in a Glider Fly-Off to honor the 100th anniversary of Orville and Wilbur Wright's historic first flight.

The students involved in the Glider Fly-Off were primarily middle school students from four schools near Dayton: Esther Dennis Middle School in Kettering, Smith Elementary in Oakwood, Weisenborn Middle School in Huber Heights, and TORCH Holy Family Institute, a home-school program for students from the Dayton area. These students are all participants of SAE's *A World In Motion* program, which consists of four challenges designed to increase students' interest in math and science by creating hands-on activities.

The glider activity, Challenge 3 in the AWIM program, was designed for eighth-grade students, however, several teams of younger gifted students took part in the



Concentration and skill were evident through the Glider Fly-Off. These students watch their glider perform a 360 degree loop in the acrobatic category of the fly-off.

fly-off as well. The goal of Challenge 3 is to help students understand the concepts of un-motorized flight, which will then help them to grasp how motorized flight works. For the SAE competition, the

See **A WORLD IN MOTION** page 4

## Roush, Shelby, Saleen bring "Passion for Performance" to SAE 2004 World Congress

What do you get when you bring the current Winston Cup champion car owner, the legendary designer of the Ford Cobra, and the builder of a 200-mph street-legal supercar together in one place? Attendees at the SAE 2004 World Congress will find out when the mini-conference titled "High Performance Cars - A Passion for Performance" debuts at the event held at Cobo Center in Detroit, March 8-11.

Performance car icons Jack Roush, Carroll Shelby, and Steve Saleen join Paolo Martinelli, Chief Engine Designer for the Ferrari Formula 1 Team; Peter Spence, VP and Technical Director for Toyota Racing Development; John Coletti, Chief SVT Engineer - Ford Motor Co.; and Andy Tempest, Managing Director, Automotive Technology, for fabled racing and performance design shop Prodrive, in the SAE World Congress program. Sir Jackie Stewart has also been invited to deliver the keynote address on Thursday, March 11.

Roush, Shelby, and Saleen will appear at a 10:30 a.m. panel titled, "Niche Vehicles and Flexible Manufacturing: Building Consumer Excitement, Showroom Traffic and Profits - Can It Be Done?" This session, moderated by Ted Robertson, President of ASC Industries,

takes place in the AVL Technology Theater on the exhibit floor.

SAE Automotive Projects Manager Dave Mitchell has worked with Coletti and others to put this program together, "It's exciting that so many of the personalities we have coming to the SAE World Congress are current and future legends in the performance vehicle and racing worlds," said Mitchell. "We believe the Passion for Performance mini-conference will attract some young engineers and professionals that may have missed the opportunity to come to the event in the past."

*Car and Driver* Editor-in-Chief Csaba Csere and *Road and Track* Technical Editor Dennis Simanaitis will moderate panels during the week on the design and development of the Ford GT and Cadillac XLR automobiles. The chief engineers and technical staff from GM, Ford, Lear Corp., and Roush Industries will talk about the unique design challenges presented by these two performance machines at Wednesday and Thursday panel sessions.

For the latest information about the "Passion for Performance" mini-conference, see [www.sae.org/congress/highperformance/agenda/](http://www.sae.org/congress/highperformance/agenda/). For the latest information about the SAE 2004 World Congress, see [www.sae.org/congress](http://www.sae.org/congress).

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Leading Our World In Motion 1905-2005

## SAE CENTENNIAL

### A look at two of SAE's early members

In 1905, the SAE membership number 19 went to 44-year old Charles Duryea of Reading, PA. Duryea, along with his brother Frank, eight years his junior, is considered America's first gasoline-powered automobile manufacturer. J. Frank Duryea joined SAE in 1911.

Charles was considered a visionary—the creative engineering mind behind the development of the automobile as we have come to know it—while brother Frank had far greater success as both a racer and manufacturer of automobiles. Many credit Frank with the tireless dedication to development that resulted in America's first production car.

In 1882 at the age of 21, Charles wrote a college thesis titled, "The advent of the automobile" then set out to become a mechanic. After finishing mechanical school in his native Illinois, he found a job in Washington, D.C. in the growing bicycle business, and soon founded a shop, which would later be called the Rouse-Duryea Cycle Co.

In 1889, the Duryea brothers moved to the Springfield, MA, area. Charles became interested in developing a horseless buggy, and asked Frank, now a toolmaker at Chicopee's Ames Manufacturing Co., to join the project in 1892. Frank finally tested the first car on Springfield's streets in September of 1893. After two years of fine-tuning and retooling, he had finally created a car that was reliable and viable enough to entice investors into a new business venture. The initial vehicle had a one-cylinder engine that propelled the car at 7.5 mph, but the belt-driven friction clutch sapped power and performed badly. A new and improved model, tested in 1894, had a two-cylinder engine, a gear and clutch transmission, and pneumatic tires.

In 1895, the brothers entered the 700 lb Duryea Motor Wagon in the first American Automobile Race in Chicago. With Frank at the wheel, it took the Duryea entry over



An 1895 Duryea automobile.

10 hours to complete the snowy 54-mile round trip from Chicago to Evanston, but they still won. The same year, the brothers used their \$2000 in prize money and raised enough additional investor capital to found the Duryea Motor Wagon Co., the first American corporation founded specifically for the mass production of automobiles.

Their 1896 output of 13 Duryea Motor Wagons marked what historians consider the beginning of the American automobile industry. Early car sales, at a price of almost \$2000 per car, were sporadic at best. In May of that year, New York City motorist Henry Wells hit a bicyclist with his new Duryea. The rider suffered a broken leg, Wells spent the night in jail, and the nation's first automobile accident was on the books and a dubious part of the Duryea legacy.

The original 1893 Duryea—the prototype for the first commercially produced American automobile—is housed in the Smithsonian Museum in Washington. The Duryea brothers are both members of the Automotive Hall of Fame in Dearborn, MI. The history of these two industry pioneers is chronicled in the book *Carriages Without Horses* by Richard P. Scharchburg—published by SAE in 1993 as R-127.

## MESSAGE FROM THE PRESIDENT

### Technical updating opportunities

Professional development of mobility engineers on a worldwide basis is one of SAE's core competencies. It takes many forms that you are familiar with, but there are some new developments worth mentioning. We have an outstanding staff that focuses every day on how to deliver the latest technical information to the membership in the most concise, efficient manner.

Some of the current delivery systems are:

- Technical publications—Available in hard copy, online downloads of PDF files of all ground vehicle and aerospace papers since February 1998, and CD-ROM (1200 new papers were presented at the 2003 World Congress and more are planned for 2004.) More than 500 books on major topics are also available through SAE's Bookstore. *Automotive Engineering International* magazine is one of the most widely read technical publications in the world, and it is now translated and enhanced with local content in Spain, Brazil, China, and Russia.

- Seminars—35 to be offered at the 2004 World Congress in March and many more (more than 90) offered throughout the year.

- 25 Major technical meetings—Including the premier yearly event for the mobility engineer—the SAE World Congress in Detroit. The annual Congress now includes, among other things, the Technology Theater on the exhibit floor where top executives and engineers discuss the latest industry developments.

- Symposia (the new name for TOPTECs)—Dealing with specific, emerging technology (e.g., the latest on fuel cells and hydrogen to be covered at the Air Resources Board meeting in Sacramento on February 19).

- Two new TechKnowledge products—One available on Safety and one on Powertrain, which consolidate information from many sources to provide one-stop shopping for the engineer seeking specific, up-to-date knowledge on these two important subjects. More subjects are planned for the future.

- e-Learning—This past fall we saw the first seminar presented as an interactive tele-webcast, a delivery format that allows "attendance" while sitting in your office with most of the benefits of a "live" course. I have been working with our staff on a new course on "Digital Product Development for Managers/Supervisors" to be delivered this way later in 2004.

