

Emily Goren, PhD

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Education

PhD, Statistics 12/2019

Iowa State University

- Advisors: Peng Liu, PhD and Chong Wang, PhD
- Dissertation title: Statistical methods for ChIP-seq and microbiome studies using next-generation DNA sequencing data

MS, Biostatistics (Mathematics minor) 05/2014

University of Minnesota – Twin Cities

BS, Biology & Philosophy double major (Chemistry minor) 08/2009

University of Minnesota – Twin Cities

Professional Positions

Cancer Research and Biostatistics, Seattle, WA

Senior Biostatistician 10/2022 – present

Seagen, Bothell, WA

Senior Biostatistician II 04/2021 – 09/2022

Microsoft, Redmond, WA

Data and Applied Scientist II 04/2020 – 04/2021

Institute for Health Metrics and Evaluation, Seattle, WA

Statistical Modeler 05/2019 – 04/2020

Iowa State University, Ames, IA

Research Assistant, Department of Statistics 05/2015 – 04/2019

Teaching Assistant, Department of Statistics 08/2014 – 12/2017

Merck, North Wales, PA

Biostatistics and Research Decision Sciences Intern 05/2017 – 08/2017

University of Minnesota, Minneapolis, MN

Teaching Assistant, Division of Biostatistics 05/2013 – 08/2014

Assistant Scientist, Department of Pediatrics 10/2010 – 08/2012

Junior Scientist, Department of Pediatrics 08/2009 – 05/2010

Student Lab Assistant, Department of Pediatrics 11/2006 – 08/2009

Minnesota Department of Health, St. Paul, MN

Student Worker 01/2013 – 07/2014

Portland VA Medical Center, Portland, OR

Research Assistant 06/2010 – 10/2010

Awards

Impact Award <i>Biometrics, Seagen</i>	2021
Recognized for teamwork and mutual respect.	
Vince Spósito Statistical Computing Award <i>Department of Statistics, Iowa State University</i>	2019
Recognizes outstanding potential in statistical computing in a statistics graduate student.	
Holly and Beth Fryer Award <i>Department of Statistics, Iowa State University</i>	2016
Awarded annually to honor a top second-year PhD student in statistics.	
Kempthorne Award <i>Department of Statistics, Iowa State University</i>	2015
Awarded to a top student in linear models.	
Alumni Fellowship <i>Department of Statistics, Iowa State University</i>	2014 – 2015

Publications

1. Chai, Y. N., Qi, Y., **Goren, E.**, Chiniquy, D., Shefflin, A. M., Tringe, S. G., Prenni, J. E., Liu, P., & Schachtman, D. P. (2024). Root-associated bacterial communities and root metabolite composition are linked to nitrogen use efficiency in sorghum. *mSystems*, 9(1), e01190–23.
2. Ruffini, E., Huang, J., Cilento, V., **Goren, E.**, Detterbeck, F., Ahmad, U., Appel, S., Bille, A., Boubia, S., Brambilla, C., Cangir, A. K., Falkson, C., Fang, W., Filosso, P. L., Giaccone, G., Girard, N., Guerrero, F., Infante, M., Kim, D. K., Lucchi, M., Marino, M., Marom, E. M., Nicholson, A. G., Okumura, M., Rami-Porta, R., Rimner, A., Simone, I., Charles B., & Asamura, H. (2023). The International Association for the Study of Lung Cancer Thymic Epithelial Tumors Staging Project: Proposal for a stage classification for the forthcoming (ninth) edition of the TNM classification of malignant tumors. *Journal of Thoracic Oncology*, 18(12).
3. Okumura, M., Marino, M., Cilento, V., **Goren, E.**, Ruffini, E., Dibaba, D., Ahmad, U., Appel, S., Bille, A., Boubia, S., Brambilla, C., Cangir, A. K., Detterbeck, F., Falkson, C., Fang, W., Filosso, P. L., Giaccone, G., Girard, N., Guerrero, F., Huang, J., Infante, M., Kim, D. K., Lucchi, M., Marom, E. M., Nicholson, A. G., Rami-Porta, R., Rimner, A., Simone, I., Charles B., & Asamura, H. (2023). The International Association for the Study of Lung Cancer Thymic Epithelial Tumor Staging Project: Proposal for the T component for the forthcoming (ninth) edition of the TNM classification of malignant tumors. *Journal of Thoracic Oncology*, 18(12).
4. Fang, W., Girard, N., Cilento, V., **Goren, E.**, Dibaba, D., Ruffini, E., Ahmad, U., Appel, S., Bille, A., Boubia, S., Brambilla, C., Cangir, A. K., Detterbeck, F., Falkson, C., Filosso, P. L., Giaccone, G., Guerrero, F., Huang, J., Infante, M., Kim, D. K., Lucchi, M., Marino, M., Marom, E. M., Nicholson, A. G., Okumura, M., Rami-Porta, R., Rimner, A., Simone, I., Charles B., & Asamura, H. (2024). The International Association for the Study of Lung Cancer Thymic Epithelial Tumors Staging Project: Proposals for the N and the M components for the forthcoming (ninth) edition of the TNM classification of malignant tumors. *Journal of Thoracic Oncology*, 19(1).

