

\*\*\*\*\* *New Meeting Location* (Page 3) \*\*\*\*\*

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

**HIGHLIGHTS...**

- |                          |                                   |                                 |
|--------------------------|-----------------------------------|---------------------------------|
| - Light Rail             | - Message from the Outgoing Chair | - A World In Motion             |
| - Message from the Chair | - Las Vegas/November Meeting      | - Maps for New Meeting Location |
| - Recap of May Meeting   |                                   |                                 |

Dinner Presentation...

## Valley Metro Rail by Wulf Grote

Valley Metro Rail, a public non-profit corporation initiated in October 2002, is responsible for the design, construction and operation of light rail transit in the Phoenix Metropolitan Area. Light rail will carry up to 600 passengers in a three-car train. Initially, the system will carry 3,000-5,000 passengers per hour, but has a capacity of 15,000 per hour.

Light rail will be powered by electricity from overhead wires and will generate about as much noise as a new model passenger truck. The METRO light rail system is virtually pollution free, since it is powered by clean electrical power. As a result, the METRO system is expected to reduce airborne emissions by more than 12 tons each day.

The cost of the METRO 20-mile initial line is \$1.4 billion dollars, approximately 41 percent of which will be funded by a federal grant. Six extensions to the initial line were approved by voters in three separate transportation elections. The Regional Transportation Plan approved by voters

in 2004 includes 27.7 miles of future light rail extensions in Phoenix, Tempe and Mesa.

The system is scheduled to open in December 2008 and will operate 18-20 hours per day, 7 days a week.

Wulf Grote, our guest speaker for September, will discuss the construction packages and how the project was divided among contractors. Additionally, Wulf will provide details on the installation of piers and trusses at Tempe Town Lake Bridge, project schedules, expansion plans, safety testing and technical specifications of the system.



Light Rail



Tempe Town Lake Bridge under development for the Valley Metro Rail.

### WULF GROTE

Wulf Grote is the Director of Project Development for Valley Metro Rail, Inc., responsible for programming, planning and preliminary engineering of light rail projects. Through December 2003 Wulf served as Valley Metro Rail's Acting Executive Director. Wulf was also responsible for directing the light rail project for the previous four years, under the direction of the Regional Public Transportation Authority.

Wulf was an employee of the City of Phoenix Public Transit Department for 20 years, serving as the Assistant Public Transit Director between 2000 and 2002 and a Deputy Director from 1986 to 2000. While with the City, Wulf directed the transit capital program, which included development and maintenance of bus passenger and operating facilities, rail development, bus fleet planning, fleet and equipment procurement, and bus operations studies.

Wulf also spent six years as a transportation engineer in Denver, Colorado. Wulf has Bachelor and Master of Science degrees from the University of Utah and is a registered professional engineer in the State of Arizona.

DATE	TIME	LOCATION	COST	With Dinner	Presentation Only
Sept. 21	Social	- 6:00 pm	<b>Hilton Phoenix Airport</b>	Members - \$22	\$10
	Dinner	- 6:30 pm	2435 S. 47th St, Phoenix-85034	Guests - \$27	\$10
	Presentation	- 7:30 pm	480.894.1600	Students - \$10	no charge
<b>RSVP by 2:00 pm Monday September 18.</b>			<b>Call Donna Miranda: 602.364.7456</b>		

## Message from the Chair

The Arizona-Nevada section governing board has been working diligently through the summer to select a new meeting location, plan and schedule interesting dinner topics/speakers, and complete year-end section business.



Dave Vasquez, Section Chair

The board has selected the Hilton Phoenix Airport as our new meeting location. It's located north of University and east of the SR143, just south of the previous hotel. The Hilton's helpful staff and large selection of dinner menu options will be a welcome change to our section. I'd like to thank all of the board members involved in helping select the hotel and providing feedback, especially Allan Watts and Derek Logan. I'd also like to thank outgoing Arrangements Chair Paul Curry for his support last year and welcome Cathleen Gary, who will be replacing Paul.

