

Elena (Laney) Strange, Ph.D.
Director of Teaching Faculty (Boston)
Teaching Professor | Director of Broadening Participation
Northeastern University, Boston, MA.

EMPLOYMENT HISTORY

Khoury College of Computer Sciences, Northeastern University, Boston, MA.

- Teaching Professor, 2023-present
- Associate Teaching Professor, 2018-2023
- Director of Teaching Faculty (Boston campus), 2023-present
- Director of Broadening Participation, 2021-present

Center for Inclusive Computing, Northeastern University, Boston, MA.

- Technical Advisor, 2021-present

Department of Computer Science, Tufts University, Medford, MA.

- Lecturer, 2016-2018

School of Computing & Data Science, Wentworth Institute of Technology, Boston, MA.

- Adjunct Professor, Summer 2017

Department of Computer Science, Rhodes College, Memphis, TN.

- Visiting Assistant Professor, 2015-2016

Girls Who Code, Chicago, IL.

- Lead Teacher, Summer Immersion Program, Summer 2015

Department of Computer Science, University of Memphis, Memphis, TN.

- Curriculum Developer and Summer Camp Director, Summer 2015
- Instructor, 2013-2015

CodeCrew, Memphis, TN.

- Interim Executive Director, 2016
- Curriculum Developer, 2015

Memphis Punch Studios, Memphis, TN.

- Co-Founder and COO, 2013-2014

TechSoup Global, San Francisco, CA.

- Director of Product, 2012-2013
- Senior Manager for Product, Research, and Integration, 2010-2012

Amazon.com Inc., Palo Alto, CA.

- Senior Software Development Engineer, 2007-2010

H5 Technologies, San Francisco, CA.

- Research Engineer, 2006-2007

EDUCATION HISTORY

Dartmouth College, Hanover, NH

Ph.D. Computer Science, 2006

Advisor: Thomas H. Cormen

Dissertation: FG: Improving Parallel Programs and Parallel Programming Since 2003.

Simmons University, Boston, MA

B.S. Computer Science, 2001

ACADEMIC LEADERSHIP SUMMARY

Director of Teaching Faculty (Boston), 2023-present

- Advocate and biggest cheerleader for the 41 teaching faculty at Khoury College's Boston campus. I support our teaching faculty in terms of seeking and sharing resources, elevating their accomplishments, and supporting their new ideas and initiatives.
- I work closely with my peers who oversee Teaching Faculty at 8 other campuses across Northeastern's global network. I also work with Khoury College's leadership team, including the Dean and our several Associate and Senior Associate Deans in the academic and operational components of our college.
- As part of this role, I completely revamped our hiring process to make it more equitable and inclusive. We've hired 14 new faculty under the new processes, who are all fantastic, and the process has been adopted by Khoury's other campuses beyond Boston.

Director of Broadening Participation, 2023-present

- I lead and participate in diversity initiatives across Northeastern with the goal of increasing diversity in computer science. My role is to bring forward and support everything we can try to make computer science welcoming and inclusive of everyone,

especially those who have been marginalized in our field.

- *Khoury College Broadening Participation in Computing (BPC) Award (2022-present)* -- I launched Khoury College's first-ever BPC award in 2022. It has joined the teaching and research awards as the most valued offered by our college. We select one faculty and one staff member each year to recognize; the faculty winner is then nominated for national or global recognition, including the successful nomination of Prof. Jonathan Mwaura for SIGCSE's Broadening Participation in Education in 2024.
- *Women's Community of Code (2018-present)* -- I launched this program when I joined Northeastern University. We run 2-3 workshops per semester for girls ages 10-14 and for women ages 18+, to introduce and spark engagement in computing. These workshops also bring together a wonderful group of undergraduate and graduate student volunteers who find community in one another.
- *Public school field trips (2021-present)* -- I took over this initiative in 2021. We invite student from the Boston Public schools and our non-profit partner Digital Ready to visit campus and learn about computer science programs and the college experience. I organize this program, including all communication with school officials and students, managing our risk-services requirements, and recruiting faculty and students to lead sessions.
- *SMASH Summer Academy (2020-2023)* -- Khoury College partnered with SMASH Academy to host a residential college-prep program for high-school students from underserved communities. We launched at the height of COVID and pivoted to virtual programming, and then a mix of virtual and in-person. The partnership ended in Fall 2023 after 4 summer programs.

