Ethan O. Kung, Ph. D.

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Mechanical Engineering & Bioengineering, Clemson University
ekung@clemson.edu (650) 307-5557 http://www.cmerl.com

CURRENT APPOINTMENTS

Assistant Professor, Mechanical Engineering, Clemson University, 2014-present

Assistant Professor, Bioengineering, Clemson University, 2016-present

Faculty Scholar, School of Health Research, Clemson University, 2015-2018

EDUCATION

Clemson University (Clemson, SC), Critical Thinking Pedagogy Certificate, Clemson Thinks^2, 2018

University of California San Diego (La Jolla, CA), The College Classroom Certificate, Center for Teaching Development, 2014

University of California San Diego (La Jolla, CA), Postdoc**,** Mechanical & Aerospace Engineering, 2011-2014 *Advisor:* Dr. Alison Marsden

Stanford University (Stanford, CA), Ph.D. Bioengineering – Medical Devices, 2010 *Advisor:* Dr. Charles A. Taylor

Stanford University (Stanford CA), M.S. Bioengineering – Medical Devices, 2006

Queen's University (Kingston, ON), B.Sc. Electrical Engineering Honours First Class, 2003

AWARDS

CAREER Award National Science Foundation, 2018-2023

Dean's Faculty Fellow Award Clemson University, 2018-2021

Eastman Award for Excellence Clemson University, 2017-2018

CHD Research Award The Children's Heart Foundation, 2016

Postdoctoral Fellowship Award American Heart Association**,** 2012- 2014

1st Place Winner PhD Student Paper Competition ASME Summer Bioengineering Conference, 2010

Postgraduate Scholarship PhD Natural Sciences and Engineering Research Council of Canada, 2006-2009

Postgraduate Scholarship MS Natural Sciences and Engineering Research Council of Canada, 2005-2006

Dean's Scholar Award Queen's University, 2000-2002

PUBLICATIONS

1. **Kung E**, Farahmand M, Gupta A. "A Hybrid Modeling Framework Combining In-Vitro Experiment With Computational Physiology Simulation for Cardiovascular Device Testing." *ASAIO Journal.* (2018) *In review*

2. Conover T, Hlavacek A, Migliavacca F, **Kung E**, Dorfman A, Figliola R, Hsia TY. "An Interactive Simulation Tool for Patient-Specific Clinical Decision Support in Single Ventricle Physiology." *J Thoracic Cardiovascular Surg.* DOI: http://dx.doi.org/10.1016/j.jtcvs.2017.09.046 (2017)

3. Schmidt T, Rosenthal D, Reinhartz O, Riemer RK, He F, Hsia TY, Marsden A, **Kung E**, MOCHA Investigators. "Superior Performance of Continuous Over Pulsatile Flow Ventricular Assist Devices in the Single Ventricle Circulation: A Computational Study." *J Biomech*. 52:48-54 (2016)

4. Mechoor R, Schmidt T, **Kung E**. "A Real-Time Programmable Pulsatile Flow Pump For In-Vitro Cardiovascular Experimentation." *Journal of Biomechanical Engineering.* 138(11):111002 (2016)

5. Van De Bruaene A, Claessen G, Gerche A, **Kung E,** Marsden A, Meester P, Devroe S, Bogaert J, Claus P, Heidbuchel H, Budts W, Gewillig M. "Effect Of Respiration On Cardiac Filling At Rest And During Exercise In Fontan Patients: A Clinical And Computational Modeling Study." *IJC Heart & Vasculature.* (2015)

6. **Kung E**, Marsden A, Baker C, Giardini A, Figliola R, Hsia TY, "Does TCPC Power Loss Really Affect Exercise Capacity?" *Heart.* DOI:10.1136/heartjnl-2014-307379 (2015)

7. Schiavazzi D, **Kung E**, Marsden AL, Baker C, Pennati G, Hsia TY, Dorfman A, "Hemodynamic Effects of Left Pulmonary Artery Stenosis Following Superior Cavopulmonary Connection: A Patient-Specific Multiscale Modeling Study." *J Thoracic and Cardiovascular Surgery.* (2014)

