

Charlotte Wickham

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Assistant Professor
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EDUCATION AND EMPLOYMENT INFORMATION

Education

- 2011 Ph.D. (Statistics) University of California, Berkeley
2004 B.Sc. (Statistics) First Class Honors, University of Auckland.

Employment

- 2011 - Assistant Professor, Department of Statistics, Oregon State University

TEACHING, ADVISING AND OTHER ASSIGNMENTS

Credit courses at Oregon State University

| Course | | Term | Enrollment |
|---------------|----------------------------------|--------|------------|
| ST565 (3) | Time Series | W2016 | 44 |
| ST552 (4) | Statistical Methods II | W2016 | 26 |
| ST411/511 (4) | Methods of Data Analysis I | F2015 | 178 |
| ST599 (2) | Topics in Data Visualization | Su2015 | 12 |
| ST412/512 (4) | Methods of Data Analysis II | W2015 | 115 |
| ST552 (4) | Statistical Methods II | W2015 | 25 |
| ST411/511 (4) | Methods of Data Analysis I | F2014 | 171 |
| ST499/599 (2) | Topics in Data Visualization | Su2014 | 20 |
| ST599 (3) | Stat Computing & Big Data | S2014 | 25 |
| ST412/512 (4) | Methods of Data Analysis II | W2014 | 113 |
| ST565 (3) | Time Series | W2014 | 34 |
| ST411/511 (4) | Methods of Data Analysis I | F2013 | 174 |
| ST411/511 (4) | Methods of Data Analysis I | W2013 | 91 |
| ST412/512 (4) | Methods of Data Analysis II | W2013 | 99 |
| ST411/511 (4) | Methods of Data Analysis I | F2012 | 159 |
| ST565 (3) | Time Series & Spatial Statistics | S2012 | 33 |
| ST411/511 (4) | Methods of Data Analysis I | W2012 | 80 |

Non-Credit Courses and Workshops

- 2017 Instructor **Happy R users purrr: solving iteration problems with functional programming** An invited 2.25 hour workshop introducing the R package purrr. RStudio Conference, Orlando, Jan 2017.
- 2017 Teaching Assistant **Data Science with the tidyverse** A two-day short course on data science using the tidyverse packages for R offered by RStudio. Orlando, Jan 2017.

- 2016 Teaching Assistant **Advanced R** A two-day short course on advanced R programming offered by RStudio. San Francisco, Jan 2016.
- 2015 Organizer for **PhD Journal Club** Facilitated discussion of five position papers on the role of statistics in the past, present and future with five PhD students. Oregon State University, Spring 2015.
- 2014 Instructor **Introduction to R** A four hour short course for College of Agricultural Sciences taught jointly with Alix Gitelman, Oregon State University, Sep 2014.
- 2013 Teaching Assistant **R development masterclass** A two-day short course on advanced R programming offered by RStudio. San Francisco, Dec 2013.
- 2011 Teaching Assistant **R development masterclass** A two-day short course on advanced R programming sponsored by Revolution Analytics. San Francisco, Jun 2011, New York, Dec 2011.
- 2009 Teaching Assistant **Looking at Data** A two-day short course on data manipulation and visualization in R. University of Missouri, Saint Louis, Oct 2009.
- 2006 Joint Instructor **Stat bootcamp** One week incoming statistics graduate student bootcamp. Department of Statistics, University of California, Berkeley. Summer, 2006.