5. Marom, E. M., Fang, W., Ruffini, E., Detterbeck, F., Ahmad, U., Appel, S., Bille, A., Boubia, S., Brambilla, C., Cilento, V., Cangir, A. K., Falkson, C., Filosso, P. L., Giaccone, G., Girard, N., **Goren, E.**, Guerrero, F., Huang, J., Infante, M., Kim, D.-K., Lucchi, M., Marino, M., Nicholson, A. G., Okumura, M., Rami-Porta, R., Rimmer, A., Simone, I., Charles B., & Asamura, H. (2023). The International Association for the Study of Lung Cancer Thymic Epithelial Tumor Staging Project: A re-assessment of the International Thymic Malignancy Interest Group/International Association for the Study of Lung Cancer lymph node map for thymic epithelial tumors for the forthcoming ninth edition of the TNM classification of malignant tumors. *Journal of Thoracic Oncology*, (12), 1672–1688.
6. Rimmer, A., Ruffini, E., Cilento, V., **Goren, E.**, Ahmad, U., Appel, S., Bille, A., Boubia, S., Brambilla, C., Cangir, A. K., Detterbeck, F., Falkson, C., Fang, W., Filosso, P. L., Giaccone, G., Girard, N., Guerrero, F., Huang, J., Infante, M., Kim, D. K., Lucchi, M., Marino, M., Marom, E. M., Nicholson, A. G., Okumura, M., Rami-Porta, R., Simone, I., Charles B., & Asamura, H. (2023). The International Association for the Study of Lung Cancer Thymic Epithelial Tumors Staging Project: An overview of the central database informing revision of the forthcoming (ninth) edition of the TNM classification of malignant tumors. *Journal of Thoracic Oncology*, 18(10), 1386–1398.
7. **Goren, E.**, Hoering, A., & Nichol, G. (2023). Withdrawal of life sustaining treatment after resuscitation from cardiac arrest: Quo vadis? *Resuscitation*, 193, 109988.
8. **Goren, E.**, Hoering, A., & Nichol, G. (2023). Primary and secondary analyses of trials of extracorporeal membrane oxygenation in refractory cardiac arrest: A silk purse or a sow's ear? *Resuscitation*, 194, 110078.
9. **Goren, E.**, & Maitra, R. (2022). Fast model-based clustering of partial records. *Stat*, 11(1), e416.
10. Stefanski, H. E., Xing, Y., Nicholls, J., Jonart, L., **Goren, E.**, Taylor, P. A., Mills, A. A., Riddle, M., McGrath, J., Tolar, J., Hollander, G. A., & Blazar, B. R. (2022). P63 targeted deletion under the FOXN1 promoter disrupts pre-and post-natal thymus development, function and maintenance as well as induces severe hair loss. *PLOS ONE*, 17(1), 1–13.
11. **Goren, E.**, Wang, C., He, Z., Sheflin, A. M., Chiniquy, D., Prenni, J. E., Tringe, S., Schachtman, D. P., & Liu, P. (2021). Feature selection and causal analysis for microbiome studies in the presence of confounding using standardization. *BMC Bioinformatics*, 22(362).
12. Vollset, S. E., **Goren, E.**, Yuan, C.-W., Cao, J., Smith, A. E., Hsiao, T., Bisignano, C., Azhar, G., Castro, E., Chalek, J., Dolgert, A., Frank, T., Fukutaki, K., Hay, S., Lozano, R., Mokdad, A. H., Nandakumar, V., Pierce, M., Pletcher, M., Robalik, T., Steuben, K., Wunrow, H. Y., Zlavog, B., & Murray, C. J. (2020). Fertility, mortality, migration, and population scenarios for 195 countries and territories from 2017 to 2100: a forecasting analysis for the global burden of disease study. *The Lancet*, 396(10258), 1285–1306.
13. **Goren, E.**, Lin, L.-A., Blaustein, R., & Ball, G. (2020). Bayesian meta-analysis of safety outcomes using blinded clinical trial data. *Therapeutic Innovation & Regulatory Science*, 54, 1557–1565.
14. Sheflin, A. M., Chiniquy, D., Yuan, C., **Goren, E.**, Kumar, I., Braud, M., Brutnell, T., Eveland, A. L., Tringe, S., Liu, P., Kresovich, S., Marsh, E. L., Schachtman, D. P., & Prenni,

