

# E. Shannon Neeley Tass

Associate Professor  
Department of Statistics  
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## CONTACT

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## EDUCATION

- **Ph.D.**, 2009; Statistics (Biostatistics Emphasis), Rice University  
Dissertation Topic: Preprocessing of Reverse Phase Protein Arrays  
Advisor: Keith Baggerly
- **M.A.**, 2008; Statistics, Rice University
- **M.S.**, 2003; Statistics, Brigham Young University  
Project Topic: Temporal Lobe Classification of Autism  
Advisor: Sterling Hilton
- **B.S.**, 2001; Statistics, Brigham Young University

## PROFESSIONAL EXPERIENCE

- Associate Professor, Brigham Young University, Department of Statistics, Provo UT  
2014-Present
- Assistant Professor, Brigham Young University, Department of Statistics, Provo UT  
2008-2014

## RESEARCH INTERESTS

Environmental and spatial statistics; Statistical applications in mental health;  
Data Science; Teaching data science; Analysis of text data; Computational Health Science.

## PUBLICATIONS

### Projects and Papers In Progress

- Westhoff C, Westhoff J, Low E, Monsen J, Hanson C, **Tass ES**, Snell Q. (Submitted). Assessing Large Language Models in Building a Structured Dataset from Reddit Data: A Methodological Study. *Journal of Medical Internet Research*.
- Hawkes T, Erekson D, **Tass ES**. (In progress). Using Machine Learning to Understand Why People Seek Crisis Counseling.
- Spackman S, **Tass ES**, Erekson D, Cox J, Hanson CL, Snell Q. (In progress). LLMs in Psychotherapy

### Published

1. Low E, Monsen J, Schow L, Roberts R, Collins L, Johnson J, Hanson CL, Snell Q, **Tass ES**. (2025). Predicting bullying victimization among adolescents using the risk and protective factor framework: A large-scale machine learning approach. *BMC Public Health*. 25, 321. doi: <https://doi.org/10.1186/s12889-025-21521-0>
2. Cox JC, **Tass ESN**, Frandsen C, Vogeler HA, and Gabrielsen T, Orton A, Probst R, McKinnon KK, Heath J, Higham M, Preator B. (2023-preprint). What do the Records Say: Autism Spectrum Disorder and Higher Education. *Research in Autism Spectrum Disorders*. Available at SSRN: <https://ssrn.com/abstract=4431503> or <http://dx.doi.org/10.2139/ssrn.4431503>
3. Ke SY, **Neeley-Tass ES**, Barnes M, Hanson CL, Giraud-Carrier C, Snell Q. (2022). COVID-19 Health Beliefs Regarding Mask Wearing and Vaccinations on Twitter: Deep Learning Approach. *JMIR Infodemiology*. 2022 Oct 31;2(2):e37861. doi: 10.2196/37861. PMID: 36348979; PMCID: PMC9631942.
4. Cox JC, **Neeley-Tass ES** (2022). Psychotherapy Outcome for College Students with ASD and other Disabilities in a National Sample: Replication, Refinement, and Extension. *Penn State Student Affairs Center for Collegiate Mental Health*.. April 2022.
5. Weller O, Sagers L, Hanson C, Barnes M, **Tass ES**. (2021). Predicting suicidal thoughts and behavior among adolescents using the risk and protective factor framework: A large scale machine learning approach. *PloS One*. 2021 Nov 3;16(11):e0258535. doi: 10.1371/journal.pone.0258535.
6. Merrill BM, Vogeler H, Kirchoefer J, **Tass S**, Erekson D, Beecher M, Wothen V, Hobbs K, Boardman RD, Bingham J, Bailey RJ, Cox JC, Carney DM, Kilcullen JR, Griner D. (2021). Trump, Obama, Bush: Impacts of Presidential Elections on College Student Mental Health. *Journal of College Student Psychotherapy*. 1-18. doi:10.1080/87568225.2021.1888216.
7. Weller O, Hildebrandt J, Ilya R, Challis C, **Tass ES**, Snell Q, Seppi K. (2020). You Don't Have Time to Read This: An Exploration of Document Reading Time Prediction. *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics*. 1789–1794. doi: 10.18653/v1/2020.acl-main.162
8. Guerrero-Arguero I, Hoj TR, **Tass ES**, Berges BK, Robison RA. (2020). A comparison of Chikungunya virus infection, progression, and cytokine profiles in human PMA-differentiated U937 and murine RAW264. 7 monocyte derived macrophages. *PloS One*. 2020 Mar 12;15(3):e0230328.
9. Erekson DM, Clayson R, Park SY, **Tass ES**. (2018). Therapist effects on early change in psychotherapy in a naturalistic setting, *Psychotherapy Research*, DOI: 10.1080/10503307.2018.1556824

