

Benjamin S. Baumer

PROFESSOR OF STATISTICAL AND DATA SCIENCES

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1. Degrees

PStat Statistics	<i>American Statistical Association (ASA)</i> 2014
Ph.D. Mathematics, Topic: <i>theoretical computer science, analysis of algorithms</i>	<i>City University of New York</i> 2012
M.Phil., M.A. Mathematics	<i>City University of New York</i> 2011
M.A. Mathematics (Applied)	<i>University of California, San Diego</i> 2003
B.A. Economics	<i>Wesleyan University</i> 2000

2. Awards and honors

Fellow Won. The designation of ASA Fellow has been a significant honor for nearly 100 years. Under ASA bylaws, the Committee on Fellows can elect up to one-third of one percent of the total association membership as fellows each year. The Fellow designation is one of the highest honors the ASA bestows.	<i>American Statistical Association</i> 2025
Jackie Dietz Best Paper Award Won. For <i>Integrating Data Science Ethics Into an Undergraduate Major: A Case Study</i> .	<i>Journal of Statistics and Data Science Education</i> 2022
Waller Education Award Won. Honors individuals for innovation in the instruction of elementary statistics.	<i>ASA Section on Statistics and Data Science Education</i> 2019
Significant Contributor Award Won. Honors a significant contributor to statistics in sports who is invited to speak at the section's annual luncheon at the JSM.	<i>ASA Section on Statistics and Sports</i> 2019
Outstanding Undergraduate Teaching Award Won. Recognizes exceptional efforts in teaching statistics at the undergraduate level.	<i>ASA Boston Chapter</i> 2019
SPAIG Award Won, on behalf of the Five Colleges and MassMutual. Recognizes outstanding statistical partnerships between academe, industry, and government organizations, as well as to promote new partnerships among these organizations.	<i>American Statistical Association</i> 2019
Contemporary Baseball Analysis Award Won, for <i>Open WAR: An open source system for evaluating overall player performance in Major League Baseball</i> . Awarded annually to outstanding research projects that have 'significantly expanded our knowledge or understanding of baseball'.	<i>Society for American Baseball Research</i> 2016
EPPY Award Nominated, for <i>The Great Analytics Rankings</i> article for ESPN.com. Best Innovation Project with 1 million unique monthly visitors and over.	<i>Editor & Publisher</i> 2015

3. Employment history

Professor (with tenure)	<i>Smith College</i>
<ul style="list-style-type: none"> • Professor (with tenure), Statistical & Data Sciences (2023-) • Associate Professor (with tenure), Statistical & Data Sciences (2020-2023) • Assistant Professor, Statistical & Data Sciences (2015-2020) • Visiting Assistant Professor, Statistical & Data Sciences (2014-2015) • Visiting Assistant Professor, Mathematics & Statistics (2012-2014) 	2012-
Visiting Professor	<i>Universidad EAFIT</i>
Computación y Analítica	2023-2024
Statistical Analyst	<i>New York Mets</i>
Baseball Operations	2004-2012
Adjunct Lecturer	<i>Queens College</i>
Mathematics	2010-2010
Adjunct Lecturer	<i>Hunter College</i>
Statistics	2008-2009

4. Grants received

Kahn Institute Fellowship	<i>Smith College</i>
Possible Futures: AI and Human Experience	2025
Susan B. Lindenauer '61 Fellowship	<i>Smith College</i>
Support development of a new one-credit course, SDS 100: Reproducible Scientific Computing with Data, shaping students' ability to engage in data science work using modern workflows, open-source tools, and ethical practices.	2022-2023
The Data Science WAV	<i>National Science Foundation</i>
Serving as PI on three-year, nine-institution, \$1.2 million workforce development project for undergraduate data science that focuses on experiential learning with local community organizations. Funded under the Harnessing the Data Revolution, Data Science Corps program.	2019-2023
Ad-Hoc Faculty Working Group on Learning & Technology	<i>Smith College</i>
Studied the effect of integration of new technologies upon student learning and engagement	2019
Design Thinking Initiative Curriculum Enhancement Grant	<i>Smith College</i>
Integrated faculty from film and media studies and English language and literature into data journalism and ethics liberal arts modules in intro data science course	2017-2018
Jean M. Picker Fellowship	<i>Smith College</i>
One-course release to pursue research in statistical and data sciences	2016-2017
Liberal Arts Modules to Promote Diversity and Achievement in STEM	<i>PKAL/TIDES</i>
Converted data science into an intro course, integrated liberal arts modules, and incorporated inclusive teaching methods	2014-2017
Faculty Fellow	<i>Project Teaching Integrity in Empirical Research</i>
Developed and promoted computational reproducible research methods across disciplines	2015-2016
Maven and Contributor	<i>Project MOSAIC</i>
Contributed to open-source codebase and promoted use of NSF-funded project to streamline mathematical and statistical computing	2013-2015
Tesla K40 GPU Hardware Grant	<i>NVIDIA Corp</i>
Received \$5500 GPU card for research and education on computing with big data	2015
Mary P. Dolciani Fellow	<i>Project NExT</i>

5. Publications

Note: student co-authors in **bold**. Please see my Google Scholar profile (<https://scholar.google.com/citations?user=HWo0CDEAAAAJ>) for citations.

5.a. Books

1. Albert, J., Baumer, B. S., & Marchi, M. (2024). *Analyzing baseball data with R* (3rd ed., p. 418). Boca Raton, FL: Chapman & Hall/CRC Press. <https://www.routledge.com/Analyzing-Baseball-Data-with-R/Albert-Baumer-Marchi/p/book/9781032668093>
2. Baumer, B. S., Kaplan, D. T., & Horton, N. J. (2021). *Modern Data Science with R* (2nd ed., pp. 1–673). Boca Raton, FL: Chapman; Hall/CRC Press. <https://www.routledge.com/Modern-Data-Science-with-R/Baumer-Kaplan-Horton/p/book/9780367191498>
3. Albert, J., Marchi, M., & Baumer, B. S. (2018). *Analyzing baseball data with R* (2nd ed., p. 342). Boca Raton, FL: Chapman & Hall/CRC Press. <https://www.crcpress.com/Analyzing-Baseball-Data-with-R-Second-Edition/Marchi-Albert-Baumer/p/book/9780815353515>
4. Baumer, B. S., Kaplan, D. T., & Horton, N. J. (2017). *Modern Data Science with R* (p. 551). Boca Raton, FL: Chapman; Hall/CRC Press. <https://www.crcpress.com/Modern-Data-Science-with-R/Baumer-Kaplan-Horton/9781498724487>
5. Baumer, B., & Zimbalist, A. (2014). *The Sabermetric Revolution: Assessing the Growth of Analytics in Baseball* (p. 240). University of Pennsylvania Press. <http://www.upenn.edu/pennpress/book/15168.html>
6. Baumer, B. S. (2012). *Sensor strip cover: Maximizing network lifetime on an interval* (p. 110) [PhD thesis, City University of New York]. <http://proquest.umi.com/pqdweb?did=2677679131&sid=1&Fmt=2&clientId=29054&RQT=309&VName=PQD>

Note: In computer science research, publications tend to come in pairs: a conference paper that represents the first public appearance of a finding; and (often) a corresponding journal publication that follows. Conference papers are considered more prestigious, since the peer-review process is more competitive. Journal papers are required to contain 25-40% more material than the corresponding conference paper, and are thus considered separate publications. Order of authors is usually alphabetical. In statistics, order of authors is usually based on strength of contribution.