Northeastern University Faculty Senate

- *Senate Agenda Committee (2024-2025)*. SAC drives the agenda of senate meetings and the priorities of senate committees. As a member of SAC, I collaborated with SAC members and university leadership on issues including academic freedom and faculty-senate structure.
- *Khoury College Senator (2021-2025)*. As a member of the faculty senate, I advocated for gender-inclusive restrooms, office space, and new degree programs with university leadership.
- *Senate Committee - Faculty Handbook (2023-2024, 2025-2026)*. I chaired this committee in 2023-2024 and oversaw significant changes to the faculty handbook, including progress on the implementation of the One Faculty Model, which makes no distinctions between faculty classification other than tenure. I currently serve on this committee for 2025-2026, and we are prioritizing address inequities in the faculty grievance procedure.

TEACHING

Courses Taught at Northeastern University

Summary of Teaching at Northeastern

- *Course load:* 3/3 with an overload course most summers
- *Undergraduate core courses (regular rotation)*
 - CS1800 (Discrete Structures), DS2000 (Programming with Data), DS2500 (Intermediate Programming with Data), CS3000 (Algorithms), CS2500 (Fundamentals of Programming)
 - Course sizes range from 100-850.
 - I hire and oversee 8-85 Teaching Assistants for each course.
 - For CS1800 I often serve as coordinator, responsible for syllabus and all course material, organizing multiple faculty teaching lectures and supporting recitations.
 - For DS2000, which is interdisciplinary, I often serve as coordinator, organizing multiple faculty across 4-5 Northeastern University schools
- *Undergraduate elective courses (each taught once)*
 - Data Science and Social Justice Honors Seminar, Transformative Justice Through Computing Technology (collaboration with Mills College)
- *Graduate core courses (regular rotation):*
 - CS5001 (Intensive Fundamentals of Computing), CS5002 (Discrete Math)
 - Course sizes range from 50-100
 - I hire and oversee 5-10 Teaching Assistants for each course
 - For CS5001 I re-developed the entire course content to support a change in primary programming language from Racket to Python
- *Graduate elective courses (each taught 1-2 times):*
 - Align CS Identity Seminar, Pre-Introductory Mathematics
 - Both were new courses, developed by myself and one or more collaborators

Student Clubs (Faculty Advisor)

- *Interdisciplinary Women's Collaborative*, a club that brings together women and women's organizations on campus to facilitate the communication and promotion of women's empowerment initiatives and events on campus. Advisor 2022-present
- *FirstByte*, a club that promotes diversity and equity within STEM, with a focus on computer science. Advisor 2021-present.
- *Code 4 Community*, a club that is a 100% student-led collective for charitable software development. Advisor 2020-present.

- *Bake It Till You Make It*, a club that uses baking and food to start conversations about mental health. Advisor 2024-present, even though I don't know how to bake.

Student Mentorship

Fall 2024

- WeSupport mentor for student campus transition, Nattakara Phariyaniticupt.

Summer 2021

- Master's Project (CS8674), Isabella Aviles. A platform for asynchronous computer science learning for girls.

Summer 2020

- Independent study (CS4993), Verda Bursal. Recommendation system based on user preferences.

Courses Taught at Other Institutions (Undergraduate)

Introduction to Computer Science

- Tufts University, Medford, MA. 2016-2018.
- Rhodes College, Memphis, TN. 2015-2016.
- University of Memphis, Memphis, TN. 2013-2016.

Algorithms

- Wentworth Institute of Technology, Boston, MA. 2017.
- University of Memphis, Memphis, TN. 2014.

Discrete Mathematics

- Tufts University, Medford, MA. 2017-2018.
- University of Memphis, Memphis, TN. 2013-2014.

Data Structures

- Tufts University, Medford, MA. 2016-2018.
- Rhodes College, Memphis, TN. 2015-2016.
- University of Memphis, Memphis, TN. 2013-2016.

Computer Organization and Architecture

- University of Memphis, Memphis, TN. 2013-2016.
- Dartmouth College, Hanover, NH, 2005.

Object-Oriented Programming

- Rhodes College, Memphis, TN. 2015-2016.

Database Design and Processing

- University of Memphis, Memphis, TN. 2015

Operating Systems

- Tufts University, Medford, MA. 2016.

