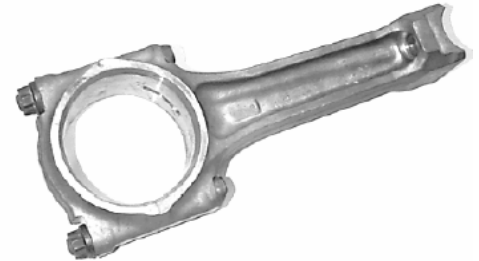


# CONNECTING ROD

The Oregon SAE Newsletter

April 2006 Volume 10 Issue 11



Online at: [www.oregonsae.org](http://www.oregonsae.org)

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## Thursday, April 20<sup>th</sup>, Evening Tech Meeting: [Mechanical Failure Analysis](#)

**What:** How to recognize failure mechanisms and why they happen

**Location:** Freightliner Truck Headquarters Cafeteria, 4435 N. Channel Ave Portland, OR 97217

**Cost:** Varies, see page 2

**RSVP:** Contact Andre Susanto by April 19<sup>th</sup> (503 745-2185 / ([AndreSusanto@freightliner.com](mailto:AndreSusanto@freightliner.com)))

## Friday, April 28<sup>th</sup>, 11:30 Lunch Meeting: [Oregon "WAVE Runner" and the DARPA Challenge](#)

**What:** Oregon State University is participating in the DARPA Grand Challenge, a U.S. government-sponsored competition that aims to create the first fully autonomous vehicles capable of competing on an under-300 mile off-road course in the Mojave Desert.

**Location:** Elmer's Restaurant at Delta Park, 9848 N. Whitaker Rd. Portland, OR

**Cost:** 8\$ General, \$4 Students

**RSVP:** by April 21<sup>st</sup> to Jason Wilkening ([JasonWilkening@freightliner.com](mailto:JasonWilkening@freightliner.com)) or 503-745-9328

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Oregon Section Presents

## Friday Lunch Meeting: Oregon “WAVE Runner” and DARPA Grand Challenge

Could this be the precursor technology to smart highways and/or advanced automotive safety systems? We hope presenter Matthew MacClary [macclary@lifetime.oregonstate.edu] of the Oregon WAVE team will give us some insight as he tells us about this unique project and experience!

### Topics Covered:

- 1) Grand Challenge race description.
- 2) Description of changes to the Mini Baja platform.
- 3) Actuation and on-vehicle sensing.
- 4) Off-vehicle sensing like GPS and LADAR.



The WAVE Runner will be on hand for inspection!

### Background:

The **DARPA Grand Challenge** is a United States government-sponsored competition that aims to create the first fully autonomous vehicles capable of competing on an under-300 mile, off-road course in the Mojave Desert in the Southwest United States. This annual challenge took place for the first time on March 13, 2004 and was sponsored by the [Defense Advanced Research Projects Agency](#) (DARPA) of the U.S. Department of Defense.

The Oregon WAVE (Willamette Autonomous Vehicles Enterprise) team is a partnership between Oregon State University faculty and students and outstanding engineers from the surrounding community. Oregon WAVE has broad collective experience that spans high level software, embedded firmware, electrical and mechanical engineering. “Our autonomous vehicle embodies simple, elegant engineering and strives to make efficient use of power and weight. The background of the team members is mainly robotics, computer systems, and professional robot fighting.”

**Location:** Elmer’s Restaurant at Delta Park, 9848 N. Whitaker Rd. Portland, OR

**When:** April 28<sup>th</sup> - Friday Noon Luncheon Meeting

**Cost:** 8\$ General, \$4 Students (Includes Lunch)

**RSVP:** by April 21<sup>st</sup> to Jason Wilkening ([jasonwilkening@freightliner.com](mailto:jasonwilkening@freightliner.com)) or 503-745-9328



Oregon Section Presents

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## Evening Tech Meeting: Mechanical Failure Analysis

“Why did my part fail and how do I fix it?”

How to recognize failure mechanisms and why they happen

If you have ever had a part fail on you, this is a meeting not to miss. Learn to distinguish different failure mechanisms such as fatigue, stress corrosion cracking, hydrogen embrittlement, static overload, and many others. Find out why they happen and fix the root cause of the failure.

Dave Van Dyke, PE is a mechanical engineer from VGO Inc. Engineers ([www.vgoinc.com](http://www.vgoinc.com)); a company specializing in forensic engineering, design analysis and failure testing. His background includes forensic engineering, finite element analysis, and test program design and evaluation. He has conducted a large number of failure investigations, and co-authored an ASM chapter on failures in steel welds.



**Location:** Freightliner Truck Headquarters Cafeteria, 4435 N Channel Ave, Portland, OR 97217

**When:** April 20<sup>th</sup>, 6:00pm dinner/social, 6:30 presentation

**Meal:** Dinner will be provided with your choice of pizza or sub sandwiches.

**Cost:**

- SAE member attendance with dinner \$8
- Non-SAE member attendance with dinner \$10
- Student attendance with dinner \$5
- Non-SAE member attendance without dinner \$2
- SAE member attendance without dinner \$0

**RSVP:** Contact Andre Susanto by April 19<sup>th</sup> (503 745-2185 / ([andresusanto@freightliner.com](mailto:andresusanto@freightliner.com)))

# ***VOLUNTEERS NEEDED!!***

***What: 2006 SAE Mini Baja West***

***When: May 11-13, 2006***

***Where: Expo Center (Portland) & Washougal MX Park (SW Washington)***

***Why: To support university engineering education***

The Oregon Section of SAE (Society of Automotive Engineers) is hosting this year's Mini Baja West Competition. This event provides undergraduate engineering students the opportunity to work on a real-world design project from the ground up – they design and build an off-road vehicle, raise the funds required to build it, and provide detailed design, costing, and manufacturing reports. The project culminates in a three-day competition against teams from other schools.

We need volunteers to help make this year's competition a success; you do not need to be an engineer to volunteer – much of the help we need does not require any technical experience. Day 1 will be at the Expo Center in Portland and Days 2 & 3 will be at the Washougal MX Park. Whether you can volunteer for a couple hours or all three days, we need your help!

***Contact: Valerie Uskoski, Volunteer Coordinator***

***[vuskoski@yahoo.com](mailto:vuskoski@yahoo.com)***

***Please visit our website at <http://minibajawest.com/> for more information.***