- Section Meetings—New product introductions including engineering innovations are discussed by the engineers who did the work.

Many other methods of delivering specific knowledge to the engineer at his/her workplace are being studied. Your requests and needs are the major drivers for this activity. Please provide your input to me at [jthompson@sae.org](mailto:jthompson@sae.org).

## UPdate

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



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

## WASHINGTON REPORT

### Alliance and IHS announce new occupant protection safety commitment

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

The Alliance of Automobile Manufacturers and the Insurance Institute for Highway Safety (IIHS) recently announced a new voluntary industry safety commitment to meet new performance criteria established to enhance occupant protection in front- and side-impact crashes.



Doug Read

The NHTSA Administrator had challenged automakers to move together quickly, and the industry complied with this request. These voluntary performance criteria, as well as research plans to investigate possible additional safety improvements, are contained in a report provided to NHTSA.

This new safety performance criteria will drive a wide range of occupant protection technologies and designs, including enhanced matching of vehicle front structural components and enhanced side-impact protection through the use of features such as side airbags, airbag curtains and revised side-impact structures.

Automakers representing virtually all U.S. vehicle sales are participating in this broad industry initiative.

"Technologies and industry-wide cooperation that we could only dream about a few years ago are now coming to fruition very quickly, with consumers the ultimate beneficiaries," said Robert Strassburger, Vice President for Safety and Harmonization at the Alliance. "These commitments will lead to significant improvements in the protection afforded to occupants in crashes," said Brian O'Neill, President of the Insurance Institute for Highway Safety. "Better geometric and stiffness matching of front structures will reduce over-ride and under-ride and the resulting intrusion into compartments that can occur in serious head-on crashes. The enhanced head protection for side impacts will benefit occupants when their vehicles are struck in the side by another vehicle. In addition, it will protect people in many single-vehicle side impacts." To enhance safety in front-to-side crashes, automakers commit to enhance protection for passenger car and light truck occupants in side-struck vehicles, principally through improved head protection.

By September 1, 2007, at least 50% of all vehicles offered in the U.S. by participating manufacturers will meet the front-to-side performance criteria, and by September 2009, 100% of the vehicles of participating manufacturers will meet the criteria.

Enhancing the geometric matching of front structural components of vehicles will enhance safety in front-to-front crashes, claims the industry. Better matching of structural components will enhance the ability of these structures to absorb crash forces, reducing occupant fatalities by an estimated 16-28%. Manufacturers have begun accommodating the performance criteria in their new products, and by September 2009, 100% of the vehicles of participating manufacturers will meet the front-to-front performance criteria.

#### WAPA hosts Nissan executive at National Press Club

The Washington Automotive Press Association (WAPA) recently hosted a luncheon meeting featuring Nissan's Robert Yakushi. Yakushi discussed the company's current and future safety technologies.

Yakushi acts as a safety spokesperson for Nissan and is Director of Product Safety, Regulatory and Accessory Quality at Nissan North America. He is responsible for analyzing product safety issues for current and future models in the areas of strategy, design, direction, and testing for North American and global markets.

#### Workshop held to exchange ideas on how optics and photonics could meet national transportation needs

Safety, security, mobility, energy efficiency, and the environment are key challenges facing the transportation and infrastructure sectors. What solutions can advanced technologies provide? Optics and photonics technologies are currently used in transportation and infrastructure. Their importance will increase as technology is enlisted to address the key challenges, with vehicles and structures incorporating more sensors, diagnostics, and interconnecting communications.

Co-sponsored by the U.S. Department of Transportation, the U.S. Department of Commerce, SPIE (The International Society for Optical Engineering), and the Optical Society of America (OSA), a special workshop was recently held to bring together industry, academic, and government experts from the transportation/infrastructure, and optics/photonics communities to exchange needs and ideas and create a roadmap for how optics and photonics technologies can contribute to solving the challenges ahead.

The one-and-a-half day workshop, which was held on December 10 and 11, 2003, began with a morning of invited talks to provide background on key national transportation needs. The afternoon of the first day consisted of breakout sessions in which participants examined the different modes in more detail and considered technological approaches to solving problems. The morning of the second day included time for each breakout session to review and edit conclusions, and then all participants reconvened to present their results.

Speakers and panelists included: Benjamin H. Wu, Deputy Under Secretary of Commerce for Technology; Jeffrey N. Shane, Under Secretary of Transportation for Policy; Stephen J. McHale, Deputy Administrator, Transportation Security Administration; Mortimer L. Downey, President, PB Consult, and former Deputy Secretary of Transportation; Robert Breault, Chairman, Breault Research Organization; Maj. Gen. William W. Hoover, USAF (retired), and Chairman, National Academies Aeronautics and Space Engineering Board (ASEB); Rear Adm. Robert C. North, USCG (retired), North Star Maritime; John Horsley, Executive Director, American Association of State Highway and Transportation Officials; and Robert M. Clarke, President,

Truck Manufacturers Association. A workshop report is the ultimate result from the workshop and will be a single report that outlines the potential applications for optics and photonics technologies in transportation and infrastructure. The report will consider the timeline for the introduction of new devices, as dictated by national needs and technological feasibility.

The Joint Advocacy for Optics and Photonics is a cooperative effort by SPIE and the OSA to work with academia, industry, and government to determine needs and priorities for optics- and photonics-based solutions.

#### Congressman Ehlers recognizes EPA effort to improve management of science

The U.S. Environmental Protection Agency (EPA) recently unveiled a new agency-wide Science Inventory that catalogues current and past science products and activities. This tool, developed by EPA's Office of Research and Development with support from the agency's program offices, will make the most up-to-date scientific information broadly available. "The inventory represents a step forward in efforts to improve the quality and use of science at

EPA," according to Rep. Vernon J. Ehlers (R-MI), Chairman of the Environment, Technology, and Standards Subcommittee of the House Science Committee.

The inventory was originally designed to help EPA scientists and managers better plan and carry out science activities in support of the agency's mission. The agency is opening up the database to the public in a searchable, Web-based format. EPA plans to update the inventory as new information becomes available, making it a dynamic tool for planning, managing, and enabling collaboration on environmentally related science that supports the EPA's overall mission.

"The Science Committee and others have been concerned for some time that it is difficult for researchers, the public, and Congress to know what scientific research is taking place throughout EPA and to have access to these research results," Ehlers explained. "EPA deserves a great deal of credit for following through on its commitment to open access to the science that the agency uses for understanding environmental problems and for making regulatory decisions. The inventory pulls back the curtain on these important environmental research activities and results."

### 2004 SAE Annual Nominating Committee meeting announcement

The Annual Nominating Committee meeting has been scheduled for Monday, March 8, 2004, during the SAE World Congress. The meeting will begin at 8:00 a.m. in the Ambassador

Ballroom, Marriott Renaissance Center in Detroit, MI.

Information regarding the meeting will be forwarded to all ANC Delegates and Alternates.

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Each year SAE assembles leading technical authorities from government, industry and academia 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.**

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- **Donald E. Zinger**, Assistant Director, Office of Transportation and Air Quality, U.S. EPA, 2004 General Chair

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Bookmark the Web site for speakers and program updates as they become available.  
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## SAE FOUNDATION

*A WORLD IN MOTION continued from page 1*

students presented their design briefs, sketches and models to a panel of judges that included Don Ableson, SAE 1998 President and current Foundation board member. Ableson called the students' work outstanding. "I'm really impressed with the kids' creativity and enthusiasm on this project," he said. "It's great to see the knowledge they gain in the classroom solidify into a concrete experience that helps bring what they've learned into the real world."

