# Elizabeth Anne Sigworth **Westerberg**

## 🎓 EDUCATION

**2022 | 2016**

**Vanderbilt University**
Ph.D. Biostatistics (anticipated Nov. 2022)  📍 Nashville, TN, USA

**2016 | 2012**

**Saint Olaf College**
B.A. Mathematics, concentration Statistics  📍 Northfield, MN, USA

## 🖥 EXPERIENCE

**2022 | 2016**

**Biostatistics Ph.D. Candidate**
Dept. Biostatistics, Vanderbilt Univ.  📍 Nashville, TN, USA
· Developed Bayesian meta-analytic method guiding medication switching, focused on chemotherapy
· Extensive experience with survival analysis, particularly time-dependent coefficient effects
· Completed coursework in mathematics, probability theory, computing (R and Python), and statistical modeling
· Served as teaching assistant for Regression Analysis, Survival Analysis, and Advanced Probability courses

**2022 | 2018**

**Medical Economics Analyst**
Wayspring (formerly axialHealthcare)  📍 Nashville, TN, USA
· Performed savings analyses for clients with sensitive data (medical claims and member demographics)
· Collaborated across departments, authored executive reports, and presented in client-facing meetings
· Utilized time-series trend forecasting, risk-adjustment, longitudinal analysis, and propensity-score designs in reporting
· Coded automated in-house implementation of risk adjustment methodology in R and SQL
· Began as intern in June 2018, with responsibilities shifted to part-time analyst level in May 2020

**2022 | 2018**

**Graduate Research Assistant**
Dept. Biomedical Informatics, Vanderbilt Univ.  📍 Nashville, TN, USA
· Focused on oncology data using clinical trial data, electronic health records, and genetic data
· Performed meta- and network analyses in R on clinical trial publishing and co-authorship trends over time
· Collaborated with clinicians for analyses, manuscript publication, and conference presentations
· Dedicated effort towards multisite NIH grant 1U24CA194215

**2021 | 2020**

**Neuroscience Collaborator**
Vanderbilt Brain Institute  📍 Nashville, TN, USA
· Devised statistical modeling strategies for cognitive neurophysiological datasets via Bayesian methods
· Coauthored high impact manuscript in multidisciplinary journal (see PNAS 2021 below)
· Provided ongoing statistical consultation and education to groups at the Vanderbilt Brain Institute

## PERSONAL INFO

✉ elizabeth@westerberg.science
🌐 elizabethwesterberg.science
🆔 orcid.org/0000-0002-0865-0265
🧍 Family status: married (née Sigworth)
🌍 Nationality: American
🎂 Date of birth: 19-09-1993

## SKILLS

**Programming**

R (dplyr, ggplot2, RStan, JAGS, etc.), Python (numpy, pandas, scikit-learn), SQL, Stata, Beamer, SLURM, bash, Markdown, LaTeX

**Statistical Analysis**

Bayesian analyses, descriptive statistics, EHRs, hypothesis testing, longitudinal analyses, meta-analyses, network analyses, regression modeling strategies, survival analyses, simulation studies

**Data Tools**

RMarkdown (reproducible reporting), Tableau (interactive dashboards), Jupyter, Excel

**Development Tools**

GitHub, RStudio Server Pro, JIRA, Confluence

**Data Platforms**

Exasol, Google BigQuery, PostgreSQL, Redshift

*Last updated: 28 September 2022*

**Graduate Student Association Officer**
Dept. Biostatistics, Vanderbilt Univ.                                     📍 Nashville, TN, USA

2021
|
2016

・Organized trainee events, invited guest speakers, and liaised with faculty and staff on behalf of students
・Acted as Secretary from August 2018 - May 2019 then Vice President August 2019 - May 2021

## 📄 PUBLICATIONS

**2022** — **Building a dose toxo-equivalence model from a Bayesian meta-analysis of published clinical trials**
Annals of Applied Statistics (revision under review)
**Sigworth, E.A.**, Rubinstein, S.M., Warner, J.L., Chen, Y., and Chen, Q.

**2022** — **Assessment of a naloxone coprescribing alert for patients at risk of opioid overdose: a quality improvement project.** ↗
Anesthesia & Analgesia (2022): 10-1213.
Nelson, S.D., McCoy, A.B., Rector, H., Teare, A.J., Barrett, T.W., **Sigworth, E.A.**, et al.

**2022** — **Development of a bayesian toxo-equivalence model between docetaxel and paclitaxel.** ↗
iScience 25, no. 4 (2022): 104045.
**Sigworth, E.A.**, Rubinstein, S.M., Chaugai, S., Rivera, D.R., Walker, P.D., Chen, Q., and Warner, J.L.

**2021** — **Pop-out search instigates beta-gated feature selectivity enhancement across V4 layers.** ↗
Proceedings of the National Academy of Sciences 118, no. 50 (2021).
Westerberg, J.A., **Sigworth, E.A.**, Schall, J.D., and Maier, A.

**2021** — **Imprecision and preferences in interpretation of verbal probabilities in health: a systematic review.** ↗
Journal of General Internal Medicine (2021): 1-10.
Andreadis, K., Chan, E., Park, M., Benda, N.C., Sharma, M.M., Demetres, M., Delgado, D., **Sigworth, E.A.**, et al.

**2020** — **Seven decades of chemotherapy clinical trials: a pan-cancer social network analysis.** ↗
Scientific reports 10, no. 1 (2020): 1-13.
Li, X., **Sigworth, E.A.**, Wu, A.H., Behrens, J., Etemad, S.A., et al.

**2019** — **Indication of measures of uncertainty for statistical significance in abstracts of published oncology trials: A systematic review and meta-analysis.** ↗
JAMA Network Open 2, no. 12 (2019): e1917530-e1917530.
Rubinstein, S.M., **Sigworth, E.A.**, Etemad, S., Martin, R.L., Chen, Q. and Warner, J.L.

## 💬 INVITED TALKS AND SELECTED ABSTRACTS

**2022** — **Building a dose toxo-equivalence model from a Bayesian meta-analysis of published clinical trials**
2022 Eastern North American Region - invited talk
**Sigworth, E.A.**, Rubinstein, S.M., Warner, J.L., Chen, Y., and Chen, Q.

**2019** — **Real world investigation of hypermagnesemia in the setting of platinum exposure.**
2019 ITCR Annual Meeting - poster
**Sigworth, E.A.**, Niu, X., Chen, Q., Warner, J.L., Wuichet, K., Chaugai, S., and Dai, Q.

**2018** — **A simultaneous PK/PD model for muscle relaxant using muscle twitch counts.**
2018 Women in Statistics and Data Science - invited talk
**Sigworth, E.A.** and Shotwell, M.