Curriculum Development

- 2014 Developed a two course summer program in Data Exploration and Visualization with Shawn O'Neil (OSU CGRB) taught for the first time in Summer, 2014.
- 2011- Statistics department curriculum committee

Graduate and Undergraduate Students and Postdoctoral Trainees

Major Professor

- 2018 Kalbi Zongo, PhD Statistics *Co-advising with Sarah Emerson*
Faraz Niyaghi, MS Industrial Engineering *Minor Advisor* (2013), MS Statistics *Advisor* (2015), PhD Statistics *Co-advising with Sarah Emerson*
- 2017 Chris Comiskey, PhD Statistics *Co-advising with Alix Gitelman*
- 2016 Sam Engle, MS Statistics
Alyssa Pederson, MS Statistics
Shaoshan Liao, MS Statistics
- 2015 Chunxiao Wang, MS Statistics
- 2014 Heather Kitada, MS Statistics
Jaret Keniston, MS Statistics

Minor Professor

- 2017 Alexandra Davis, PhD Integrative Biology
- 2016 Lillian Tuttle, PhD Integrative Biology
Faisal Alfayez, MEng
- 2015 Andrea Havron, MS Marine Resource Management
Johannie Spaan, PhD Zoology
Weijun Li, MEng Electrical Engineering and Computer Science

Ali Moghaddam, MS Construction Engineering and Management
 Ganesh Ummadi, PhD Chemistry

2014 Adam Korejwa, MS Ecological Engineering
 Deepak Rayamajhi, PhD Civil Engineering
 Kelly Kerr, MS Forest Ecosystems and Society
 Catarina Pestana, MS Civil and Construction engineering
 Gordon Akudibillah, PhD Environmental Science
 Viswanath Parameshwaran Kashi, MS Industrial Engineering
 Juliana Mbuthia, MS Electrical Engineering and Computer Science
 Lacey Jeroue, MS Forest Engineering and Resource Management
 Sean Cummings, MS Applied Economics

2013 Youjie Yan, MEng Computer science
 Daniel Lebowitz, MS Mathematics

2012 Andres Cardenas, MPH Biostatistics
 Jamila Hunt, MPH Biostatistics

Committee Member

2017 Ben Brintz, PhD Statistics

2016 Addison James, PhD Statistics
 Conrad Cartmell, BS Mathematics Honors
 Spencer LeDoux, MS Statistics
 Paul Logan, MS Statistics
 Casey Stevens, MS Statistics
 Matt Higham, MS Statistics
 Yijun Yang, MS Statistics
 Xun Sun, MS Statistics

2015 Leela Richman, MS Statistics
 Garth Hansen, MS Statistics
 John Walker Orr, MS Statistics

2014 Gisselle Yang Xie, MS Statistics
 Eric Gunnink, MS Statistics
 Jose T. Montero, MS Geography
 Ben Armstrong, MS Statistics
 Kyle Dettloff, MS Statistics
 Rosalinda Gonzalez, MS Fisheries
 Luna Sun, PhD Statistics
 Nadia Bathaee, MS Industrial Engineering

- 2013 Elise Korejwa MS Statistics
 Qian Wu, MS Statistics
 Malcolm Itter MS Statistics
 Team or Collaborative Efforts
- 2014 Developed and taught, ST599: Statistical Computing and Big Data, with Alix Gitelman (OSU), Spring 2014. The class revolved around three group big data analyses projects and armed students with the tools and confidence to attack big data and work effectively in a data science team.
 International Teaching
- 2015 Instructor for **Data Science in R**, a 10 hour module, as part of the MS in Analytics at Universidad de los Andes, Bogotá, Colombia, October 2015.