5.b. Articles (peer-reviewed journals)

1. Baumer, B. S., & Sierra, B. M. S. (2026). Tidychangepoint: A unified framework for analyzing changepoint detection in univariate time series. *Computational Statistics*, 41(3). <https://doi.org/10.1007/s00180-026-01726-6>
2. Jones, D. W., Simons, J. P., Markert, E., MacGibbon, C., Huang, J., Lin, N., Susnea, S., Baumer, B. S., Scali, S., Stone, D. H., Schermerhorn, M., & Schanzer, A. (2025). Earned outcome metrics outperform recommended open abdominal aortic aneurysm repair volume guidelines in discriminating perioperative mortality among centers. *Journal of Vascular Surgery*. <https://doi.org/10.1016/j.jvs.2025.07.047>
3. Fernández, D., Estopañan, M., Baumer, B., & Casals, M. (2025). Reporting of regression models for ordinal responses in sports sciences field: A systematic review. *Wiley Interdisciplinary Reviews: Computational Statistics*, 17(1), e70012. <https://doi.org/10.1002/wics.70012>
4. Saidi, R., Burn, H., Baumer, B., Black, J., Deb, D., & Drozda, Z. (2024). Building ramps & pathways to data science in k-12, minority serving institutions, and two-year colleges. *Scatterplot*, 1(1), 1–9. <https://doi.org/10.1080/29932955.2024.2395091>
5. Baumer, B. S., Matthews, G. J., & Nguyen, Q. (2023). Big ideas in sports analytics and statistical tools for their investigation. *Wiley Interdisciplinary Reviews: Computational Statistics*, 15(6), e1612. <https://doi.org/10.1002/wics.1612>
6. Baumer, B. S. (2023). More math for data scientists, not less. *Chance*, 36(3), 9–11. <https://doi.org/10.1080/09332480.2023.2264734>
7. Legacy, C., Zieffler, A., Baumer, B. S., Barr, V., & Horton, N. J. (2023). Facilitating team-based data science: Lessons learned from the DSC-WAV project. *Foundations of Data Science*, 5(2), 244–265. <https://doi.org/10.3934/fods.2022003>
8. Baumer, B. S., & Horton, N. J. (2023). Data science transfer pathways from associate’s to bachelor’s programs. *Harvard Data Science Review*, 5(1). <https://doi.org/10.1162/99608f92.e2720e81>

9. Çetinkaya-Rundel, M., Hardin, J. S., Baumer, B. S., McNamara, A. A., Horton, N. J., & Rundel, C. W. (2022). An educator's perspective of the tidyverse. *Technology Innovations in Statistics Education*, 14(1). <https://doi.org/10.5070/T514154352>
10. Baumer, B. S., Garcia, R. L., Kim, A. Y., Kinnaird, K. M., & Ott, M. Q. (2022). Integrating data science ethics into an undergraduate major: A case study. *Journal of Statistics and Data Science Education*, 30(1), 15–28. <https://doi.org/10.1080/26939169.2022.2038041>
11. Couch, S. P., Bray, A. P., Ismay, C., Chasnovski, E., Baumer, B. S., & Çetinkaya-Rundel, M. (2021). Infer: An R package for tidyverse-friendly statistical inference. *Journal of Open Source Software*, 6(65), 3661. <https://doi.org/10.21105/joss.03661>
12. Bertin, A. M., & Baumer, B. S. (2020). Creating optimal conditions for reproducible data analysis in R with “fertile.” *Stat*, 10(1), e332. <https://doi.org/10.1002/sta4.332>
13. Baumer, B. S., Bray, A. S., Çetinkaya-Rundel, M., & Hardin, J. (2020). Teaching introductory statistics with DataCamp. *Journal of Statistics Education*, 28(1). <https://doi.org/10.1080/10691898.2020.1730734>
14. Schwartz, M. S., Schnabl, J., Litz, M. P. H., Baumer, B. S., & Barresi, M. (2020). -SCOPE: A new method to quantify 3D biological structures and identify differences in zebrafish forebrain development. *Developmental Biology*, 460(2), 115–138. <https://doi.org/10.1016/j.ydbio.2019.11.014>
15. Baumer, B. S. (2019). A grammar for reproducible and painless extract-transform-load operations on medium data. *Journal of Computational and Statistical Graphics*, 28(2), 256–264. <https://doi.org/10.1080/10618600.2018.1512867>
16. Baumer, B. S., & Zimbalist, A. S. (2019). The impact of college athletic success on donations and applicant quality. *International Journal of Financial Studies*, 7(2), 19. <https://doi.org/10.3390/ijfs7020019>
17. Lopez, M., Matthews, G. J., & Baumer, B. S. (2018). How often does the best team win? A unified approach to understanding randomness in North American sport. *Annals of Applied Statistics*, 12(4), 2483–2516. <https://doi.org/10.1214/18-AOAS1165>
18. Baumer, B. S. (2018). Lessons from between the white lines for isolated data scientists. *The American Statistician*, 72(1), 66–71. <https://doi.org/10.1080/00031305.2017.1375985>
19. Papaiakevou, M., Pilotte, N., Baumer, B. S., Grant, J., Asbjornsdottir, K., Schaer, F., Hu, Y., Aroian, R., Walson, J., & Williams, S. A. (2018). A comparative analysis of preservation techniques for the optimal molecular detection of hookworm DNA in human fecal specimens. *PLOS Neglected Tropical Diseases*, 12(1), 1–17. <https://doi.org/10.1371/journal.pntd.0006130>
20. Bar-Noy, A., Baumer, B., & Rawitz, D. (2016). Set it and forget it: Tighter approximation bounds for ROUNDROBIN in a restricted lifetime model. *Algorithmica*, 76(2), 1–19. <https://doi.org/10.1007/s00453-016-0198-8>
21. Baumer, B. S., Wei, Y., & Bloom, G. S. (2016). The smallest non-autograph. *Discussiones Mathematicae Graph Theory*, 36(3), 577–602. <https://doi.org/10.7151/dmgt.1881>
22. Bar-Noy, A., Baumer, B., & Rawitz, D. (2016). Changing of the guards: Strip cover with duty cycling. *Theoretical Computer Science*, 610, 135–148. <https://doi.org/10.1016/j.tcs.2014.09.002>
23. Baumer, B., & Udwin, D. (2015). R Markdown. *Wiley Interdisciplinary Reviews: Computational Statistics*, 7(3), 167–177. <https://doi.org/10.1002/wics.1348>
24. Baumer, B. (2015). A data science course for undergraduates: Thinking with data. *The American Statistician*, 69(4), 334–342. <https://doi.org/10.1080/00031305.2015.1081105>
25. Hardin, J., Hoerl, R., Horton, N. J., Nolan, D., Baumer, B., Hall-Holt, O., Murrell, P., Peng, R., Roback, P., Temple Lang, D., et al. (2015). Data science in statistics curricula: Preparing students to “think with data.” *The American Statistician*, 69(4), 343–353. <https://doi.org/10.1080/00031305.2015.1077729>
26. Baumer, B. S., Jensen, S. T., & Matthews, G. J. (2015). OpenWAR: An open source system for evaluating overall player performance in Major League Baseball. *Journal of Quantitative Analysis in Sports*, 11(2), 69–84. <https://doi.org/10.1515/jqas-2014-0098>
27. Bar-Noy, A., & Baumer, B. (2015). Average case network lifetime on an interval with adjustable sensing ranges. *Algorithmica*, 72(1), 148–166. <https://doi.org/10.1007/s00453-013-9853-5>
28. Horton, N. J., Baumer, B. S., & Wickham, H. (2015). Setting the stage for data science: Integration of data management skills in introductory and second courses in statistics. *CHANCE*, 28(3), 40–50. <http://chance.amstat.org/2015/04/setting-the-stage/>

