

Julie E. Steinbrenner

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ECME 126 | 1111 Engineering Drive
Boulder, Colorado

Education	Doctor of Philosophy in Mechanical Engineering Stanford University Thesis: Two-Phase Flow Phenomena in Fuel Cell Microchannels Advisor: Dr. Kenneth E. Goodson	March 2011 <i>Stanford, California</i>
	Master of Science in Mechanical Engineering Stanford University	January 2005 <i>Stanford, California</i>
	Bachelor of Science in Mechanical Engineering Valparaiso University Summa Cum Laude Christ College Associate, Interdisciplinary Honors College, French minor	May 2003 <i>Valparaiso, Indiana</i>
Current Position	Associate Chair – Undergraduate Program Wolenski/Roller Faculty Fellow Senior Instructor / Associate Teaching Professor Instructor Adjunct Professor <i>Department of Mechanical Engineering, University of Colorado</i>	July 2022 – present December 2017 – present August 2019 – present August 2013 – July 2019 August 2012 – May 2013 <i>Boulder, Colorado</i>
	<ul style="list-style-type: none">Consistently employ active learning techniques, including team-based design/build/test projects, analysis projects, in-class workshops, hands-on laboratories, and concept-focused clicker questions for classes up to 283 students.Prepare students for success after college by emphasizing career preparations, building connections with industry, developing professional skillsDevelop curriculum focused on practical application of fundamental conceptual understanding, and best practices for engineering analysis and decision-makingActively participate in the recruitment and management of industry sponsors for student projects	
	Graduate Courses: MCEN 5042: Graduate Heat Transfer	Fall 2013, 2014; Spring 2016
	Project-based design courses: ENEN 4600: Interdisciplinary Energy Engineering Projects MCEN 4045: ME Design Projects MCEN 4085: ME Design Projects II GEEN 1400: First Year Design Projects	Fall 2015, 2016 Fall 2012 - 2021 Spring 2013 - 2022 Spring 2014
	Other undergraduate courses: MCEN 2000: Mechanical Engineering as a Profession MCEN 3012: Thermodynamics MCEN 3032: Thermodynamics II MCEN 3022: Heat Transfer MCEN 3021: Fluid Mechanics MCEN 4228: Thermofluids Laboratory	Fall 2016 - 2020 Spring 2016, Spring 2020 Spring 2014 Spring 2013; Summer 2014, 2016, 2017, 2018 Fall 2013, Spring 2021 Spring 2017, 2018, 2019
	New course development or major course redesign: MCEN 4228: Thermofluids Laboratory	

Developed course consisting of seven modules focused on real-world thermofluids systems, with each module emphasizing a real-world system, a measurement technique, and a technical communication method. Modules include an instrumented commercial AC unit, a purpose-built solar-thermal system, and a reconditioned optical engine.

MCEN 2000: Mechanical Engineering as a Profession

Redesigned course to introduce students to the profession of Mechanical Engineering, emphasizing professional skills, such as critical-thinking, problem-solving and communication. Improved career preparation elements by incorporating more industry connections through a Careers in ME Symposium, alumni-conducted mock interviews, student-driven informational interviews, and UROP-funded Research lunches

ENEN 4600: Interdisciplinary Energy Engineering Projects

Incorporated elements of project management, engineering economics, costing, risk assessment and uncertainty analysis into a semester-long analysis-based design project with Energy themes, such as “Alternatives to Gas Flaring in the North Dakota Bakken Oil Fields” and “Electrification of Rural Myanmar with Micro-grids”. Brought industry professionals in for guest lectures and brought students to industry for site visits.

