**Julie A Lorah**

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## Education

**Ph.D., Area of Measurement and Statistics**, June 2015

University of Washington, College of Education, Seattle, WA

Dissertation: *Estimating individual-level interaction effects in multilevel models: A Monte Carlo simulation study with application*

**M.Ed., Area of Measurement and Statistics**, March 2010

University of Washington, College of Education**,** Seattle, WA

Thesis: *The robustness of the t-test given deviations from the normality assumption*

**B.S., Operations Research and Industrial Engineering**, May 2006

Cornell University, College of Engineering, Ithaca, NY

### Research Interests

* Quantitative methods, particularly multilevel modeling, survival models, and moderated regression
* Substantive applications of quantitative methods within music education & engineering education
* Diversity and opportunity for underrepresented groups

### Teaching Interests

* Advanced quantitative methods, including multilevel modeling
* Introductory and multivariate statistics
* Quantitative research methods

## Experience

## Assistant Professor, *Indiana University*

School of Education, Bloomington, IN, August 2016 – present

Department of counseling and educational psychology, inquiry methodology program

* Teach i*ntermediate statistics applied to education* (both in-person and online)*,* *covariance structure analysis*, *multilevel modeling,* *ANOVA/experimental design, and multivariate statistics*

## Visiting Assistant Professor, *Indiana University*

School of Education, Bloomington, IN, August 2015 – August 2016

* Taught i*ntermediate statistics applied to education,* *covariance structure analysis*, *multilevel modeling,* & *ANOVA/experimental design*
* Created and conducted all class lectures
* Prepared all course materials including syllabus, assignments, exams, and projects
* Graded and provided feedback for student work
* Coordinated with the teaching assistant, as necessary
* Continued with independent and collaborative research projects

**Pre-Doctoral Teaching Assistant II (Instructor)**, *University of Washington*

College of Education, Seattle, WA, September 2014 – June 2015

* Taught one course each quarter including *survey research methodology* (fall 2014) and *methods of educational research* (winter & spring 2015)
* Prepared all course materials, including syllabus, lectures, and assignments
* Conducted all weekly class lectures
* Graded and provided feedback for student work
* *Survey research methodology* covers sampling, item and questionnaire development, cognitive interviewing, and data analysis
* *Methods of educational research* covers experimental, correlational, and mixed methods research designs; the research process; academic writing; and how to critique published research

**Research Assistant**,*University of Washington*

## Center for Workforce Development, Seattle, WA, June 2011 – September 2014

## Analyzed quantitative survey data in R from 22 universities using various quantitative methods, including multilevel modeling, principal components analysis, and Bayesian methods

* Prepared journal publications, conference presentations, and reports for universities
* Conducted research on school climate, gender, and racial/ethnic diversity for undergraduate engineering students
* Designed and created graphics in R to display quantitative survey results for various audiences

## Coordinated with liaisons from each university to prepare and administer survey/focus groups

## Managed research activities, including internal review board (IRB) and funding agency reports

* Conducted focus groups at four universities examining climate among undergraduate engineers and wrote informal summary of results for school administrators

## Statistical Research Intern, *ACT*

## Iowa City, IA, May 2012 – July 2012

## Developed multi-level logistic regression models to analyze college achievement gaps for ethnic/racial minority, low-income, and male students

## Published findings in ACT Research Report Series and ACT Issue Brief Series

## Presented findings internally at paper presentation and poster session

## Teaching Assistant I (TA), *University of Washington*

## College of Education, Seattle, WA, September 2009 – June 2011

* Assisted with *basic educational statistics* course for six quarters
* Prepared and conducted some class lectures
* Evaluated student homework assignments
* Conducted office hours and tutored students in individual appointments
* Taught approximately 100 students per quarter from various undergraduate and graduate majors
* Course covers basic descriptive and inferential statistics

### Publications

**Lorah,** J. A. & Miksza, P. (in press). Applications of moderation analysis for music education research. Bulletin of the Council for Research in Music Education.

**Lorah,** J. A. (2018). Effect Size Measures for Multilevel Models: Definition, Interpretation, and TIMSS Example. Large-scale Assessments in Education.

Nichols, B. & **Lorah**, J. A. (in press). Solo or doubled singing accuracy: An examination of previous findings. *Psychology of Music*.

