Peter Shaffery
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Education:

University of Massachusetts Lowell (Sept '09 - May '14)
B.Sc. Physics and Mathematics (double major), Magna Cum Laude
Cum. GPA: 3.53

University of Colorado Boulder (Aug '14 - Present)
Ph.D Applied Mathematics (in prog.)
Cum. GPA: 3.63

Research Experience:

Undergraduate Lab Assistant (March '11- May '12)
Employed at the Van de Graff accelerator on UMass Lowell campus. Work included assisting the Chief Lab Technician in repairs and upgrades to equipment.

NSF Research Experience for Undergraduates (June '12 - Aug '12)
Participated in the University of Florida International REU. Performed research abroad at the Seoul National University Astrophysics Department. Work focused on Markov Chain Monte Carlo techniques for the LIGO gravitational wave analysis pipeline.

Undergraduate Research Assistant (Feb. ' 14 - May '14)
Funded by a UMass Lowell initiative to promote undergraduate research, performed data cleaning/pre-processing of neutron star observations for Dr. Silas Laycock in the UMass Lowell Physics Department.

Research Assistant (July '15 - Present)
Since July of 2015 I have worked with Dr. Vanja Dukic at the University of Colorado Boulder on a collaborative, NSF-funded project with Dr. Bret Elderd of Louisiana State University. This work aims to determine the effects of community and genetic diversity on epidemic risk. Our group applies Bayesian statistical methods to compare epidemic models fit with data collected by the Elderd Ecology Lab at LSU, with a focus on combining data collected at multiple scales of system behavior (eg. within-host, between-host, etc). This project has resulted in a presentation at the SIAM 2016 Annual Meeting and a paper in prep.

Working Experience:

Teaching Assistant (Aug '15 - Dec '16)
Employed by the CU Boulder Department of Applied Math to teach Differential Equations and Calculus III recitations for engineering students. In addition to these main courses, I have taught both the Diff. Eq. and Calc III computer lab. These optional lab sections taught MATLAB and Mathematica for coursework and class projects. In addition to teaching a computer language I co-coordinated three course-wide projects per semester for both labs.

Vice Chair of CUSG Finance Board (May '17 - Present)
After a year of participation as a non-voting member I was elected to the Vice Chair of the University of Colorado Student Government Finance Board, which manages a student fee budget of around $24e6. This position acts as a de facto parliamentarian in board meetings, and advises or assists the Chair in whatever way they need.

Notable Class Projects:

- Ensemble Kalman Filtering for Google Trends Epidemiology
- Automated Spotify Playlist Construction
- Landscape Ecology Perspectives on Epidemic Volatility

Presentations

- Presented in both the CU Boulder APPM 'Math Biology' and 'Machine Learning, Optimization, and Statistics' seminars every semester that I have been at CU.
- Co-organized and presented in a minisymposium on Bayesian approaches to epidemiology for the 2016 SIAM Annual Meeting
- Presented in a minisymposium on disease ecology in the Sept. 2017 SIAM Central States Meeting

Research Interests:

- Bayesian statistics
- Markov Chain Monte Carlo methods (particularly in high dimensional settings)
- Ecology and epidemiology
- The history and philosophy of statistical methods

Relevant Skills:

Programming Languages

- Strong: Python, R
- Good: Mathematica
- Familiar: MATLAB
- Novice: Julia, SQL, C++

In addition to the above I am on proficient with Linux systems and am familiar with Git(Hub).

Miscellaneous

I have served as the Applied Math representative to the CU Boulder United Government of Graduate Students (UGGS) and was part of the Finance Committee there. In my spare time I enjoy working on and riding my bicycle, cooking, and have recently started running a Dungeons and Dragons 5e campaign (ask me about my world-building).