Each team of students participated in a marketing category by presenting a promotional poster advertising its company and glider. Teams then chose one of three subsequent categories within which to test their gliders: distance, accuracy, or acrobatics. Students' scores were tabulated based on the best two of three launches (both scores from two launches were used for acrobatics). Students' scores were projected onto a wall in the competition area immediately after completing a category. A crowd gathered at the score projection area for most of the day, with both cheers and groans accompanying each score posting.

During the competition, students also had the opportunity to view the multimedia show, "The Wright Way to Fly" in the Caryl D. Philips Theater at the museum and to visit a special kite and glider exhibit called "Kites to Kitty Hawk." The exhibit explained the importance of kites and gliders in the development of powered flight. "Kites to Kitty Hawk" included a full-scale model of the 1901 Wright Glider and a Wright Brothers flight simulator.



Students discuss rules with Scott Klavon from SAE Aerospace Standards. Klavon served as a launch pad assistant for the fly-off.

The day was filled with excitement and pride as students launched their gliders and saw the final results of their knowledge and creativity soar through the air. Loud cheering and frantic attempts to re-position gliders on the launch pad gave way to tense silence in the seconds before takeoff as groups concentrated on getting the maximum performance from their gliders. Hurried team discussions included advice such as "bend the wings up a little bit" and "don't pull as far back on the launch pad."

Seeing their work come alive was an important part of the learning process for these students. It also helped them to appreciate just how amazing the Wright Brothers' achievements are. "Thank you for an exciting day," said Lenny Eubank, a science teacher at Smith Elementary, after the competition. "I can't think of a better way to celebrate the 100 years of flight and learn about the principles of flight. I can't thank you enough for this opportunity."

## MEETINGS UPDATE

## Ford's Scheele to keynote at SAE 2004 World Congress Banquet

Nick Scheele, President and Chief Operating Officer of Ford Motor Co., will deliver the keynote speech at the SAE 2004 World Congress Annual Banquet: Driven to Dream on March 11, 2004.



Nick Scheele

The banquet, which will close the four-day event, will be held at 7:00 p.m. in the Renaissance Ballroom at the Marriott Renaissance Center Hotel in downtown Detroit.

Since assuming his current position on October 30, 2001, Scheele has been responsible for Ford's global automotive business. Prior to his current position, he was Group Vice President, Ford North America, a job he assumed in August 2001. Scheele also served as Chairman, Ford Europe, from January 2000 through July 2001, and he was Chairman and CEO of Jaguar Cars Ltd. from 1992 to 1999. Under his leadership, Jaguar's sales doubled and the company regained its place as one of the world's top marques in brand image, product quality, and customer satisfaction.

Scheele's career at Ford began in Europe in 1966 where he held several successive

senior purchasing appointments in Ford's British and European operations before moving to the U.S. in 1978. In 1988, Scheele became President of Ford of Mexico, where he directed manufacturing and marketing operations.

In June 2001, the British Queen awarded Scheele a knighthood. He was awarded the Order of St. Michael and St. George for services to British exports. He serves on the Advisory Board for the British American Chamber of Commerce and is on the Executive Committee of the Society of Motor Manufacturers and Traders.

Ford Motor Co. is the host company for the SAE 2004 World Congress, which is expected to attract 40,000 engineers, managers, and technical professionals from March 8-11. Since 1947, the SAE World Congress has been the world's largest meeting and exposition devoted to automotive engineering and product technology. Each year the world of automotive engineering, design, and technology descends on Cobo Center for the SAE World Congress.

For the latest information about the SAE 2004 World Congress, visit [www.sae.org/congress](http://www.sae.org/congress). To order banquet tickets, visit [www.sae.org/congress/specialevents/annual-banquet.htm](http://www.sae.org/congress/specialevents/annual-banquet.htm).

## SAE All-Wheel-Drive Systems, Security, and Driver Interaction Symposium to be hosted by Dana in fall 2004

A two-day symposium, scheduled for Tuesday & Wednesday, September 28-29, 2004, will explore emerging technologies and focus on state-of-the-art industry knowledge of all-wheel-drive systems and their integration into passenger vehicles through exposure to a wide variety of current and future design approaches. Presenters from OEMs, suppliers, and academia will share their expertise and contribute to a free-flowing exchange of knowledge. Presentations will include information on the following:

- Popularity of AWD
- Growth of AWD in small-car segments
- Interactions with other systems
- No longer used just for mobility
- Increased safety and stability
- Driver interactions
- AWD customer needs... Who? When? And how often?
- AWD market size, segments, and growth
- AWD technology and systems
- Trends in FWD AWD architectures and technology
- Trends in RWD AWD architectures and technology
- Evolution of electronics in AWD
- The battle for independent wheel torque control
- Driver awareness and interaction with AWD systems
- Stability improvements offered by AWD interactivity with chassis systems

On Monday, immediately preceding the symposium, an optional one-day Professional Development seminar titled Fundamentals of Automotive All-Wheel Drive Systems will be offered.

An optional ride-and-drive event will be held on Thursday, September 30, 2004, which will allow attendees to drive, ride in, and observe vehicles that employ technologies in use today or likely to be deployed tomorrow.

Media Day, for invited media only, will take place on Friday, October 1.

The entire week's events will take place at Dana Corp.'s Technical Resource Park, 8000 Yankee Road, Ottawa Lake, MI (approximately 10 miles northwest of Toledo).

Organizers for this event are Gary Meyers, WaveCrest Laboratories; H. Gregory Nilsen, GM; Joseph Palazzolo, WaveCrest Laboratories; Andy Perakes, Ford Motor Co.; and Steve Wesolowski, Dana Corp.

This symposium is in the early stages of development. Details on the technical program and registration information will be posted at [www.sae.org/contedu/symp\\_awd.htm](http://www.sae.org/contedu/symp_awd.htm) as they become available. If you would like to propose a technical presentation, please contact Nancy Eiben, Staff Team Leader, at 1.724.772.8525 or [naneiben@sae.org](mailto:naneiben@sae.org).

**SAE International**<sup>™</sup>

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## 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.

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- 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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## MEETINGS UPDATE

## Meetings and symposia schedule

For more information about meetings and symposia, call SAE Customer Service toll-free at 1.877.606.7323 (1.724.776.4970 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		
Fuel Cell Vehicles - the Next Step Toward Commercialization TOPTEC Symposium	February 18 2004	Sacramento, CA
Facets of Implementing a Hydrogen Economy TOPTEC Symposium	February 19 2004	Sacramento, CA
*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 11-13 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
International Body Engineering Symposium	September 21-22 2004	Troy, MI
Small Engine Technology Conference (SETC)	September 27-30 2004	Graz, Austria
AWD Systems, Security, and Driver Interaction Symposium	September 27- October 1 2004	Ottawa Lake, MI
SAE Aerospace Design & Manufacturing Events		
General Aviation Technology Conference & Exhibition (GATC)	April 20-22 2004	Wichita, KS
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
Aerospace Manufacturing and Automated Fastening Conference & Exhibition	September 21-23 2004	St. Louis, MO
*Meetings at which SAE seminars will be conducted.		

## 2004 SAE Annual Business Meeting scheduled

The Annual Business Meeting of the members of SAE has been scheduled for Wednesday, March 10, 2004, during the SAE World Congress. The meeting will begin at 1:00 p.m. in the Engineering Innovation Forum. During the meeting, SAE 2003 President Jack E. Thompson will deliver the Presidential address, the election of 2004 Board of Directors will be announced, and the SAE Annual Report will be presented.

Information regarding the meeting will be available in the SAE 2004 World Congress Final Program.