8. Corsini C, Baker C, Baretta A, Biglino G, Hlavacek AM, Hsia TY, **Kung E**, Marsden A, Migliavacca F, Vignon-Clementel I, Pennati G, "Integration of Clinical Data Collected at Different Times For Virtual Surgery in Single Ventricle Patients: A Case Study." *Annals of Biomedical Engineering.* (2014)

9. **Kung E**, Perry JC, Davis C, Migliavacca F, Pennati G, Giardini A, Hsia TY, Marsden A, "Computational Modeling of Pathophysiologic Responses to Exercise in Fontan Patients." *Annals of Biomedical Engineering.* DOI:10.1007/s10439-014-1131-4 (2014)

10. **Kung E**, Kahn AM, Burns JC, Marsden A, "In-vitro Validation of Patient-Specific Hemodynamic Simulations in Coronary Aneurysms Caused by Kawasaki Disease." *Cardio Eng and Tech.* 5(2):189-201 (2014)

11. Sengupta D, Kahn AM, **Kung E**, Moghadam ME, Shirinsky O, Lyskina GA, Burns JC, Marsden AL, "Thrombotic Risk Stratification Using Computational Modeling in Patients with Coronary Artery Aneurysms Following Kawasaki Disease." *Biomechanics and Modeling in Mechanobiology*. DOI 10.1007/s10237-014-0570-z (2014)

12. **Kung E**, Pennati G, Migliavacca F, Hsia TY, Figliola R, Marsden A, Giardini A, MOCHA Investigators, "A Simulation Protocol For Exercise Physiology In Fontan Patients Using A Closed-Loop Lumped-Parameter Model." *Journal of Biomechanical Engineering.* 136(8):081007 (2014)

13. Lee J, Moghadam ME, **Kung E**, Cao H, Beebe T, Miller Y, Roman BL, Lien C-L, Chi NC, Marsden AL, "Moving Domain Computational Fluid Dynamics to Interface with an Embryonic Model of Cardiac Morphogenesis." *PloS one*. 8(8):e72924 (2013)

14. **Kung E**, Baretta A, Baker C, Arbia G, Biglino G, Corsini C, Schievano S, Vignon-Clementel IE, Dubini G, Pennati G, Taylor A, Dorfman A, Hlavacek AM, Marsden AL, Hsia T-Y, Migliavacca F, "Predictive modeling of the virtual Hemi-Fontan operation for second stage single ventricle palliation: Two patient-specific cases." *Journal of Biomechanics*. 46(2):423-429 (2013)

15. Corsini C, Baker C, **Kung E**, Schievano S, Arbia G, Baretta A, Biglino G, Migliavacca F, Dubini G, Pennati G, Marsden A, Vignon-Clementel I, Taylor A, Hsia TY, Dorfman A, MOCHA Investigators, "An integrated approach to patient-specific predictive modeling for single ventricle heart palliation." *Comput Methods Biomech Biomed Engin*. Available online, DOI:10.1080/10255842.2012.758254 (Jan 23, 2013)

16. **Kung E**, Les A, Figueroa CA, Medina F, Arcaute K, Wicker R, McConnell M, Taylor C, "In Vitro Validation of Finite Element Analysis of Blood Flow in Deformable Models." *Annals of Biomedical Engineering*. 39(7):1947-1960 (2011)

17. **Kung E**, Les AS, Medina F, Wicker RB, McConnell MV, Taylor CA, "In vitro validation of finite-element model of AAA hemodynamics incorporating realistic outlet boundary conditions." *J Biomech Eng*. 133(4):041003 (2011).

18. **Kung E**, Taylor C, "Development of a Physical Windkessel Module to Re-Create In Vivo Vascular Flow Impedance for In Vitro Experiments." *Cardiovascular Engineering and Technology*. 2(1):2-14 (2011)

BOOK CHAPTERS

1. Marsden A, **Kung E**, "Multi-scale Modeling of Cardiovascular Flows", *Computational Bioengineering*, CRC Press Taylor & Francis Group, Editor: Guigen Zhang

2. **Kung E**, "Cardiovascular Biomechanical Models", *Advances in Experimental Surgery*, Nova Science Publishers, Editor: Huifang Chen *(In press)*