Guest Lectures and Workshops:

Advanced Product Design: Design interviewing	<i>Spring 15</i>
Graduate Seminar: Tips for giving a technical talk to a broad audience	<i>Spring 15</i>
Graduate Intro to Research Seminar: The Peer Review Process	<i>Fall 16</i>
Graduate Intro to Research Seminar: Technical Writing and Editing	<i>Fall 16</i>
Graduate Intro to Research Seminar: Ethics of responsible research conduct interactive workshop with case studies	<i>Fall 13, Fall 14, Fall 16</i>

Program
Development

Design Your Career Professional Development Program

2017 – present

Department of Mechanical Engineering, University of Colorado

Boulder, Colorado

- Conceived and planned new Professional Development Program for Mechanical Engineering Students at CU Boulder, themed to encourage students to apply design thinking to career explorations, and incorporating multiple opportunities for student/industry connections, such as Explore ME Dinners, Industry Tours, and formal and informal one-on-one meetings with practicing engineers
- Proposed new program to undergraduate committee for successful adoption of program as new graduation requirement
- Hired and supervise new senior professional development advisor for department

Student Experiential Education Initiative Development

2018 – present

Department of Mechanical Engineering, University of Colorado

Boulder, Colorado

- Conceived and planned new Professional Development Program for Mechanical Engineering Students at CU Boulder, themed to encourage students to apply design thinking to career explorations
- Designed experiences incorporating multiple opportunities for student/industry connections, such as Explore ME Dinners, Industry Tours, and formal and informal one-on-one meetings with practicing engineers

ME Alumni Connect Day

2016 – present

Department of Mechanical Engineering, University of Colorado

Boulder, Colorado

- With committee comprised of department staff, advancement personnel, and department chair, organized and planned annual event to bring alumni to campus

for networking lunch, in-class panels, and mock interviews with students.

Leadership
Positions

External Relations Committee Chair

Summer 2017 – Spring 2022

Department of Mechanical Engineering, University of Colorado

Boulder, Colorado

- Lead and coordinate marketing efforts to attract diverse students, facilitate maintenance and improvements to departmental website and social media
- Facilitate industry collaboration, including coordination of ME Partners, a department-wide industry
- Developed alumni engagement programs which bring over 100 alumni to campus annually to engage with over 600 students during two annual events
- Manage reporting for Industry gift funds to the department
- Collaborate with department, college, and university administrators involved with advancement, alumni and industry relations, internship and professional development educational programming

Energy Engineering Minor, Inaugural Director

August 2014 – Summer 2017

University of Colorado

Boulder, Colorado

- Develop curriculum and programming for first interdisciplinary minor within the College of Engineering and Applied Science
- Administrated interdisciplinary Energy Minor program for approximately 60 students with 5 different engineering majors
- Advertised program to undergraduate students, and planned events such as *Exploring Energy Engineering* industry connections panels/discussion
- Established and recruited new industry partners to the Energy Engineering Minor Advisory Panel (EEMAP) consisting of 10 energy industry professionals
- Conducted bi-annual meetings with Industry Advisory Panel and led meetings with faculty curriculum committee, and collaborated with energy-related organizations on campus.
- Coordinated development of two new courses – Oil & Gas Processing and Wind Energy System Design
- Developed and taught new Energy Engineering Projects course for first two offerings

Honors and
Awards

Sullivan-Carlson Innovation in Education Award, 2020 (nominated and selected by students from College of Engineering and Applied Science, 1 awarded per year)

Charles A. Hutchinson Memorial Teaching Award, 2019 (College of Engineering and Applied Science, 1 awarded per year)

College of Engineering and Applied Science Outstanding Faculty for Teaching, 2019 (1 awarded per year)

Wolenski/Roller Faculty Fellowship, 2017-present

Outstanding Service Award for Department of Mechanical Engineering, 2018

Outstanding Undergraduate Educator for Department of Mechanical Engineering, 2017

Outstanding Graduate Educator for Department of Mechanical Engineering, 2016

Chateaubriand Scientific Fellowship, 2007

Charles H. Kruger Stanford Graduate Fellowship in Science and Engineering, 2004-2007

Best Poster Award, HeatSET, 2005

Stanford Graduate Engineering Fellowship, 2004

Other Teaching
Experience

**Physics Instructor,
Summer Math And Science Honors (SMASH) Academy**

Summer 2011

Level Playing Field Institute

San Francisco, California

- Taught a 6-week summer honors program for 23 high-achieving seniors from under-resourced high schools
- Developed curriculum, lecture materials, laboratory activities, and evaluation metrics for physics course focused on fundamental kinematics concepts and thermodynamic principles related to energy
- Co-developed a projects-based course in renewable and sustainable community development culminating in small group projects on energy efficiency analysis

