

# AARON D. NIELSEN

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## CONTACT INFORMATION

Department of Statistics  
Colorado State University  
220 Statistics Building  
Fort Collins, Colorado 80523

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*Departmental Phone:* (970) 491-1109  
*E-mail:* aaron.nielsen@colostate.edu  
*Website:* aaron-nielsen.github.io

## 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)

## ACADEMIC EXPERIENCE

**Colorado State University**, Department of Statistics 2018 –  
*Assistant Professor*

I am currently teaching and coordinating courses in statistics and mentoring graduate teaching assistants as an assistant professor.

### Recent Courses Taught

Fall 2021: STAT 305, STAT 315, STAT 472  
Summer 2021: STAA 556  
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, STAR 502  
Summer 2019: STAT 315  
Spring 2019: STAT 201, STAT 315 (2 sec.), STAT 460, STAT 472  
Fall 2018: STAT 201 (2 sec.), STAT 315

## INDUSTRY EXPERIENCE

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

I 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. MATLAB and C were the primary tools for this development.

In 2009, I acquired a Top Secret/Sensitive Compartmentalized Information (TS/SCI) clearance and collaborated in multiple classified programs.

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\*also served as course coordinator

TEACHING  
EXPERIENCE

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

<u>Courses Taught</u>	<u>Semesters Taught</u>
STAT 100: Statistical Literacy	Fall 2020
STAT 201: General Statistics*	Spring 2019 (+ 2 other semesters)
STAT 204: Statistics for Business Students	Summer 2014 (+ 2 other semesters)
STAT 301: Applied Statistical Methods	Spring 2015, Fall 2014
STAT 305: Sampling Techniques	Fall 2021
STAT 315: Theory and Practice of Statistics*	Fall 2021 (+ 8 other semesters)
STAT 460: Applied Multivariate Analysis	Spring 2020, Spring 2019
STAT 472: Statistical Research*	Fall 2021 (+ 5 other semesters)
STAR 502: Multivariate Analysis for Researchers	Fall 2019
STAA 556: Statistical Consulting	Summer 2021
STAA 574: Methods in Multivariate Analysis	Spring 2020

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

<u>Courses Taught</u>	<u>Semesters Taught</u>
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.