10. White PA, Berrett C, **Neeley-Tass ES**, Findley MG. (2018). Modeling efficiency of foreign aid allocation in Malawi. *The American Statistician*, DOI: 10.1080/00031305.2018.1470032
11. Gibson KE, Heaton MJ, **Neeley Tass ES**. (2017). Identifying crash risk factors and high risk locations on an interstate network. *Statistical Modelling*. DOI: 10.1177/1471082X17722072
12. Ahern AA, Radebaugh J, Christiansen EH, Harris RA, **Tass ES**. (2017). Lineations and structural mapping of Io's patarae and mountains: Implications for internal stresses. *Icarus*. 297:14-32.
13. Anderberg E, Cox JC, **Neeley Tass ES**, Erekson DM, Gabrielsen TP, Warren JS, Cline J, Petersen D, South M. (2017). Sticking with it: Psychotherapy Outcomes for adults with autism spectrum disorder in a university counseling center setting. *Autism Research*. 10(12):2048–2055.
14. Lundwall RA, Stephenson KG, **Neeley-Tass ES**, Cox JC, South M, Bigler ED, Anderberg E, Prigge MD, Hansen BD, Lainhart JE, Kellems RO. (2016). Relationship between brain stem volume and aggression in children diagnosed with autism spectrum disorder. *Research in Autism Spectrum Disorders*. 2016 Dec 9.
15. Jensen JL, **Neeley S**, Hatch JB, Piorczynski T. (2015) Learning Scientific Reasoning Skills May Be Key to Retention in Science, Technology, Engineering, and Mathematics. *Journal of College Student Retention: Research, Theory & Practice*. October 28, 2015, 1521025115611616, doi: 10.1177/1521025115611616
16. Ruvolo PP, Qiu Y, Coombes KR, Zhang N, **Neeley ES**, Ruvolo VR, Hail N Jr, Borthakur G, Konopleva M, Andreeff M, Kornblau SM. (2015) Phosphorylation of GSK3 $\alpha/\beta$  correlates with activation of AKT and is prognostic for poor overall survival in acute myeloid leukemia patients. *BBA Clinical*. 4:59-68. doi: 10.1016/j.bbacli.2015.07.001
17. **Neeley ES**, Christensen WF, Sain SR (2013). A Bayesian Spatial Factor Analysis Approach for Combining Climate Model Ensembles. *Environmetrics*. 25(7):483-497.
18. Prigge MB, Lange N, Bigler ED, Merkley TL, **Neeley ES**, Abildskov TJ, Froehlich AL, Nielsen JA, Cooperrider JR, Cariello AN, Ravichandran C, Alexander AL, Lainhart JE. (2013) Corpus Callosum area in children and adults with autism. *Res Autism Spectr Disord*. 7(2):221-234.
19. **Neeley**. (2013). Review of books and teaching materials: Essentials of Probability and Statistics for Engineers and Scientists by Walpole, Myers, Myers, Ye. *The American Statistician*, 67(1):60-63.
20. West J, Hall P, Hanson C, Prier, K, Giraud-Carrier C, **Neeley ES**, Barnes M. (2012) Temporal variability of problem drinking on Twitter. *textitOpen Journal of Preventive Medicine*, 2, 43-48. doi: 10.4236/ojpm.2012.210
21. **Neeley ES**, Kornbalu SM, Baggery KA. (2011). Surface adjustment of reverse phase protein arrays using positive control spots. *Cancer Informatics*. 11:77-86.
22. Heltemes-Harris LM, Willette MJ, Ramsey LB, Qiu YH, **Neeley ES**, Zhang N, Thomas DA, Koeuth T, Baechler EC, Kornblau SM, Farrar MA. (2011). Ebf1 or Pax5 haploinsufficiency synergizes with STAT5 activation to initiate acute lymphoblastic leukemia. *Journal of Experimental Medicine*. 208(6):1135-1149.
23. Tate DF, Khedraki R, **Neeley ES**, Ryser D, Bigler ED. (2011). Cerebral volume loss, cognitive deficit and neuropsychological performance: Comparative measures of brain atrophy II: Traumatic brain injury. *Journal of the International Neuropsychological Society*. 17(2):308-316.
24. Tate DF, **Neeley ES**, Norton MC, Tschanz JT, Miller MJ, Wolfson L, Hulette C, Leslie C, Welsh-Bohmer KA, Plassman B, Bigler ED. (2011). Intracranial volume and dementia: Some evidence in support of the cerebral reserve hypothesis. *Brain Research*. 1385:151-162.

