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^{st} 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^{st} 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[1]

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: 10.11105/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, "An Experimentally Validated Model of Phonation-induced Aerosolization," American Association for Aerosol Research 41st Annual Conference (AAAR 2023), Portland, OR, Oct. 2023.

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.

[1] All peer-reviewed

Books

2013 J. Schox, Not So Obvious: An Introduction to Patent Law and Strategy, 3rd ed. CreateSpace Independent Publishing Platform, 2013.[2]

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

[2]Contributor and Editor

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)

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