# Every year a new event

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

- With record-setting technical session numbers and a growing business program, SAE 2004 brings you an exciting, engaging global exhibition that puts industry's technologies and business issues on center stage. A record number of the technical presentations - approximately 50% - will be from representatives of the industry's OEMs and major suppliers including 25 of the top 30 suppliers.
- The new program "High-Performance Vehicles - A Passion For Performance" will feature dynamic technical sessions and executive panels, as well as exhibits from performance engineering and aftermarket modification companies. J. T. Battenberg III, Chairman of the Board, Chief Executive Officer & President of Delphi Corp., will provide the program's keynote address.
- Join us at the AVL Technology Theater and the NEW SAE Engineering Innovation Forum featuring some of SAE 2004's most popular technical sessions and industry's top technology leaders and executives including:
  - Dennis Campbell, President and Chief Executive Officer, Ballard Power Systems
  - Susan M. Cischke, Vice President, Environmental & Safety Engineering, Ford Motor Company
  - Larry Denton, President & CEO, DURA Automotive Systems
  - Peter L. Herzog, Deputy Vice President, AVL LIST GmbH
  - Dr. John Heywood, MIT
  - Dr. Thomas D. Gillespie, Sr. Research Scientist, University of Michigan Transportation Research Institute
  - William Mattingly, Vice President, E/E Systems Engineering, DaimlerChrysler
  - Thierry Morin, Chairman and CEO, Valeo
  - Margo Oge, Director, Office of Transportation and Air Quality, U.S. Environmental Protection Agency
  - Dr. Reinhard Ploss, CEO, Infineon
  - Jack Roush, Chairman, Roush Industries
  - Steve Saleen, President, Saleen, Inc.
  - Carroll Shelby, Chairman, Carroll Shelby International, Inc.

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- Philip R. Martens, Group Vice President - Product Creation, Ford North America

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## AWARDS

## Paul M. Bevilaqua receives 2002 SAE Clarence L. "Kelly" Johnson Aerospace Vehicle Design and Development Award

Paul M. Bevilaqua, Program Manager for Lockheed Martin Aeronautics Co., has received the 2002 SAE Clarence L. "Kelly" Johnson Award. Bevilaqua was presented with the award during a banquet ceremony at the 2003 Aerospace Congress & Exhibition (ACE) in September 2003.



Paul M. Bevilaqua

This award, established in 1993, recognizes individuals who have distinguished themselves by making significant contributions during their career in the innovative design and development of advanced aircraft and/or spacecraft, especially those vehicles that perform military missions. It honors the memory of Clarence L. (Kelly) Johnson and the enormous impact he had on the aerospace industry as the aeronautical genius who created Lockheed's famed Skunk Works and who played a leading role in the design and development of

more than 40 of the world's most advanced aircraft.

Bevilaqua has more than 30 years of experience in the aviation industry during which time he has made significant internationally recognized contributions to the technology, development, and design of military aircraft. He spent most of his career in the design and development of Short Take-Off and Vertical Landing (STOVL) aircraft and pioneered a shaft-driven fan propulsion system for such aircraft. He joined Lockheed Martin in 1985, and held the position of Chief Engineer of Advanced Development at the company's famed Skunk Works, where he played a leading role in the creation of the Joint Strike Fighter Program.

Bevilaqua has a bachelor's degree in aerospace engineering from the University of Notre Dame and a master's degree and doctorate in aeronautics and astronautics from Purdue University. As a member of the Society of Automotive Engineers, he has served on the VSTOL Committee as well as the Military Aircraft and Propulsion Committee.

## Kenneth R. Buckholtz to receive 2002 SAE Russell S. Springer Award

Kenneth R. Buckholtz of The Boeing Corp.'s Integrated Defense Systems Division has been selected to receive the SAE Russell S. Springer Award. The presentation of the award will take place on March 9, 2004 during the Honors Convocation at the annual SAE World Congress in Detroit.



Kenneth R. Buckholtz

This award is given to recognize original and outstanding technical papers that are distinct contributions to the literature of the professions of mobility engineering, and for the encouragement of the younger members. The award is made annually by SAE to a young eligible SAE member whose paper, presented at an SAE-sponsored technical conference, is published in SAE literature in the year for which the award is made. Buckholtz was selected to receive the award for his technical paper, "Use of Fuzzy Logic in

Wheel Slip Assignment – Part 1: Yaw Rate Control" (2002-01-1221).

Currently, Buckholtz works in guidance, navigation, and controls engineering on Boeing's Joint Unmanned Combat Air System (J-UCAS) program. Prior to joining Boeing, he worked for Delphi Corp. for more than three years, as a co-op student, a Manufacturing Controls Engineer in shock absorbers manufacturing, and as an Advanced Chassis Controls Engineer developing anti-lock braking (ABS) algorithms for Delphi's brake-by-wire effort.

Buckholtz is active in several professional societies as a member of SAE, IEEE, the IEEE Control Systems Society, and AIAA. He received a bachelor's degree in electrical engineering from Kettering University in Flint, MI (1994), a master's degree in electrical engineering from the University of Dayton in Dayton, OH (1997), and a doctorate in electrical engineering from the University of Dayton (2001). He is currently pursuing a MS in aerospace engineering from Saint Louis University in St. Louis, MO.

## Your son or daughter can apply now for SAE scholarships

SAE is accepting applications for the scholarships listed below. These scholarships are geared toward college juniors who will be entering their senior year of undergraduate studies in the fall of 2004. Details and applications are available on the SAE website at [www.sae.org/students/scholarships](http://www.sae.org/students/scholarships). The deadline for application is April 1, 2004.

• **Yanmar/SAE Scholarship**—This scholarship was established by the Yanmar Diesel America Corp. and awards a \$2000 scholarship to a recipient who is pursuing a course of study or research related to the conservation of energy in

transportation, agriculture and construction, and power generation, with emphasis placed on research or study related to the internal-combustion engine.

• **SAE Long-Term Member Sponsored Scholarship**—The scholarship continues to be supported through generous contributions from long-time members of SAE. Several \$1000 nonrenewable scholarships are awarded annually to SAE student members who actively support SAE, the collegiate chapter, or the local SAE Section and its programs. Student grade point average is not a determining factor within the scope of this scholarship.

## Andrew Shields receives 2002 SAE Marvin Whitlock Award

Andrew "Andy" Shields, Boeing 757/Boeing 767/Airbus A330 Engineering Fleet Manager at US Airways in Charlotte, NC, has received the 2002 SAE Marvin Whitlock Award. Shields was presented with the award during a banquet ceremony at the 2003 Aerospace Congress & Exhibition (ACE) in September 2003.



Andrew Shields

This award, established in 1988, honors individuals for outstanding management accomplishment that has resulted in superior aviation maintenance integrity of airline, fixed-base, corporate, or military aircraft. It acknowledges and commemorates the distinctive management contributions of the late Marvin Whitlock, Senior Vice President-Maintenance and a member of the Board of Directors of United Airlines.

Shields has more than 18 years of experience in the aviation industry. Drawing on his extensive maintenance background, he has instilled the highest standards of integrity into the US Airways maintenance organization, standards that have been a key component in bringing the organization to an irreproachable level

of safety. Shields has played an important role in the ATA Lead Airline coordination process, especially for the 737 aircraft, and, in conjunction with his team, has generated more than 250 Alternative Means of Compliance (AMOCs) to address deviations performed by US Airways maintenance during Airworthiness Compliance. In addition to his engineering skills, Shields has been recognized as an outstanding mentor and is one of the key figures in US Airways' award-winning co-op engineering program.

Shields holds an FAA airframe and powerplant license and recently became a registered Chartered Engineer and Member of the Royal Aeronautical Society. He is currently working toward a master's of business administration degree and is an FAA Designated Engineering Representative candidate in training.