Awards & Recognition

Khoury College Excellence in Teaching Award, 2021

Northeastern University Excellence in Teaching Award, 2021

Medford Girl Scouts Community Leadership Award, 2018 (recognition for coding workshops that were the predecessor for my Northeastern program, Women's Community of Code).

SERVICE AND PROFESSIONAL DEVELOPMENT

Service to Khoury College

Khoury College Committees

- **Chair**, Broadening Participation Impact Area. 2022-2024.
- Teaching Faculty Hiring Committee.
 - **Chair, 2022-present**
 - Member, 202-2022.
 - **Chair and Founder, Subcommittee on Diversity & Inclusion, 2020-2022.**
- Member, Broadening Participation in Computing Awards Committee. Inaugural award presented April 2022. 2022-present.
- Member, Undergraduate Curriculum Committee. 2021-2022.
- Member, Teaching Assistant Committee. 2021-2022.
- Member, Teaching Awards Committee. 2021-present.
- Member, Associate Teaching Professor Promotion Committee. 2018-present.
- **Chair**, Khoury College Subcommittee on Diversity & Inclusion: Attracting and Retaining a Diverse Faculty. 2021-2022.
- Member, Hiring Committee, Academic Coordinator. Member. 2021, 2022.

Service to Northeastern University

- AI Faculty Fellow, 2025-2026. A role to advance the responsible and ethical adoption of AI in teaching and learning across Northeastern
- Member, University Faculty Teaching Awards Committee. 2024-present.
- Member, STRIDE committee for diversity in faculty hiring. 2023-present.
- Member, Graduate Teaching Awards Committee. 2022-present.
- Member, Senate Agenda Committee. 2024-2025.
- Member, Faculty Senate. Khoury College Representative. 2021-2025.
- Member, Women's, Gender, and Sexuality Studies Executive Committee. 2021-present.
- Member, Undergraduate Curriculum Committee. 2021-2022.
- Member, Office of Institutional Diversity & Inclusion review committee for the Faculty Innovations in Diversity & Academic Excellence grant applications. 2020.

Service to the Discipline

- Reviewer, Special Interesting Group on Computer Science Education (SIGCSE). 2020-present.
- Member, Simmons University Board of Advisors. Advise Mathematics, Computing, and Statistics department on issues related to curriculum and student engagement. 2019-present
- Member, Program Committee for the Tenth Symposium Educational Advances in Artificial Intelligence (EAAI-20). 2020.
- Application Reviewer. National Center for Women in Information Technology (NCWIT) Aspirations in Computing Awards. 2014-2020.
- Grader, CollegeBoard. Graded Advanced Placement computer science exam for Computer Science Principles. 2018.

Service to the Community

- Academic Champion, SMASH Northeastern. 2019-2024.
- Founder and lead teacher, Women's Community of Code. 2018-present.
- Mentor, MAGIC Program mentorship program for middle- and high-school girls. 2014-present.
- Diversity & Inclusion panel, hosted by Inversant Insights. June 2021.
- Judge, Shark Hack Hackathon. Simmons University, 2018, 2020, 2021.
- Thinking Big and Small About Participation in Computer Science. Hazel Dick Leonard Interdisciplinary Research Symposium, Simmons University. April 2018.
- Founder and lead teacher, Tufts Girls of Code. Tufts University. 2016- 2018.
- Regional Organizer, National Council on Women and Information Technology (NCWIT),

- annual awards event for the Midsouth region. 2014-2015.
- Chapter Lead, 100 Girls of Code (Memphis). 2014-2016.
- Newsletter Editor & Webmaster, San Francisco Association for Women in Science. 2008-2011.
- Instructor, SF Connect, a volunteer program to help unhoused populations in San Francisco write, print, and share resumes. 2008-2010.

Professional Development

- Participant and presenter, Special Interest Group for Computer Science Education (SIGCSE) Technical Symposium. 2015-present.
- University of Illinois Urbana-Champaign Summer Teaching Workshop.
 - Participant and presenter, 2022
 - Participant, 2021, 2023
- Participant, Grace Hopper Celebration of Women in Computing (GHC). 2013, 2015, 2016, 2020, 2021.
- Participant, She+ Geeks Out tech conference, July 2020.
- Session leader, She's Geeky tech conference. August 2020.
- Process-Oriented Guided Inquiry Learning (POGIL) research project, evaluating students' knowledge and sense of belonging after POGIL classes. Spring 2019.
- POGIL summer workshop for instructors. June 2019.
- Participant and presenter, Ninth Symposium on Educational Advances in Artificial Intelligence (EAAI-19). Spring 2019.
- Participation at CSForAll workshop. Fall 2018.

