

# Corey Lynn Murphey

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Website | ORCID | Github

## EDUCATION

- Ph.D.** **University of Colorado – Boulder** **8/2021 – present**  
*In Progress* *Department of Computer Science*  
Advisors: Elizabeth Bradley and Jed Brown  
Focus: Numerical Computation and Scientific Computing
- M.S.** **Stanford University** **4/2012 – 4/2014**  
*Department of Mechanical Engineering*  
Advisor: Reginald Mitchell  
Focus: Energy Systems; Breadth: Biomechanics and Manufacturing
- B.S.** **Stanford University** **8/2008 – 1/2013**  
*Department of Mechanical Engineering*  
Advisor: Ellen Kuhl  
Focus: Computational Biomechanics and Biomechanical Engineering

## RESEARCH EXPERIENCE

- 6/2021 – present **University of Colorado – Boulder**  
*Graduate Research Assistant, Advised by Elizabeth Bradley*
- 9/2012 – 6/2013 **Stanford University, Hearing Dynamics**  
*Research Assistant, Advised by Sunil Puria*  
Built a model of Békésy's pendulum to demonstrate hair cell dynamics.  
Developed a computational model of Békésy's analogy for the inner ear.
- 5/2010 – 8/2012 **Stanford University, Living Matter Laboratory**  
*Research Assistant, Advised by Ellen Kuhl*  
Modeled electrochemical conductive pathways of the heart.  
Generated electrocardiogram plots of simulated cardiac pacing.  
Developed patient-specific models of implant-induced skin growth.  
Worked with graduate students to create a model of red blood cell division.  
Designed a continuum growth model of the vocal folds and vocal polyps.

## PROFESSIONAL EXPERIENCE

- 10/2018 - 7/2021 **Bolder Industries**, Boulder, CO  
*R&D Engineer, IP Manager, and Chief of Staff*
- 5/2018 – 8/2018 **Caban Systems**, San Mateo, CA  
*Thermal Engineer, Consultant*
- 3/2017 – 4/2018 **Run8 Patent Group**, San Francisco, CA  
*Patent Agent*
- 6/2015 – 3/2017 **Nebia**, San Francisco, CA  
*R&D Engineer and Engineering Project Manager*
- 4/2014 – 4/2015 **Schox Patent Group**, San Francisco, CA  
*Patent Agent*
- 6/2013 – 9/2013 **Benvenue Medical Inc.**, Santa Clara, CA  
*R&D Engineering Intern*

## TEACHING

- Spring 2023 **Chaotic Dynamics (CSCI 4446/5446)**  
*Course Manager*, University of Colorado - Boulder  
 Advised graduate student final projects.
- Fall 2013 **Patent Law and Strategy for Engineers (ME 208)**  
*Course Assistant*, Stanford University
- Fall 2012 **Engineering Dynamics (E15)**  
*Grader*, Stanford University

## FELLOWSHIPS AND AWARDS

- 2023 **D. J. Kasik (1972) Scholarship Fund Award**  
 University of Colorado – Boulder, College of Engineering
- 2023 **Outstanding Departmental Service Award**  
 University of Colorado – Boulder, Computer Science Department
- 2022 **CS Endowed Founder’s Fellowship**  
 University of Colorado – Boulder, Computer Science Department
- 2021 **Early Career Professional Development Fellowship**  
 University of Colorado – Boulder, Computer Science Department

## GRANTS

- 2019 **Colorado Advanced-Industries Early-Stage Capital and Retention Grant**  
 State of Colorado, OEDIT

- 2010 – 2012      **Vice Provost of Undergraduate Education (VPUE) Grant**  
Stanford University
- 2010 – 2012      **Summer Undergraduate Research Institute (SURI) Grant**  
Stanford University
- 2008              **Stanford Summer Engineering Academy (SSEA) Grant**  
Stanford University

## CONFERENCES

- 2023      American Association for Aerosol Research (AAAR) 41<sup>st</sup> Annual Conference, Portland, OR.
- 2023      SIAM Conference on Applications of Dynamical Systems (DS23), Portland, OR.
- 2023      15th International Conference on Advances in Quantitative Laryngology, Voice and Speech Research 2023, Phoenix, AZ.
- 2023      Dynamics Days US 2023, Virtual.
- 2011      ASME 2011 Summer Bioengineering Conference, Portland, OR.
- 2011      IUTAM Symposium on Computer Models in Biomechanics, Stanford, CA.

## Conference & Travel Grants

- 2023      **AAAR US Student Travel Grant**  
American Association for Aerosol Research.  
*For American Association for Aerosol Research (AAAR) 41<sup>st</sup> Annual Conference.*
- 2023      **Conference Support Fellowship**  
Department of Computer Science, University of Colorado - Boulder.  
*For SIAM Conference on Applications of Dynamical Systems (DS23).*
- 2023      **Student Registration Award**  
15th International Conference on Advances in Quantitative Laryngology, Voice and Speech Research 2023.  
*For 15th International Conference on Advances in Quantitative Laryngology, Voice and Speech Research 2023.*
- 2023      **Graduate School Domestic Travel Grant**  
University of Colorado - Boulder.  
*For 15th International Conference on Advances in Quantitative Laryngology, Voice and Speech Research 2023.*

## PUBLICATIONS

### Reviewed Conference Papers<sup>1</sup>

- 2011 **C. L. Murphey**, J. Wong, and E. Kuhl, “Computational Simulation of Biventricular Pacing in an Asymptomatic Human Heart,” in SBC2011, ASME 2011 Summer Bioengineering Conference, Parts A and B, Jun. 2011, pp. 917–918, doi: 10.111105/SBC2011-53110.
- 2011 **C. L. Murphey**, J. Wong, and E. Kuhl, “Computational simulation of biventricular pacing in a human heart,” in Proceedings of the IUTAM Symposium on Computer Models in Biomechanics, Stanford, California, 2011, p. 56.