**Lorah,** J. A. & Wong, Y. J. (2018). Contemporary applications of moderation analysis in counseling psychology. *Journal of Counseling Psychology*. Advance online publication. DOI: 10.1037/cou0000290

**Lorah**, J. A. (in press). Estimating individual-level interaction effects in multilevel models: A Monte Carlo simulation study with application. *Journal of Applied Statistics*. DOI: 10.1080/02664763.2017.1414163. (online: <http://dx.doi.org/10.1080/02664763.2017.1414163>)

Litzler, E., & **Lorah**, J. A. (2018). Degree aspirations of undergraduate engineering students at the intersection of race/ethnicity and gender. *Journal of Women and Minorities in Science and Engineering 24*(2), 165-193.

**Lorah**, J. A., Morrison, S. J., & Sanders, E. A. (2015). Music achievement of English language learner eighth-grade students. *The* *Bulletin of the Council for Research in Music Education, 206,* 23-39*.*

### Lorah, J. A. (2015). *Estimating individual-level interaction effects in multilevel models: A Monte Carlo simulation study with application* (Doctoral dissertation). University of Washington, Seattle, WA

Litzler, E., Samuelson, C. C., & **Lorah**, J. A. (2014). Breaking it down: Engineering student STEM confidence at the intersection of race/ethnicity and gender. *Research in Higher Education, 55,* 810-832. DOI 10.1007/s11162-014-9333-z

**Lorah**, J. A., Sanders, E. A., & Morrison, S. J. (2014). The relationship between English language learner status and music ensemble participation. *Journal of Research in Music Education*, *62*, 234-244.

**Lorah**, J. & Ndum, E. (2013). Trends in achievement gaps in first-year college courses for racial/ethnic, income, and gender subgroups: A 12-year study. (ACT Research Report Series 2013 (8)). ACT, Inc., Iowa City, IA.

**Lorah**, J. A. (2009). *The robustness of the t-test given deviations from the normality assumption* (Unpublished master’s thesis). University of Washington, Seattle, WA.

### Works in Progress

**Lorah**, J. A., Qian, Y., Demattee, A., & Lau, P. (2018). Type I error and power rates for discrete multilevel survival models with varying sample size. Submitted to AERA annual meeting.

**Lorah**, J. A. & Valdivia, M. (2018). Diversity in statistics education at postsecondary institutions. Submitted to AERA annual meeting.

**Lorah**, J. A. Interpretation of main effects for moderated regression models. In preparation. [Majority of writing complete]

Bonifacio, K., **Lorah**, J. A., Conn-Powers, M. Suspension, expulsion, and retention rates in kindergarten and later academic achievement. In revisions.

**Lorah**, J. A. & Womack, A. J. Value of sample size for computation of Bayesian information criterion (BIC) in multilevel modeling. Submitted to Behavior Research Methods (2018).

### Presentations

**Lorah**, J.A. (2018, September). Diversity in statistics education at postsecondary institutions. Invited talk presented at Indiana University Center for Teaching and Learning (CITL) Scholarship of Teaching and Learning (SOTL) ignite talk, Bloomington, Indiana.

**Lorah**, J. A. (2018, July). Interpretation of main effects for moderated regression models. Paper presented at the VIII European Congress of Methodology [EAM 2018], University of Jena, Germany.

**Lorah**, J. A. (2018, April). Panel member to discuss AERA submission reviews, Survey Research SIG business meeting. American Educational Research Association (AERA) Annual Meeting, New York City, NY.

**Lorah**, J. A. (2018, April). Value of N for computation of Bayesian information criterion (BIC) in multilevel modeling. Paper presented at American Educational Research Association (AERA) Annual Meeting, New York City, NY.

**Lorah**, J. A. (2017, June). Effect size measures for multilevel models: Definition, interpretation, and TIMSS Example. Paper presented at IEA International Research Conference (IRC), Prague, Czech Republic.

Nichols, B. E. & **Lorah**, J. A. (2016, March). Does doubled singing or solo singing produce higher outcomes? New data and synthesis inform previous findings. Paper presented at theNAfME Biennial Music Educators National Conference, Atlanta, Georgia.

**Lorah**, J. A. (2015, May). Estimating Interaction Effects in Multilevel Models: A Simulation Study Examining Power and Type I Error Rates. Poster presented at the Modern Modeling Methods (M3) Conference in Storrs, CT.

Samuelson, C., Litzler, E., & **Lorah**, J.A. (2014, April). Collaboration between researchers and practitioners for mutual benefit. Paper presented at the AERA Annual Meeting, Philadelphia, PA.

Litzler, E. & **Lorah**, J. (2013, June). A natural experiment: NAE’s *Changing the Conversation* report and students’ changing perceptions of engineering. *Proceedings of the American Society for Engineering Education*, *USA*.