25. Ghia AJ, **Neeley ES**, Gaffney DK. (2010). Postoperative radiotherapy use and patterns of care analysis for node positive or parametria positive cervical cancer. *Gynecologic Oncology*, 119(3):411-416.
26. Brown AP, **Neeley ES**, Werner T, Soisson AP, Burt RW, Gaffney DK. (2010). A population-based study of subsequent primary malignancies after endometrial cancer: Genetic, environmental, and treatment-related associations. *International Journal of Radiation Oncology\*Biophysics*, 78(1):127-135.
27. Trusov A, Bumgarner R, Valijev R, Chestnova R, Talevski S, Vragoterova C, **Neeley ES**. (2009). Comparison of Lumin LED fluorescent attachment, fluorescent microscopy and Ziehl-Neelsen for AFB diagnosis. *The International Journal of Tuberculosis and Lung Disease*, 13(7):836-841.
28. Poland KS, Shardy DL, Azim M, Naeem R, Krance RA, Dreyer ZE, **Neeley ES**, Zhang N, Qiu YH, Kornblau SM, Plon SE. (2009). Overexpression of ZNF342 by juxtaposition with MPO promoter/enhancer in the novel translocation t(17;19)(q23;q13.32) in pediatric acute myeloid leukemia and analysis of ZNF342 expression in leukemia. *Genes, Chromosomes, and Cancer*, 48(6):480-489.
29. **Neeley ES**, Kornblau SM, Coombes KR, Baggery KA. (2009). Variable slope normalization of reverse phase protein arrays. *Bioinformatics*, 25(11):1384-1389.
30. Baggerly KA, Coombes KR, **Neeley ES**. (2008). Run batch effects potentially compromise the usefulness of genomic signatures for ovarian cancer. *Journal of Clinical Oncology*, 26(7):1187-1188.
31. Bigler ED, Mortensen S, **Neeley ES**, Ozonoff S, Krasny L, Johnson M, Lu J, Provencal SL, McMahon W, Lainhart JE. (2007). Superior temporal gyrus, language function, and autism. *Developmental Neuropsychology*, 31(2):217-238.
32. **Neeley ES**, Bigler ED, Krasny L, Ozonoff S, McMahon W, Lainhart JE. (2007). Quantitative temporal lobe difference: autism distinguished from controls using classification and regression tree analysis. *Brain Development*, 29(7):389-399.
33. Bigler ED, **Neeley ES**, Miller MJ, Tate DF, Rice SA, Cleavinger H, Wolfson L, Tschanz J, Welsh-Bohmer K. (2004). Cerebral volume loss, cognitive deficit and neuropsychological performance: comparative measures of brain atrophy: I. Dementia. *Journal of the International Neuropsychological Society*, 10(3):442-452.
34. Bigler ED, Tate DF, **Neeley ES**, Wolfson LJ, Miller MJ, Rice SA, Cleavinger H, Anderson C, Coon H, Ozonoff S, Johnson M, Dinh E, Lu J, Mc Mahon W, Lainhart JE. (2003). Temporal lobe, autism, and macrocephaly. *American Journal of Neuroradiology*, 24(10):2066-2076.

