

Section Web Site: [www.sae-arizona.org](http://www.sae-arizona.org) - Sign up for your newsletter on our website.

## HIGHLIGHTS...

- Clean Diesel Passenger Cars
- UA Formula SAE Team
- Message from the Chair
- Recap of February Meeting
- Report on SOLS
- A Diesel In Your Future?
- Tucson Meeting
- Mini Baja
- Electronic Newsletter

Dinner Presentation...

## Clean Diesel Passenger Vehicles: Oxymoron or Energy Policy

In Europe, where the high price of fuel (~\$5/gal) has allowed market-driven forces and technologies to compete, modern high efficiency, reliable, low noise passenger car diesel engines have emerged as the clear winner. Today, over 50% of new vehicles sold in Europe are diesel-powered, with some countries exceeding 70%. Even in Germany, where the Green Party has such political power, clean diesel-powered vehicle market share is ever increasing.



March program presented by Gary W. Rogers.

Here in the U.S., diesel engines in passenger vehicles have the reputation for being noisy, smoky, smelly, under powered and unreliable. To address fuel economy issues and increasingly stringent exhaust emission standards, especially in California, hybrid electric vehicles are gaining increasing market share, although their absolute numbers are still quite small considering the 15-16 million passenger vehicles which are sold each year in the U.S.

FEV Engine Technology, with world headquarters in Aachen, Germany, and its North American Technical Center in Detroit, is a recognized leader in the design and development of both heavy- and light-duty diesel engines. For example they have developed diesel engines from 1.5L Turbocharged Injection (TCI) 3-Cylinder up to 2.5L Turbocharged Injection (TCI) 6-Cylinder.

In the U.S., FEV is known for its advanced, low emission and innovative design expertise, having developed the cleanest diesel engine technology known to date, in cooperation with the U.S. EPA Advanced Technology Division in Ann Arbor, Michigan. The concept, called Clean Diesel

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Gary W. Rogers

Gary W. Rogers is the President and CEO of FEV Engine Technology, Inc., and Vice President, North American Operations, FEV Motorentechnik, GmbH, Aachen, Germany. He possesses extensive experience in research, design and development of advanced engine and powertrain systems including homogeneous and direct injected gasoline engines, automotive and heavy-duty diesel engines, conventional and hybrid-powertrain vehicles, fuel injection systems, turbo- and super-charger systems, transmissions, hydraulic systems and gas turbines. He has also served as the principal investigator on many EPA, DOE and DoD contracts over the last 15 years focusing on the design and development of advanced engine, powertrain and hybrid vehicle systems including production-intent concepts, and provided technical oversight on several programs in support of Ford Motor Co., International Transportation and Engine Co., Eaton Corp, and others. He recently served on the National Research Council Committee on the Effectiveness and Impact of Corporate Average Fuel Economy Standards (NRC, 2002) where he was responsible for all technology assessments and predictive analyses for the potential for fuel economy improvement through the application of advanced technologies. He is a 25 year member of the SAE, sits on the Advanced Powerplant Committee and is a member of the Executive Leadership Team and Organizing Committee for the SAE North American International Powertrain Conference which will debut in September, 2005.

Coffee Talk...

### UA Formula SAE Team

Our March Coffee-Talk will be presented by the UA student section and their Formula SAE team. This year is the second year for this team and they have been able to construct a new car for competition. The Formula SAE team will be bringing last year's and this year's cars with them for comparison and evaluation. The section will get to see first hand the design presentation that will be given at the competition this year and will give the students an opportunity to share with the section what they have been doing for the past year.

DATE	TIME	LOCATION	COST	With Dinner	Presentation Only
March 17	Social	- 6:00 pm	Crowne Plaza Hotel (Holiday Inn)	Members - \$20	\$10
	Dinner	- 7:00 pm	44th St. & Washington	Guests - \$25	\$10
	Presentation	- 8:00 pm	602-273-7778	Students - \$10	no charge

**RSVP by 2:00 pm Monday March 14. Call Bob Riley: 623-872-3475**

## Message from the Chair

In an effort to bring to the Section the latest in automotive technologies, the Board is proud to have Gary Rogers present to us in March some of the latest developments in Diesel technology. Diesel fuel as a clean burning technology sounds like an oxymoron here in the states. But in



Kevin Willson in Dodge Viper.

many countries in Europe, tax breaks encourage the use of diesel fuel and about 70% of the new automobiles sold in Europe today are diesel powered. Gary is the CEO of the American subsidiary of a well-known consulting firm in Europe. He will be coming to us from Detroit to address the latest developments in clean burning diesel technology. These technologies can be utilized in automobile powertrains as well as power generation and over-the-road truck applications.