Prior to arriving in the United States, Shields held numerous positions of increasing responsibility within the British Aerospace (Airbus) Product Support organization and was a key member in the introduction to service team of the A330/A340 aircraft. He is a time-served aircraft technician apprentice from the UK Ministry of Defence and spent five years at RAF St. Athan. Shields also served more than seven years in the Territorial Army.

## Forgivable loans available for Ph.D. students

Sponsored by the SAE Foundation, the Doctoral Scholars Program offers forgivable loans to assist and encourage promising engineering graduate students to pursue careers in teaching engineering in the classroom at the college level. For each year of qualified teaching after graduation, one year's loan will be forgiven.

An amount of up to \$5000 per year is available for up to three years for a total of \$15,000. Funding levels at the time of selection will determine the number of loans available for the 2004/2005 academic year.

Eligible candidates will be citizens of North America (U.S., Canada, Mexico),

hold a degree from an institution with an ABET-accredited undergraduate program, and be accepted into a doctoral program at the time of application. Selection of applicants will be based on scholastic achievement, desire to teach engineering upon graduation, interest in the mobility technology field, and support of the SAE Collegiate Chapter Faculty Advisor where one exists.

Applications, reference forms, and additional information are available online at [www.sae.org/students/docschol.htm](http://www.sae.org/students/docschol.htm). The deadline for application is April 1, 2004.

## Grant money available for Canadian students

SAE is pleased to announce that it is now accepting applications for the **William G. Belfry Memorial/SAE Grant**. This scholarship/grant program is sponsored by the SAE Foundation Canada and the SAE Central Ontario Section, and through the generous support from friends of the late William G. Belfry. Belfry was a long-time SAE member, exemplary leader, and exceptional engineer within SAE and the Central Ontario Section. The grant was established to honor Belfry's passion for life, his leadership skills, and his dedication to the service of others.

Two \$1000 grants will be awarded annually in Belfry's honor. One will be awarded to a Canadian citizen enrolled at any Canadian university, and one grant

will be specific to the University of Toronto. Eligible applicants will be citizens of Canada and will be juniors entering their senior year of full-time undergraduate engineering studies at a Canadian university. Applicants will be judged on academic and leadership achievement, essay content, intent to pursue a career in mobility engineering, and involvement in SAE collegiate chapter activities with a recommendation from the SAE faculty advisor.

Students should retrieve the applications and information online at [www.sae.org/students/scholarships/belfry.htm](http://www.sae.org/students/scholarships/belfry.htm). The application deadline is April 1, 2004.

## AWARDS

## Robert E. Spitzer receives 2002 SAE Franklin W. Kolk Air Transportation Progress Award

Robert "Bob" E. Spitzer, Vice President of Technical Affiliations at Boeing World Headquarters, has received the 2002 SAE Franklin W. Kolk Air Transportation Progress Award. Spitzer was presented with the award during a banquet ceremony at the 2003 Aerospace Congress & Exhibition (ACE) in September.



Bob Spitzer

career, Spitzer worked on technical aspects of the 737, the NASA Augmentor Wing STOL research airplane, and the U.S. Air Force YC-14. He moved on to hold various management positions, including Chief Engineer and Program Manager for the Boeing portion of the B-2 program. In his current position, he is responsible for the development of company-wide networks with key government, academic, industry, and technical organizations and associations to increase the awareness of global aerospace issues and technology initiatives.

This award, established in 1978, recognizes an individual for unique and outstanding contributions to air transportation and/or to the work of the aerospace technical committees in developing aerospace standards, specifications, technical reports, and data through cooperative research. The award acknowledges and commemorates the distinctive contributions of the late Franklin W. Kolk to the advancement of civil air transportation and to the associated work of the society.

Spitzer has more than 35 years of experience with Boeing. Early on in his

Spitzer has a master of science degree in management from the Massachusetts Institute of Technology, bachelor's and master's degrees in aeronautical engineering from the University of Illinois, and an aeronautical engineering graduate degree from California Institute of Technology. He is an Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA), and serves as SAE's Vice President for Aerospace. He also serves on the ABET Industry Advisory Council and the NASA Aerospace Technology Advisory Committee.

## Bart P. Terburg to receive the 2004 SAE/InterRegs Standards & Regulations Award for Young Engineers

Bart P. Terburg, Global Regulations Manager & Senior Development Engineer at GE Lighting, has been selected to receive the 2004 SAE InterRegs Standards and Regulations Award for Young Engineers. The award will be presented on March 9, 2004 during the Honors Convocation at the annual SAE World Congress in Detroit. Terburg is being recognized for his work on standards and improved safety related to headlamp beam color and glare regulation with halogen bulb color separation test.



Bart P. Terburg

In addition to his activities related to regulations, he is also development engineer and safety leader of the automotive product line. His main expertise lies in the field of halogen and discharge light sources for road illumination devices.

An active contributor to the drafting of national and international vehicle lighting regulations, Terburg participates regularly in domestic and European regulatory meetings. He is Co-Chairman of the Replaceable Bulb Task Force and Vice Chairman of the International Lighting Standards Committee of the SAE Lighting Committee. Internationally he is member of the U.S. delegation to the GTB (Groupe de Travail "Bruxelles 1952") and Secretary of the GTB Working Group Light Sources.

Terburg graduated Cum Laude from the Delft University of Technology in The Netherlands. After pursuing his undergraduate degree in engineering physics, he pursued his doctoral studies in physics at the University of Illinois at Urbana-Champaign (UIUC). Terburg received a Fulbright Graduate Student Mutual Exchange Grant, the UIUC Physics Department Felix T. Adler Fellowship, and the Southeastern Universities Research Association (SURA) thesis prize for his doctoral dissertation research.

This award, established in 2001 by InterRegs, Ltd. and the SAE Foundation, recognizes a practicing engineer under the age of 40 who is involved in standards, regulations, or conformity assessment systems which improved safety or reduced emissions in a mobility product. The intent of the award is to encourage participation of young engineers in the standards and regulations development process early in their technical careers.

Terburg joined GE Lighting in 1999, where he is currently leading the automotive lighting regulatory program.

**Correction:** In the article titled "Tim Worthy receives SAE Gary Dickinson Award for Teaching Excellence" on p. 8 of the January 2004 issue, Bruce Aubin was inadvertently identified as Tim Worthy. Aubin was in fact the award presenter.



## CALL FOR NOMINATIONS

**Award:** William Littlewood Memorial Lecture

**Who:** Civil air transportation professionals

**Nomination deadline:** February 1, 2004

**Description:** This award provides the opportunity to deliver a lecture dealing with a broad phase of civil air transportation considered of current interest and major importance. The objective is to advance air transport engineering and to recognize those who make personal contributions to the field. The award perpetuates the memory of William Littlewood, the only person ever to be president of both SAE (1954) and the American Institute of Aeronautics and Astronautics. He was renowned for his contributions to the design of, and operational requirements for, civil transport aircraft.

**Submission:** Visit [www.sae.org/awards/aero\\_little.htm](http://www.sae.org/awards/aero_little.htm) for a nomination form.

**Award:** Marvin Whitlock

**Who:** Aviation maintenance integrity management

**Nomination deadline:** February 1, 2004

**Description:** This award recognizes an individual for outstanding management accomplishment that has resulted in superior aviation maintenance integrity of airline, fixed base, corporate, or military aircraft. Established in 1988 by the Aerospace Council, this award acknowledges and commemorates the distinctive management contributions of the late Marvin Whitlock, Senior Vice President of Maintenance and Operations and a member of the United Airlines Board of Directors.

