WILLEM COLLIER

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EDUCATION

University of Utah *2017-Present*
PhD - Population Health Sciences - Biostatistics Emphasis (In Progress, 3.99 GPA)
University of Utah *2011-2017*
Honors BS - Economics (Cum Laude, 3.86 GPA)
BS - Mathematics with Statistics Emphasis

RESEARCH INTERESTS

Bayesian statistics and hierarchical modeling, meta-analysis and meta-regression, evaluation of surrogate endpoints, novel clinical trial design, Bayesian adaptive clinical trial design.

RESEARCH EXPERIENCE

Graduate Research Assistant - Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI), Sponsored by the National Kidney Foundation, University of Utah
2020-Present

- Developed statistical methodology for the evaluation of surrogate endpoints relevant to chronic kidney disease (CKD) as well as novel clinical trial design strategies for CKD.
- Collaborated with statisticians, clinical trial experts, and clinicians on multiple projects related to evaluation of surrogate endpoints in CKD.
- Prepared and submitted manuscripts and presented on methodological and collaborative work to the National Kidney Foundation and the U.S. Food and Drug Administration.

Graduate Research Assistant - Veterans Affairs Administration
2019-2020

- Provided large-scale data management and data consolidation for policy evaluation research using health records in the VA network.

Graduate Research Assistant - Study Design and Biostatistics Center, University of Utah
2018-Present

- Implemented data preparation and statistical analyses, and contributed to manuscript writing for projects with the Department of Pediatrics, Orthopedic Surgery, and Huntsman Cancer Institute.

Graduate Research Assistant - Division of Plastic Surgery, University of Utah School of Medicine
2017-2019

- Designed and implemented analyses for observational studies related to surgical outcomes, health services, and other clinical research relevant to microsurgery.
- Authored several manuscripts accepted by high impact peer-reviewed plastic surgery journals.

FUNDING AND AWARDS

Population Health Sciences Graduate Research Assistantship *2017-Present*
Marriner S. Eccles Graduate Fellowship *2018-2019*
University of Washington Summer Institutes Travel Scholarship *2018*
University of Utah Department of Mathematics Research Scholarship *2017*

University of Utah Undergraduate Research Opportunities Program *2015*
Dan Jones Future Leaders Scholarship *2015*

PRESENTATIONS

Conference and Webinar Talks Given

- Are 30-Day Outcomes Enough? Late Infectious Readmissions following Prosthetic-Based Breast Reconstruction - Mountain West Society of Plastic Surgeons Annual Scientific Meeting (2018)
- Diagnosing compatibility of Individual Trials with Broader Trial Level Analyses Across the Full Set of CKD-EPI CT Trials National Kidney Foundation Scientific Webinar Series (2020)
- Further Developments in the Trial-Level Approach for Evaluation of Surrogate Endpoints in CKD - National Kidney Foundation Scientific Webinar Series (2021)

Conference Talks Contributed To

- Patient-reported opioid use for tissue expander-based breast reconstruction - Mountain West Society of Plastic Surgeons Annual Scientific Meeting (2019)
- Clinician versus patient: Who gets it right when assessing function in palliative care? - American Society of Clinical Oncology Annual Meeting (2018)

TEACHING EXPERIENCE

Undergraduate Teaching Assistant - Department of Mathematics *2015-2017*
Mathematics Tutor - Associated Students of the University of Utah *2015-2017*

ENGAGEMENT

Current Professional Organizations

American Statistical Association
Utah Chapter of the American Statistical Association
International Biometrics Society

Department of Population Health Sciences Committee Memberships

Graduate Student Advisory Committee *2017-present*
Equity, Diversity, and Inclusion Committee *2020-present*
Faculty Retention and Promotion Committee - Student Representative *2020-present*

ARTICLES IN REFEREED JOURNALS

Published

1. Van Boerum MS, Mann SL, Veith JP, **Collier W**, Hosein RC, Manum JS, Agarwal J, Kwok AC. Patient-reported opioid use for tissue expander-based breast reconstruction. J Plast Reconstr Aesthet Surg. 2021 Apr 18:S1748-6815(21)00218-7. doi: 10.1016/j.bjps.2021.03.114. Epub ahead of print. PMID: 34078588.
2. Veith J, **Collier W**, Simpson A, Magno-Padron D, Mast B, Murphy RX Jr, Agarwal J, Kwok A. A Comparison of Common Plastic Surgery Operations Using the NSQIP and TOPS Databases. Plast Reconstr Surg Glob Open. 2020 May 27;8(5):e2841. doi: 10.1097/GOX.0000000000002841. PMID: 33133901; PMCID: PMC7572021.