SCHOLARSHIP AND CREATIVE ACTIVITY

Publications

Refereed research papers

- 2016 Lee, E. H., P. A. Beedlow, R. S. Waschmann, D. T. Tingey, C. **Wickham**, S. Cline, M. Bollman, and C. Carlile (2016). Douglas-fir displays a range of growth responses to temperature, water, and Swiss needle cast in western Oregon, USA. *Agricultural and Forest Meteorology* **221**, 176–188.
- 2015 Emerson, S., C. Wickham, and K. J. Ruzicka (2015). Rethinking the linear regression model for spatial ecological data: comment. *Ecology* **96**(7), 2021–2025.
- 2013 Muller, R. A., J. Curry, D. Groom, R. Jacobsen, S. Perlmutter, R. Rohde, A. Rosenfeld, C. **Wickham**, and J. Wurtele (2013). Decadal variations in the global atmospheric land temperatures. *Journal of Geophysical Research: Atmospheres*.
- 2013 Rohde, R., R. Muller, R. Jacobsen, S. Perlmutter, A. Rosenfeld, J. Wurtele, J. Curry, C. **Wickham**, and S. Mosher (2013). Berkeley Earth Temperature Averaging Process. *Geoinfor Geostat: An Overview* **1**(2).
- 2013 **Wickham**, C, R Rohde, R. Muller, J Wurtele, J Curry, D Groom, R Jacobsen, S Perlmutter, A Rosenfeld, and M. S (2013). Influence of Urban Heating on the Global Temperature Land Average using Rural Sites Identified from MODIS Classifications. *Geoinfor Geostat: An Overview* **1**(2).
- 2012 Rohde, R., R. Muller, R. Jacobsen, E. Muller, S. Perlmutter, A. Rosenfeld, J. Wurtele, D. Groom, and C. **Wickham** (2012). A New Estimate of the Average Earth Surface Land Temperature Spanning 1753 to 2011. *Geoinfor Geostat: An Overview* **1**(1).
- 2012 Wickham, H., H. Hofmann, C. **Wickham**, and D. Cook (2012). Glyph-maps for visually exploring temporal patterns in climate data and models. *Environmetrics* **23**(5), 382–393.
- 2011 **Wickham**, C. (2011). A Tale of Two Airports: Exploring Flight Traffic at SFO and OAK. *Journal of Computational and Graphical Statistics* **20**(2), 291–293.

In preparation

- Danner, A. G., M. Safeeq, C. **Wickham**, D. Tullos, G. E. Grant, and M. V. Santelmann. Changing climate, changing rules: assessing climate change impacts on operations of a multipurpose reservoir in Oregon, USA. *Journal of the American Water Resources Association Submitted*.
- Fuentes, C., C. **Wickham**, and S. Emerson. *Teaching the Wilcoxon-Mann-Whitney Test: Demonstrating Hypothesis Test Performance Criteria*.

Conference posters

- 2011 **Wickham, C.**, J. A. Curry, D. Groom, B. Jacobsen, R. A. Muller, S. Perlmutter, R. A. Rohde, and A. R. J. Wurtele (2011). *A Study of Temperature Trends Using Rural Sites Identified from MODIS Classifications*. American Geophysical Union Meetings, San Francisco.
- 2009 **Wickham, C.** (2009). *A Tale of Two Airports: An exploration Flight Traffic at OAK and SFO*. Joint Statistical Meetings, Washington DC.
- 2007 **Wickham, C.** (2007). *A Stroll Along the Beach*. UserR!, Ames IA.

Thesis

- Wickham, C.** (2011). “Whither the whale shark wanders: Tools and methods for modelling whale shark movement”. PhD thesis. University of California, Berkeley.

Professional Meetings and Presentations

Invited Talks

- 2013 **Wickham, C.** (2013). *An introduction to plyr*. R Group at EPA, Corvallis OR.
- 2012 **Wickham, C.** (2012). *Modelling trajectories with stochastic differential equations driven by a potential function*. Mathematical Biology Seminar, Oregon State University.
- 2011 **Wickham, C.** (2011). *A statistician, a politician and a grandma walk into a bar: explaining the evidence that the earth is getting hotter*. Department of Statistics Seminar, University of Auckland.
- 2008 **Wickham, C.** (2008). *Modeling Whale Shark Movement*. Society of Women Geographers, Bay Area Group Meeting.