Bill Gest, Cathleen Gary, and Derek Logan have been planning an additional November dinner meeting, the same week as the SEMA show, in Las Vegas. This should be an exciting event and I hope to see you there!

Allan Watts and John Lester have completed the required paperwork for SAE Headquarters, such as the year-end summary report a year-end summary financial report. Additionally, John has been working on the budget for the upcoming year. I appreciate their ongoing support.

As a member of the Arizona-Nevada section, we welcome your feedback and comments. I've been a board member for several years and our goal has always been to provide our members with the best services possible - interesting dinner meeting speakers, a great newsletter, an information-filled website, student support through A World in Motion (AWIM), and university student sponsorship.

It is an honor to be selected as the section Chair and I look forward to an exciting year ahead. If you see a board member, please pat them on the back and thank them for their hard work and diligence to the success of the Arizona-Nevada section.

Dave Vasquez, Section Chair

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## Recap of May Meeting

by Allan Watts

The May 18, 2006 meeting of the Arizona/Nevada Section of SAE was a rocketing success with Mark Ogren, Vice President of Business Development for Orbital Sciences speaking on launch vehicles. Mr. Ogren provided a very interesting and informative presentation. He told us that Orbital, headquartered in Chandler, Arizona, uses a unique management style, in that the same team designs, builds, and launches a rocket, completing two to two and one half designs per year. Each engineer has a specialty that repeats

for each project. Orbital uses avionics that can be standard for several launch vehicles, and can combine different stages to make different products for different applications.

Orbital makes launch vehicles for both military and civilian applications. Military applications include missile defense vehicles, including the Kinetic Energy Interceptor or KEI, and also targets to be used to test missile defense systems. Many launch vehicles are launched from the ground, but Orbital also makes target cruise missiles and a Pegasus rocket that launches from a conventional aircraft and then goes into orbit.

Recently, missile boosters have been converted and used to launch satellites for civilian applications. Use of surplus boosters not only saves the cost of making a new booster, but also saves the cost of having old boosters destroyed that are no longer needed. And there are enough surplus boosters from the cold war to launch civilian satellites for a long time. Mr. Ogren said that 200 surplus Minuteman boosters are available, for example, and 65 Peace Keepers, and they only launch ½ to 2 rockets per year. He also said that the solid fuels last virtually indefinitely.

Mr. Ogren told us about the future of launch vehicles and said that single-stage to orbit vehicles are probably not practical, but two-stage vehicles can be done. He also said that there is a push to find rocket fuels that do not contain perchlorates. Mr. Ogren's presentation was very much appreciated by the Section.

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## Message from Outgoing Chair

It was both an honor and a pleasure to serve as the Chairperson of the Arizona/Nevada Section of SAE for the 2005/2006 season. I was blessed by a wealth of talented and dedicated people that make the Section run well and serving as Chairperson a delight. In particular, I would like to thank John Lester for serving as treasurer, and Bob Riley for serving as newsletter editor. These positions both require hours of dedicated service to the Section and these gentlemen have done a fantastic job for many years. John also presented on the history of our Section at one of the dinner meetings, and both of these gentlemen actively participate in all of the board meetings when they are in town. I would also like to thank David Vasquez for serving as Vice Chair and also for updating the website and handling most of the e-mail duties for the Section, and Bill Gest for serving as secretary and taking notes at each of the board meetings and distributing them to the board. I would also like to thank Paul Curry for arranging the facilities and handling issues with the hotel, as well as arranging a number of speakers for our dinner meetings. Thanks also go to Kevin Willson for obtaining speaker gifts, arranging audio visual equipment, performing treasurer duties when John was out of town, coordinating activities with student Sections, and various other duties.

