**Bryan W. Weber**

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(412) 443-6447 (412) 968-5884

**Education**

**Case Western Reserve University,** Cleveland, OH

Bachelor of Science, Aerospace Engineering

Graduated *cum laude*, May 2009

Cumulative GPA: 3.73

**University of Connecticut,** Storrs, CT

Master of Science, Mechanical Engineering

Planned Graduation: May 2010

**Professional Experience**

**Master’s Thesis (Planned Completion: May 2010)**

**Combustion Laboratory,** University of Connecticut, Storrs, CT

Autoignition of Butanol Isomers at Elevated Pressure

**Objective**: To determine the ignition characteristics and kinetics of the 4 butanol isomers using a rapid compression machine

* Developed LabView instrument to control data sampling from the rapid compression machine
* Designed and constructed an electrical circuit and mechanical system to control diaphragm puncture timing on a sampling apparatus for the rapid compression machine
* Operating the rapid compression machine to measure the autoignition delay associated with the four isomers of butanol
* Operating the gas chromatograph, mass spectrometer, and flame ionization detector to determine the kinetic pathways of butanol ignition
* Simulating ignition delay and kinetic results of experiments using CHEMKIN software

**Senior Project, Summer 2008-Spring 2009**

**Combustion Diagnostics Laboratory**, Case Western Reserve University, Cleveland, OH

Analysis of Heavy Hydrocarbon Fuels using Gas Chromatography with Mass Spectrometry

Characterized the composition of unburned conventional and synthetic jet fuels (Jet-A, JP-8, and S-8)

**Mechanical Engineering Laboratory 2, Spring 2008**

**Combustion Diagnostics Laboratory**, Case Western Reserve University, Cleveland, OH

An Investigation of Hydrocarbon Flames using Probe Sampling and Gas Chromatography with Mass Spectrometry

* Constructed gas sampling probe and control system
* Tested sampling probe on flat, premixed methane flames

**Internship, Summer 2007**

**Combustion Diagnostics Laboratory**, Case Western Reserve University, Cleveland, OH

Catalytic Hydrogen Ignition Project

* Designed, constructed, and calibrated a flow control system for hydrogen, nitrogen, and oxygen
* Designed and constructed a customized translation stage for hydrogen-air burner
* Constructed a customized exhaust hood for hydrogen-air burner

**Awards**

* The Fred H. Vose Prize, awarded to the senior in Mechanical and Aerospace Engineering at Case Western Reserve University showing the most promise for future leadership, 2009
* The Summer Undergraduate Research in Energy Sciences grant for $3,500 from Case Western Reserve University, 2008
* The Case Alumni Association Junior/Senior Scholarship for $2,100 per year, 2008-2009
* The Provost’s Scholarship for $14,400 per year for 4 years to attend Case Western Reserve University, 2005-2009
* A Graduate Assistantship in Areas of National Need Fellowship for $7,600 for Spring 2010 semester, with the possibility of continuing support for Ph.D. dissertation

**Presentations**

* Hands-on demonstration of the rapid compression machine to senior faculty in the Mechanical Engineering Department at the University of Connecticut, senior engineers at Pratt & Whitney, and senior research fellows at United Technologies Research Center; October 2009
* An Investigation of Hydrocarbon Flames using Probe Sampling and Gas Chromatography/Mass Spectrometry; 2009 Symposium and Poster Session, sponsored by the Support of Undergraduate Research and Creative Endeavors Office at Case Western Reserve University; April 2009
* Analysis of Hydrocarbon Fuels using Gas Chromatography/Mass Spectrometry; 2008 Summer Undergraduate Research in Energy Sciences program, sponsored by the Dominion Energy East Ohio Branch; August 2008

**Leadership Experience**

**Combustion Diagnostics Lab,** Case Western Reserve University, Cleveland, OH

Mentored an undergraduate student in the Summer Research in Energy Studies program, 2009

**Ultimate Frisbee Club**, Case Western Reserve University, Cleveland, OH

***President****,* 2008; ***Treasurer****,* 2007-2008; ***Secretary and Webmaster***, 2006-2007; ***Member***, 2005-2009

**Computer Skills**

Windows XP, SolidWorks, Microsoft Word, Excel, and PowerPoint, MatLab, LabView, CHEMKIN 4.1.1 (Chemical Kinetic Modeling Software)