29. Baumer, B., Çetinkaya-Rundel, M., Bray, A., Loi, L., & Horton, N. J. (2014). R Markdown: Integrating a reproducible analysis tool into introductory statistics. *Technology Innovations in Statistics Education*, 8(1). <https://doi.org/10.5070/T581020118>
30. Baumer, B. S., & Matthews, G. J. (2014). There is no avoiding WAR. *CHANCE*, 27(3), 41–44. <http://chance.amstat.org/2014/09/avoiding-war/>
31. Baumer, B., & Zimbalist, A. (2014). Quantifying Market Inefficiencies in the Baseball Players' Market. *Eastern Economic Journal*, 40, 488–498. <https://doi.org/doi:10.1057/ej.2013.43>
32. Baumer, B. S., Piette, J., & Null, B. (2012). Parsing the relationship between baserunning and batting abilities within lineups. *Journal of Quantitative Analysis in Sports*, 8(2), 1–17. <https://doi.org/10.1515/1559-0410.1429>
33. Baumer, B. S. (2009). Using Simulation to Estimate the Impact of Baserunning Ability in Baseball. *Journal of Quantitative Analysis in Sports*, 5(2), 1–16. <https://doi.org/10.2202/1559-0410.1174>
34. Baumer, B. S. (2008). Why On-Base Percentage is a Better Indicator of Future Performance than Batting Average: An Algebraic Proof. *Journal of Quantitative Analysis in Sports*, 4(2), 1–11. <https://doi.org/10.2202/1559-0410.1101>

5.c. Articles (peer-reviewed conferences)

1. Baumer, B. S. (2017). Lessons from between the white lines for isolated data scientists. *PeerJ Preprints*, 5, e3160v2. <https://doi.org/10.7287/peerj.preprints.3160v2>
2. Baumer, B., Rabanca, G., Bar-Noy, A., & Basu, P. (2015). *Star search: Effective subgroups in collaborative social networks* (pp. 729–736). ACM; ACM. <https://doi.org/10.1145/2808797.2810062>
3. Bogdanov, P., Baumer, B., Basu, P., Bar-Noy, A., & Singh, A. K. (2013). *As strong as the weakest link: Mining diverse cliques in weighted graphs* (H. Blockeel, K. Kersting, S. Nijssen, & F. Zelezný, Eds.; Vol. 8188, pp. 525–540). Springer. https://doi.org/10.1007/978-3-642-40988-2_34
4. Bar-Noy, A., Baumer, B., & Rawitz, D. (2013). *Brief announcement: Set it and forget it - approximating the set once strip cover problem* (G. E. Blelloch & B. Vöcking, Eds.; pp. 105–107). ACM. <https://doi.org/10.1145/2486159.2486162>
5. Bar-Noy, A., Baumer, B., & Rawitz, D. (2012). *Changing of the guards: Strip cover with duty cycling* (G. Even & M. M. Halldórsson, Eds.; Vol. 7355, pp. 36–47). Springer. https://doi.org/10.1007/978-3-642-31104-8_4
6. Bar-Noy, A., & Baumer, B. (2011). Maximizing network lifetime on the line with adjustable sensing ranges. In T. Erlebach, S. E. Nikolettseas, & P. Orponen (Eds.), *ALGOSENSORS* (Vol. 7111, pp. 28–41). Springer. https://doi.org/https://doi.org/10.1007/978-3-642-28209-6_4
7. Baumer, B., Basu, P., & Bar-Noy, A. (2011). Modeling and analysis of composite network embeddings. In A. Helmy, B. Landfeldt, & L. Bononi (Eds.), *MSWiM* (pp. 341–350). ACM. <https://doi.org/10.1145/2068897.2068956>

5.d. Articles (not peer-reviewed)