**Submission:** Visit [www.sae.org/awards/aero\\_whitlock.htm](http://www.sae.org/awards/aero_whitlock.htm).

**Award:** Franklin W. Kolk Air Transportation Progress

**Who:** Air transportation professionals

**Nomination deadline:** February 1, 2004

**Description:** This award is given to recognize an individual for unique and outstanding contributions to air transportation and/or contributions to the work of the aerospace technical committees in developing aerospace standards, specifications, technical reports, and data through cooperative research. Selection is based on originality and value of the contribution, the impact and influence on the progress and development of air transportation, and peer recognition.

**Submission:** Visit [www.sae.org/awards/aero\\_kolk.htm](http://www.sae.org/awards/aero_kolk.htm).

**Award:** Cliff Garrett Turbomachinery Engineering

**Who:** Turbomachinery engineering professionals

**Nomination deadline:** March 31, 2004

**Description:** 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 Garrett's achievements and dedication as an aerospace pioneer, SAE administers an annual lecture by a distinguished authority in the engineering of turbomachinery for on-highway, off-highway, and/or spacecraft and aircraft uses. The award is made possible by a contribution from the Garrett Corp. (now a division of Honeywell).

**Submission:** Visit [www.sae.org/awards/aero\\_garrett.htm](http://www.sae.org/awards/aero_garrett.htm) for a nomination form.

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This distinctive event brings together research and design engineers and management from leading organizations around the world such as ExxonMobil, Renault, Ricardo, Ford, Southwest Research Institute, and Lubrizol to exchange the most up-to-date technical information and address significant issues facing the industry.

**Confirmed keynote speakers and panelists:**

**Jean Claude Grieseman**, Research Group Leader, Renault  
**Dr. Heinz Hass**, Manager Environmental Team, Ford Aachen Research Laboratory (and Leader of European Tank to Wheels study)  
**Kasumasa Katoh**, Senior VP Powertrain Engineering, Renault  
**Stuart Smith**, Vice President F&L Technology, BP

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## MEMBER UPDATE

## Nominate a member for SAE Fellow

Do you know a colleague who has made distinguished personal contribution(s) to the advancement of mobility technology? If so, why not nominate your colleague for SAE Fellow?

The SAE Fellow Program was established in 1976 to honor individual members whose engineering or scientific achievements have brought about meaningful advances in the fields of technology covered by SAE. This exceptional professional distinction is only awarded to 20 or less recipients each year. Candidates are considered for election to this prestigious grade by being nominated by a SAE Member or Fellow grade member.

The Fellow Nomination form can be found on SAE's website [www.sae.org/awards/fellow.htm](http://www.sae.org/awards/fellow.htm), or contact Janiece Lang, SAE Membership & Section Programs, for a nomination form. Contact Janiece at [janiec@sae.org](mailto:janiec@sae.org) or 1.724.772.7137. Nominations are due to SAE by June 1, 2004.

Nominating a colleague for Fellow is a unique way of acknowledging personal outstanding engineering/scientific accomplishment(s). Election to this prestigious Fellow grade of SAE Membership will honor and reward a member not only with immediate and highly visible recognition but also through his/her lifetime association with the 450 plus current SAE Fellows.

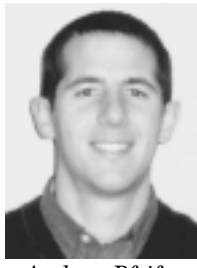
## Members on the move

**Mark Chernoby** (Aff'03) has been named Vice President-Advance Vehicle Engineering for the Chrysler Group. Chernoby is responsible for directing the advance vehicle engineering activities for all Chrysler products, including advance vehicle concept development and innovation, and virtual engineering. Additionally, he has overall vehicle responsibility for the Chrysler Crossfire.



Mark Chernoby

**Andrew Pfeifer** (Aff'98) has been named Marketing Supervisor for Metal Coatings International Inc. He will be responsible for marketing and advertising. In addition to his new duties, Pfeifer will continue to coordinate general industry sales, expanding non-automotive applications.



Andrew Pfeifer

**John Dutton** (Aff'94) has been appointed General Manager for Metal Coatings International Inc. He will oversee the day-to-day operations of the company.



John Dutton

**Lee Grant** (Mbr'88) has been named Assistant Vice President of the Fuels and Lubricants Research Division for Southwest Research Institute.



Lee Grant

**John Wesley Hardin** (Mbr'99) has been appointed Vice President and General Manager of A M E T E K ' s Aerospace Division.



John Wesley Hardin

**John Herc** (Asc'03) has joined Stone Construction Equipment, Inc. as Regional Manager. He will be responsible for the management of the southern region's direct and indirect sales representatives.



John Herc

## Special acknowledgments

**Bob Spitzer** (Mbr'95), SAE Vice President—Aerospace and The Boeing Co.'s Vice President of Technical Affiliations, was recently elected a Fellow of the American Institute of Aeronautics and Astronautics (AIAA).



Bob Spitzer

**Allan Feit** (Mbr'96), of The Goodyear Tire & Rubber Co., has been named to the 2004 Executive Committee for the American Chemical Society's Rubber Division. Feit will serve as Assistant Treasurer.

**Robert Sawyer** (Fel'71), Professor at the University of California at Berkeley, has received the Soichiro Honda Medal from the American Society of Mechanical Engineers. He was recognized for contributions to the understanding of the role of chemistry and kinetics in the formation of emissions from internal-combustion engines, and for his efforts to develop and apply scientific knowledge for the control of air pollution from mobile sources.

**Karl Springer** (Fel'63) has received Honorary Membership in the American Society of Mechanical Engineers. Springer was recognized for developing test methodologies for measuring emissions of smoke, odor, and particulate matter from internal-combustion engines and advancing this understanding via an extensive publishing activity.

## February membership renewal time is here

Check your SAE Membership card...if you have an expiration date of February 29, 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 1.724.776.4970 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 1.877.606.7323 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 1.877.606.7323 in the U.S. and Canada, 1.724.776.4970 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 1.724.776.0790. 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 1.877.606.7323 for details.

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

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## MEMBER UPDATE

## 2004 SAE Long-Term Member Recipients

The following SAE members, listed by Section, have reached an important milestone of 25 years of membership in SAE. Each member received a special pin recognizing their years of service. In addition, members could choose a special certificate of recognition or, in lieu of the certificate, make a donation to the SAE Long-Term Member Scholarship.

**Alberta**

Antonakis Andreou  
D Ken Mitchell  
John W Tuck

**Arizona**

Robert L Anderson  
Norman S Behn  
Glen Bickley  
Frank W Cox  
William J Ernyei  
Ronald P Gilmour  
William D Jones  
Theodore Kujawski  
Joseph Francis Lestingi  
Dennis McClement  
Richard A Pearce  
James P Prendergast  
Dieterich J Schuring  
Willard F Yarde

**Atlanta**

Jacques Alain  
Brent K Bailey  
Douglas M Brooks  
Jonathan Delong  
Warren R Erickson  
Andrew N Gilberg  
Stede W Granger  
Joe W Kent Jr  
Vance A Lausmann  
Phillip L Myers  
Thomas H Vadnais  
E Blake Wood  
Henry C Yeatman

**Baltimore**

Richard W Clarke  
Charles Felix Jones  
James A Kidd Jr  
Edward Forbes Owens  
Richard J Roby

**British Columbia**

Terence S Edwards  
Charles R Gahr  
David I Gourley  
G C Perry  
John Seckel

**Carolina**

Jerome N Berreth  
Henry T Dangson  
Edward N Heatherington  
Scott A Larson  
Paul A Meyer  
G Ronald Morris  
David L Morrow  
Jon Kevin Ochsner  
Arza Donald Patterson  
James F Prestel  
Melvin K Richardson  
Richard A Vincent  
Guy Patrick Weaver