We also have with us in March the Formula SAE group from the University of Arizona coming to present to us their entry for this year's Formula SAE competition. On hand they will have both last year's car and this year's car ready for display and comparison. So be sure to come during the social hour before dinner to get a good look at these vehicles. Our section meeting will also give the team the opportunity to try out their design presentation on a large group before heading off to Detroit. Thanks to Ryan Kanto for helping arrange this with the U of A student section.

From our February meeting I would like to thank Dr. Gerald Jakubowski, Provost for ASU at the East Campus, for bringing to us the future vision for the ASU Polytechnic Campus on the grounds of the old Williams Air Force Base in East Mesa. Some of the before and after pictures of the campus showed how some old military barracks could be turned into student housing and how faculty offices were established in other former military buildings. The ideas of a Polytechnic type of learning were also presented along with the type of programs offered at the East Campus. The next few years should see enormous growth in the enrollment at the East Campus and Gerald will be there to help guide it.

Thanks go to Derek Logan for helping me out with the Coffee Talk for February and for his continued support. Derek was able to step in at the last minute to present the need for volunteers for the Mini-Baja 100 event scheduled for June. With everyone's help, the Arizona section will be able to present a well planned Mini-Baja event for the rest of SAE and for the students competing this year. Thanks also to John Lester for arranging our speaker for February and for his ongoing contributions as our section treasurer.

Kevin Willson  
Section Chair

## Recap of February Meeting by John Lester

Our Section meeting of February 17 featured a presentation by Dr. Gerald Jakubowski, Provost of the Arizona State University at the East Campus, soon to be called the Polytechnic Campus.



Section Chair, Kevin Willson, presents an SAE coffee mug to speaker, Dr. Gerald Jakubowski

Dr. Jakubowski was appointed to this position in July 2004, having

recently served as Dean of the College of Science and Engineering at Loyola Marymount University in Los Angeles. In his presentation, he described the overall plan for ASU's four campuses and of the specific plans for the Polytechnic Campus located at the old Williams Air Force Base in Mesa. ASU's emphasis is to be "One University in Many Places."

The College of Technology and Applied Sciences is now fully located and operational on this campus. This college includes programs in Mechanical and Manufacturing Engineering Technology, Aeronautical Management Technology, Electronic and Computer Engineering Technology, Computing Studies, and Information and Management Technology. In cooperation with the Chandler-Gilbert Community College, which shares a portion of the Williams Air Force Base site, the East College includes programs in Elementary Education, Business Administration, Applied Psychology, Interdisciplinary Studies, Multimedia Writing and Technical Communication, Human Health Studies, Applied Biological Sciences, Nutrition, and Exercise and Wellness. Finally, the Morrison School of Agribusiness and Resource Management includes programs in Agribusiness, Golf and Facilities Management, Pre-Vet Medicine and Professional Golf Management. He emphasized the fact that these academic programs prepare graduates for professional careers or advanced studies, integrating technology throughout the curriculum. This is the essence of a Polytechnic University, which is the long term vision for this ASU Campus.

Dr. Jakubowski described the process of converting Air Force Base buildings and structures into a college facility. Many of the existing buildings are being renovated and used for dormitory, classroom, and office spaces--very few new buildings have been constructed at this time. He stated that current enrollment is 4000 students with many living on campus, with a projected 8000 student enrollment in future years. Exciting things are happening in the east valley!

## Report on SOLS

By Allan Watts

As our Vice Chair and next year's Chair, I had the opportunity to attend the Section Officer's Leadership Seminar (SOLS) in San Antonio. I met with current and future section leaders, including student section leaders, from all over North America and discussed SAE's contributions to mobility technology and the engineering profession. We discussed what it means to be a leader of SAE, and what it can do for our own professional growth as well as for the profession. Leadership in SAE provides opportunities to develop many skills that are useful in one's career. These skills include organizational skills, networking skills, public speaking, budget management, and teamwork. It's possible to develop skills through a leadership role in SAE that are difficult to develop in a typical work environment. But such skills may help one qualify for advancement. Leadership in SAE at the section level also provides opportunities to build relationships with other board members, speakers, section members, and SAE leaders beyond the section. Such relationships may also lead to future opportunities. Thus, in addition to helping the profession, involvement in the leadership of SAE also helps to advance our own careers.

Our section will be looking for at least one new board member in the next few months. If you are interested in serving on the board, please let me or one of the other board members know.

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Clean Diesels Continued....

Combustion, has been the subject of historic cooperative agreements between the EPA and the U.S. automotive and heavy-duty diesel manufacturers including Ford Motor Company and International Truck and Engine Corporation. FEV is also developing exhaust gas aftertreatment systems and calibration/regeneration strategies under U.S. Department of Energy sponsorship.