1. Elam, A. B., Baumer, B. S., Schott, T., Samsami, M., Dwivedi, A. K., Baldegger, R. J., Guerrero, M., Boutaleb, F., & Hughes, K. D. (2022). *Global entrepreneurship monitor 2021/22 women's entrepreneurship report: From crisis to opportunity* (pp. 1–184). Global Entrepreneurship Monitor; Global Entrepreneurship Research Association: London. <https://www.gemconsortium.org/report/gem-202122-womens-entrepreneurship-report-from-crisis-to-opportunity>
2. Elam, A. B., Brush, C. G., Greene, P. G., Baumer, B. S., & Heavlow, R. (2021). *Global entrepreneurship monitor women's entrepreneurship 2020/2021: Thriving through crisis* (pp. 1–146). Global Entrepreneurship Monitor; Global Entrepreneurship Research Association: London. <https://www.gemconsortium.org/file/open?fileId=50841>
3. Elam, A. B., Brush, C. G., Greene, P. G., Baumer, B. S., Dean, M., & Heavlow, R. (2019). *Global entrepreneurship monitor 2018/2019 women's entrepreneurship report* (pp. 1–108). Global Entrepreneurship Monitor; Global Entrepreneurship Research Association: London. <https://www.gemconsortium.org/file/open?fileId=50405>
4. De Veaux, R. D., Agarwal, M., Averett, M., Baumer, B. S., Bray, A., Bressoud, T. C., Bryant, L., Cheng, L. Z., Francis, A., Gould, R., Kim, A. Y., Kretchmar, M., Lu, Q., Moskol, A., Nolan, D., Pelayo, R., Raleigh, S., Sethi, R. J., Sondjaja, M., ... Ye, P. (2017). Curriculum guidelines for undergraduate programs in data science. *Annual Review of Statistics and Its Application*, 4(1), 1–16. <https://doi.org/10.1146/annurev-statistics-060116-053930>
5. Kelley, D. J., Baumer, B. S., Brush, C. G., Cole, M., Dean, M., Madavi, M., Majbouri, M., Greene, P., & Heavlow, R. (2017). *Global entrepreneurship monitor 2016/2017 women's entrepreneurship report* (pp. 1–93). Global Entrepreneurship Monitor; Global Entrepreneurship Research Association.
6. Stoudt, S., Santana, L., & Baumer, B. (2014, August). In pursuit of perfection: An ensemble method for predicting march madness match-up probabilities. *JSM Proceedings*.

- Baumer, B. S., & Terlecky, P. (2010, August). Improved Estimates for the Impact of Baserunning in Baseball. *JSM Proceedings*.
- Baumer, B. S., & Draghicescu, D. (2010, August). Mapping Batter Ability in Baseball: A Study in Spatial Modeling. *JSM Proceedings*.
- Baumer, B. S., Galdi, A., & Sebastian, R. (2009, August). A Survey of Methods for the Statistical Evaluation of Defensive Ability in Major League Baseball. *JSM Proceedings*.

5.e. Chapters in books

- Baumer, B. S., & Badian-Pessot, P. (2016). Evaluation of batters and base runners. In J. Albert, M. E. Glickman, T. B. Swartz, & R. H. Koning (Eds.), *Handbook of statistical methods and analyses in sports* (pp. 1–37). Boca Raton, FL: Chapman; Hall/CRC Press. <https://www.crcpress.com/Handbook-of-Statistical-Methods-and-Analyses-in-Sports/Albert-Glickman-Swartz-Koning/p/book/9781498737364>
- Baumer, B., Basu, P., Bar-Noy, A., & Chau, C. (2014). Social-communication composite networks. In *Opportunistic mobile social networks* (pp. 1–36). CRC Press. <https://www.crcpress.com/Opportunistic-Mobile-Social-Networks/Wu-Wang/p/book/9781466594944>

5.f. Book reviews

- Baumer, B. S. (2018). [Review of *The Oxford Anthology of Statistics in Sports: Volume 1: 2000-2004* by James J. Cochran, Jay Bennett, Jim Albert]. *The American Statistician*, 72(3), 297–298. <https://doi.org/10.1080/00031305.2018.1496649>
- Baumer, B. S. (2014). [Review of *Analyzing baseball data with R* by Max Marchi, Jim Albert]. *International Statistical Review*, 82(2), 313–315. https://doi.org/10.1111/insr.12068_5

5.g. Review articles and essays

- Baumer, B. S. (2024). Editor’s note: On fairness in sports analytics. *Journal of Quantitative Analysis in Sports*, 20(1), 1–3. <https://doi.org/10.1515/jqas-2023-0103>
- Baumer, B. S., Horton, N. J., Meyers, E., & Dustin, A. (2022). Symposium focuses on opportunities for Massachusetts community colleges. *AMSTAT News*, 444, 1. https://magazine.amstat.org/blog/2022/09/01/syposium_mass/
- Baumer, B. S., Nguyen, Q., & Matthews, G. J. (2022). *CRAN task view: Sports analytics*. The Comprehensive R Archive Network; The Comprehensive R Archive Network. <https://cran.r-project.org/web/views/SportsAnalytics.html>
- Horton, N. J., Baumer, B. S., Zieffler, A., & Barr, V. (2021). The Data Science Corps Wrangle-Analyze-Visualize program: Building data acumen for undergraduate students. *Harvard Data Science Review*, 3(1), 1–8. <https://doi.org/10.1162/99608f92.8233428d>
- McNamara, A. A., Horton, N. J., & Baumer, B. S. (2017). Greater data science at baccalaureate institutions. *Journal of Computational and Graphical Statistics*, 26(4), 781–783. <https://doi.org/10.1080/10618600.2017.1386568>
- Baumer, B. (2015). In a Moneyball world, a number of teams remain slow to buy into sabermetrics. In R. Webb (Ed.), *The great analytics rankings*. ESPN.com; ESPN.com. http://espn.go.com/espn/feature/story/_/id/12331388/the-great-analytics-rankings#mlb
- Baumer, B. (2014). Applied mathematics at the ballpark: The life of one sabermetrician. *Math Horizons*, 22(1), 18–20. <https://doi.org/10.4169/mathhorizons.22.1.18>
- Gould, R., Baumer, B., Çetinkaya-Rundel, M., & Bray, A. (2014). Big data goes to college. *AMSTAT News*, 444, 17–19. <http://magazine.amstat.org/blog/2014/06/01/datafest/>

5.h. R packages (published on CRAN)

- Baumer, B. S., Suárez Sierra, B. M., Coen, A., & Taimal, C. A. (2026). *Tidychangepoint: A tidy framework for changepoint detection analysis*. <https://doi.org/10.32614/CRAN.package.tidychangepoint>
- Tapal, M., Gahwagy, R., Ryan, I., & Baumer, B. S. (2025). *fec16: Data package for the 2016 united states federal elections*. <https://doi.org/10.32614/CRAN.package.fec16>
- Baumer, B. S. (2026). *Etl: Extract-transform-load framework for medium data*. <https://doi.org/10.32614/CRAN.package.etl>
- Baumer, B. S., Horton, N., & Kaplan, D. (2026). *Mdsr: Complement to modern data science with r*. <https://doi.org/10.32614/CRAN.package.mdsr>