Teaching Assistant

Department of Mechanical Engineering, Stanford University

Stanford, California

Undergraduate Statics

Fall 2008

- Taught and assisted with laboratory sessions to enhance undergraduate student comprehension of fundamental principles of statics, ethics, and design
- Held office hours to assist students with homework problems, wrote and graded exam questions, developed and presented a lecture to 150 students

Fundamentals of Heat Conduction

Winter 2008

- Designed and taught problem sessions for 30 graduate students in a technical heat transfer course
- Held office hours to assist students with homework problems
- Wrote homework and exam questions, graded homework and exams

Teaching-Related Interests and Training

- Tutored high school and undergraduate engineering students
- Peer Mentor for freshmen engineering students, Valparaiso University
- Relevant coursework: science course design (1 quarter), Stanford University

Research
Experience

Research Staff Member

2011 – 2012

Palo Alto Research Center

Palo Alto, California

- Experimentally analyzed particle-laden flows and phase-change phenomena in multi-scale environments applicable to printing technologies using various prototyping techniques and high-speed imaging, PIV, and shadowgraphy
- Developed Flow-3D general moving object (GMO) simulations of flow fields and particle dynamics in low-Reynolds number flows

Charles H. Kruger Stanford Graduate Fellow, Research Assistant 2003 – 2011

Microscale Heat Transfer Laboratory, Stanford University

Stanford, California

- Developed two and three-dimensional techniques for white light and fluorescent visualization of two-phase flow regimes in rectangular microchannels relevant to fuel cell applications for comparison with numerical models of stratified films
- Designed and implemented control and measurement system for two phase air-water flow in microchannels

Scientific Chateaubriand Fellow

2007

Commissariat à l'Énergie Atomique (CEA), Fuel Cell Laboratory

Grenoble, France

- Developed and implemented techniques for local measurement of current density

in the membrane electrode assembly of a proton exchange membrane fuel cell

- Developed tools for and performed characterization of anisotropic electrical properties of fuel cell components under variable mechanical strain

Research and Development Intern

Summer 2003

Seagate Technologies, Inc.

Longmont, Colorado

- Designed and constructed a test apparatus and LabVIEW control software to measure torque on actuator assembly of disk drive, with key design requirements including ease of use, accuracy, versatility for drives of various geometries

Research Stagiare

Fall 2002

IMP-CNRS (French National Research Center)

Odeillo, France

- Performed preliminary research for the development of an optical temperature measurement system for molten silicon under concentrated solar irradiation

NSF Undergraduate Research Student

Summer 2002

Paul Scherrer Institut, Solar Technology Laboratory

Villigen, Switzerland

- Experimentally determined the effect of carbon reactivity and reactant configuration on products obtained during carbothermic ZnO decomposition at temperatures near 2000K using a 45-kW solar concentrator
- Developed Fortran and MATLAB models to predict the temperature distribution within a solar reactor cavity using radiosity and Monte Carlo radiation modeling

Multi-disciplinary Undergraduate Research in Turbulence

2000 - 2002

Team Member and Summer Research Student

Valparaiso University

Valparaiso, Indiana

- Coordinated research activities and responsibilities among six engineering and meteorology students as research team leader
- Wrote Visual Basic program for high sample rate measurement of wind velocity using hot wire anemometers at the Atmospheric Boundary Layer Experiment facility in Whitewater, Kansas
- Prepared water flume for turbulent boundary layer testing, including development of an in-situ calibration rig to obtain velocity profiles in the turbulent boundary layer of water using hot-film probes

Engineering
Education
Research

D. Kotys-Schwartz, D. Knight, **J.E. Steinbrenner**, A Qualitative Investigation of Success and Challenges with Team Roles in Capstone Design, *2018 Capstone Design Conference*, June 4-6, 2018, Rochester, NY.