FUNDED RESEARCH

National Science Foundation *CAREER Award***,** (PI) "Hybrid Experimental-Computational Modeling Framework for Transformative Research and Multidisciplinary Education in Cardiovascular Biomechanics," 2018-2023, $513,729

American Heart Association *Scientist Development Grant***,** (PI) "Design of Fontan Cavopulmonary Assist Using A Novel Combined Experimental-Computational Technology," 2016-2019, $231,000

Saving tiny Hearts Society *Research Grant***,** (PI) "Feasibility of a Novel Fontan Right-Side Assist Device," 2017-2018, $65,000

Clemson University *TIGER Grant Award*, (PI) "Trans-catheter Aortic Valve Replacement Treatment Planning via A Novel Virtual Procedure," 2017-2018, $18,000

Jarvik Heart, Inc. *Research Grant*, (PI) "Assessment of the Jarvik 2000 Ventricular Assist Device Using the Physiology-Modeling Coupled Experiment," 2017-2017, $6,013

Leducq Foundation *Transatlantic Network of Excellence for Cardiovascular Research*, (Co-investigator, PI TY Hsia) "Multi-Scale Modeling of Single Ventricle Hearts for Clinical Decision Support," 2010-2015, $6M (Co-investigator portion $33,000 for 2015-2016)

American Heart Association *Postdoctoral Fellowship***,** (PI) "In-vivo Validation of Multi-scale CFD Simulations in Exercise Fontan Circulation," 2012-2014, $85,000

FUNDED EXCHANGES

Great Ormond Street Hospital for Children (London, UK), *Visiting Research Scholar* (Leducq Foundation Network), 9/09/2012-9/23/2012 and 10/18/2012-10/26/2012

Politecnico di Milano (Milan, Italy), *Visiting Research Scholar* (Leducq Foundation Network) 9/23/2012-10/18/2012 and 3/12/2013-3/27/2013

Clemson University (SC, USA), *Visiting Research Scholar* (Leducq Foundation Network) 5/4/2012-5/15/2012

FIRST/LAST AUTHORED CONFERENCE PROCEEDINGS

1. **Kung E**, Farahmand M, Gupta A. Unifying Experiment and Computation in Cardiovascular Modelling. 8th World Congress of Biomechanics, Dublin, Ireland, July 8-12, 2018

2. Farahmand M, Mirzaei E, Shabani M, Kavarana M, **Kung E**. A Novel Right-Side Assist Device for Univentricular Fontan Patients. 8th World Congress of Biomechanics, Dublin, Ireland, July 8-12, 2018 *Oral presentation*

3. Gupta A, **Kung E**. Smart Discretization Through Automated Iterative Adaptive Meshing. 8th World Congress of Biomechanics, Dublin, Ireland, July 8-12, 2018

4. Gupta A, **Kung E**. Pulmonary Artery and Somatic Growth in Fontan Patients. 8th World Congress of Biomechanics, Dublin, Ireland, July 8-12, 2018

5. Farahmand M, **Kung E**. Modified Cavopulmonary Assist Device Implemented In the Inferior Vena Cava Can Improve Fontan Hemodynamics. ASAIO 64th Annual Conference, Washington, DC, June 13-16, 2018 *Oral presentation*

6. Mirzaei E, **Kung E**. An Algorithm for Coupling Multi-Outlet Experimental Sections to Numerical Physiology Simulations for a Hybrid Cardiovascular Model. ASAIO 64th Annual Conference, Washington, DC, June 13-16, 2018

7. Gupta A, **Kung E**. A Protocol For Automated Adaptive Discretization of Complex Geometry. ASAIO 64th Annual Conference, Washington, DC, June 13-16, 2018

8. Blais F, Luraghi G, Migliavacca F, Pennati G, Sierad L, **Kung E**. 3-Dimensional Fluid-Structure Interaction Computational Model of Heart Valves for Bioreactor Optimization. Biomedical Engineering Society Annual Meeting, Phoenix, AZ, Oct 11-14, 2017 *Oral presentation*

9. Scaringi J, **Kung E**. Multivariate Models For Aortic Pressure And Cardiac Output Constructed From Meta-Analysis. Biomedical Engineering Society Annual Meeting, Phoenix, AZ, Oct 11-14, 2017