- Baumer, B. S., Goueth, R., Li, W., Kelly, D., & Kim, A. Y. (2025). *MacLeish: Retrieve data from MacLeish field station*. <https://doi.org/10.32614/CRAN.package.macleish>
- Baumer, B. S., & Matthews, G. J. (2020). *Teamcolors: Color palettes for pro sports teams*. <https://doi.org/10.32614/CRAN.package.teamcolors>
- Bray, A., Ismay, C., Chasnovski, E., Couch, S., Baumer, B., & Cetinkaya-Rundel, M. (2025). *Infer: Tidy statistical inference*. <https://doi.org/10.32614/CRAN.package.infer>

5.i. R packages (published on GitHub)

- Baumer, B., & Matthews, G. (2018). *openWAR: Machinery for analyzing baseball data and computing WAR*. <https://github.com/beanumber/openWAR>
- Baumer, B. S. (2018). *Airlines: Historical on-time flight data*. <http://github.com/beanumber/airlines>
- Baumer, B. S., & Gjekmarkaj, E. (2017). *Fec: Campaign finance for federal elections*. <http://github.com/beanumber/fec>
- Baumer, B. S. (2017). *Imdb: Populate a database with data from the IMDB*. <https://github.com/beanumber/imdb>

5.j. Acknowledgements in the work of others

- Jones, D. W., Simons, J., Lipsitz, S., Schermerhorn, M., & Schanzer, A. (2022). Novel surgical quality metrics in abdominal aortic aneurysm repair. *Journal of Vascular Surgery*. <https://doi.org/10.1016/j.jvs.2022.03.877>

5.k. Reviews of my work

- Arai, K., & Lyubchich, V. (2022). Modern Data Science with R (2nd ed.). *Technometrics*, 64(3), 429–429. <https://doi.org/10.1080/00401706.2022.2087421>
- Hoyer, A. (2021). Modern Data Science with R (2nd ed.). *Biometrical Journal*, 63(8), 1748–1749. <https://doi.org/10.1002/bimj.202100258>
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- Bray, A. P. (2018). Reviews of books and teaching materials. *The American Statistician*, 72(3), 295–299. <https://doi.org/10.1080/00031305.2018.1496649>
- Liu, S. (2018). Modern Data Science with R. *International Statistical Review*, 86(1), 162–162. <https://doi.org/10.1111/insr.12256>
- Prats, J. (2018). R book review: Two approaches to learning data science. In *Significance*. <https://www.significancemagazine.com/science/596-r-book-review-two-approaches-to-learning-data-science?highlight=WYjiYXVtZXIiXQ==>
- Hayden, R. W. (2017). Modern Data Science with R. *MAA Reviews*. <https://www.maa.org/press/maa-reviews/modern-data-science-with-r>
- Downie, T. (2019). Analyzing Baseball Data with R (2nd edition). *Journal of Statistical Software, Book Reviews*, 90(1), 1–4. <https://doi.org/10.18637/jss.v090.b01>

Forthcoming

Works in progress

5.l. Articles (under review)

- Baumer, B. S., Min, S., & Saidi, R. (2025). Let's standardize the first course in data science. *Harvard Data Science Review*.

5.m. Articles (in progress)

- Baumer, B. S., & Susnea, S. B. (2025). Reward systems in sports: What's the fairest of them all? *TBD*.
- Baumer, B. S., Horton, N. J., Posner, M., Roback, P., Heggeseth, B., Myint, L., & Beltz-Mohrmann, G. (2024). Successful models for a second undergraduate course in data science. *Harvard Data Science Review*. <https://beanumber.github.io/datascience2/>
- Baumer, B. S., Kelly, D., & Kim, A. Y. (2022). MacLeish: An R package for monitoring environmental conditions in Whately, Massachusetts. *Journal of Statistics and Data Science Education*.
- Hancock, S., Baumer, B. S., Gould, R., Kozak, K., & Horton, N. J. (2019). Data science for statistics programs. *Harvard Data Science Review*.

6. Concerts, performances, and exhibitions

6.a. Book readings

1. Baumer, B. S., & Zimbalist, A. S. (2014). *The sabermetric revolution*.
2. Baumer, B. S., & Zimbalist, A. S. (2014). *The sabermetric revolution*. Rabbit Maranville Chapter, Society for American Baseball Research.
3. Baumer, B. S. (2014). *The sabermetric revolution*. Smokey Joe Wood Chapter, Society for American Baseball Research.

7. Scholarly lectures and other professional presentations

7.a. Keynotes and Invited Talks

1. Baumer, B. S. (2025). *What baseball analytics can teach us about basketball*. 3ⁿ Congrès d'analítica aplicada al bàsquet.
2. Baumer, B. S. (2025). *From Northampton to Queens and back*. Applied Math in Statistics and Data Science Education.
3. Baumer, B. S. (2022). *Creating optimal conditions for reproducible data analysis in R with "fertile"*. Joint Statistical Meetings. <https://ww2.amstat.org/meetings/jsm/2022/onlineprogram/ActivityDetails.cfm?SessionID=222036>
4. Baumer, B. S. (2020). *Data science clinic: A capstone experience for Smithies in SDS*. Invited Session on Real-Life Data Analysis Experiences for Statistics and Data Science Students, Symposium on Data Science and Statistics. <https://ww2.amstat.org/meetings/sdss/2020/onlineprogram/AbstractDetails.cfm?AbstractID=308060>
5. Baumer, B. S. (2019). *Statistics and data science at Smith*. AMS Mini-Conference on Education: Mathematics Departments and the Explosive Growth of Computational and Quantitative Offerings in Higher Education.
6. Baumer, B. S. (2019). *The new roaring twenties: Imagining statistics and data science curricula in the coming decade*. Boston Chapter of the ASA.
7. Baumer, B. S. (2019). *How did i get here?: Reflections on an early career in sports analytics*. Invited Speaker with Lunch, Joint Statistical Meetings; Statistics in Sports Section of the ASA.
8. Baumer, B. S. (2019). *Building a data science program*. Invited address.
9. Baumer, B. S. (2018). *How often does the best team win? A unified approach to understanding randomness in North American sport*. Fields Sports Analytics Workshop.
10. Baumer, B. S. (2017). *How often does the best team win? A unified approach to understanding randomness in North American sport*. CMU Sports Analytics Conference.
11. *Moneyball revisited: Sabermetrics past, present, and future* (2017). Play Ball: The History, Culture, and Politics of Baseball.
12. *Data science, sabermetrics, and you* (2017). MacDougal Lecture in Mathematics.
13. *Three methods approach to statistical inference* (2017). Invited Session on Novel Approaches to First Statistics/Data Science courses, Joint Statistical Meetings.
14. *Harnessing the extraordinary power of statistics in sports* (2016). Invited Panel, Joint Statistical Meetings.
15. *Data wrangling for the Lahman* (2015). Invited Session on the Use of Sports Data in Undergraduate Statistics Education, Joint Statistical Meetings.
16. *Teaching data science at a small liberal arts college for women* (2014). Invited Session on Teaching Data Science at the Undergraduate Level, Joint Statistical Meetings.
17. *Open WAR: An open source system for overall player performance in major league baseball* (2013). Invited Session on Analytics & Visualization in Professional Sports, Joint Statistical Meetings.
18. *Open WAR: An open source system for overall player performance in major league baseball* (2014). New England Statistics Symposium.
19. *Moneyball revisited: Assessing the sabermetric revolution in baseball* (2013). MIT Sloan Sports Analytics Conference.
20. *Applications of the hits per balls in play rate in baseball* (2010). NJCU Math Awareness Month.
21. *Survey of methods for the evaluation of defensive ability in major league baseball* (2009). Special Section on Statistics in Sports, Joint Statistical Meetings.