I would also like to thank Derek Logan for repre-

senting the Section at Congress, scrambling to find speakers at the last minute, coordinating communication with student Sections, and helping to host the President of SAE International, Ted Robertson, when he visited our Section. Special thanks also go to Max Rumbaugh and Howard Daudet, who both provided me with profound advice and guidance while I served as Chairperson, attended all of the board meetings when they were available, and helped to find and coordinate speakers for the dinner meetings. I would also like to thank Joshua Rudin for organizing and running a program to make presentations to school children about careers in engineering, which Joshua derived from SAE's "A World in Motion" (AWIM) program. Finally, I would also like to thank our members who attend our dinner meetings, who make the activities of the Section all worthwhile.

I would also like to congratulate Dave Vasquez for being elected Chairperson for the Section for the 2006-2007 season. Dave is already doing a fantastic job as Chairperson and I am sure it will be a wonderful year. In addition, congratulations go to Bill Gest for being elected to serve as Vice Chairman, and Joshua Rudin for being elected to serve as Secretary. All of these gentlemen are valuable assets to the Section.

Serving as Chairperson for the Section has been rewarding, and I believe I have grown tremendously from the experience. It has been a pleasure to represent the Section, work with the other members of the Governing Board, to meet and interact with the speakers, and to interact with the members of the Section. I am proud of the speakers that we have had, and believe that the Section is well positioned for another successful year this season. I also encourage others to get involved with the Governing Board. You will find it to be a rewarding experience. You can look forward to another set of talented speakers on a number of interesting and varied subjects in the upcoming season. I look forward to seeing you at the dinner meetings.

Allan Watts, Outgoing Section Chair

### Section Meeting in Las Vegas Wednesday: November 1, 2006

Are you going to the SEMA convention in Las Vegas this year? Join the Arizona-Nevada SAE section in a dinner meeting (6:30 pm to 9:30 pm.) Our meeting is planned to be at the Greek Isles Hotel and Casino which is just two blocks away from the Specialty Equipment Manufacturers Association (SEMA) convention. Menu includes Rosemary chicken.

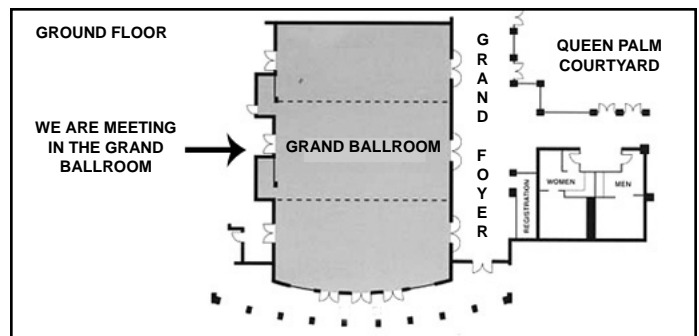
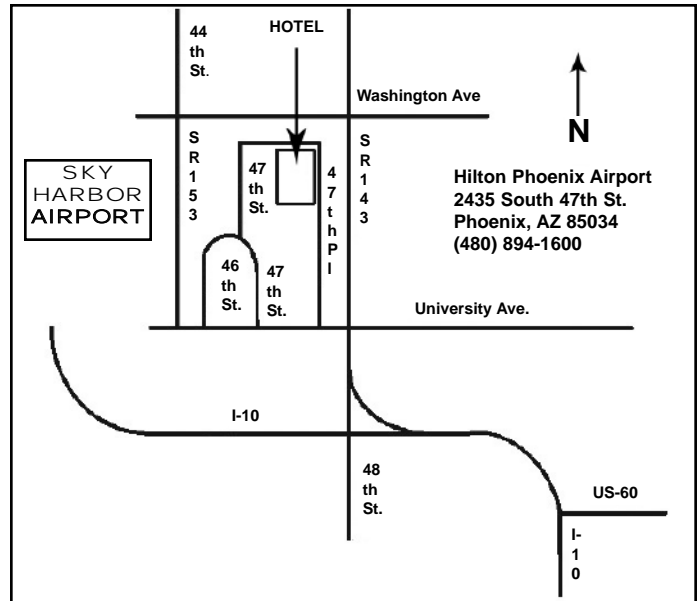
This is a great opportunity to meet with SAE members from Nevada and across the world who are attending the SEMA. We are finalizing our speaker plans, but plan on a great presentation.