SCHOLARSHIP & GRANTS

Refereed Articles

- Ricks, V., Magnani, M., and Strange, L. Cultivating a Culture of Ethical Engagement among CS Students. Under review. Submitted to Proceedings of the 54th ACM Technical Symposium on Computer Science Education (SIGCSE 2023).
- Strange, L. So Inclusive Teaching Sounds Great... Now What? Abstract and presentation for Illinois Computer Science Summer Teaching Workshop, August 2022.
- Gregg, C., and Strange, L. Teaching Faculty in Computer Science. Proceedings of the 53rd ACM Technical Symposium on Computer Science Education (SIGCSE 2022). March 2022, p. 1189.
- Gregg, C., Lupoli, S., and Strange, L. Teaching Track Faculty in Computer Science. Proceedings of the 51st ACM Technical Symposium on Computer Science Education (SIGCSE 2020). March 2020, p. 1408.

- Gregg, C., Lupoli, S., and Strange, L. Teaching Track Faculty in Computer Science. Proceedings of the 50th ACM Technical Symposium on Computer Science Education (SIGCSE 2019). February 2019, p. 1245.
- Derbinsky, N., and Strange, E. Nearest Neighbor Classification with (Almost) No Background. Model Assignment at The Ninth Symposium on Educational Advances in Artificial Intelligence (EAAI-2019). January 2019, pp. 9751-9753.
- Strange, E., Working Group Chair. Institute of Electrical and Electronics Engineers (IEEE) Standard 24748-5:2016. Systems and Software Engineering--Life Cycle Management--Part 5: Software Development Planning. June 2017.
- Strange, E., Working Group Chair. Institute of Electrical and Electronics Engineers (IEEE) Standard 1517-2009. Information Technology--System and Software Life Cycle Processes--Reuse Processes. June 2010.
- Natarajan, P., Cormen, T., and Strange, E. Out-of-Core Distribution Sort in the FG Programming Environment. Workshop on Multithreaded Architectures and Applications (MTAAP 2010). April 2010, pp. 1-8.
- Davidson, E¹. The FG Programming Environment: Good and Good for You. 18th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA 2006). July 2006, p. 115.
- Davidson, E., and Cormen, T. Building on a Framework: Using FG for More Flexibility and Improved Performance in Parallel Programs. 19th International Parallel and Distributed Processing Symposium (IPDPS 2005), April 2005, p. 54.
- Davidson, E., and Cormen, T.. The FG Programming Environment: Reducing Source Code Size for Parallel Programs Running on Clusters. Second Workshop on Productivity and Performance in High-End Computing (P-PHEC 2005), February 2005, pp. 27–34.
- Cormen, T., and Davidson, E.. FG: A Framework Generator for Hiding Latency in Parallel Programs Running on Clusters. 17th International Conference on Parallel and Distributed Computing Systems (PDCS 2004), September 2004, pp. 127–144.

Book Chapters

- Strange, E. Barriers to the Adoption of Big-Data Applications in the Social Sector. Big Data: Algorithms, Analytics, and Applications, Kuan-Ching Li, editor. Chapman and Hall/CRC. February 2015, pp. 425-435.
- Cormen, T., and Davidson, E. Reducing the Effect of Latency in Parallel Programs Running on Clusters. CRC Handbook of Parallel Computing: Models, Algorithms and Applications, Sanguthevar Rajasekaran and John Reif, editors. Chapman and Hall/CRC, 2007, pp. 34.1-34.15.

¹ Last name changed from Davidson to Strange in 2008. First name is listed as Elena in some publications and Laney in others.

GRANTS

Internal Grants

Khoury College Teaching Innovation Grant - \$10,000 (Successfully funded)

- Project: Cultivating a culture of ethical engagement among CS students
- Timeline: June 2022 - March 2023
- Principal Investigators: Meica Magnani, Vance Ricks, Laney Strange

Northeastern University OIDI Faculty Innovation Grant - \$10,000 (Successfully funded)

- Project: A Mathematical Launch for Incoming Align Students
- Timeline: May 2019 - January 2020
- Principal Investigators: Alden Jackson, Laney Strange
- This was a pilot program, and successful in its initial run. This short math course is now offered to all incoming Align students across the network.