7.b. Conference talks and posters

1. Baumer, B. S., & Susnea, S. B. (2025). *Reward systems in sports: What's the fairest of them all?* New England Symposium on Statistics in Sports.
2. Baumer, B. S. (2025). *What does 'fairness' mean in sports analytics?* Connecticut Sports Analytics Symposium.

3. Baumer, B. S. (2025). *Artisanal programming*. Joint Statistical Meetings. <https://ww3.aievolution.com/JSMAnnual2025/Events/viewEv?ev=2175>
4. Bertin, A. M., & Baumer, B. S. (2020). *Creating optimal conditions for reproducible data analysis in R with “fertile”*. Software and Data Science Technologies I, Symposium on Data Science and Statistics. <https://ww2.amstat.org/meetings/sdss/2020/onlineprogram/AbstractDetails.cfm?AbstractID=308233>
5. Baumer, B. S. (2018). *A grammar for reproducible and painless extract-transform-load operations on medium data*. Joint Statistical Meetings.
6. Baumer, B. S. (2018). *A grammar for reproducible and painless extract-transform-load operations on medium data*. ASA Symposium on Statistics and Data Science.
7. Baumer, B. S. (2017). *How often does the best team win? A unified approach to understanding randomness in North American sport*. New England Symposium on Statistics in Sports.
8. *ETL for medium data* (2016). useR! Conference.
9. *Open WAR: An open source system for overall player performance in major league baseball* (2014). Mathematics and Sports II, Joint Mathematical Meetings.
10. *Open WAR: An open source system for overall player performance in major league baseball* (2013). New England Symposium on Statistics in Sports.
11. *Quantifying market inefficiencies in the baseball players’ market* (2013). Eastern Economic Association Annual Meeting.
12. *Parsing the relationship between baserunning and batting abilities within lineups* (2013). Mathematics and Sports II, Joint Mathematical Meetings.
13. *Parsing the relationship between baserunning and batting abilities within lineups* (2011). Poster Session, New England Symposium on Statistics in Sports.
14. *Modeling the ability of a major league infielder* (2013). MAA Poster Session, Joint Mathematical Meetings.
15. *Changing of the guards: Strip cover with duty cycling* (2012). SIROCCO 2012.
16. *Set it and forget it: Maximizing network lifetime on the line* (2012). STAR-W Workshop.
17. *Set it and forget it: Tighter approximation bounds for ROUNDROBIN in a restricted lifetime model* (2011). 21st Annual Fall Workshop in Computational Geometry.
18. *Modeling and analysis of composite network embeddings* (2011). MSWiM 2011.
19. *Maximizing network lifetime on the line with adjustable sensing ranges* (2011). ALGOSENSORS 2011.
20. *Discovering influential groups of agents using composite network analysis* (2011). NetSci 2011.
21. *Deterministic and probabilistic analysis of restricted strip cover with adjustable sensing ranges* (2011). STAR-W Workshop.
22. *Analysis of composite networks* (2010). Session On Large-Scale Networks and Applications, INFORMS Annual Meetings.
23. *(Probabilistic) adjustable range restricted strip cover* (2010). 20th Annual Fall Workshop in Computational Geometry.
24. *Improved estimates for the impact of baserunning in baseball* (2010). Novel Applications of Statistical Methods in Baseball Research, Joint Statistical Meetings.
25. *An investigation into the effects of baserunning in baseball using simulation* (2008). Northern California Symposium on Statistics and Operations Research in Sports.
26. *Why on-base percentage is a better indicator of future performance than batting average: An algebraic proof* (2007). New England Symposium on Statistics in Sports.

7.c. Seminars and Colloquium talks

1. Baumer, B. S. (2026). *The story of data science through the prism of sabermetrics*. Seminar in Data Analytics.
2. Baumer, B. S. (2025). *Tidychangepoint: A unified framework for analyzing changepoint detection in time series*. Grup de Recerca en Bioestadística Seminars.
3. Baumer, B. S. (2025). *Will generative AI (finally) make programming a form of art?* Possible Futures: AI and Human Experience.
4. Baumer, B. S. (2025). *Introduction to sports analytics*. Athletic Department Graduate Colloquium.
5. Baumer, B. S. (2025). *A brief introduction to sports analytics*. Williams College Statistics Colloquium.
6. *Sports analytics: A case study in data science* (2022). Data Science Colloquium.
7. *Data science, sabermetrics, and you* (2023). Data Science Colloquium.
8. *Data science, sabermetrics, and you* (2023). Health Data Science Colloquium.
9. Baumer, B. S., & Kinnaid, K. M. (2022). *Integrating data science ethics into an undergraduate major*. Journal of Statistics and Data Science Education webinar.

