

# Grace Olive Lawley

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## INTERESTS

- Data Science
- Computational Linguistics
- Natural Language Processing
- Statistics
- Discrete Mathematics
- Speech and Language Disorders

## SKILLS

- R, Python
- Git/GitHub
- R Markdown
- Data Analysis
- Data Wrangling
- Data Visualization

## CONTACT

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## EDUCATION

### PHD CANDIDATE, COMPUTER SCIENCE & ENGINEERING | OREGON HEALTH & SCIENCE UNIVERSITY (OHSU)

Expected end of 2023 • Portland, Oregon, USA

- Advisor: Steven Bedrick, PhD [📄](#) (previously Jan van Santen, PhD)
- Dissertation title: 'Computationally Characterizing Communicative Context and Content in Autistic Children'
- My research involves developing computational methods to detect and quantify different aspects of the language of Autistic children.

### BA, MATHEMATICS | LEWIS & CLARK COLLEGE

May 2017 • Portland, Oregon, USA

## INDUSTRY EXPERIENCE

### DATA SCIENCE MENTOR | POSIT ACADEMY • POSIT, PBC

Aug. 2022 - Present

- Mentoring small groups of working professionals as they develop and hone their data science skills in either R or Python. [📄](#)

### DATA SCIENCE EDUCATOR | POSIT ACADEMY • POSIT, PBC

Dec. 2022 - Jun. 2023

- Worked with the Posit Academy Python team on translating and adapting course material from R into Python as well as developing Python specific course material. [📄](#)

### WORKSHOP COORDINATOR | RSTUDIO::CONF(2020) • RSTUDIO, PBC

Jan. 27-28, 2020 • Applied Machine Learning Workshop

- Responsible for course logistics of a two-day, 180-person workshop. Duties included resolving technical issues, being the point person for student questions, and acting as the intermediary between the workshop teaching staff and the rstudio::conf(2020) coordinators.

### INTERN | EDUCATION TEAM • RSTUDIO, PBC

June 2019 - Sep. 2019

- Worked with Alison Hill [📄](#) to create an updated bookdown version of Jenny Bryan's [📄](#) STAT 545, a data science course originally taught at the University of British Columbia. The course materials are now available as an online textbook created with the R bookdown package and can be used as a resource for both self-guided learners and educators. With over 40 chapters of content, STAT 545 teaches skills for data wrangling, exploration, and analysis in R, from how to read data into R to how to create an R package. [📄](#)

## RESEARCH EXPERIENCE

### GRADUATE RESEARCH ASSISTANT | CENTER FOR SPOKEN LANGUAGE UNDERSTANDING • OHSU

Sep. 2017 - Present

- Participating in NIH funded research on Autism Spectrum Disorder, Fragile X Syndrome, and Down Syndrome.
- R01DC012033: Automated Measurement of Language Outcomes for Neurodevelopmental Disorders [📄](#)

## RESEARCH INTERN | CENTER FOR SPOKEN LANGUAGE UNDERSTANDING • OHSU



Jan. 2017 - June 2017 • June 2016 - Aug. 2016

- Participated in Autism Spectrum Disorder research under the supervision of Jan van Santen, PhD
- Analyzed transcribed interviews with children with Autism Spectrum Disorder and developed an automated method to detect and quantify atypical word usage using natural language processing techniques.

## TEACHING EXPERIENCE



### WORKSHOP TEACHING ASSISTANT | RSTUDIO::CONF(2020) • RSTUDIO, PBC

Jan. 27-28, 2020 • Applied Machine Learning Workshop

- Assisted in a two-day, 180-person workshop on applied machine learning in R. Participants learned how to use the tidymodels packages  to build, tune, visualize, and assess various predictive models. 



### WORKSHOP TEACHING ASSISTANT | RSTUDIO::CONF(2019) • RSTUDIO, PBC

Jan. 15-16, 2019 • What They Forgot to Teach You About R Workshop

- Assisted in a two-day, hands-on workshop on project-orientated workflows, version control with Git & GitHub, debugging, personal R administration, and iterating with the purrr package.  

### GRADUATE TEACHING ASSISTANT | OREGON HEALTH & SCIENCE UNIVERSITY

June 2018 - Sep. 2018 • Introduction to Biostatistics for the Basic Sciences (CONJ 620)

- Assisted in a course on data wrangling, statistical analysis, data visualization, and communication of biomedical data using the programming language R for graduate students.  

## PUBLICATIONS

### JOURNAL ARTICLES

- [1] H. MacFarlane, A. C. Salem, S. Bedrick, J. K. Dolata, J. Wiedrick, G. O. Lawley, L. H. Finestack, S. T. Kover, A. J. Thurman, L. Abbeduto and E. Fombonne, 'Consistency and reliability of automated language measures across expressive language samples in autism', Autism Research, pp. 1–15, 2023. DOI: 10.1002/aur.2897.
- [2] G. O. Lawley, S. Bedrick, H. MacFarlane, J. K. Dolata, A. C. Salem and E. J. Fombonne, "'Um" and "Uh" Usage Patterns in Children with Autism: Associations with Measures of Structural and Pragmatic Language Ability', Journal of Autism and Developmental Disorders, vol. 53, pp. 2986–2997, 8 2022. DOI: 10.1007/s10803-022-05565-4.
- [3] A. C. Salem, H. MacFarlane, J. R. Adams, G. O. Lawley, J. K. Dolata, S. Bedrick and E. J. Fombonne, 'Evaluating atypical language in autism using automated language measures', Scientific Reports, vol. 11, no. 1, 2021. DOI: 10.1038/s41598-021-90304-5.