10. Neely K, Danahy R, Capobianco P, Shabanisamghabady M, Farahmand M, **Kung E**. Design of an Actuated Pressure Waveform Generating Device for In-Vitro Cardiovascular Experiments. Biomedical Engineering Society Annual Meeting, Phoenix, AZ, Oct 11-14, 2017

11. Shabanisamghabady M, **Kung E**. External Balloon For Fontan Cavo-Pulmonary Assist – In-Vitro Study Of Device Design Considerations. Biomedical Engineering Society Annual Meeting, Phoenix, AZ, Oct 11-14, 2017 *Oral presentation*

12. **Kung E**, Farahmand M, Gupta A. Physiology-Modeling Coupled Experiment: A High Fidelity Hardware-in-the-loop Hybrid Model for the Circulation. Biomedical Engineering Society Annual Meeting, Phoenix, AZ, Oct 11-14, 2017

13. Mirzaei E, Kavarana M, Georgakopoulos D, **Kung E**. A Novel Right-Side Assist Implementation Could Bring Potential Hemodynamic Improvements in Fontan Patients. ASME Summer Biomechanics, Bioengineering and Biotransport Conference, Tucson, AZ, June 21-24, 2017 ***Finalist****: MS student paper competition.*

14. Gupta A, **Kung E**. Pulmonary Artery and Somatic Growth in Fontan Patients. ASME Summer Biomechanics, Bioengineering and Biotransport Conference, Tucson, AZ, June 21-24, 2017 ***Finalist****: MS student paper competition.*

15. Farahmand M, **Kung E**. Hemodynamic Effects of Stenosis in the Inferior Vena Cava Conduit and Left Pulmonary Artery of the Fontan Circulation. ASME Summer Biomechanics, Bioengineering and Biotransport Conference, Tucson, AZ, June 21-24, 2017

16. Shabanisamghabady M, Mirzaei E, Kavarana M, Georgakopoulos D, **Kung E**. In-vitro Validation of a Lumped-parameter Model For A Fontan Right-side Assist Device. ASME Summer Biomechanics, Bioengineering and Biotransport Conference, Tucson, AZ, June 21-24, 2017

17. **Kung E**, Farahmand M, Gupta A. Physiology-Modeling Coupled Experiment: A High Fidelity Hardware-in-the-loop Hybrid Model for the Circulation. ASME Summer Biomechanics, Bioengineering and Biotransport Conference, Tucson, AZ, June 21-24, 2017

18. Schmidt T, Rosenthal D, Reinhartz O, Marsden A, **Kung E**, MOCHA Investigators. Evaluation of Pulsatile and Continuous Flow Ventricular Assist Device Implementation in the Single-Ventricle Circulation: A Lumped-Parameter Modeling Study. Summer Biomechanics, Bioengineering and Biotransport Conference, National Harbor, MD, June 29-July 2, 2016

19. Mechoor R, Schmidt T, **Kung E**. A Real–Time Programmable Pulsatile Flow Pump For In-Vitro Cardiovscular Experimentation. Summer Biomechanics, Bioengineering and Biotransport Conference, National Harbor, MD, June 29-July 2, 2016

20. Kavarana M, Georgakopoulos D, **Kung E**. Pediatric Mechanical Circulatory Support Device: The Fontan-Booster. ASAIO 62nd Annual Conference, San Francisco, CA, June 15-18, 2016

21. Schmidt T, Rosenthal D, Reinhartz O, Marsden A, **Kung E**, MOCHA Investigators. Computational Evaluation of Ventricular Assist Implementation in Single-Ventricle Circulation. BMES/FDA Frontiers in Medical Devices Conference, College Park, MD, May 23-25 2016

22. **Kung E**. Computational and Experimental Engineering Approach to Cardiovascular Medicine. Clemson Research Symposium: Building a Culture of Transdisciplinary Research, Clemson, SC, May 4 2016 *Oral presentation*