10. *Data science corps - wrangle, analyze, visualize: Experiential learning in community organizations* (2021). Liberal Arts Luncheon.
11. Baumer, B. S. (2018). *A grammar for reproducible and painless extract-transform-load operations on medium data*. Biostatistics Seminar.
12. Baumer, B. S., & Horton, N. J. (2017). *Databases in the tidyverse*. American Statistical Association Section on Statistical Consulting Webinar.
13. Baumer, B. S. (2017). *How often does the best team win? A unified approach to understanding randomness in North American sport*. Data Science Tea.
14. *Open WAR: An open source system for overall player performance in major league baseball* (2013). Western Mass Data Science, Stats, and R Meetup.
15. *Moneyball revisited: Assessing the sabermetric revolution in baseball* (2013). Liberal Arts Luncheon.
16. *Moneyball revisited: Assessing the sabermetric revolution in baseball* (2013). Undergraduate Mathematics Colloquium.
17. *Moneyball revisited: Assessing the sabermetric revolution in baseball* (2014). Boston Chapter of the ASA.
18. *The little spreadsheet that couldn't: Frontiers in data analytics* (2013). Undergraduate Mathematics Colloquium.
19. *Parsing the relationship between baserunning and batting abilities within lineups* (2012). Statistics and Probability Seminar Series.
20. *Parsing the relationship between baserunning and batting abilities within lineups* (2011). Undergraduate Mathematics Colloquium.
21. *A sabermetric insight: Development and applications of DIPS theory* (2012). Undergraduate Mathematics Colloquium.
22. *A sabermetric insight: Development and applications of DIPS theory* (2012). Undergraduate Mathematics Colloquium.
23. *Set it and forget it: Tighter approximation bounds for ROUNDROBIN in a restricted lifetime model* (2011). Undergraduate Computer Science Colloquium.
24. *Mapping batter ability in baseball by using spatial statistics techniques* (2010). CUNY Statistics Seminar.
25. *A survey of methods for the evaluation of defensive ability in major league baseball* (2009). CUNY Statistics Seminar.
26. *A modern view of sabermetrics: History, context, and applications* (2009). Undergraduate Statistics Colloquium.
27. *The science of baseball* (2009). UCSD Near You.
28. *A brief primer on sabermetrics: What algebra, probability and statistics have taught us about baseball* (2008). Undergraduate Mathematics Colloquium,.
29. *The core elements of baseball statistics* (2005). Undergraduate Math Lecture Series.
30. *Moneyball revisited: Sabermetrics today* (2016). SciTech Cafe.
31. *Science on screen: moneyball* (2016). Amherst Cinema.
32. *Retention of underrepresented students* (2016). Teaching Arts Luncheon.
33. Lyster, M., Eddy, S., Howlett, D., & Baumer, B. S. (2024). *Collaborative writing*. Teaching Arts Luncheon.
34. Baumer, B. S. (2024). *Tidychangepoint: A unified framework for analyzing changepoint detection in time series*. Amherst College Statistics and Data Science Colloquium Series.

7.d. Panels and Guest Lectures

1. Baumer, B. S. (2021). *Data science ethics*. Joint Statistical Meetings; Statistics in Section of the ASA. <https://ww2.amstat.org/meetings/jsm/2021/onlineprogram/ActivityDetails.cfm?SessionID=220332>
2. McNamara, A. (2021). *Consistency is key: A case study in R syntaxes*. Project TIER 2021 Spring Symposium: Instruction in Reproducible Research: Educational Outcomes.
3. Baumer, B. S. (2020). *Data science ethics: What are they and why do we need them?* Williams College Data Science Bootcamp.
4. Baumer, B. S. (2018). *SQL after dplyr*. Data Science (Using R).
5. Baumer, B. S., & Scott, Z. (2018). *Baseball analytics*. Business of Sports.
6. Baumer, B. S., Bornn, L., Chakya, M., & Pleuler, D. (2018). *Academic/industry collaboration: Frontiers in sports analytics*. Fields Sports Analytics Workshop.
7. Baumer, B. S., Crouser, R. J., & Minsky, B. (2017). *What is the difference between data science and statistics?* Sigma Xi.
8. Baumer, B. S., Swartz, M., & Gennaro, V. (2014). *The value of a win*. SaberSeminar.
9. Andres, A., Gennaro, V., Baumer, B. S., & Van, E. M. (2013). *Baseball analytics for strategy, scouting, and decision-making*. New England Symposium on Statistics in Sports.

10. Baumer, B. S., Simon, M., & Gennaro, V. (2012). *By the numbers: Statistics and analytics*. The 50th Anniversary of the New York Mets.
11. Baumer, B. (2012). *Baseball analytics*. Sports Economics.
12. Altman, B., Harrelson, B., Poris, H., Baumer, B. S., Barra, T. J., & Vescey, G. (2012). *Commemorative panel on the 50th anniversary season of the New York Mets*. Casey Stengel Chapter of NYC Society for American Baseball Research.
13. *Alumni panel discussion for students in QAC 200* (2011). Quantitative Analysis Center.
14. *Judge* (2012). Diamond Dollars Case Competition.
15. *A modern view of sabermetrics: History, context, and applications* (2010). Sports Economics.

8. Other professional activities

8.a. Grant proposals

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| Co-PI. Not Funded. \$109,381.
Guidelines for Unified Introductory Data Science Education (GUIDE) | <i>National Science Foundation</i>
2025-2027 |
| PI. Not Funded. \$22,200.
Data Science and Sports Analytics in Colombia | <i>Fulbright US Scholar</i>
2023-2024 |
| PI. Funded  . \$581,902.
The Data Science WAV: Experiential Learning with Local Community Organizations | <i>National Science Foundation</i>
2019-2022 |
| Co-PI. Not Funded. \$64,130.
Vertically Coherent Online Data Science Program Using R for Production Engineering | <i>National Science Foundation</i>
2019 |
| Co-PI. Not Funded. \$1,461,581.
MRI: Revealing the Living System, an Acquisition of a Lightsheet Microscope with Big Data Processing | <i>National Science Foundation</i>
2018-2019 |
| PI. Not Funded. \$46,757.
Improved Grammar for Reproducible and Painless Extract-Transform-Load Operations on Medium Data | <i>rOpenSci</i>
2017 |