**Central Illinois**

Jim Kent Carroll  
John R Dennis  
Matthew G Dickinson  
Eric C Fluga  
Harold W Hill  
Gordon H Holze  
J Edward Hummel  
Thomas S Lane  
Michael E Moncelle  
Randall R Richards  
William H Ward  
Michael A Watson  
Robert A White  
Timothy E Wiggers

**Chicago**

Rodica Baranescu  
Bruce B Dombek  
Gary D Fujii  
Barbara E Goodrich  
Frank D Graziano  
Keith S Hardy  
Richard E Jass  
Robert L Klug  
Bryan L Leonard  
David C Margalus  
Thomas B Newcomb  
Raymond H Oviyach  
Leslie L Pagel Jr  
Thomas Lawrence Pykosz  
James M Quigley  
Harvey A Restaino  
James A Selzer  
William M Trestrail  
Stephen M Vallino  
Daryl D Wingate  
Richard M Winter  
Martin J Zimmerman

**Cleveland**

Steven H Bendes  
Ravi R Bhatia  
David R Carper  
Marcus H Collins

Louis L Cseko Jr  
Thomas M Dodson  
Arthur L Finley  
Martin J Hapeman  
Cavour H Hauser  
Ronald J Hrovat  
Stephen F Kirk  
Jeffrey N Kopacka  
Richard F Kuntz  
Raymond J Labuda  
Kenneth A Loewenthal  
Stephen J Matas  
David Lee Mayse  
Robert A Meditz  
James J Pasela  
Jeffrey O Rolf  
Bryan D Schrandt  
Jay W Thornhill  
Brian J Werner

**Colorado**

Dennis E Gilmore  
Ronald James Grabinger  
Stan Jelsma  
Paul L Johnson  
Edward S Wright

**Cumberland Valley**

Jeffrey L Addleman  
Harold Edward Jones  
Donald L Long  
Cole T Rhodes  
Elizabeth Watts

**Dayton**

Erik Berkman  
John Robt Bishop  
Gerald L Boner  
Douglas R Evenden  
Kenneth J Kolegraff  
Joseph S Kramer  
Thomas J Lange  
Gregory D Liles  
Buryl L McFadden  
Richard C Rice  
Robert N Tanis  
Thomas J Throop  
Henry M Van Dommelen  
John Carl West  
Robert R Wright

**Detroit**

Russell D Abrams  
Charles E Allen Jr  
Aneas Amin  
Ronald A Antosch  
John Joseph Arndt  
Benjamin I Bachrach  
Kalyan Singh Bagga  
David R Baker  
Ronald E Baker  
Kenneth R Baker  
Suresh C Bansal  
David Barnhart  
David Barnhart  
Gregory A Beecher  
Laurence Bernhardt  
Mitchell Boguslawski  
Sandra L Bouckley  
Timothy K Brown  
Charles M Brunhofer  
Ralph Bugamelli  
Michael F Buscarino  
Donald K Cameron  
Richard W Caron  
Scott T Cassel  
Paul Castrilli  
Charles H Cecil  
Casimer J Cisko  
Charles J Curmi  
Mark Anthony Damico  
James G Davies  
Charles W Davis  
Richard K Deering  
Pietro Joseph Depaulis  
Wesley D Dietrich  
Subi Dinda  
Philip J Dingle  
Martin A Dinsmore  
William F Dolunt  
Bernard F Dorsey  
Herbert A Doyle  
Florian F Dutke  
David R Ehlen  
Eric D Emmer  
Ronald L Eng  
Leonard Evans  
Herbert Everss  
Todd D Fansler  
Daniel Thomas Farchone  
Michael S Faultersack  
James Federico  
Steven P Foradori  
Janice T Ford  
Rick E Forzano  
Norbert G Gieczewski Jr  
Gregory V Gillham  
William D Gorsuch

Edgar B Gostin Jr  
Paul A Green  
Dennis G Groh  
Henry P Guidali  
Kenneth Paul Gutowski  
Bobby M Hainline  
William J Hamel  
Dave A Hanes  
Tommy Harden  
Jerry P Harkey  
Stewart T Harman  
O Lee Herberger Jr  
Ross S Hill  
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## COMMITTEES & STANDARDS

### Neil Schilke receives Outstanding Contribution Award from Tech Standards Board



At the December 12, 2003 meeting of SAE Motor Vehicle Council (MVC) at SAE's Automotive Headquarters, Incoming MVC Chair Robert F. Mull (third from left) presented Neil Schilke (fourth from left), SAE's 2001 President, with the Technical Standards Board Outstanding Contribution Award. Schilke led the revitalization of the SAE Motor Vehicle Council in 2003. In this role, he worked tirelessly to obtain automotive industry leadership for the consensus standards process. The MVC has been reconstituted with senior executive leadership from the OEMs and key suppliers, and is embarking on a set of tasks designed to identify and then close strategic gaps in automotive standards. Pictured are some of the SAE 2003 Motor Vehicle Council members, from left: Ron Smisek, Mark Johnson, Mull, Schilke, Michael McKale, and Roger Shulze.

### SAE develops new standard for reporting electronic crash data

SAE has taken an important first step in harmonizing the electronic data collected from vehicle crashes, or "events." The standard, which was released in December 2003 and is referenced as J1698, establishes a common format for displaying and presenting crash-related data recorded and stored by electronic components currently installed in many light-duty vehicles. It pertains solely to the post-download format of the data and is not intended to direct how the data is collected or which vehicle systems are to be monitored.

Vehicle event data has several acknowledged applications toward designing safer vehicles and highways by providing diagnostic and operational information of on-board occupant protection systems and aiding in vehicle crash reconstruction. Data elements addressed by SAE J1698 are intended to be a compilation of those that manufacturers are currently recording, as well as those elements that can be reasonably predicted in the future. They include vehicle velocity, engine speed, throttle position, steering angle, time, date, and temperature, among others.

"Historically, crash data recording technology has evolved based on the varying technical needs of vehicle manufacturers and their customers. This has resulted in wide variations in the scope, extent, and format of such data," said Robert Kreeb, Chairman of the SAE

Vehicle Event Data Interface (VEDI) Technical Standards Committee. "In developing J1698, we wanted to maximize the validity and usefulness of event data toward improving vehicle safety, while allowing manufacturers to remain flexible and creative in how data is actually collected or extracted."

The technical deliberation surrounding this achievement has been carried forth by the SAE VEDI committee, which meets on a regular basis. As J1698 pertains only to single frontal impact events, the Committee expects to continue standardization work to include additional event types, such as side impact, vehicle rollover, and multiple impacts.

SAE is also announcing an in-depth technical program titled the Event Data Recorder Symposium. This event, which is highly anticipated in the automotive engineering community, will be held in June 2004. Additional information will be posted in the coming months at [www.sae.org](http://www.sae.org).

SAE is proud to assist the global automotive community by providing standards and other resources that remain on the cutting edge of engineering technology. For additional information, visit [www.sae.org](http://www.sae.org), or contact SAE staff VEDI Committee liaison Susan Haight at [susanhaight@sae.org](mailto:susanhaight@sae.org) or 1.248.273.2461.

## SECTIONS UPDATE

### Western Michigan Section announces upcoming events

Tuesday, February 3, 2004

*Ford F-150 New Model Introduction*

Ford Chief Engineer Matt O'Leary

Student night joint meeting with ASME

Scholarships, Student Chapters Presentations - Ferris State University, Grand Valley State University, and Western Michigan University

Grand Valley State University-Grand Rapids, MI—6:00 Social, 6:30 Meal, 7:30 Presentations. Cost: \$8.00 for students, \$20.00 for members and guests

Tuesday, March 16, 2004

*Siemens Dematic Tour (joint with SME)*

Tour location: 507 Plymouth Ave., Grand Rapids, MI

Duba's, Grand Rapids, MI—6:00 Social, 6:30 Meal, 7:45 Tour. Cost: \$10.00 for students, \$25.00 for members, spouses, \$30.00 for guests

For more information on either meeting, please visit [www.saesections.org/westernmichigan/](http://www.saesections.org/westernmichigan/).