- J. E. (2019). Metabolomics of sorghum roots during nitrogen stress reveals compromised metabolic capacity for salicylic acid biosynthesis. *Plant Direct*, 3(3), e00122.
15. **Goren, E.**, Liu, P., Wang, C., & Wang, C. (2018). BinQuasi: a peak detection method for ChIP-sequencing data with biological replicates. *Bioinformatics*, 34(14), 2909–2917.
 16. Stefanski, H. E., Jonart, L., **Goren, E.**, Mulé, J. J., & Blazar, B. R. (2018). A novel approach to improve immune effector responses post transplant by restoration of CCL21 expression. *PLOS ONE*, 13(4), 1–16.
 17. Holmgren, S. C., **Goren, E.**, Wood, B. L., Becker, P. S., & Taylor, J. A. (2012). Immune defects in a mouse model of Fanconi anaemia. *British Journal of Haematology*, 159(2), 246–250.
 18. Kelly, R. M., **Goren, E.**, Taylor, P. A., Mueller, S. N., Stefanski, H. E., Osborn, M. J., Scott, H. S., Komarova, E. A., Gudkov, A. V., Holländer, G. A., & Blazar, B. R. (2010). Short-term inhibition of p53 combined with keratinocyte growth factor improves thymic epithelial cell recovery and enhances T-cell reconstitution after murine bone marrow transplantation. *Blood*, 115(5), 1088–1097.
 19. Vogtenhuber, C., Bucher, C., Highfill, S. L., Koch, L. K., **Goren, E.**, Panoskaltsis-Mortari, A., Taylor, P. A., Farrar, M. A., & Blazar, B. R. (2010). Constitutively active Stat5b in CD4+ T-cells inhibits graft-versus-host disease lethality associated with increased regulatory T-cell potency and decreased T effector cell responses. *Blood*, 116(3), 466–474.
 20. Bucher, C., Koch, L., Vogtenhuber, C., **Goren, E.**, Munger, M., Panoskaltsis-Mortari, A., Sivakumar, P., & Blazar, B. R. (2009). IL-21 blockade reduces graft-versus-host disease mortality by supporting inducible T regulatory cell generation. *Blood*, 114(26), 5375–5384.

Book Chapters

1. Lui, P., **Goren, E.**, Morris, P., Walker, D., & Wang, C. (2021). Statistical methods for feature identification in microbiome studies. In S. Datta, & S. Guha (Eds.) *Statistical Analysis of Microbiome Data*, Frontiers in Probability and the Statistical Sciences. Springer International Publishing.

Open-Source Software

python

1. Microsoft Defender Research Team (2021). *CyberBattleSim*. Created by Seifert, C., Betser, M., Blum, W., Bono, J., Farris, K., **Goren, E.**, Grana, J., Holsheimer, K., Marken, B., Neil, J., Nichols, N., Parikh, J., & Wei, H.
URL github.com/microsoft/cyberbattlesim.

R

1. **Goren, E.** (2021). *MixtClust: Robust Clustering for Complete and Incomplete Data*. R package version 0.1-9.
URL github.com/emilygoren/MixtClust.

2. **Goren, E., & Hughes, J. (2021).** *copCAR: Fitting the copCAR regression model for discrete areal data.* R package version 2.0-4.
URL cran.r-project.org/package=copCAR.
3. **Goren, E., Lund, S., Qu, L., Marschner, I., Gerhard, D., & R Core Team (2018).** *BinQuasi: Analyzing Replicated ChIP Sequencing Data Using Quasi-Likelihood.* R package version 0.1-6.
URL github.com/emilygoren/BinQuasi.

Teaching Experience

Course Instructor at Iowa State University

- **STAT104 Introduction to Statistics** Spring 2015, Fall 2017

Teaching Assistant at Iowa State University

- **STAT301 Intermediate Statistical Concepts & Methods** Fall 2014
- **STAT401 Statistical Methods for Research Workers** Fall 2014
- **STAT402 Statistical Design & Analysis of Experiments** Fall 2015
- **STAT510 Statistical Methods II** Spring 2016

Teaching Assistant at University of Minnesota

- **PUBH6414 Biostatistical Methods I (online)** Summer 2013
- **PUBH6414 Biostatistical Methods I** Fall 2013
- **PUBH6415 Biostatistical Methods II (online)** Summer 2014
- **PUBH6451 Biostatistics II** Spring 2014

Editorial Activities

Ad hoc reviewer

1. Biostatistics
2. BMC Infectious Diseases
3. Computational and Structural Biotechnology Journal
4. Journal of Computational and Graphical Statistics
5. Therapeutic Innovation & Regulatory Science

Professional Memberships and Service

American Statistical Association Member	2012 – present
PHUSE Working Group Member: AE Groupings in Safety	2022 – 2023
Iowa State University Snedecor Sustainability Committee	2014 – 2015
Twin Cities Regional Science Fair Judge	2012 – 2014