



---

**ARIM: Automotive Research and Industrial Mentorship  
REU Program at Oakland University**



**Dept. of Mechanical Engineering**



---

**Final Project Presentations**

Tuesday, July 17, 2007  
271 South Foundation Hall

9:30AM – 10:00AM: **Investigation of Flow Distribution Media in Alkaline Fuel Cells**

Presenters: Zakaria Ahmad - Oakland University  
Christine Gerpheide – Grinnell College  
Advisors: Dr. Xia Wang, Dr. Brian Sangeorzan and Dr. Laila Guessous

10:00AM – 10:30AM: **Measuring Electrical Contact Resistance between Gas Diffusion Layers and Bipolar Plates in PEM Fuel Cells**

Presenters: Carolyn Hutchins – University of Arizona  
Huy Tran – North Carolina State University  
Advisors: Dr. Xia Wang and Dr. Brian Sangeorzan

10:30AM – 11:00AM: **Nanofluids: Measuring the Thermal Conductivity by the Transient Hot-Wire Method**

Presenters: Michelle Petty – University of Missouri-Columbia  
John Taphouse – University of Michigan  
Advisors: Dr. Beth Zou, Dr. Brian Sangeorzan and Dr. Laila Guessous

11:00AM – 11:30AM: **Nanofluids: Application in Heat Exchangers**

Presenters: Chelsye Castle – Youngstown State University  
Anastasia Taylor – Embry-Riddle Aeronautical University  
Advisors: Dr. Beth Zou, Dr. Brian Sangeorzan, Dr. Laila Guessous and Dr. Chris Kobus

---

**About ARIM:** The ARIM Research Experience for Undergraduates (REU) program was setup in the department of mechanical engineering to provide meaningful, hands-on, paid 10-week summer research experiences to eight talented and motivated undergraduate engineering students from across the United States. This program is sponsored by the National Science Foundation and by the Department of Defense ASSURE program and was funded for the 2006-2008 summer periods. Students work in teams on **automotive** research projects involving fluid mechanics, heat transfer, energy and/or tribology. It is hoped that such a program will engage participants in rewarding research experiences that excite and motivate them to pursue careers in scientific and engineering research. In addition to working on research projects, students take part in other activities such as industrial research lab and facilities tours, meetings with working engineers, conferences and seminars. For more information about the program, please visit <http://me-reu.secs.oakland.edu>



---

**ARIM: Automotive Research and Industrial Mentorship  
REU Program at Oakland University**



**Dept. of Mechanical Engineering**



---

**Acknowledgements**

A number of professionals from industry kindly volunteered their time to either, assist the students with their projects, meet the students, arrange tours, provide parts or present a seminar in 2007. These include:

Dr. Tom Asmus, Senior Research Executive (ret.), DaimlerChrysler; Adjunct Professor, Univ. of Michigan  
Dr. David Reuss, Senior Staff Research Engineer, GM R&D  
Dr. Jan Gatowski, GM Technical Fellow, GM Powertrain  
Dr. Simon Tung, Senior Staff Researcher, GM R&D  
Mr. Robert Privette, Director, Product Development, Ovonix Fuel Cell Co.  
Mr. Nathan English, Stack Assembly Manager, Ovonix Fuel Cell Co.  
Mr. John Felice, VP Manufacturing Technology and Global Enterprise, DaimlerChrysler  
Dr. Ken Singh, Aero & Fluid dynamics manager, DaimlerChrysler  
Dr. Ed Becker, Senior Materials Engineer, General Motors Powertrain  
Ms. Meg Novacek, Director, Powertrain Systems Engineering, DaimlerChrysler  
Ms. Lisa Fodale, DaimlerChrysler  
Ms. Louise Stauffer, GM R&D  
Mr. Sridhar Maddipatla, Valeo

Additional assistance was provided by SECS and Oakland University staff and faculty:

Ms. Patricia Ketcham, Nursing Laboratory Manager and Adjunct Assistant Professor, OU Nursing  
Mr. Len Brown, Laboratory Manager, SECS  
Mr. James Quinlan, Assistant Laboratory Manager, SECS  
Mr. Frank Cox, Manager, Instrument Shop  
Ms. Donna Searight, Administrative Secretary, Dept. of Electrical and Computer Engineering

OU Graduate and Undergraduate Students:

Owen Draper  
John Shi  
Elaine Petrach  
Yousif Haddad

And many others...