Contributed Talks

- 2014 **Wickham, C.** (2014). *The Mann-Kendall Test and Adjustments/Alternatives Under Complex Residual Assumptions and Small Sample Sizes*. Joint Statistical Meetings, Boston.
- 2013 **Wickham, C.**, C. Fuentes, and A. Gitelman (2013). *Evaluating the performance of trend detecting tests in hydrological data*. The International Environmetrics Society Conference, Anchorage, AK.
- 2008 **Wickham, C.** (2008). *Modeling Trajectories with an Application in Eye Tracking*. Berkeley Statistics Student Seminar.
- 2007 **Wickham, C.** (2007). *An Exploratory Stroll Along the Beach*. Joint Statistical Meetings, Salt Lake City, UT.

Other Creative Work

- 2015 First place, CrowdAnalytix visualization competition sponsored by EMC2 to reveal insights into the differences between a professional and amateur motorcycle racer based on data collected on >15 variables over six laps of racing, May 2015. <https://cwickham.shinyapps.io/motorcycle/>
- 2015 Team entrant in Kaggle National Data Science Bowl, March 2015. <https://www.kaggle.com/cwickham/results>

Workshops

- 2016 Invited participant, *Shiny Developers Conference*, Stanford, Jan 2016.
- 2013 Invited participant, *Next generation climate data products*, NCAR, July 2013.
- 2012 Funded participant, *Ten Lectures on Statistical Climatology*, University of Washington, Seattle funded by the NSF. August 2012.

Grant and contract support

- 2015 NSF-BIGDATA:IA: Integrated Statistical and Visual Methods for Emerging Super-Ensemble Studies in Climatology (PI: A. Gitelman, OSU, Co-PIs: D. Mondal, P. Mote, E. Zhang, **C. Wickham**) *Unfunded* \$1,970,323
- 2014 NSF-CMMI1435695, Collaborative Research: Salt Water Intrusion's Effect on Levee System Stability during Extreme Events (PI: H. Benjamin Mason, Civil & Construction Engineering OSU, Co-PI: Charlotte Wickham) *Unfunded* \$314,602

SERVICE

University Service

Department

- 2015- Online Programs in Data Analytics Committee, Department of Statistics
- 2015- Exam Committee (Methods Exam Chair), Department of Statistics
- 2014- COSINE advisory group
- 2014 Full Professor Search Committee, Department of Statistics
- 2012 Senior Professor Search Committee, Department of Statistics
- 2011- Curriculum Committee, Department of Statistics

College

University

- 2015- Search Advocate for Computer Science Search Committee in Data Science, College of Engineering, OSU.
- 2016 Member of Marine Sciences Initiative Learning Modes Working Group
- 2014- 2015

Service to the Profession

- 2017- Member of On-ramps team, forwards: R Foundation taskforce on women and other under-represented groups
- 2017- Treasurer/Secretary for the American Statistical Association Section on Graphics
- 2018 Co-organizer of DataFest Oregon, a nationally coordinated data analysis competition in which teams of students work to find and share meaning in a large, rich, and complex data set. April 2016 <http://impact.oregonstate.edu/2016/04/datafest-oregon-promises-of-mind-numbing-fun/>
- 2016
- 2015 Judge Coordinator, Infinite Possibilities Conference, Corvallis OR
- 2014 Reviewer for R Journal, Environmetrics
- 2013 Organizing committee Statistics 2013 - Oregon
- 2013 Reviewer for Infovis
- 2011 Reviewer for Environmetrics, the R Journal, and Technology Innovations in Statistics Education.
- 2010 Reviewer for the Journal of Statistical Software

Service to the Public (professionally related)

None to report

AWARDS

National and International Awards

- 2009 Third place in the Data Expo 2009, JSM
- 2007 Third place in R programming competition, UseR! Ames, IA

State and Regional Awards

- 2008 Society of Women Geographers Fellow

University and Community Awards

- 2015 Oregon State Statistics Student Organization (OSSSO) Teaching Award
- 2010 Evelyn Fix Memorial Prize
- 2008 Outstanding Graduate Instructor Award
- 2004 University of Auckland Honours Scholarship
- 2004 University of Auckland Annual Prize in Statistics