Aaron D. Nielsen

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Contact Information

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Education

Ph.D. Applied Mathematics, University of Colorado – Denver (2018)
Thesis: *"Statistical Analysis of Some Problems in Evolutionary Population Dynamics"*
Concentration: Applied Probability and Statistics
Advisor: Burt Simon, Ph.D.
M.S. Statistics, Colorado State University (2014)
M.S. Applied Mathematics, University of Colorado – Denver (2012)
Concentration: Applied Probability
M.S. Electrical Engineering, University of Colorado – Boulder (2008)
Concentration: Digital Signal Processing and Digital Communications
B.S. Electrical Engineering and Mathematics, Colorado State University (2007)

Professional Experience

Colorado State University, Department of Statistics 2018 –
Assistant Professor

Currently teaching and coordinating undergraduate courses in statistics and mentoring graduate teaching assistants as an assistant professor.

Teaching Experience

Colorado State University, Department of Statistics 2012 – 2015, 2018 –

Recent Courses Taught

Spring 2021:	STAT 315 (2 sec.), STAT 472
Fall 2020:	STAT 100, STAT 315 (3 sec.), STAT 472
Summer 2020:	STAT 315
Spring 2020:	STAT 315, STAT 460, STAT 472, STAA 574
Fall 2019:	STAT 315 (2 sec.), STAT 472, STAT 581A4
Summer 2019:	STAT 315
Spring 2019:	STAT 201, STAT 315 (2 sec.), STAT 460, STAT 472
Fall 2018:	STAT 201 (2 sec.), STAT 315

Full Courses History	Last Taught
STAT 201: General Statistics*	Spring 2019
STAT 204: Statistics for Business Students	Summer 2014
STAT 301: Introduction to Statistical Methods	Spring 2015
STAT 315: Statistics for Engineers and Scientists*	Summer 2020
STAT 460: Applied Multivariate Analysis	Spring 2020
STAT 472: Statistical Consulting*	Spring 2020
STAR 502: Multivariate Analysis for Researchers	Fall 2019
STAA 574: Methods in Multivariate Analysis	Spring 2020

*also served as course coordinator

Teaching Experience (cont.)

University of Colorado Denver, Department of Mathematics and Statistics 2015 – 2018

Courses Taught	Semester Taught
MATH 1110: College Algebra	Fall 2017
MATH 1401: Calculus I	Fall 2016
MATH 2411: Calculus II	Spring 2017
MATH 3191: Applied Linear Algebra	Spring 2018
MATH 3382: Statistical Theory	Summer 2017
MATH 3800: Probability and Statistics for Engineers	Summer 2018 (+ 4 other semesters)
MATH 4810: Probability	Summer 2015
MATH 4820/5320: Mathematical Statistics	Summer 2016

Additional Academic Experience

University of Colorado Denver, Department of Mathematics and Statistics 2015 – 2018
Teaching Assistant / Instructor

Taught undergraduate and graduate courses in mathematics and statistics for majors and non-majors while completing Ph.D. in Applied Mathematics. Received the Lynn Bateman Memorial Excellence in Teaching Award in 2016.

Colorado State University, Department of Statistics 2012 – 2015
Teaching Assistant / Instructor

Taught undergraduate courses and recitations in statistics for non-majors while completing M.S. in Statistics. Received the James S. Williams Memorial Scholarship in 2012.

University of Colorado Boulder, Department of Electrical Engineering 2007 – 2008
Research Assistant

Conducted research involving the applications of Algebraic Number Theory in the area of MIMO Wireless Communications while completing M.S. in Electrical Engineering. Funded by GAANN Fellowship.

Industry Experience

MacAulay-Brown, Inc., Aurora, Colorado 2009 – 2012
Engineer III

Worked as a model and simulation engineer, specifically in the area of algorithm development. This algorithm development dealt with detection and estimation applications for electronic intelligence.

Institute for Telecommunication Sciences, Boulder, Colorado May – August 2007
Engineering Intern

Developed and maintained a MATLAB graphic user interface (GUI) to process real-time wireless communication data.

UV-B Monitoring and Research Program, Fort Collins, Colorado May – August 2006
Engineering Intern

Tested and troubleshooted Ultraviolet Multifilter Rotating Shadowband Radiometers (UV-MFRSR) for use in measuring solar irradiance.