## PRESENTATIONS

1. ASA Utah Chapter, Fall Meeting, 2024  
Panel Member: "AI: What is it? Should I be using it? How can I learn it?"
2. Mini-Symposium, ASA Section on Statistical Computer, 2023  
Title: Data Jamboree in Python
3. Joint Statistical Meetings, Chicago, IL, Augst 2016  
Title: Point Pattern Analysis of Geological Surface Features on Io (Contributed talk)
4. (Student presentation by Alexandra Ahern) Global lineations and regional structural mapping of Io's paterae and mountains: Implications for crustal stresses and feature evolution. Lunar Planet. Sci. XLVII, Abstract 2355.  
Co-Authors: J. Radebaugh, E. H. Christiansen, R. A. Harris, and **E. S. Tass** 2016

5. International Meeting for Autism Research, Salt Lake City, UT, May 2015  
Title: Brain Volumes Associated with High Levels of Aggression in ASD (Poster)
6. Joint Statistical Meetings, Boston, MA, August 2014  
Title: A Bayesian Spatial Factor Analysis Approach for Combining Climate Model Ensembles (Contributed poster)
7. The International Environmetrics Society Conference, Anchorage, AK, June 2013  
Title: A Bayesian Spatial Factor Analysis Approach for Combining Climate Model Ensembles (Contributed poster)
8. Ten Lectures on Statistical Climatology, Seattle, WA, August 2012  
Title: A Gaussian Markov Random Fields Approach to Integrating Multiple Climate Model Output (Contributed poster)
9. Joint Statistical Meetings, San Diego, CA, August 2012  
Title: A Gaussian Markov Random Fields Approach to Integrating Multiple Climate Model Output (Contributed talk)
10. Brigham Young University, Provo, UT, September 2011  
Title: A Gaussian Markov Random Fields Approach to Integrating Multiple Climate Model Output (Contributed talk)
11. Joint Statistical Meetings, Miami, FL, August 2011  
Title: A Gaussian Markov Random Fields Approach to Integrating Multiple Climate Model Output (Contributed talk)
12. Joint Statistical Meetings, Vancouver, BC, Canada, August 2010  
Title: Simulation of Risk of Coddling Moth Establishment from Imported Apples (Contributed talk)
13. Joint Statistical Meetings, Washington DC, August 2009  
Title: A Bayesian approach to the quantification of protein lysate arrays (Contributed talk)
14. Annual Meeting for the Western North American Region (WNAR) of the International Biometrics Society, Portland, OR, July 2009  
Title: Normalization of reverse phase protein arrays (Contributed talk)
15. MD Anderson Cancer Center, Department of Bioinformatics, Houston, TX, June 2008  
Title: Normalization methods for reverse phase protein arrays (Invited talk)
16. Keystone Symposium on Molecular and Cellular Biology, Lake Tahoe, CA, February 2008  
Title: Preprocessing of reverse phase protein arrays to aid in the detection of molecular biomarkers in leukemia (Invited talk)
17. Conference on Interface of Statistics and Computing Science, Philadelphia, PA, May 2007  
Title: Statistical analysis of reverse phase protein arrays (Invited talk)
18. Annual Meeting for the Society of Medical Decision Making, Atlanta, GA Oct 2004  
Title: A decision analysis of prostate cancer with variable levels of disease aggressiveness (Contributed poster)

## **GRANT SUBMISSIONS & EXTERNAL FUNDING**

1. NASA EPSCoR of Utah: "Spatial Factor Analysis Models for Understanding Climate Model Uncertainty." \$23,257. (Not funded, submitted September, 2013).

2. James S. McDonnell Foundation: “Spatial Factor Analysis Models for Combining and Understanding Climate Model Ensemble Output.” \$400,000. (Not funded, submitted March, 2013).