23. **Kung E**, De Bruaene A, Claessen G, Gerche A, Marsden A, Meester P, Devroe S, Bogaert J, Claus P, Heidbuchel H, Budts W, Gewillig M. Respiration Increases Ventricular Filling At Rest And Exercise Via Pulmonary Compliance: A Clinical And Computational Modeling Study. American Heart Association Scientific Sessions, Orlando, FL, Nov 7-11 2015 *Oral presentation.*

24. **Kung E**. Integration of Computational and Benchtop Experimental Engineering Methods in Cardiovascular Medicine. Clemson 2nd Annual Research Symposium, Clemson, SC, Mar 12 2015 *Oral presentation*

25. **Kung E**, Giardini A, Hsia TY, Marsden A, MOCHA Investigators. Realistic Simulation of Exercise Physiology in Fontan Patients. Congenital Heart Surgeons' Society Annual Meeting, Chicago, IL, Oct 19-20 2014

26. **Kung E**, Kahn AM, Burns JC, Marsden A. In-vitro Validation of Patient-Specific Hemodynamic Simulations in Coronary Aneurysms Caused by Kawasaki Disease. 7th World Congress of Biomechanics, Boston, MA, July 6-11 2014

27. **Kung E**, Pennati G, Migliavacca F, Hsia TY, Marsden A, Giardini A, MOCHA Investigators. A Simulation Protocol For Exercise Physiology In Fontan Patients Using A Closed-Loop Lumped-Parameter Model. 7th World Congress of Biomechanics, Boston, MA, July 6-11 2014

28. **Kung E**, Perry J, Davis C, Hsia TY, Marsden A, MOCHA Investigators. Computational Modeling of Pathophysiologic Responses to Exercise in Fontan Patients. 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, Paris, France, May 21–22 2014

29. **Kung E**, Pennati G, Migliavacca F, Hsia TY, Figliola R, Marsden A, Giardini A, MOCHA Investigators. A Simulation Protocol For Exercise Physiology In Fontan Patients Using A Closed-Loop Lumped-Parameter Model. The 8th Southern California Symposium on Flow Physics, Los Angeles, CA, Apr 12 2014 *Oral presentation*.

30. **Kung E**, Baker C, Corsini C, Baretta A, Schievano S, Arbia G, Vignon-Clementel I, Migliavacca F, Pennati G, Dorfman A, Hlavacek A, Marsden A, Hsia TY. Patient-specific Multi-scale Model and Virtual Surgery of the Superior Cavopulmonary Connection. UCSD Postdoctoral Research Symposium, La Jolla, CA, Sep 13 2013 *Oral presentation*

31. **Kung E**, Giardini A, Migliavacca F, Pennati G, Hsia TY, Marsden A. An Automated Simulation Protocol For Exercise Physiology In Fontan Patients Using A Closed-Loop Lumped-Parameter Model. ASME Summer Bioengineering Conference, Sunriver, OR, June 26-29 2013 *Oral presentation*.

32. **Kung E**, Giardini A, Migliavacca F, Pennati G, Hsia TY, Marsden A. An Automated Simulation Protocol For Exercise Physiology In Fontan Patients Using A Closed-Loop Lumped-Parameter Model. 14th UC Systemwide Bioengineering Symposium, San Diego, CA, June 19-21 2013 *Oral presentation*.

33. **Kung E**, Baker C, Corsini C, Baretta A, Schievano S, Arbia G, Vignon-Clementel I, Migliavacca F, Pennati G, Dorfman A, Hlavacek A, Hsia TY, Marsden A. Patient-specific Multi-scale Model and Virtual Surgery of the Superior Cavopulmonary Connection. The seventh Southern California Symposium on Flow Physics, Pasadena, CA, Apr 13 2013 *Oral presentation*.

34. **Kung E**, Marsden A. Multi-scale Simulation and Surgical Optimization for Congenital Heart Disease Patients. SIAM Conference on Computational Science and Engineering, Boston, MA, Feb 25-Mar 1, 2013 *Oral presentation*.