### Presentations

#### Posters

- 2023 **C. L. Murphey**, A. Hilger, E. Bradley, “A dynamics-inspired model for phonation-induced aerosolization,” SIAM Conference on Applications of Dynamical Systems (DS23), Portland, OR, May 2023.
- 2023 **C. L. Murphey**, A. Hilger, E. Bradley, “A Computational Model of Phonation-induced aerosolization,” 15th International Conference on Advances in Quantitative Laryngology, Voice and Speech Research 2023, Phoenix, AZ, Mar. 2023.
- 2023 **C. L. Murphey**, A. Hilger, E. Bradley, “A dynamics-inspired model for phonation-induced aerosolization,” University of Colorado - Boulder Applied Math Department’s Research Poster Session, Mar. 2023.
- 2023 **C. L. Murphey**, A. Hilger, E. Bradley, “A dynamics-inspired model for phonation-induced aerosolization,” Dynamics Days US 2023, Virtual, Jan. 2023.
- 2011 **C. L. Murphey**, J. Wong, and E. Kuhl, “Computational Simulation of Biventricular Pacing in an Asymptomatic Human Heart,” ASME Summer Bioengineering Conference, Farmington, PA, Jun. 2011.

### Patents

#### *Inventor*

- 2020 US D881,340, “Showerhead and arm,” Apr. 14, 2020.
- 2019 US 10,421,083, “Immersive showerhead,” Sep. 24, 2019.
- 2019 US D855,759, “Shower wand,” Aug. 06, 2019.
- 2018 US 9,931,651, “Immersive showerhead,” Apr. 03, 2018.
- 2018 US 9,925,545, “Immersive showerhead,” Mar. 27, 2018.
- 2018 US D810,233, “Shower wand and adjustable mount,” Feb. 13, 2018.
- 2018 US D810,234, “Showerhead and adjustable bracket,” Feb. 13, 2018.

### Books

- 2013 J. Schox, Not So Obvious: An Introduction to Patent Law and Strategy, 3rd ed. CreateSpace Independent Publishing Platform, 2013.<sup>2</sup>

<sup>1</sup>All peer-reviewed

<sup>2</sup>Contributor and Editor

**Articles**

- 2016 G. Parisi-Amon and **C. L. Murphey**, "Full Steam Ahead," ANSYS Advantage, vol. 10, no. 1, pp. 10–12, 2016.

**SERVICE****Academic Service**

- 2023 – 2024 **Computer Science Graduate Student Association (CSGSA)**  
*CSGSA Chair*, University of Colorado – Boulder
- Spring 2023 **CS PhD Open House**  
*Graduate Student Organizer and Panelist*, University of Colorado – Boulder
- 2022 – 2023 **Computer Science Graduate Student Association (CSGSA)**  
*Graduate Committee Representative*, University of Colorado – Boulder
- 2022 – 2023 **Computer Science Graduate Committee**  
*Ph.D. Student Representative*, University of Colorado – Boulder
- Spring 2022 **Summer Program for Undergraduate Research (SPUR)**  
*Advisor to Undergraduate Mentors*, University of Colorado – Boulder
- Spring 2022 **Discovery Learning Apprenticeship (DLA) Program**  
*Mentor and Judge*, University of Colorado – Boulder
- Spring 2022 **Admitted CS PhD Student Open House**  
*Graduate Student Panelist*, University of Colorado – Boulder

**Other Service and Affiliations**

- 2021 – Present Renova New Music Ensemble: Founding Member, Webmaster, Soprano/Alto
- 2021 – Present Westview Lutheran Church: Alto section leader
- 2021 – 2023 CU – Chamber Singers: Alto 1
- 2018 – 2021 St. Thomas Aquinas – Boulder: Cantor, Soprano 2 Section Leader
- 2018 – 2020 St. Vrain Innovation Center: Middle School Robotics Mentor
- 2018 – 2020 Boulder Area Masters Swimming
- 2012 – 2018 Stanford Masters Swimming
- 2012 – 2018 NorCal Golden Retriever Rescue : Volunteer
- 2011 – 2012 Stanford Women's Varsity Swimming: Team Manager

**Peer Mentorship**

- 2022 – 2023 Zach Atkins, Ph.D. Student: Computer Science, CU-Boulder
- 2022 – 2023 Maria Valentini, Ph.D. Student: Computer Science, CU-Boulder
- 2022 – 2023 Aditya Pandey, M.S. Student: Computer Science, CU-Boulder
- 2022 – 2023 Armin Gholampoor, M.S. Student: Computer Science, CU-Boulder

## **PROFESSIONAL MEMBERSHIPS & CERTIFICATIONS**

### **Certifications**

2015 – Present      United States Patent and Trademark Office, Registered Patent Agent

### **General Membership**

2022 – Present      Acoustical Society of America (ASA)

2022 – Present      Society for Industrial and Applied Mathematics (SIAM)

2022 – Present      The Voice Foundation

2020 – Present      Society of Women Engineers (SWE)

2011 – Present      American Society of Mechanical Engineers (ASME)

Updated August 2023