Gary W. Rogers is the President and CEO of FEV Engine Technology, Inc. and sits on the Managing Board of FEV Motorentechnik, GmbH in Germany. In addition to his role as the principle investigator on the EPA and DOE programs, he was also member of the National Academy of Sciences, National Research Council, Committee on the Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards, whose report was submitted to Congress and was referenced in the President's proposed National Energy Policy in 2002.

Gary is a long time member and leader in SAE and enjoys a rather unique position in the automotive industry, serving both the advanced technology and production development needs of the engine manufacturers, while supporting DOE and EPA as they assess the environmental and energy policy issues in the future. His presentation will highlight the state-of-the-art in clean, efficient and powerful diesel engines in Europe and their future here in the U.S.

## Is There A Diesel in Your Future?

"Diesel engines are a proven, efficient and readily available technology that can increase fuel efficiency by 20 to 40 percent over comparable gasoline engines especially in popular sport-utility vehicles and light-

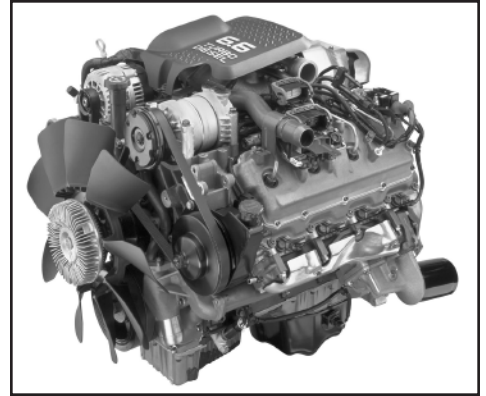


Photo courtesy General Motors Corp.

trucks which now make up more than half of all new sales," said Allen Schaeffer, executive director of the Diesel Technology Forum.

Because of their superior fuel efficiency, and high performance, the popularity of diesel engines in Europe has steadily increased to nearly half (44 percent) of all new vehicle sales. In the luxury and premium sectors, diesels comprise over 70 percent of all new sales.

In this country, American consumers now have more diesel choices than ever before. Four new light-duty diesel models were introduced in the U.S. in 2004 (Jeep Liberty CRD, Mercedes E-320 CDI, and Volkswagen Touareg and Passat), making modern diesel technology now available in four key market segments - from economy cars and family station wagons to luxury sedans and SUVs. This is in addition to the continuing popularity of diesel engine options in medium and heavy-duty pickup trucks.

"No trade-offs in vehicle type, size or performance are required for clean diesel technology-they deliver fuel efficiency on the highway and the urban driving environment, as well as towing potential and spirited performance, things that Americans want in their vehicles," said Schaeffer. "Not only are the engines more fuel-efficient, they have about 15 percent lower greenhouse gas emissions than conventional gasoline engines."

A study by the U.S. Department of Energy (DOE) found that a gradual 30 percent penetration of diesel vehicles by 2020 would save the U.S. 350,000 barrels of oil each day.

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### *SAEAZ Tucson Dinner Meeting: Spring 2006?*

The governing board is looking into having a Spring 2006 dinner meeting in Tucson. If you have suggestions for a dinner topic or meeting location, we'd like to hear from you! Please contact us at [info@saearizona.com](mailto:info@saearizona.com) or let us know by contacting a board member.

## Mini Baja West Update



The Mini-Baja 100 is only three months away! We are still looking for volunteers to

help make this the best Mini-Baja ever! Whether you have any experience or not, you can be a part of this once-in-a-hundred-years opportunity to celebrate SAE's 100 years as an organization. Sign up to volunteer for any or all days via the Mini-Baja 100 website at:

<http://www.sae.org/exdomains/minibaja100/volunteer.htm>.

For more information, contact Derek Logan at [derek.logan@email.sae.org](mailto:derek.logan@email.sae.org).

Positions available include:

Technical Inspector - Examine entries for compliance with the rules.

Design Judge - Judge the teams' designs and evaluate design reports.

Presentation Judge - Judge the teams' presentation skills.

Dynamic Events Crew - Operate and Marshall the dynamic events.

Endurance Event Crew - Operate and Marshall the 100

Continued next column....

## Meeting Schedule

March 17	- Clean Diesel Powered Passenger Vehicles
April 21	- The Boeing 7E7
May 19	- Automotive Tire Technology & Testing

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mile endurance event.

Scorekeeper - Assemble event records, determine scores and declare the winners.

General Event Crew - Fill in to help keep the event running smoothly.

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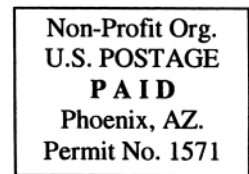
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