35. **Kung E**, Baker C, Corsini C, Baretta A, Schievano S, Arbia G, Vignon-Clementel I, Migliavacca F, Pennati G, Dorfman A, Hlavacek A, Marsden A, Hsia TY. Patient-specific Multi-scale Model and Virtual Surgery of the Superior Cavopulmonary Connection. Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, Stanford, CA, United States, May 1-2 2012

36. **Kung E**, Les A, Medina F, Wicker R, McConnell M, Taylor CA. In Vitro Validation of Finite Element Model of AAA Hemodynamics Incorporating Realistic Outflow Boundary Conditions. BioMechanical Engineering Conference at Stanford, Stanford, CA, United States, May 24th 2010

37. **Kung E**, Les A, Medina F, Wicker R, McConnell M, Taylor CA. In Vitro Validation of Finite Element Model of AAA Hemodynamics Incorporating Realistic Outflow Boundary Conditions. ASME 2010 Summer Bioengineering Conference, Naples, FL,United States, June 16-19 2010 *Oral presentation*. ***1st***

***Place Winner**: PhD Student Paper Competition Podium Presentation - Biofluids and Biotransport Engineering & Other Category*

INVITED TALKS

"Computational Modelling of the Fontan Circulation", Friday Keynote Lecture, **Universitaire ziekenhuizen Leuven**, June 29, 2018

"Three Emerging Engineering Tools that Can Benefit Cardiovascular Healthcare", Seminar, **Murdoch Childrens Research Institute**, Dec 16 2016

"Clinical Applications of Novel Engineering Tools in Cardiovascular Biomechanics", Biomedical Engineering Seminar, **University of South Carolina**, Sep 9 2016

"Application of Computational and Experimental Engineering Tools to Cardiovascular Medicine", MUSC Chilren's Hospital Medical Conference, **Medical University of South Carolina**, Nov 12 2015

"Integration of Computational and Benchtop Experimental Engineering Methods in Cardiovascular Medicine", Cardiovascular Institute Seminar, **Weill Cornell Medical College**, June 26 2014

"Integration of Computational and Benchtop Experimental Engineering Methods in Cardiovascular Medicine", Cardiovascular Institute Seminar, **Weill Cornell Medical College**, May 30 2014

"Integration of Computational and Benchtop Experimental Engineering Methods in Cardiovascular Medicine", Mechanical Engineering Seminar, **Clemson University**, May 4 2014

"In-Vitro Experimental Validation of Finite Element Analysis of Blood Flow and Vessel Wall Dynamics," MAE Dept Biomechanics Seminar, **University of California San Diego**, Jan 5 2011

"Product Development, Design, and Manufacturing for the Deep Bleeder Acoustic Coagulation Project," **C8 MediSensors Inc**. (Los Gatos, CA), Oct 28 2010

"In-Vitro Experimental Validation of Finite Element Analysis of Blood Flow and Vessel Wall Dynamics," **Triple Ring Technologies** (Newark, CA), Sep 9 2010

"Product Development, Design, and Manufacturing for the Deep Bleeder Acoustic Coagulation Project," **Design-Revolution** (Palo Alto, CA), Aug 24 2010

TEACHING

Instructor, Cardiovascular Biomechanics, Bioengineering / Mechanical Engineering, Clemson University, F15/S17/S18

Instructor, Fluid Mechanics (ME3080), Dept. of Mechanical Engineering, Clemson University, S15 – Current

Advisory Committee Chair, Internship in Engineering Design (ME402): *Turbine Blade Lift Fixture Design*, Dept. of Mechanical Engineering, Clemson University, F16

Advisory Committee Chair, Internship in Engineering Design (ME402): *Automated Guided Vehicle*, Dept. of Mechanical Engineering, Clemson University, F14/S15 (*In the News: Fox Carolina, WSPA, WYFF4 News, Clemson Newsstand, GSA Business, Greenville News.)*

Guest Lecturer, Cardiovascular Fluid Mechanics (MAE261), Dept. of Mechanical and Aerospace Engineering, University of California San Diego, Feb 8 2013

Guest Lecturer, Computational Methods for Engineers (MAE107), Dept. of Mechanical and Aerospace Engineering, University of California San Diego, 2011

Teaching Assistant, Molecular and Cellular Bioengineering (BIOE 200A), Dept. of Bioengineering, Stanford University, Fall 2005/2006