Advising Experience

Master's Advisory Committee Member, Colorado State University 2018 –

Students	Degree	Department	Completed
Shree Sowndarya S.V.	M.S./Ph.D.	Chemistry	*(in progress)*
Aaron Lear	M.S.	Mathematics	*(in progress)*
Sara Horton	M.M.	Music Therapy	*(in progress)*

Mentoring Experience

Course Coordinator, Colorado State University 2018 –

Coordinated graduate students teaching undergraduate courses and recitations and provided feedback on their teaching methods. Courses have included STAT 201, STAT 315, STAT 472

Graduate Teaching Assistant Peer Mentor, University of Colorado Denver 2015 – 2018

Mentored first and second year graduate students on mathematics education and pedagogy. Met biweekly with students, observed their classes, and offered feedback on their methods.

Undergraduate Research Mentor, University of Colorado Denver Fall 2016

Supervised and mentored two undergraduate economics majors on an independent research project analyzing faculty/course questionnaire results. This project utilized a variety of machine learning methods and the final project was presented at the graduate student seminar series.

Departmental Service

GTA Evaluation and Mentoring Committee, Department of Statistics 2019 – 2020

Committee Chair

Developed and implemented evaluation system for graduate students teaching or grading.

Research Interests

Statistics and Mathematics Education, Applied Probability and Simulation, Statistical Machine Learning, Sabermetrics

Peer-Reviewed Publications

Simon, Burton, and **Nielsen, Aaron**. "Numerical Solutions and Animations of Group Selection Dynamics." *Evolutionary Ecology Research*, 14 (2012): 757-68.

Nielsen, Aaron and Simon, Burton. "Fixation Times in Group-Structured Populations." (In preparation)

Nielsen, Aaron and Simon, Burton. "Multiple Levels of Cooperation in Evolutionary Dynamics Models." (In preparation)

Presentations/ Talks

Dissertation defense. University of Colorado Denver.	June 2018
100^{th} Anniversary MAA Rocky Mountain Section Conference. Pueblo, Colorado.	April 2017
Statistics Research Seminar. University of Colorado Denver.	April 2017
SIAM Front Range Student Conference. Denver, Colorado.	March 2017
Graduate Student-Led Seminar.† University of Colorado Denver.	December 2016

Poster Presentations

"Analyzing FCQ Results Using Advanced Data Analytics" April 2017
Research and Creative Activities Symposium.† University of Colorado Denver.

"A Survey of Recent Genetic Developments in Ant Social Polymorphism" December 2015
Topics in Statistical Genetics. University of Colorado Denver.

"A Stochastic Model of Sediment Transport" (advised undergraduate statistics majors) May 2014
Undergraduate Research Symposium. Colorado State University.

"Dual Polarization Radar Signal Processing" May 2007
Engineering Senior Design Project Poster Session. Colorado State University.

Professional Development

Graduate Teaching Assistant Peer Mentee, University of Colorado Denver 2015 – 2016
Met biweekly with a statistics faculty member to receive advice and tips on teaching.

Critical Issues in Math Education Seminar, University of Colorado Denver 2015 – 2018
Weekly seminar series discussing pedagogy.

Honors and Awards

Lynn Bateman Memorial Excellence in Teaching Award	2016
CIMS Fellowship	2013
Williams Scholarship	2012 – 2013
GAANN Fellowship	2007 – 2008
Claude W. Wood Scholarship	2002 – 2006
Colorado Distinguished Scholar	2002 – 2006
Fort Collins High School Valedictorian	2002

Security Clearances

Top Secret / Sensitive Compartmented Information (TS-SCI) clearance	2009 – 2012
Counterintelligence (CI) polygraph	2009

Clubs

Faculty Advisor, CSU Men's Club Soccer	2018 – 2020
Co-founder and Vice President, UCD Machine Learning Club	2016 – 2018

Computer Skills

Basic: JMP, SAS, C, Java, Perl, BUGS, PLINK, SPICE, MathCAD, Adobe Photoshop
Intermediate: ggplot2, HTML, CSS, Microsoft Office, Unix/Linux, Microsoft Windows, OS X
Advanced: R, MATLAB, LaTeX

References

Ben Prytherch, M.S., Senior Instructor
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Burt Simon, Ph.D., Associate Professor
Department of Mathematical and Statistical Sciences. University of Colorado Denver.
Email: burt.simon@ucdenver.edu

Stephanie Santorico, Ph.D., Professor
Department of Mathematical and Statistical Sciences. University of Colorado Denver.
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