Litzler, E. & **Lorah**, J. (2013, April). *The intersection of gender and race/ethnicity with educational aspirations of undergraduate engineering students.* Paper presented at the AERA Annual Meeting, San Francisco, CA.

**Lorah**, J. (2013, April). *Trends in college achievement gaps in first-year college courses for ethnic/racial minorities, low-income students, and males*. Paper presented at the AERA Annual Meeting, San Francisco, CA.

**Lorah**, J. (2012, April). *Participation of English language learners in school music ensembles.* Paper presented at the AERA Annual Meeting, Vancouver, British Colombia.

**Lorah**, J. (2012, March). *Musical achievement of English language learners compared with native English speakers.*  Poster presented at the NAfME Biennial Music Educators National Conference, St. Louis, Missouri.

**Lorah**, J. (2011, November). *Is there really a gap? English language learners’ lower rates of participation in music ensembles.* Paper presented at University of Washington School of Education.

**Lorah**, J. (2011, April). *Predicting school band membership.* Poster presented at the AERA Annual Meeting, New Orleans, Louisiana.

Klockars, A. & **Lorah**, J. (2010, April). *The robustness of the t-test with different, non-normal distributions.* Paper presented at the AERA Annual Meeting, Denver, Colorado.

### Community Involvement

**Committee Membership**

* Indiana University Campus Sustainability Advisory Board, part of Bloomington Faculty Council [member, 2018-2019]
* AERA Division D Business Meeting and Reception Committee [member, 2018-2021]
* Counseling and Educational Psychology Fellowship Award Committee, Indiana University, Bloomington, Spring 2018, review applicants for three fellowship awards (Harrison Headley Way, Renfro, CEP Research Fund)
* Indiana University, Bloomington, Spring 2018 Scholarship of Teaching and Learning (SOTL) Grants Selection Committee [spring 2018, 4 applications reviewed]
* Indiana University Bloomington Joint EPC-FAC Subcommittee on OCQ [member, 2017-present]
  + BFC Committee to address response rates for course evaluations
* Indiana University Bloomington School of Education Grievance Committee [member, 2017-2020]

**Review Activity**

* Reviewer for *Sociological Methods and Research* [2018, 1 review completed]
* Reviewer for *American Educational Research Association* Annual Meeting (reviews completed Aug. 2018)
  + Division D [2019 annual meeting]
  + Multilevel modeling SIG [2019 annual meeting]
  + Multiple linear regression: the general linear model [2019 annual meeting]
  + Music Education SIG [2019 annual meeting]
  + Survey Research SIG [2019 annual meeting]
* Reviewer for Journal of Women and Minorities in Science and Engineering [2017 – present; 1 review completed fall 2017]
* Reviewer for *American Educational Research Association* Annual Meeting (reviews completed Aug. 2017)
  + Multilevel modeling SIG [2018 annual meeting]
  + Music Education SIG [2018 annual meeting]
  + Survey Research SIG [2018 annual meeting]
* Reviewer for *Psychology of Men & Masculinity* [2017-present; 1 review completed spring 2017]
* Reviewer for the AERA Division D Graduate Student In-Progress Research Gala [2017-present; 2 reviews completed 1/17; 1 review completed 2/18]
* Reviewer for graduate-level text book prospectus for Pearson [Oct. 2016; August 2017]
* Guest reviewer for *Bulletin for the Council for Research in Music Education* [2016 – present; 2 reviews completed]
* Reviewer for *Journal of Research on Leadership Education* [2016 – present; 1 review completed spring 2016]

**Other Service**

* Indiana University, Center for Learning Analytics & Student Success, fellow, 2018 - present
* Guest lecturer, Indiana University Bloomington E632 [Advanced quantitative research in music education], spring 2018, conducted lecture on logistic regression
* Volunteer for South Sudan Higher Education Initiative for Equity and Leadership Development (SSHIELD) Masters of Education project (MEP)
  + Traveled to Juba, South Sudan for one week during March 2016 to assist team in working with University of Juba faculty in setting up new courses, providing curriculum guidance, and developing new syllabi for the new Masters of Education in Emergencies program

**Grants Awarded**

* Indiana University Overseas Conference Grant, August 2018
  + Awarded from the Office of the Vice President for International Affairs (OVPIA), $1000 to support travel to Germany to present at the EAM conference
* Indiana University Center for Innovative Teaching and Learning (CITL) sponsored Scholarship of Teaching and Learning (SOTL) grant [application 11/1/17; one year; funding level $2000]

**Professional Associations**

* American Educational Research Association (AERA), member, 2016-present