

EMPLOYMENT

Kruskal Instructor (Applied Mathematics, University of Chicago)

Aug 2020 – present

Research: Works actively with 7 research groups at 3 institutions. Expertise includes population training, uncertainty quantification, information flow in neural networks, and topology random processes.

Teaching: Designed and taught 6 undergraduate and graduate level courses. Restructured the linear algebra sequence, adapted teaching materials to focus on applications, and created a new reinforcement learning course.

Mentoring: Mentored 12 students, 8 currently (5 undergraduate, 6 MS, and 1 PhD). Encourages students to collaborate across projects and participate in field specific labs. Successfully directs each project to a deliverable.

Research Consultant and Founder (Alexander Strang Consulting LLC)

Jan 2021 – present

Consults with industrial clients ([LAIC](#)) on AI in strategic choice. Developed data visualization methods, proposed novel training paradigms, and advised on objectives and grants. Represents the collaboration at major summits.

EDUCATION

PhD (Applied Mathematics). **Case Western Reserve University**

2016 – 2020

Bachelor's of Science (Mathematics and Physics). **Case Western Reserve University**

2012 – 2016

RESEARCH

Research Summary

[Full Publication List](#)

14 publications (8 first-author) spanning graph theory, optimization, Bayesian inference, biophysics, population ecology, stochastic processes, evolutionary game theory, and data visualization.

Selected Publications

Strang, Alexander et al. (2018). "Generalized relationships between characteristic path length, efficiency, clustering coefficients, and density". In: *Social Network Analysis and Mining*.

Calvetti, Daniela et al. (2019). "Hierarchical Bayesian models and sparsity: ℓ_2 -magic". In: *Inverse Problems*.

Strang, Alexander (2020). "Solutions to the minimum variance problem using Delaunay triangulation". In: *SIAM Journal on Discrete Mathematics*.

Strang, Alexander et al. (2022). "The network HHD: Quantifying cyclic competition in trait-performance models of tournaments". In: *SIAM Review*.

SKILLS

Technical Proficiencies

Python, Matlab, GitHub, LaTeX

Communication

Delivered 250+ lectures, invited speaker at 20+ conference and seminar talks, and WGBH (NPR) Living Lab Radio interviewee

LEADERSHIP

Cross Country Coach (Kenwood Academy, Chicago Public Schools)

Mar 2022 – present

Developed a complete 6 month training plan for [Kenwood Academy's first full season](#). Ran daily with the boys and girls, led workouts, prepared race plans, and individually mentored 35 athletes.

Workshops and Professional Events

Banff International Research Station: Lead organizer of a [5 day international workshop](#) with 30+ participants.

Joint Mathematics Meetings: Co-organized a [session on stochastic processes in biology](#).

Chair of the [Committee on Outreach and Engagement](#)

Jan 2022 – present

Proposed the committee, and organize events to create an inclusive department culture by connecting students and faculty to our broader community. Collaborates with the [Ronald McDonald House](#), [Cook County Forest Service](#), [Greater Chicago Food Depository](#), and [Habitat for Humanity](#).