

Kathryn R. Gosselin, Ph.D.

CONTACT INFORMATION

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Mechanical Engineering Department
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RESEARCH INTERESTS

Applied combustion, optical diagnostics, turbulent flow, natural ventilation, sustainable energy

EDUCATION

University of Connecticut, Storrs, Connecticut USA

Ph.D., Mechanical Engineering, June 2015

- Concentration: Energy and Thermal Sciences
- Dissertation Title: “Development of Novel Optical Diagnostic Methods for the Study of Combustion and Extinction”
- Advisor: Michael W. Renfro

B.S., Mechanical Engineering, May 2009

- Minor: Mathematics

PROFESSIONAL EXPERIENCE

San José State University
Mechanical Engineering Department
Assistant Professor

San José, California USA

August 2015 - present

University of Connecticut
Department of Mechanical Engineering
Graduate Research Assistant
Teaching Fellow
Undergraduate Research Assistant

Storrs, Connecticut

May 2009 - June 2015

January - May 2013

January 2008 - May 2009

Pratt and Whitney
Systems Engineering & Validation
F-100 Test Engineering Intern
PW-4000 Test Engineering Intern
System Design & Component Integration
Problem Resolution Process Intern

Middletown, Connecticut

May - August 2008

May - August 2007

East Hartford, Connecticut

May - August 2006

TEACHING EXPERIENCE

San José State University
ME 210, Advanced Thermodynamics (Graduate)

Graduate course covering application of the First and Second Laws of Thermodynamics to engineering systems, equations of state, thermodynamic property relations, chemical equilibrium, and combustion.

- Spring 2016

ME 113, Thermodynamics (Undergraduate)

Required undergraduate course covering equations of state, the First and Second Laws of Thermodynamics, irreversibility, power and refrigeration cycles, gas mixtures, and air conditioning processes.

- Fall 2015
- Fall 2016

University of Connecticut

ENGR 1166, Foundations of Engineering (Undergraduate)

Freshman-level course introducing students to a specific engineering major. The mechanical engineering section covers mechanics of materials, machine design, thermodynamics, fluid mechanics, and heat transfer.

- Spring 2013

FUNDING

SJSU Spring 2016 Central RSCA Infusion Program, "Circulation efficiency of various natural ventilation strategies in the presence of turbulence." PI: K.R. Gosselin. 2/15/2016-5/30/2016. Total funding: \$3600.

PUBLICATIONS

2. **Gosselin, K.R.**, Carnell, William F., Jr., and Renfro, M.W. (2015). "Formaldehyde as a marker for scalar dissipation through local extinction." *Combustion Science and Technology*, v. 187(11), 1742-1758.
1. **Gosselin, K.R.**, and Renfro, M.W. (2011). "Reconstruction of three-dimensional chemiluminescence images with Cassegrain optics and a maximum entropy deconvolution algorithm." *Applied Optics*, v. 51, 1671-1680.

PAPERS IN PREPARATION

2. **Gosselin, K.R.**, Kopp-Vaughan, K.M., and Renfro, M.W. (2016). "Influence of Lewis number on advective heat flux and extinction scalar dissipation rate in negative edge flames," in preparation.
1. **Gosselin, K.R.**, Stoddard, J.P., and Renfro, M.W. (2016). "Measuring time-series statistics in an axisymmetric, turbulent jet with line-integrated chemiluminescence," in preparation.

CONFERENCE PRESENTATIONS

6. **Gosselin, K.R.**, Carnell, Jr, W.F., and Renfro, M.W. (2014). "Formaldehyde fluorescence as a marker for scalar dissipation through local extinction." 35th International Symposium on Combustion, Combustion Institute, San Francisco, CA.
5. **Gosselin, K.R.**, Carnell, Jr., W.F., and Renfro, M.W. (2013). "Formaldehyde fluorescence as a marker for scalar dissipation through local extinction." Proceedings of the 2013 Eastern States Section Meeting, Combustion Institute, Clemson, SC.
4. **Gosselin, K.R.**, and Renfro, M.W. (2013). "Influence of fuel type on advective heat flux and extinction scalar dissipation rate in negative edge flames." Proceedings of the 2013 Joint U.S. Section Meeting, Combustion Institute, Park City, UT.
3. **Gosselin, K.R.**, Cetegen, B.M., and Renfro, M.W. (2012). "Ignition studies of vitiated fuel-oxidizer mixtures at atmospheric and low pressure." Proceedings of the 2012 Augmentor Design Systems Conference, Jacksonville, FL.
2. **Gosselin, K.R.** and Renfro, M.W. (2011). "Reconstruction of three-dimensional chemiluminescence images with a maximum entropy deconvolution algorithm." Proceedings of the 2011 Joint U.S. Section Meeting, Combustion Institute, Atlanta, GA.
1. Carnell, W.F., Jr., **Gosselin, K.R.**, and Renfro, M.W. (2009). "Comparison of measured and simulated OH and HCHO distributions through a local extinction." Proceedings of the 2009 Joint U.S. Section Meeting, Combustion Institute, Ann Arbor, MI.

INVITED TALKS

1. "Improving Line-of-Sight Chemiluminescence Measurements for Combustion Applications." Combustion Research Facility, Sandia National Laboratories, Livermore, CA. July 2016.

HONORS AND
AWARDS

George H. Markstein Best Paper Award, Eastern States Section of the Combustion Institute, March 2014
Graduate Teaching Fellowship, Department of Mechanical Engineering, University of Connecticut, January 2013
Graduate Predoctoral Fellowship Competition, 2nd Place, Department of Mechanical Engineering, University of Connecticut, May 2012
Koerner Family Fellowship, School of Engineering, University of Connecticut, August 2011
Graduate Assistance in Areas of National Need Fellowship, School of Engineering, University of Connecticut, January 2010
Senior Design Professors Award, Department of Mechanical Engineering, University of Connecticut, May 2009
New England Scholar Award for Academic Excellence, University of Connecticut, March 2007
P&M Longobardi Scholarship, School of Engineering, University of Connecticut, 2005-2009
Achievement Scholarship, University of Connecticut, 2005-2009

ACADEMIC SERVICE **San José State University**

Session Chair and Planning Committee Member, Silicon Valley Women in Engineering Conference, College of Engineering, March 2016
Graduate Studies Committee, Mechanical Engineering Department, Fall 2015 - present.
Graduate Studies Committee, College of Engineering, Fall 2015 - present.
Assessment Committee, Mechanical Engineering Department, Fall 2015 - present.

University of Connecticut

Laboratory Teacher, Exploring Engineering Program for High School Students, Department of Mechanical Engineering, Summer 2014
Dean of Engineering Search Committee, School of Engineering, Fall 2013
Mentor and Research Facilitator, Research Experience for Undergraduates, University of Connecticut, Summer 2012, Summer 2013, Summer 2014
Student Presenter, Open House, Department of Mechanical Engineering, Fall 2011, Spring 2012
Lecturer, Exploring Engineering Program for High School Students, Department of Mechanical Engineering, University of Connecticut, Summer 2011
Panel Member, Graduate Student Orientation, School of Engineering, Fall 2010
Laboratory Experience Facilitator, Joule Fellows Program, School of Engineering, Summer 2010
Mentor and Design Project Supervisor, Foundations of Engineering/Leadership in Engineering, Department of Mechanical Engineering, Spring 2009

TECHNICAL
MEMBERSHIPS

- The Combustion Institute
- American Society of Mechanical Engineers
- The American Institute of Aeronautics and Astronautics
- Pi Tau Sigma (UConn Chapter Vice President, 2008-2009)