

*	Todo list	
	Update and expand duties from this teaching . . . . .	3
	Really need to update the description of the work for Jackie's class . . . . .	3
	Update the duties in this position . . . . .	3
	Update description of this award with its meaning . . . . .	3

## Bryan W. Weber

CONTACT INFORMATION	Department of Mechanical Engineering University of Connecticut 191 Auditorium Road U-3139 Storrs, CT 06269 USA	<i>E-mail:</i> <a href="mailto:bryan.weber@uconn.edu">bryan.weber@uconn.edu</a> <i>Work:</i> +1-860-486-2492 <i>Cell:</i> +1-412-443-6447 <i>Web:</i> <a href="http://bryanweber.com">bryanweber.com</a>
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RESEARCH INTERESTS	<b>Combustion Engineering:</b> Alternative biofuels including alcohols and biodiesel; design of novel experimental methods for combustion analysis
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EDUCATION	<b>University of Connecticut</b> , Storrs, CT, USA  Ph.D., Mechanical Engineering, Planned 2014 Working Dissertation Title: <i>High Pressure Ignition Chemistry of Alternative Fuels</i> Advisor: Professor Chih-Jen (Jackie) Sung  M.S., Mechanical Engineering, August 2010 Thesis Title: <i>Autoignition of n-Butanol at Low to Intermediate Temperature and Elevated Pressure</i> Advisor: Professor Chih-Jen (Jackie) Sung  <b>Case Western Reserve University</b> , Cleveland, OH, USA  B.S., <i>Cum Laude</i> Aerospace Engineering, May 2009 Senior Project Title: <i>Analysis of Heavy Hydrocarbon Fuels using Gas Chromatography with Mass Spectrometry</i> Advisor: Professor Chih-Jen (Jackie) Sung
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JOURNAL PUBLICATIONS	S.M. Sarathy, S. Park, <b>B.W. Weber</b> , W. Wang, P.S. Veloo, A.C. Davis, C. Togbé, C.K. Westbrook, O. Park, G. Dayma, Z. Luo, M.A. Oehlschlaeger, F.N. Egolfopoulos, T. Lu, W.J. Pitz, C.J. Sung, and P. Dagaut. <i>A Comprehensive Experimental and Modeling Study of iso-Pentanol Combustion</i> . Combustion and Flame, Aug. 2013. doi:10.1016/j.combustflame.2013.06.022  <b>B.W. Weber</b> and C.J. Sung. <i>Comparative Autoignition Trends in Butanol Isomers at Elevated Pressure</i> . Energy and Fuels, vol. 27, no. 3, pp. 1688-1698, Feb. 2013. doi:10.1021/ef302195c  T. Tsujimura, W.J. Pitz, F. Gillespie, H.J. Curran, <b>B.W. Weber</b> , Y. Zhang, and C.J. Sung. <i>Development of Isopentanol Reaction Mechanism Reproducing Autoignition Character at High and Low Temperatures</i> . Energy and Fuels, vol. 26, no. 8, pp. 4871-4886, Aug. 2012. doi:10.1021/ef300879k  <b>B.W. Weber</b> , K. Kumar, Y. Zhang, and C.J. Sung. <i>Autoignition of n-butanol at elevated pressure and low-to-intermediate temperature</i> . Combustion and Flame, vol. 158, no. 5, pp. 809-819, Mar. 2011. doi:10.1016/j.combustflame.2011.02.005
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CONFERENCE  
PAPERS AND  
PRESENTATIONS

S.S. Merchant (Presenting), W.H. Green, K.M. Van Geem, N. Hansen, **B.W. Weber**, C.J. Sung. *Combustion of the Butanol Isomers: Reaction Pathways from High to Low Temperature*. 8<sup>th</sup> International Conference on Chemical Kinetics, University Seville, Seville, Spain, July 2013. [Abstract](#)

**B.W. Weber**, W.J. Pitz, C.J. Sung, M. Mehl, E.J. Silke, A.C. Davis. *Experiments and Modeling of the Autoignition of Methyl-Cyclohexane at High Pressure*. Paper 3A02, 8<sup>th</sup> US National Technical Meeting of the Combustion Institute, Park City, UT, May 2013.

**B.W. Weber**, S.S. Merchant, C.J. Sung, and W.H. Green. *An Autoignition Study of iso-Butanol: Experiments and Modeling*. Paper 3A01, 8<sup>th</sup> US National Technical Meeting of the Combustion Institute, Park City, UT, May 2013.

S.M. Sarathy, S. Park, W. Wang, P. Veloo, A.C. Davis, C. Togbé, **B.W. Weber**, C.K. Westbrook, O. Park, G. Dayma, Z. Luo, M.A. Oehlschlaeger, F. Egolfopoulos, T. Lu, W.J. Pitz, C.J. Sung, P. Dagaut. *A Comprehensive Experimental and Modeling Study of iso-Pentanol Combustion*. Paper 2A12, 8<sup>th</sup> US National Technical Meeting of the Combustion Institute, Park City, UT, May 2013.

**B.W. Weber** and C.J. Sung. *Comparative Investigation of the High Pressure Autoignition of the Butanol Isomers*. Paper A-01, Fall Technical Meeting of the Eastern States Section of the Combustion Institute, Storrs, CT, October 2011.