K. Pickens McConnell, D. Knight, and **J.E. Steinbrenner**, Push and Pull: Integrating Industry Across the Student Experience, *2019 ASEE Annual Conference & Exposition*, June 15-19, 2019, Tampa, FL.

A. Scott, M. Kern, **J.E. Steinbrenner**, Increasing communication avenues between Mechanical Engineering doctoral students, faculty and the administration, *2020 ASEE Virtual Annual Conference & Exposition*, June 22-26, 2020.

K. Pickens McConnell, **J.E. Steinbrenner**, From Theory to Impact: A Mixed Media Approach to Shifting Student Perceptions of Faculty Research, *2020 ASEE Annual Conference & Exposition*, submitted, not presented due to COVID.

J.E. Steinbrenner, D. Kotys-Schwartz, D. Knight, Teams, Tantrums, and Tears: Conflict Resolution in 2020, *2020 Capstone Design Conference*, submitted, then presented at *Capstone Design Conference 2022*, June 6-8, 2022, Dallas, Texas.

K. McConnell, **J. Steinbrenner**, J. Blacklock, M. Gordon, M. Darbeheshti, Workshop Proposal: Mechanical Engineering Roundtables, *ASME Rocky Mountain Section Regional Conference 2020*, submitted, not presented due to COVID.

Other
Publications

R.K. Cole, A.D. Draper, P. J. Schroeder, C.M. Casby, A.S. Makowiecki, S.C. Coburn, **J.E. Steinbrenner**, N. Hoghooghi, and G.B. Rieker. "Demonstration of a uniform, high-pressure, high-temperature gas cell with a dual frequency comb absorption spectrometer." *Journal of Quantitative Spectroscopy and Radiative Transfer* 268 (2021): 107640.

A. Makowiecki, **J.E. Steinbrenner**, N. Wimer, J. Glusman, C. LaPointe, J. Daily, P. Hamlington, and G. Rieker, Dual Frequency Comb Spectroscopy of Solid Fuel Pyrolysis and Combustion: Quantifying the Influence of Moisture Content in Douglas Fir, *Fire Safety Journal*. September 2020; vol.116, p.103185.

J.E. Steinbrenner, E.S. Lee, C.H. Hidrovo, J.K. Eaton, K.E. Goodson, Impact of channel geometry on two-phase flow in fuel cell microchannels, *J. Power Sources*. June 2011; vol.196, no.11, p.5012-5020.

A. Rogacs, **J.E. Steinbrenner**, J.A. Rowlette, J.M. Weisse, X.L. Zheng, K.E. Goodson. Characterization of wettability of thin nanostructured films in the presence of evaporation. *J. Colloid Interface Science*. September 2010; vol.349, no.1, p.354-360.

C. Fang, **J.E. Steinbrenner**, F.-M. Wang, K.E. Goodson. Impact of wall hydrophobicity on condensation flow and heat transfer in silicon microchannels. *J. Micromechanics Microengineering*. April 2010; vol.20, no.4, 045018.

J.E. Steinbrenner, C.H. Hidrovo, F.-M. Wang, E.S. Lee, S. Vigneron, T.A. Kramer, C.H. Cheng, J.K. Eaton, K.E. Goodson. Measurement and Modeling of Liquid Film Thickness Evolution in Stratified Two-Phase Microchannel Flows. *Applied Thermal Engineering*. July 2007; vol.27, no.10, p.1722-7.

F.-M. Wang, **J.E. Steinbrenner**, C.H. Hidrovo, T.A. Kramer, E.S. Lee, S. Vigneron, J.K. Eaton, K.E. Goodson. Investigation of Two-Phase Transport Phenomena in Microchannels Using a Microfabricated Experimental Structure. *Applied Thermal Engineering*, July 2007; vol.27, no.10, p.1728-1733.