3. Magno-Padron DA, **Collier W**, Kim J, Agarwal JP, Kwok AC. A Nationwide Analysis of Early and Late Readmissions following Free Tissue Transfer for Breast Reconstruction. J Reconstr Microsurg. 2020 Jul;36(6):450-457. doi: 10.1055/s-0040-1702175. Epub 2020 Mar 15. PMID: 32172527.

4. Sindt JE, Larsen SD, Dalley AP, **Collier WH**, Brogan SE. The Rate of Infectious Complications After Intrathecal Drug Delivery System Implant for Cancer-Related Pain Is Low Despite Frequent Concurrent Anticancer Treatment or Leukopenia. Anesth Analg. 2020 Jul;131(1):280-287. doi: 10.1213/ANE.0000000000004639. PMID: 31990731.

5. Simpson AM, Kwok AC, **Collier WH**, Kim J, Veith J, Agarwal JP. 2011 ACGME Duty Hour Limits had No Association With Breast Reconstruction Complications. J Surg Res. 2020 Mar;247:469-478. doi: 10.1016/j.jss.2019.09.058. Epub 2019 Oct 23. PMID: 31668433.

6. Veith J, **Collier W**, Rockwell WB, Pannucci C. Direct Comparison of Patient-completed and Physician-completed Caprini Scores for Plastic Surgery Patients. Plast Reconstr Surg Glob Open. 2019 Aug 8;7(8):e2363. doi: 10.1097/GOX.0000000000002363. PMID: 31592033; PMCID: PMC6756651.

7. Mordhorst TR, McCormick ZL, Presson AP, **Collier WH**, Spiker WR. Examining the relationship between epidural steroid injections and patient satisfaction. Spine J. 2020 Feb;20(2):207-212. doi: 10.1016/j.spinee.2019.09.024. Epub 2019 Sep 26. PMID: 31563577.

8. **Collier W**, Scheefer Van Boerum M, Kim J, Kwok AC. Are 30-Day Outcomes Enough? Late Infectious Readmissions following Prosthetic-Based Breast Reconstruction. Plast Reconstr Surg. 2019 Sep;144(3):360e-368e. doi: 10.1097/PRS.0000000000005903. PMID: 31461001.

9. Veith JP, **Collier W**, Kim J, Agarwal J, Kwok A. A national analysis of readmissions for wound healing complications following the repair of lower back, hip, and buttock pressure ulcers using the Nationwide Readmissions Database. Am J Surg. 2019 Apr;217(4):658-663. doi: 10.1016/j.amjsurg.2018.12.013. Epub 2018 Dec 11. PMID: 30638726.

Under Review

1. Luo, J., **Collier, W.**, Magno-Padron, D., Tieman, J., Pires, G., Moss, W., Rosales, M., Kim, J., Agarwal, J., Kwok, A. (2021). Characteristics of Non-elderly Adult Healthcare Persistent Super Utilizers in Utah.

2. Corbett, K., Eckerle, M., **Collier, W.**, Presson, A., Kondowe, D., Lufesi, N., Tisungane, M., McCollum, E., Smith, A. G. (2021). Blood Gas Derangement in Severe Pneumonia in Malawian Children.

Manuscripts in Progress

1. **Collier, W.**, Haaland, B., Inker, L., Heerspink, H., Greene, T. (in preparation). Evaluation of Surrogate Endpoints where the Quality of the Surrogate May Vary by Treatment Class or Disease Etiology.

2. **Collier, W.**, Haaland, B., Inker, L., Heerspink, H., Greene, T. (in preparation). The Within-Study Correlation and Surrogate Endpoint Evaluation: How it Influences the Quality of the Surrogate and What Can be Done When it is Missing.

SELECTED COURSEWORK (GRADE)

- Undergraduate Real Analysis 1 (A)
- Undergraduate Real Analysis 2 (A)
- Undergraduate Real Analysis 3 (A-)

- Linear Algebra (A)
- Ordinary and Partial Differential Equations (A)
- Undergraduate Mathematical Statistics 1 (A)
- Undergraduate Mathematical Statistics 2 (A)
- Undergraduate Probability Theory (A)
- Stochastic Processes (A)
- Linear Models (A)
- Nonlinear Models (A)
- Graduate Mathematical Statistics (A)
- Categorical Data Analysis (A)
- Survival Modeling (A)
- Longitudinal Data Analysis (A)
- Multilevel Modeling (A)
- Machine Learning (A-)
- Advanced Epidemiology (A)

COMPUTER LANGUAGES AND COMPETENCIES

R (proficient)
SAS, STATA, Python (experienced)
Extensive experience with the University of Utah's high performance computing cluster