### CONFERENCE PROCEEDINGS

- [4] G. O. Lawley, P. A. Heeman and S. Bedrick, 'Computational Analysis of Backchannel Usage and Overlap Length in Autistic Children', in 24th Meeting of the Special Interest Group on Discourse and Dialogue (SIGDIAL), Workshop on Connecting Multiple Disciplines to AI Techniques in Interaction-centric Autism Research and Diagnosis (ICARD), Prague, Czechia, Sep. 2023.
- [5] G. O. Lawley, P. A. Heeman, J. K. Dolata, E. Fombonne and S. Bedrick, 'A Statistical Approach for Quantifying Group Difference in Topic Distributions Using Clinical Discourse Samples', in 24th Meeting of the Special Interest Group on Discourse and Dialogue (SIGDIAL), Prague, Czechia, Sep. 2023.
- [6] G. O. Lawley, S. Bedrick and E. Fombonne, 'Sex Differences in Pronoun and Maze Usage in the Language of Children with Autism Spectrum Disorder', in International Society for Autism Research Annual Meeting, INSAR, Austin, TX, May 2022.
- [7] G. O. Lawley, S. Bedrick, J. K. Dolata and E. J. Fombonne, 'Investigation on Examiner "Um" and "Uh" Usage in ADOS-2 Sessions', in International Society for Autism Research Annual Meeting, INSAR, May 2021.
- [8] A. C. Salem, H. MacFarlane, J. Adams, G. O. Lawley, J. K. Dolata, S. Bedrick and E. J. Fombonne, 'Evaluating Atypical Language in Autism Using Automated Discourse Measures', in International Society for Autism Research Annual Meeting, INSAR, May 2021.
- [9] A. C. Salem, H. MacFarlane, J. K. Dolata, G. O. Lawley and E. J. Fombonne, 'Using MLU to Evaluate the Reliability of ADOS Transcription', in International Society for Autism Research Annual Meeting, INSAR, Jun. 2020.

### BOOK CHAPTERS

- [10] H. MacFarlane, A. C. Salem, G. O. Lawley, A. P. Hill, K. Zuckerman and E. J. Fombonne, Epidemiology. In: Textbook of Autism Spectrum Disorders, 2nd, E. Hollander, R. J. Hagerman and C. J. Ferretti, Eds. American Psychiatric Association Publishing, 2022, ch. 1, pp. 5–33.

## TALKS & PANELS

**"A STATISTICAL APPROACH FOR QUANTIFYING GROUP DIFFERENCE IN TOPIC DISTRIBUTIONS USING CLINICAL DISCOURSE SAMPLES" | CONFERENCE TALK**

Sep. 2023 • SIGDIAL 2023 Conference, Prague, Czechia • [📄](#)

**"COMPUTATIONAL ANALYSIS OF BACKCHANNEL USAGE AND OVERLAP LENGTH IN AUTISTIC CHILDREN" | CONFERENCE TALK**

Sep. 2023 • ICARD Workshop @ SIGDIAL 2023 Conference, Prague, Czechia • [📄](#)

**"PEDANTIC SPEECH IN CHILDREN WITH AUTISM SPECTRUM DISORDER" | DEPARTMENT TALK**

May 2019 • Center for Spoken Language Understanding, OHSU • [📄](#)

**"MATH MEETS DATA" | INVITED SPEAKER**

Apr. 2019 • Lewis & Clark College • Mathematical Sciences Colloquium • [📄](#)

**STEM GRADUATE SCHOOL EXPERIENCE PANEL | INVITED PANELIST**

Apr. 2019 • Lewis & Clark College • Gender Minorities in STEM (GemSTEM) Club

**"A SENTIMENT ANALYSIS OF CHILD LANGUAGE ACQUISITION DATA" | INVITED SPEAKER**

Aug. 2018 • Portland R User Group • OHSU Data Viz Lab Talk Nights • [📄](#)

## CERTIFICATIONS

**RSTUDIO CERTIFIED INSTRUCTOR | TIDYVERSE**

Nov. 2019 - Present • [📄](#)

## AWARDS & HONORS

**PROMISING SCHOLAR AWARD | \$1,000**

May 2017 • Oregon Health & Science University

**MILLER INTERNSHIP AWARD | \$4,600**

June 2016 • Lewis & Clark College

## PROFESSIONAL MEMBERSHIPS & AFFILIATIONS

- Pi Mu Epsilon (US Honorary National Mathematics Society)
- Women in Science Portland
- R-Ladies PDX

## ADDITIONAL EXPERIENCE

**CAMP ODAKODA BY ASD OREGON | CABIN COUNSELOR**

Aug. 2018 • Sisters, OR

Worked as a cabin counselor at a five-day-long overnight summer camp for children with high functioning Autism Spectrum Disorder. [📄](#)