C.H. Hidrovo, T.A. Kramer, E.N. Wang, S. Vigneron, **J.E. Steinbrenner**, J.M. Koo, F.M. Wang, D.W. Fogg, R.D. Flynn, E.S. Lee, C.H. Cheng, T.W. Kenny, J.K. Eaton, K.E. Goodson. Two-Phase Microfluidics for Semiconductor Circuits and Fuel Cells. *ICMM2005: 3rd International Conference on Microchannels and Minichannels*, June 13-15, 2005, Toronto, Ontario, Canada (keynote paper). *Heat Transfer Engineering*, May 2006; v.27, no.4, p.53-63.

A.P. Freid, P.K. Johnson, M. Musella, R. Müller, **J.E. Steinbrenner**, R.D. Palumbo. Solar Blind Pyrometer Temperature Measurements in High Temperature Solar Thermal Reactors: A Method for Correcting the System-Sensor Cavity Reflection Error. *J. Solar Energy Engineering*. Feb. 2005; vol.127, no.1, p.86-93.

Media Stories

ASME Magazine, *Universities Educating from a Distance*, by Carlos M. Gonzalez, Dec 2020 <https://www.asme.org/topics-resources/content/universities-educating-from-a-distance>

Colorado Engineer Magazine, *Producing a Prototype during the Pandemic*, Spring 2020 <https://www.colorado.edu/studentgroups/colorado-engineer/>

Mechanical Engineering Projects Showcase Week 2020, April 27 2020,

<https://www.colorado.edu/mechanical/2020/04/24/mechanical-engineering-projects-showcase-week-2020>

ME educators recognized by college for supporting students beyond the classroom, by Oksana Schuppan, January 24, 2020 <https://www.colorado.edu/mechanical/2020/01/24/me-educators-recognized-college-supporting-students-beyond-classroom>

Student Experiential Education transforms professional development for mechanical engineers at CU Boulder, by Oksana Schuppan, January 24, 2020 <https://www.colorado.edu/mechanical/2020/01/24/student-experiential-education-transforms-professional-development-mechanical-engineers>

Connecting beyond the classroom at annual ME Alumni Connect Day, Nov. 13, 2019 <https://www.colorado.edu/mechanical/2019/11/13/connecting-beyond-classroom-annual-me-alumni-connect-day>

Veterans challenge CU Boulder capstone students to design for improved quality of life, April 22, 2019 <https://www.colorado.edu/mechanical/2019/04/22/veterans-challenge-cu-boulder-capstone-students-design-improved-quality-life>

Alumni impart wisdom at Careers in ME Symposium, October 8, 2018 <https://www.colorado.edu/mechanical/2018/10/08/alumni-impart-wisdom-careers-me-symposium>

Students design microsatellite launcher for Lockheed Martin, July 25, 2016 <https://www.colorado.edu/mechanical/2016/07/25/students-design-microsatellite-launcher-lockheed-martin>

Departmental
Committees

Chair, Undergraduate Committee, AY 22/23
ME Department Executive Committee, AY 17/18, 18/19, 19/20, 20/21, 21/22, 22/23
Chair, External Relations Committee, AY 17/18, 18/19, 19/20, 20/21, 21/22
Member of the Graduate Committee, AY 13/14, 14/15, 16/17

Other
departmental
Service

Active participant in departmental functions: faculty search visits, instructor search visits, department meetings, department retreats, Distinguished Seminar Speaker series, and strategic planning
SEE Initiative planning and execution meetings, AY 17/18, 18/19, 19/20
Client for a CMCI Capstone course focusing on marketing strategy for the Department of Mechanical Engineering, 2018
Wrote sections of ABET report for MCEN 2000 continuous improvement and met with ABET evaluator, 2017
Wrote outreach section of ARPAC report and met with ARPAC reviewers, 2017, 2018
Organized Instructor Search, resulting in hire of Dr. Jenifer Blacklock, 2017
Coordinated Fluids Preliminary Exam, 2017, 2018
Coordinated Heat Transfer Preliminary Exam, 2016
Mentor for Lead TA, Adrienne Scott, in Mechanical Engineering, AY 18/19
Mentor for Lead TA, Tim Morrissey, in Mechanical Engineering, AY 16/17, 17/18
Client for WRTG 3035 projects related to ME student professional development, 2016, 2019