ADVISING EXPERIENCE	<p><b>Master's Advisory Committee Member</b>, Colorado State University <span style="float: right;">2018 –</span></p> <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black; padding: 2px;"><u>Students</u></th> <th style="text-align: left; border-bottom: 1px solid black; padding: 2px;"><u>Degree</u></th> <th style="text-align: left; border-bottom: 1px solid black; padding: 2px;"><u>Department</u></th> <th style="text-align: left; border-bottom: 1px solid black; padding: 2px;"><u>Completed</u></th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;">Shree Sowndarya S.V.</td> <td style="padding: 2px;">M.S./Ph.D.</td> <td style="padding: 2px;">Chemistry</td> <td style="padding: 2px;"><i>(in progress)</i></td> </tr> <tr> <td style="padding: 2px;">Aaron Lear</td> <td style="padding: 2px;">M.S.</td> <td style="padding: 2px;">Mathematics</td> <td style="padding: 2px;"><i>(in progress)</i></td> </tr> <tr> <td style="padding: 2px;">Sara Horton</td> <td style="padding: 2px;">M.M.</td> <td style="padding: 2px;">Music Therapy</td> <td style="padding: 2px;"><i>(in progress)</i></td> </tr> </tbody> </table>	<u>Students</u>	<u>Degree</u>	<u>Department</u>	<u>Completed</u>	Shree Sowndarya S.V.	M.S./Ph.D.	Chemistry	<i>(in progress)</i>	Aaron Lear	M.S.	Mathematics	<i>(in progress)</i>	Sara Horton	M.M.	Music Therapy	<i>(in progress)</i>
<u>Students</u>	<u>Degree</u>	<u>Department</u>	<u>Completed</u>														
Shree Sowndarya S.V.	M.S./Ph.D.	Chemistry	<i>(in progress)</i>														
Aaron Lear	M.S.	Mathematics	<i>(in progress)</i>														
Sara Horton	M.M.	Music Therapy	<i>(in progress)</i>														
MENTORING EXPERIENCE	<p><b>Course Coordinator</b>, Colorado State University <span style="float: right;">2018 –</span></p> <p>Coordinated graduate students teaching undergraduate courses and recitations and provided feedback on their teaching methods. Courses have included STAT 201, STAT 315, STAT 472</p> <p><b>Graduate Teaching Assistant Peer Mentor</b>, University of Colorado Denver <span style="float: right;">2015 – 2018</span></p> <p>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.</p> <p><b>Undergraduate Research Mentor</b>, University of Colorado Denver <span style="float: right;">Fall 2016</span></p> <p>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.</p>																
INTERNSHIPS	<p><b>Institute for Telecommunication Sciences</b>, Boulder, Colorado <span style="float: right;">May – August 2007</span></p> <p><i>Engineering Intern</i></p> <p>Developed and maintained a MATLAB graphic user interface (GUI) to process real-time wireless communication data.</p> <p><b>UV-B Monitoring and Research Program</b>, Fort Collins, Colorado <span style="float: right;">May – August 2006</span></p> <p><i>Engineering Intern</i></p> <p>Tested and troubleshooted Ultraviolet Multifilter Rotating Shadowband Radiometers (UV-MFRSR) for use in measuring solar irradiance.</p>																
DEPARTMENTAL SERVICE	<p><b>GTA Evaluation and Mentoring Committee</b>, Department of Statistics <span style="float: right;">2019 – 2021</span></p> <p><i>Committee Chair</i></p> <p>Developed and implemented evaluation system for graduate students teaching or grading.</p>																
RESEARCH INTERESTS	<p>Statistics and Mathematics Education, Applied Probability and Simulation, Statistical Machine Learning, Sabermetrics</p>																
PEER-REVIEWED PUBLICATIONS	<p>Simon, Burton, and <b>Nielsen, Aaron</b>. “Numerical Solutions and Animations of Group Selection Dynamics.” <i>Evolutionary Ecology Research</i>, 14 (2012): 757-68.</p> <p><b>Nielsen, Aaron</b> and Simon, Burton. “Fixation Times in Group-Structured Populations.” (In preparation)</p> <p><b>Nielsen, Aaron</b> and Simon, Burton. “Multiple Levels of Cooperation in Evolutionary Dynamics Models.” (In preparation)</p>																

PRESENTATIONS/ TALKS	Dissertation defense. University of Colorado Denver.	June 2018
	100 <sup>th</sup> 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. <sup>†</sup> University of Colorado Denver.	December 2016
POSTER PRESENTATIONS	<i>“Analyzing FCQ Results Using Advanced Data Analytics”</i> Research and Creative Activities Symposium. <sup>†</sup> University of Colorado Denver.	April 2017
	<i>“A Survey of Recent Genetic Developments in Ant Social Polymorphism”</i> Topics in Statistical Genetics. University of Colorado Denver.	December 2015
	<i>“A Stochastic Model of Sediment Transport”</i> (advised undergraduate statistics majors) Undergraduate Research Symposium. Colorado State University.	May 2014
	<i>“Dual Polarization Radar Signal Processing”</i> Engineering Senior Design Project Poster Session. Colorado State University.	May 2007
PROFESSIONAL DEVELOPMENT	<b>Graduate Teaching Assistant Peer Mentee</b> , University of Colorado Denver Met biweekly with a statistics faculty member to receive advice and tips on teaching.	2015 – 2016
	<b>Critical Issues in Math Education Seminar</b> , University of Colorado Denver Weekly seminar series discussing pedagogy.	2015 – 2018
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	<i>Basic:</i> JMP, SAS, C, Java, Perl, BUGS, PLINK, SPICE, MathCAD, Adobe Photoshop <i>Intermediate:</i> ggplot2, HTML, CSS, Microsoft Office, Unix/Linux, Microsoft Windows, OS X <i>Advanced:</i> R, MATLAB, L <sup>A</sup> T <sub>E</sub> X	

## REFERENCES

Ben Prytherch, M.S., Senior Instructor

Department of Statistics. Colorado State University.

Email: prytherc@stat.colostate.edu

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.

Email: stephanie.santorico@ucdenver.edu