Teaching Assistant, Cardiovascular Bioengineering (ME/BIOE 284A/B), Dept. of Bioengineering/Mechanical Engineering, Stanford University, Fall & Winter 2007-2009

Teaching Assistant, Systems Biology and Tissue Engineering (BIOE 300B), Dept. of Bioengineering, Stanford University, Spring 2007/2008

SERVICE ACTIVITIES

Grant Reviewer. American Heart Association, UK Medical Research Council, National Sciences and Engineering Research Council of Canada

Journal Reviewer. American Journal of Physiology Heart and Circulatory / J of Biomechanics / J of Biomechanical Engineering / Cardiovascular Engineering and Technology / J of Medical and Biological Engineering / World Journal for Pediatric and Congenital Heart Surgery / Cardiology in the Young / Medical Engineering & Physics / International Journal for Numerical Methods in Biomedical Engineering / J of Engineering in Medicine / Computers in Biology and Medicine / Annals of Biomedical Engineering / American Society for Artificial Internal Organs Journal / Scientific Reports / Cardiovascular Translational Research / Frontiers in Pediatrics / Bioengineering

Conference Service / Abstract Reviewer. American Physical Society Division of Fluid Dynamics, San Diego, 2012 / ASME Summer Biomechanics, Bioengineering and Biotransport Conference, National Harbor, 2016 / ASME Summer Biomechanics, Bioengineering and Biotransport Conference, Tucson, AZ 2017 / 8th World Congress of Biomechanics, Dublin, Ireland 2018 / BMES Annual Meeting, Atlanta, GA 2018

Professional memberships. American Society of Mechanical Engineers, American Heart Association, American Society for Artificial Internal Organs, Biomedical Engineering Society

Educational Outreach.

Summer 2018	Mentor, Clemson EUREKA summer program (2 mentees)
3/27/2018	Tech demo, ONE Seneca STEAM Event
Summer 2017	Mentor, Clemson EUREKA summer program (4 mentees)
5/12~14, 2017	Engineering toys showcase, Artisphere Festival, Clemson STEAM Exhibit
3/15/2017	Host: Lab tour for under-represented students from Morehouse College
2/9/2017	DrawBot demonstration, ONE Seneca Family STEAM Night
12/2/2016	Host: Lab tour for elementary school students, *"Clemson Engineering Design Expo"*
Summer 2016	Mentor, Clemson EUREKA summer program (2 mentees)
6/30/2016	Mentor, Career Networking Mixer, ASME SB3C Meeting
5/13~15, 2016	Spin disc musical instrument showcase, Artisphere Festival, Clemson STEAM Exhibit
1/28/2016	DrawBot demonstration, Seneca STEAM Outreach Night
8/16/2015	Faculty volunteer: Clemson Out-of-State-Connection Orientation Outreach
7/16/2015	DrawBot demonstration, Rotary Club Clemson
Summer 2015	Mentor, Clemson EUREKA summer program (3 mentees)
5/8~11, 2015	DrawBot demonstration, Artisphere Festival, Clemson STEAM Exhibit
3/19/2015	Community Judge: National high school level debate tournament
3/6/2015	Entry: Clemson Science as Art Festival
11/20/2014	Organizer: Clemson Capstone Design Showcase "Automated Guided Vehicle"

10/8/2014	Faculty Judge: Clemson 3rd Mechanical Engineering Poster Competition
3/14/2014	Table Host: La Jolla Elementary School Family Science Night *"CompSci & Engineering"*
1/31/2014	Teacher/Activity leader: San Diego Festival of Science and Engineering *Nifty 50 Program Led Outreach Activities 2014*
9/21/2013	Teacher/Activity leader: Center for Talented Youth, Family Academic Programs *Science and Technology Series @ UCSD*
7/26/2012	Guest lecturer: UCSD Academic Connections *Class: Fluid Mechanics*
7/25/2012	Host: Lab tour for minority undergraduate student group
2/28/2012	Host: Lab tour for high school visiting group
1/21/2012	Host/Teacher: Lesson on cardiovascular physiology for high school visiting group
Fall 2010	Instructor: Stanford "Splash!" Educational Studies Program *Classes: Catching Wildlife, Exploring Christian Apologetics, Parkour Free Running*