Task force for Senior Design program expansion, 2016
Presented at Fall IAC meeting task force discussion, 2015
Task force for Heat Transfer course review, 2015
FE Review session for Heat Transfer and Fluid Mechanics, AY 12/13, 13/14
Intro to Research Seminar Coordination, F 13, F 14
GEARRS presentation critiques and participation, S 13 – 19

College-level
Committees

Undergraduate Education Council Member, AY 15/16, 16/17, 22/23
COVID-19 working group for project/lab classes, Spring/Summer 20
Search Committee for CEAS Senior Director of Student Professional Development, F 18
CEAS Internship Working Group, AY 18/19
Faculty Advisor, Engineering Excellence Fund (EEF) Committee, AY 16/17, 17/18, F 18
Undergraduate Education Council Task Force on Writing in the Curriculum, 2016
Faculty Director of CEAS Energy Engineering Minor, AY 15/16, 16/17
Energy Engineering Minor Task Force, AY 14/15

Other college-
level service

Discussion groups for entrepreneurial and off-cycle interdisciplinary capstone, 2020
Development of COVID protocols for Capstone courses, Summer 2020
Participate in BOLD coffee hours with students, 2017
BOLD S-STEM mentor, 2017, 2018, 2019, 2020, 2021
Meetings to coordinate ME/EE Interdisciplinary Capstone Exchanges, AY 17/18, 18/19, 19/20, 20/21
Client for WRTG 3035 project examining Energy Engineering Minor, 2017
Participant in Advancement meetings with industry partners, advisory board members
Faculty facilitator for Freshman Orientation Presentation: Growth Mindset, F 17
Recruited female undergraduate students at BOLD Mocktails event, F 15, F 17, F 18
Faculty Student Mentorship Program, AY 14/15
College of Engineering Strategic Planning Retreat, F 13

Student
Advising

Technical Writing consults: Chelsea Cheveran, Paul Schroder, Torrey Hayden
Resume advising and job search and career discussions, dozens of students annually.
Letters of Recommendation, typically over 10 students annually.
Thermofluids Laboratory Module Development: Alexander Khaldy, Kaiyang Zheng, Griff Wendland, Scott Oubre, Daniel Navarro, Majed Al Hulayel, Eric Witter, Winston Mosley, Nasha Nasry, Mirza Fatini Mohd Rosidi
Independent study: Technical Writing, Simon Hafner, BS/MS Student in Mechanical Engineering, 2018, 2019
Independent study: Thermo-fluid system modeling using commercial software, Alexander Thompson, BS/MS Student in Mechanical Engineering, 2017
Independent study: Thermo-fluid system modeling using commercial software, Alexander Enright, BS/MS Student in Mechanical Engineering, 2017
Independent study: Thermal modeling of Solar Thermal Water Heater (with NREL), Chinmay Morankar, MS Student in Mechanical Engineering, 2016
Independent Study: Redesign of a dynamometer for high-mileage vehicle diagnostics, Jeffrey Gonzales and Sam Orzinski, BS Students in Mechanical Engineering, 2015

Dissertation
Committee
Member

Bryn Grunwald, MS student in Mechanical Engineering, 2020
Steven Isaacs, PhD student in Mechanical Engineering, 2020
Kyle Karber, PhD student in Mechanical Engineering, 2018
Shanshan Xu, PhD student in Mechanical Engineering, 2017
Amanda Luketa, MS student in Mechanical Engineering, 2015
Miles Abarr, PhD student in Mechanical Engineering, 2015
Berkeley Almand-Hunter, PhD student in Mechanical Engineering, 2015
Qian Li, PhD student in Mechanical Engineering, 2014
Suraj Thiagarajan, PhD student in Mechanical Engineering, 2014