Please make your reservations by 10-15-06 by contacting Bill Gest via his e-mail at [Bgest@Esgeng.com](mailto:Bgest@Esgeng.com) or by calling Donna Miranda at 602-364-7456.

### A World In Motion

A World in Motion has been set up to enlighten youngsters about careers in science and engineering. Demand has been high--engineers are needed to go to local schools for a one-hour presentation. Please contact Joshua Rudin at 602.369.6487 for more information.

#### \*\*\* New Meeting Location \*\*\*



### SAE-AZ New Officers

- Chair - Dave Vasquez
- Vice Chair - Bill Gest
- Secretary - Joshua Rudin
- Treasurer - John Lester
- Newsletter Editor - Robert Riley
- Arrangements Chair - Cathleen Gary
- Vice Chair Student Activities - Derek Logan
- Assistant Vice Chair Student Activities - Howard Daudet
- A World in Motion Chair - Joshua Rudin
- Past Chair - Allan Watts

THE UNIVERSITY OF ARIZONA ANNOUNCES:

The 44th Annual Applied Reliability Engineering and Management Institute provides all engineers, and particularly Reliability Managers and Engineers, and Product Assurance Managers and Engineers in government and industry a working knowledge of Reliability Engineering Theory and Practice; Mechanical Reliability Prediction; Reliability Testing and Demonstration; Accelerated Testing; Failure Analysis Techniques; Complete Industry Product Assurance Techniques; Maintainability; Customer Satisfaction, Strategies to provide the tools required to design, test and manufacture products which are highly reliable with minimum if any product recalls, easy to maintain, safe and less costly to operate, and sold at globally competitive prices, plus many more! Numerous practical applications of these methodologies are presented. This Institute will also prepare and help participants pass their ASQ Certified Reliability Engineer (CRE) Examination.

THE 44th ANNUAL APPLIED RELIABILITY ENGINEERING  
AND MANAGEMENT INSTITUTE  
November 13-16, 2006

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Tucson, Arizona 85706  
520-746-3932 or 800-526-0550

Registration Fee: \$1500      Proceedings Cost: \$50

*For Details and Technical Information, please write to:*

Dr. Dimitri B. Kececioglu, P.E.  
Professor of Aerospace and Mechanical Engineering  
The University of Arizona  
1130 N. Mountain Avenue, Bldg. 119, Room N517  
P.O. Box 210119, Tucson, AZ 85721-0119  
You can also Call: 520-621-6120, Fax: 520-621-8191,  
Or Email: [dimitri@u.arizona.edu](mailto:dimitri@u.arizona.edu)  
Please pursue his website at: <http://www.u.arizona.edu/~dimitri>

## ARIZONA-NEVADA SECTION: Meeting Schedule

September 21 - Light Rail  
October 19 - Sea Launch Vehicles  
November 1 - Special Event, Las Vegas, Nevada  
November 16 - Alternative Fuels, E85  
December - NO MEETING  
January 25 - Infinity G35 Sedan  
February 15 - Sterling Energy Systems  
March 15 - Phoenix International Airport  
April 19 - To Be Determined  
May 17 - Global Warming

Dave Vasquez  
Chair  
602-616-8180

Bill Gest  
Vice Chair  
[bgest@esng.com](mailto:bgest@esng.com)

Josh Rudin  
Secretary  
602-369-6487

John Lester  
Treasurer  
480-733-6532

Robert Riley  
Newsletter Editor  
623-872-8010



Society of Automotive Engineers  
Arizona Section  
69 West Wilshire Drive  
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