## PUBLICATIONS

### New book available on transmission engineering

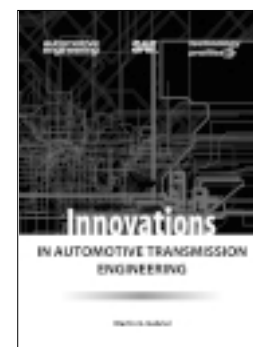
The automotive transmission plays a vital role in the vehicle powertrain, yet in an optimum operation environment it is invisible to the customer. *Innovations in Automotive Transmission Engineering* examines the technological innovations in transmission design that contribute to important overall vehicle characteristics such as fuel economy, vehicle performance, quality, and reliability. Looking at historical information to learn from the past while analyzing current and future design concepts, this book is a reference providing solid supportive data for the manager and engineer with responsibility for directing the application of the transmission in vehicle design concepts.

Martin G. Gabriel, a technical leader in transmission technology with more than 50 years of engineering experience, provides a concise historical overview then delves into a comprehensive technical presentation of the various aspects of transmission design and engineering. *Innovations in Automotive Transmission Engineering* concludes with an expert's outlook on

the shifting paradigms and technical challenges faced by engineers in developing the "new" transmission of the future.

Topics covered in the book include: background and innovations; transmission types and components; performance attributes; power requirements, losses, and efficiency; fluids, lubrication, and sealing; industry measurables; and the "new" transmission.

To purchase a copy of *Innovations in Automotive Transmission Engineering* (Member price \$79.20; List price \$99.00), contact SAE Customer Service at 1.877.606.7323 or 1.724.776.4970 (outside the U.S. or Canada) or visit <http://store.sae.org>.



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**Rex Luzader**, Vice President Business Development, Millennium Cell, Inc.  
**Dr. Edward Nam**, Engineer, Office of Transportation & Air Quality, U.S. EPA  
**Dr. John J. Petrovic**, Technical Advisor Laboratory Fellow, Los Alamos National Laboratory  
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**Brian Walsh**, Director of Member Services, U.S. Fuel Cell Council

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February 2004

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

Feb 2-3	Hydraulic & Pneumatic Fluid Power Seals
Feb 2-4	Geometric Dimensioning and Tolerancing - Level I **
Feb 4-6	Automotive Coatings: Materials & Applications
Feb 5-6	Simplified Taguchi/DOE Methods **
Feb 9	Statistical Tolerance Design
Feb 9-10	Automotive Glazing Materials **
Feb 12-13	Benchmarking: A Tool to Achieve Competitive Leadership

March 2004

**Detroit, MI, USA - Cobo Center**

In conjunction with the SAE 2004 World Congress & Exhibition

Mar 8	A Familiarization of Drivetrain Components **
Mar 8-10	Design of Hybrid Electric Vehicles **
Mar 8-10	Motor Vehicle Accident Reconstruction **
Mar 8-10	Fundamentals of Modern Vehicle Transmissions **
Mar 8-10	Combustion and Emissions for Engineers **
Mar 8-10	Weibull-Log Normal Analysis Workshop **
Mar 8-10	Chassis & Suspension Component Design for Passenger Cars & Light Trucks **
Mar 8-10	Commercial Vehicle Braking Systems **
Mar 8-10	Injuries, Anatomy, Biomechanics, & Federal Regulation **
Mar 8-9	Diesel Engine Technology **
Mar 8-9	Introduction to Variable Valve Actuation: System Benefits, Design and Integration
Mar 8-9	<b>New!</b> Distributed Automotive Embedded Systems This seminar provides background on the most important issues of automotive embedded systems operating in a network environment. While the widely used CAN protocol is primarily used in examples and applications, emerging protocols such as TTP/C and Flexray will also be discussed. The seminar begins with the fundamental requirements for communication systems followed by event-based and time-triggered computing and communications. Then typical automotive applications of in-vehicle networks are discussed followed by the CAN protocol and a summary of the main characteristics of TTP/C and Flexray. Finally, the design, analysis, and implementation of distributed automotive embedded systems using CAN is covered.
Mar 8-9	Introduction to Failure Modes and Effects Analysis for Product Design & Manufacturing Process Design (Product & Process FMEA) **
Mar 8-9	Automotive Electronics - An Applications Primer **
Mar 8-9	Compact Heat Exchangers for Automotive Applications **

Mar 9	<b>New!</b> Fundamentals of Automotive All-Wheel Drive Systems This course provides an introduction to the fundamental concepts and evolution of passenger car and light truck 4x4/all-wheel drive (AWD) systems including the nomenclature used to describe these systems. It covers basic power transfer unit and transfer case design parameters along with component application to system function. In addition, the future of AWD systems and emerging technologies that may enable future systems are addressed.
Mar 9-10	Catalytic Converters: Design and Durability **
Mar 10	Sensor & Actuator Technology: Module 1 - Powertrain (Engine, Transmission, and Onboard Diagnostics)**
Mar 10-11	Diesel Emissions and Aftertreatment Devices: Design & Durability **
Mar 10-12	Advanced Electric Motor/Generator/Actuator Design and Analysis for Automotive Applications **
Mar 10-12	Automotive Fuel Cell Systems **
Mar 10-12	Vehicle Dynamics for Passenger Cars and Light Trucks **
Mar 11	The Tire as a Vehicle Component **
Mar 11	Sensor & Actuator Technology: Module 2 - Chassis (Steering, Suspension, Braking, Stability, Vehicle Dynamics) **
Mar 11-12	The Basics of Internal Combustion Engines **
Mar 11-12	Selection, Evaluation, and Measurements of Acoustical Materials for Vehicle Interior Noise Study **
Mar 11-12	<b>New!</b> Introduction to Brake Control Systems This course provides a fundamental overview and analysis of brake control systems including anti-lock braking systems (ABS), traction control systems (TCS), vehicle stability enhancement systems (ESP, IVD, VSC, VSE), and their derivative technologies. Starting with vehicle-level performance requirements, participants will be exposed to brake control system architecture, system sensor needs, and the basic control strategies employed by each technology. A brief review of vehicle dynamics, the friction circle concept, and tire-road interface characteristics will be used to examine the limiting factors and compromises that must be made in the design and development of brake control systems. Integrated technologies that employ brake control system functionality and sensing technologies will also be covered.
Mar 11-12	Automotive Lighting
Mar 11-12	Role of the Seat in Rear Crash Safety **
Mar 11-12	Threaded Fasteners and the Bolted Joint **
Mar 11-12	Engineering Project Management **

Continued on page 12

## 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.

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## PROFESSIONAL DEVELOPMENT

Continued from page 11

- Mar 12 Exhaust Flow Performance and Pressure Drop of Exhaust Components and Systems \*\*
- Mar 12 Design Reviews for Effective Product Development \*\*
- Mar 12 Sensor & Actuator Technology: Module 3 - Body (Occupant Safety, Intelligent Vehicles, Navigation, Comfort, Convenience, Security)
- Mar 12 Tire and Wheel Safety Issues \*\*

April 2004

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- 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 **New!** Powertrain Selection for Fuel Economy and Acceleration Performance \*\*

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- Apr 14-16 Fundamentals of Metal Fatigue Analysis \*\*
- Apr 19-20 Fundamentals of Engine Oils
- Apr 19-20 Engineering Safety Specifications: Designing for Safety \*\*
- 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 30 Patents - A Global Perspective

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