## **TEACHING EXPERIENCE**

### **Brigham Young University, Department of Statistics**

- Undergraduate level
  - STAT 105: Introduction to Statistics (w2003)
  - STAT 121: Principles of Statistics (f2008, f2009, w2015)
  - STAT 151: Introduction to Bayesian Statistics (f2013, f2014, w2015, f2015, w2016)
  - STAT 201: Statistics for Engineers and Scientists (w2012, w2013, w2014, w2016, f2016, w2017, f2017)
  - STAT 340: Probability & Inference II (w2018, w2020, w2021, w2022)
  - STAT 386: Data Science Process (f2022, w2023, f2023, w2024, f2024, w2025)  
*Developed course*
  - STAT 337: Statistical Methods II (w2009, w2010, f2010)
  - STAT 420/421: Data Science Capstone (two semester course) (2018-19, 2019-20, 2020-21, 2021-22)
  - STAT 426: Data Science Methods (f2019, f2020, f2021)  
*Developed course*
  - STAT 486: Machine Learning (w2023, f2023, w2024, f2024, w2025)  
*Developed course*
- Graduate level
  - STAT 641: Probability Theory and Mathematical Statistics I (f2011, f2012, f2013, f2014, f2015, f2016, f2017, f2018)
  - STAT 642: Probability Theory and Mathematical Statistics II (w2012)

## **STUDENT ADVISING & MENTORING**

- Graduate Level: MS Committee Chair
  - 2025-2026 (projected), Ty Hawkes
  - 2024-2025, Sam Spackman
  - 2023-2024, Megan Smith
  - 2022-2023, Max Smith
  - 2022-2023, Bethany Bassett
  - 2020-2021, Brandon Cook
  - 2020-2021, Steven Orgill
  - 2019-2020, Spencer Ebert MS committee member
  - 2017-2018, Kristina Murri
  - 2014-2016, Keaton Baughan
  - 2012-2013, Megan Denison
  - 2011-2013, Jessica Olsen

- Graduate Level Committee Member
  - 2023, Garrett Duncan, MS
  - 2023, Josh Christensen, MS
  - 2022, Camilla Handley, MS
  - 2021, David Teuscher, MS
  - 2016 Kaitlin Gibson, MS
  - 2015-2023, Israel Guerrero (Micro & Molecular Biology), PhD
  - 2016, Jacob Mortenson, MS
  - 2018, Josh Meyers, MS
  - 2015, Phil White, MS
  - 2014, Nick Martineau, MS
  - 2012, Tricia Merkley (Psychology), PhD
  - 2012, Samuel Tolley, MS
  - 2012, Scott Huddleston, MS
  - 2011, Kenneth Fairchild, MS
  - 2011, Michelle Withers, MS
  - 2010, James Hattaway, 2010, MS
  - 2009, Kelly James (Psychology), MS
- Mentoring
  - 2022-2023, Caitlyn Anderson
  - 2022-2023, Sarah Fulmer
  - 2023, Ryan Wolfe
  - 2021, Charity Monroe
  - 2018–2020, Brandon Cook
  - 2018, Sierra Heiner
  - 2017–2018, Clarissa Farmer
  - 2016, Marelise Oberholzer
  - 2016, Matt Zackrison
  - 2016, Ryan Ross
  - 2015–2015, Amber Shephard
  - 2013–2015, Ben Nealy
  - 2013 Keturah Bartlett
  - 2011–2012, Ashley Dye
  - 2011-2012, Samuel Tolley
  - 2009, Sierra Debenham

## **UNIVERSITY SERVICE**

- Present, College Data Science Committee Member
- 2023-2024, College Data Science Committee Chair
- 2017–2022, Curriculum Committee Chair, Department of Statistics
- 2013–2017, Learning Outcomes Assessment Chair
- 2011–2014, Student Research Conference Department Coordinator

- 2012, Department Seminar Coordinator
- 2009–2010, Methods Subcommittee of Teaching and Learning Committee Chair
- 2008–2009, Undergraduate Service Oversight Committee Chair

### **PROFESSIONAL SERVICE**

- 2019–2020, Past President, Utah Chapter American Statistical Association
- 2018–2019, President, Utah Chapter American Statistical Association
- 2017–2018, First Vice President, Utah Chapter American Statistical Association
- 2011–2013 Treasurer, Utah Chapter American Statistical Association

### **PROFESSIONAL MEMBERSHIPS**

- American Statistical Association (ASA)  
ASA Chapters: Utah