Comprehensive
Exam Reviewer

Steven Isaacs, PhD student in Mechanical Engineering, 2017
Kyle Karber, PhD student in Mechanical Engineering, 2017
Shanshan Xu, PhD student in Mechanical Engineering, 2016
Didier Muvandimwe, PhD student in Mechanical Engineering, 2014
Berkeley Almand, PhD student in Mechanical Engineering, 2014
Qian Li, PhD student in Mechanical Engineering, 2013
Suraj Thiagarajan, PhD student in Mechanical Engineering, 2013

Ph.D.
Qualifying
Examination
Committee

Ablimit Aili, PhD student in Mechanical Engineering, 2018
Julian Quick, PhD student in Mechanical Engineering, 2018
Corey Trujillo, PhD student in Mechanical Engineering, 2018
Alex Rybchuk, PhD student in Mechanical Engineering, 2018
Elizabeth Strong, PhD student in Mechanical Engineering, 2018
Mike Meehan, PhD student in Mechanical Engineering, 2018
Skyler Kern, PhD student in Mechanical Engineering, 2018
Jeff Glusman, PhD student in Mechanical Engineering, 2018
Ryan Cole, PhD student in Mechanical Engineering, 2017
Sam Whitman, PhD student in Mechanical Engineering, 2017
Xinpeng Zhao, PhD student in Mechanical Engineering, 2017
Olga Doronina, PhD student in Mechanical Engineering, 2017
Elise Mesenbring, PhD student in Mechanical Engineering, 2016
Caelen Lapointe, PhD student in Mechanical Engineering, 2016, 2017
Nathan Malarich, PhD student in Mechanical Engineering, 2016
David Pfothenauer, PhD student in Mechanical Engineering, 2016
Andres Villada, PhD student in Mechanical Engineering, 2016
Tim Ritter, PhD student in Mechanical Engineering, 2016
Nathan Malarich, PhD student in Mechanical Engineering, 2016
Aaron Lampugh, PhD student in Mechanical Engineering, 2016
Steven Issacs, PhD student in Mechanical Engineering, 2016
Yao Zhai, PhD student in Mechanical Engineering, 2015/2016

	Alec Thomas, PhD student in Mechanical Engineering, 2015
	Xin Qian, PhD student in Mechanical Engineering, 2015
	Shanshan Xu, PhD student in Mechanical Engineering, 2014
	Kyle Karber, PhD student in Mechanical Engineering, 2014
Invited Reviewer	Scientific Reports
Professional Development Workshops Attended	Toward a More Inclusive College, BOLD Workshop, 2017 Inclusive Pedagogy with Dr. Saundra McGuire, 2017 Teaching your First Day of Class, FTEP workshop, 2015 Effective Use of Clickers, FTEP workshop, 2013 What do you want them to learn today?: learning goals and formative assessment, FTEP workshop, 2013 Writing Effective Clicker Questions, FTEP workshop, 2013
Grants	UROP Development Grant for Research Lunches in MCEN 2000: Mechanical Engineering as a Profession, 2018 Gift funding in support of SEE Initiative, \$100k+, 2018 EEF Grant for Module Development for Thermofluids Laboratory Course, \$33.5k, 2016
Patents	United States Patent 9,819,134, <i>Tool for stripping and crimping a wire</i> , November 14, 2017. United States Patent 9,211,703, <i>Temperature dependent shape elements for void control in ink jet printers</i> , December 15, 2015
Community Involvement	Faculty Mentor for Science Research Seminar student design team from Monarch High School studying Double Wishbone Suspension Dynamics, AY 15/16 University of Colorado – Boulder Lutheran Campus Ministry Board, 2012 – present El Camino Colorado mentor, 2014-2016 Judge for Northglenn High School Physics Project-Based Learning Course Fair, 2015 Tau Beta Pi – Engineering Honor Society, 2000-2002: Vice-President of Valparaiso Chapter, 2001-2002 Society of Women Engineers – VU Student Chapter, 1998-2002. President, 1999/2000. Treasurer, 1998 Dean's Student Advisory Committee for the Valparaiso University College of Engineering, 1999-2002
Languages	English (native), French (proficient)