M.R. Harper, W.H. Green (Presenting), K.M. Van Geem, **B.W. Weber**, C.J. Sung, I. Stranic, D.F. Davidson, R.K. Hanson. *Combustion of the butanol isomers: Reaction pathways at elevated pressures from low-to-high temperatures*. Paper #84, 7<sup>th</sup> International Conference on Chemical Kinetics, Massachusetts Institute of Technology, Cambridge, MA, July 2011. [Slides](#)

**B.W. Weber** and C.J. Sung. *A Rapid Compression Study of the Butanol Isomers at Elevated Pressure*. Paper 1B13, 7<sup>th</sup> US National Technical Meeting of the Combustion Institute, Georgia Institute of Technology, Atlanta, GA, March 2011.

**B.W. Weber**, K. Kumar, and C.J. Sung. *Autoignition of Butanol Isomers at Low to Intermediate Temperature and Elevated Pressure*. Paper AIAA-2011-0316, 49<sup>th</sup> Annual Aerospace Sciences Meeting, Orlando, FL, January 2011.

CONFERENCE  
POSTERS

**B.W. Weber** and C.J. Sung. *Validation of Kinetic Models of the Butanol Isomers At High Pressure using a Rapid Compression Machine*. Poster T40, 7<sup>th</sup> International Conference on Chemical Kinetics, Massachusetts Institute of Technology, Cambridge, MA, July 2011. [Poster](#)

**B.W. Weber**. *Autoignition of n-Butanol at Elevated Pressure and Low to Intermediate Temperature*. 1<sup>st</sup> Combustion Energy Frontier Research Center Annual Meeting, Princeton University, Princeton, NJ, September 2010.

**B.W. Weber**, K. Kumar, and C.J. Sung. *An Investigation of Hydrocarbon Flames using Probe Sampling and Gas Chromatography/Mass Spectrometry*. Support of Undergraduate Research and Creative Endeavors Symposium and Poster Session, Case Western Reserve University, Cleveland, OH, April 2009.

OTHER  
PRESENTATIONS

**B.W. Weber** and C.J. Sung. *Analysis of Hydrocarbon Fuels using Gas Chromatography/Mass Spectrometry*. Summer Undergraduate Research in Energy Sciences Program, Dominion Energy East Ohio Branch, Cleveland, OH, August 2008.

TEACHING  
EXPERIENCE

**University of Connecticut, Storrs, CT, USA**

Fall 2012 - Spring 2013

Instructor for ENGR 1166: Introduction to Mechanical Engineering

Update and expand duties from this teaching

- Spring 2013
  - Prepared and delivered lectures covering the fundamental topics in Mechanical Engineering, including: Vector Math and Calculus, Statics, Dynamics, Solid Mechanics, Thermodynamics, Fluid Mechanics and Heat Transfer
  - Prepared and graded weekly homework assignments for 60 2<sup>nd</sup> semester engineering students
  - Held weekly office hour sessions
- Lecture notes and sample homework problems are available on request

Substitute Instructor and Grader for ME 3239: Combustion for Energy Conversion

- Fall 2012
- Assisted in the preparation of lectures
- Developed intensive student projects using the CHEMKIN-Pro software

Really need to update the description of the work for Jackie's class

- Graded approximately 20 7<sup>th</sup> semester students' projects
- Sample project assignments are available on request

RESEARCH  
EXPERIENCE

**Combustion Diagnostics Laboratory**

2007-Present

University of Connecticut, Storrs, CT, USA

Case Western Reserve University, Cleveland, OH, USA

Projects:

- Experimentally and computationally studying the ignition properties of the butanol isomers over a wide pressure range
- Designing a species sampling apparatus for time-resolved species measurements in the rapid compression machine
- Experimentally investigating the autoignition of iso-pentanol in the rapid compression machine
- Experimentally investigating the autoignition of methyl-cyclohexane in the rapid compression machine
- Characterized the components of heavy hydrocarbon fuels, including conventional and synthetic jet fuels, using gas chromatography/mass spectrometry

PROFESSIONAL  
EXPERIENCE

**Combustion Energy Frontier Research Center**

2012-Present

- Co-chair, Junior Associates Committee
- Duties include planning monthly teleconferences for junior members of the CEFRC, attending PI teleconferences on behalf of the junior members, etc.

Update the duties in this position

AWARDS AND  
FELLOWSHIPS

**University of Connecticut**

- **First Place, Mechanical Engineering Graduate Predoctoral Fellowship Award**  
Spring 2013

Update description of this award with its meaning

- **Graduate Assistantship in Areas of National Need** **Spring 2010**  
Awarded in the area of Sustainable Energy Technologies

**Case Western Reserve University**

- **Fred H. Vose Prize** **Spring 2009**  
Awarded to the senior in Mechanical and Aerospace Engineering at Case Western Reserve University showing the most promise for future leadership
- **Summer Undergraduate Research in Energy Sciences Grant** **Summer 2008**  
Awarded for research to analyze the composition of traditional petroleum-based hydrocarbon fuels using GC/MS

PROFESSIONAL  
MEMBERSHIPS

AIAA - Student Member  
ASME - Student Member  
The Combustion Institute - Student Member

SKILLS

Programming/Scripting Languages:  

- Python, MATLAB, FORTRAN 77, UNIX shell scripting (bash)

Software Packages:  

- CHEMKIN-II and associated programs (SENKIN, etc.)
- CHEMKIN-Pro
- T<sub>E</sub>X (L<sup>A</sup>T<sub>E</sub>X, B<sub>I</sub>B<sub>T</sub>E<sub>X</sub>),
- Microsoft Office, Google Docs
- Solidworks 3D Modeling

Operating Systems:  

- Microsoft Windows (XP, Vista, 7, 8), Linux (Ubuntu)