

Teaching (and more) at a Liberal Arts College

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My trajectory

- BS (1999) Math from the University of MN Duluth
- PhD (2004) Statistics from the University of MN
- Colby College 2004-2007
 - Assistant Professor
- Carleton College 2007-
 - Associate Professor of Statistics
 - Department of Mathematics and Statistics
 - Chair (since July 1!)





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Carleton College

- Northfield, MN
 - 45 minutes south of MSP
- Liberal arts college
- 2,000 undergrads from around the US and abroad
 - very few (if any) students outside the 18-22 age range
- student-to-faculty ratio of 9:1
- in Stats: class sizes between 20-35



Department of Mathematics and Statistics

- Faculty:
 - 4 statisticians
 - 9 mathematicians
 - 1 continuing faculty and 3-4 visitors/year
- Two majors:
 - Statistics: 40 juniors/seniors
 - Mathematics: 90 juniors/seniors
- One minor:
 - Mathematics: 13



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Teaching at a liberal arts college

- Generally strong students
 - often have broad academic interests
 - but math/stat background can vary
- High quality **undergrad** teaching is expected



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Teaching at a liberal arts college

- Building a math/stat community is important
 - accessible to students outside of class
 - internship/career/grad school advice, letters of recommendation
 - social events



Stat vs. Math tug of war



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Who we teach

- Our statistics majors
- Students seeking
 - a distribution requirement (a "quantitative reasoning" course)
 - a prerequisite for a methods class (e.g. econ, poli sci)
- Non-majors wanting to enhance their stats/data science knowledge
- These groups are not mutually exclusive



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What we teach

- Intro Stats: Lock-level
- Core Major Courses: Probability and Intro to Inference (Math/Stat)
- "Second" Course: Applied Regression, Data Science
- Electives: usually every other year
 - Intro to Sampling
 - Time Series
 - Advanced Modeling
 - Bayesian Stats
- Statistical Consulting



Teaching load at Carleton

- 5 courses/year
 - Our academic year has three 9.5-week terms (fall, winter, spring)
 - *usually* balanced between Intro and non-Intro courses
 - *usually* elective every other year
 - *usually* have a homework grader but not TAs

Research with students

- Most years I run a "senior comprehensive" project (capstone course)
 - group of 4-6 senior stat majors, 2 terms
- Carleton also provides summer funding for **students** doing research with faculty



Me, Nick Fredrickson, Emily Kaegi, Alana Danieu, Clara Livingston



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Research expectations (for tenure)

- Need to demonstrate a commitment to scholarship and intellectual growth
 - no quota on production
 - (hopefully) includes pedagogy and student research, consulting, package development
 - make sure mathematicians understand what statistics scholarship looks like



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Service on Campus

- Departmental:
 - weekly meeting
 - hiring committees
 - "chores"
- College-wide:
 - faculty meetings
 - committee meetings
 - student advising: 10-16 advisees
- "Consulting":
 - advice for students doing comps
 - advice for faculty research ("free")
 - supporting campus-wide interest in stats/DS/R

Promotion

- Tenure-track candidates are evaluated on
 - teaching: most important!
 - scholarship/research
 - service: on campus and the broader statistics/data science community
- Timeline at Carleton
 - Third-year review
 - Tenure review (~6-7 years)
 - Full professor



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Support

- Get teaching support and advice from your wider campus community
 - at Carleton: the Learning and Teaching Center
- Use mentors inside and outside your department
- Engage with any "junior" faculty groups on campus
 - at Carleton: Junior Faculty Affairs Committee
- Get involved with the SSDSE community



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What would hiring for your job look like today?

- Timing:
 - late fall or January
 - some informal meetings/announcements at JSM
- Application
 - Cover
 - CV
 - Teaching Statement
 - Research Statement (for tenure-track)
 - Diversity Statement (formal statement is optional)



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Strong applications...

- avoid a generic cover
 - why you want to be at a liberal arts school?
 - highlight knowledge of Carleton



Strong applications...

- have a thoughtful teaching statement
 - how will you engage *all* students?
 - create a welcoming/inclusive environment?
 - how will you help increase diversity in our department/majors?
 - talk both about your experience and potential for growth



Strong applications...

- have research statements that addresses both current and future scholarship plans
 - how will you stay active if you are an "isolated" statistician?
 - is your research accessible to undergrads?
 - do you have ideas for UG projects?

Rewards

What are the rewarding aspects of your job?

- Students
 - Overenrolled courses (everyone wants stats/data science!)
 - mentoring curious students with great attitudes (mostly!)
- Colleagues
 - working with people who value and *support* teaching
 - having a say in curriculum and program development



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Challenges

What are the challenges of your job?

- Overenrolled courses (everyone wants stats/data science!)
- Being one of a few statisticians in a department
- Everyone wants to fit statistical models and analyze data
 - but should they?



Rewarding Challenges

What are the rewarding challenges of your job?

- data science.
- how to have productive classroom discussions of ethics in statistics/data science
- how to increase diversity in both faculty and students



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Contact info

- kstclair@carleton.edu
- slides: https://kstclair.github.io/JSM_2020/slides.pdf
- <https://www.carleton.edu/math/>