8.b. Blog posts

1. Kim, A. Y., Crouser, R. J., & Baumer, B. S. (2020). *Slack for (a)synchronous course communication*. StatTLC. <https://stattlc.com/2020/05/29/slack-for-asynchronous-course-communication/>
2. Baumer, B. (2016, March 15). *Scraping the web for analytics directors*. Exploring Baseball Data with R. <https://baseballwithr.wordpress.com/2016/03/15/scraping-the-web-for-analytics-directors/>
3. Baumer, B. (2014, August 22). *openWAR in 2014*. Exploring Baseball Data with R. <https://baseballwithr.wordpress.com/2014/08/22/openwar-in-2014/>
4. Baumer, B. (2014, November 18). *Building a hall of fame classifier*. Exploring Baseball Data with R. <https://baseballwithr.wordpress.com/2014/11/18/building-a-hall-of-fame-classifier-2/>
5. Baumer, B. (2014, October 17). *Does good pitching beat good hitting in the playoffs?* Exploring Baseball Data with R. <https://baseballwithr.wordpress.com/2014/10/17/does-good-pitching-beat-good-hitting-in-the-playoffs-2/>
6. Baumer, B. (2014, July 24). *openWAR and the defensive spectrum*. Exploring Baseball Data with R. <https://baseballwithr.wordpress.com/2014/07/24/openwar-and-the-defensive-spectrum/>
7. Baumer, B. (2014, June 25). *MARCEL the matrix*. Exploring Baseball Data with R. <https://baseballwithr.wordpress.com/2014/06/25/marcel-the-matrix/>
8. Baumer, B. (2014, June 6). *Creating HexBin plots*. Exploring Baseball Data with R. <https://baseballwithr.wordpress.com/2014/06/06/creating-hexbin-plots/>
9. Baumer, B. (2014, May 1). *Building an expected run matrix with openWAR*. Exploring Baseball Data with R. <https://baseballwithr.wordpress.com/2014/05/01/building-an-expected-run-matrix-with-openwar/>

8.c. Events co-organized

1. Kaparakis, E., Horton, N. J., Baumer, B. S., & Supp, S. (2026). *Generative AI and data analysis: Implications for data science curriculum and pedagogy*. AALAC Workshop.
2. Baumer, B. S. (2025). *ASA Five College DataFest™*.
3. Baumer, B. S. (2025). *Teaching data storytelling in the age of AI*. Topic-Contributed Session, Joint Statistical Meetings.
4. Baumer, B. S., & LaCombe, S. (2023). *ASA Five College DataFest™*.
5. Baumer, B. S., Horton, N. J., Meyers, E., & Dustin, A. (2022). *2nd DSC-WAV faculty development workshop*. <https://dsc-wav.github.io/facdev22/>,
6. Baumer, B. S., Horton, N. J., Meyers, E., & Dustin, A. (2021). *1st DSC-WAV faculty development workshop*. <https://dsc-wav.github.io/facdev21/>,
7. Baumer, B. S., Horton, N. J., Zieffler, A., & Legacy, C. (2021). *Facilitating team-based data science: Lessons learned from the DSC-WAV project*. Breakout session, US Conference on Teaching Statistics.
8. Kim, A. Y., & Baumer, B. S. (2019). *ASA Five College DataFest™*.
9. Baumer, B. S., & Ott, M. Q. (2018). *ASA Five College DataFest™*.
10. Pfeil, C., Foulkes, A., Barr, V., Hoopes, M., & Baumer, B. S. (2018). *Data science education*. Invited Session, Women in Data Science Conference.
11. Baumer, B. S. (2018). *Expanding the tent: Undergraduate majors in data science*. Invited Session, Joint Statistical Meetings.
12. Baumer, B. S. (2018). *Best practices in data science education*. Symposium on Data Science and Statistics.
13. Baumer, B. S., & McNamara, A. A. (2017). *Data science at women's colleges*. Women in Statistics and Data Science Conference.
14. Baumer, B. S., & McNamara, A. A. (2017). *ASA Five College DataFest™*.
15. Hoopes, M., Douglas, A., & Baumer, B. (2017). *WiDS Western Massachusetts*. WiDS livestream. <https://www.mtholyoke.edu/events/66202/women-data-science-conference>
16. Baumer, B. S., Broman, K., & Çetinkaya-Rundel, M. (2016). *Teaching reproducible research: Inspiring new researchers to do more robust and reliable science*. American Statistical Association webinar. <https://www.amstat.org/asa/files/pdfs/EDU-ReproducibleResearchWebinarTranscript.pdf>
17. Pattanayak, C., An, M.-W., Baumer, B., Kaparakis, E., Taylor, C., & Wagaman, A. (2016). *Big data: Implications for the liberal arts curriculum*. AALAC Workshop.
18. Baumer, B. S. (2016). *Reproducibility in statistics and data science*. Invited Session, Joint Statistical Meetings.
19. Baumer, B. S., & McNamara, A. A. (2016). *ASA Five College DataFest™*.
20. Baumer, B. S., & Bray, A. (2015). *ASA Five College DataFest™*.
21. Baumer, B. S., & Bray, A. (2014). *Five College DataFest*.
22. Lello, D., Baumer, B. S., Pruijm, R., Kaplan, D., & Horton, N. (2015). *3rd computation and visualization consortium*.
23. Baumer, B. S. (2013). *Using r markdown for integrating reproducibility tools into an introductory statistics course*. Roundtable Discussion, Section on Statistical Education, Joint Statistical Meetings.
24. Pruijm, R., Kaplan, D., Horton, N., & Baumer, B. S. (2013). *Changing to r in an introductory statistics course*. Breakout session, US Conference on Teaching Statistics.

8.d. Workshops attended

1. *Data for black lives* (2017). livestream.
2. *PKAL/TIDES pre-conference workshop on diversity, equity, and inclusion* (2016). AAC&U Transforming STEM Higher Education.
3. *Undergraduate faculty program* (2016). Park City Mathematics Institute.
4. *TIER faculty development workshop* (2016). Project TIER.
5. *TIDES summer institute* (2015). TIDES.
6. *PKAL/TIDES pre-conference workshop on cultural competency* (2014). AAC&U Transforming STEM Higher Education.
7. *Hierarchical bayesian modeling and analysis for spatial data* (2014). Professional Development Continuing Education Course.
8. *Tackling the challenges of big data* (2014). Online X Programs.
9. *Short course: Bayesian methods for data analysis (with emphasis on clinical trials)* (2013). Boston Chapter of the ASA.
10. *How to implement a randomization-based introductory statistics course: The CATALST curriculum* (2013). USCOTS.
11. *Teaching the statistical investigation process with randomization-based inference* (2013). USCOTS.

12. "Big data" and data mining for mathematicians (2013). MAA-PREP.
13. *Modeling: Early and often in introductory calculus* (2012). MAA-PREP.
14. *Beyond introductory statistics: Generalized linear and multilevel models* (2012). MAA-PREP.
15. *Discrete and computational geometry* (2012). Short Course, Joint Mathematical Meetings.
16. *Summer workshop on a project-based introductory statistics curriculum* (2012).
17. *Summer workshop on inquiry-based statistics education* (2011).
18. *Combinatorial geometry workshop* (2009). IPAM Combinatorics: Methods and Applications in Mathematics and Computer Science.

8.e. Refereeing papers

Note: Please see my Publons profile (<http://publons.com/author/1553312/>) for more information.

Regular reviewer

Journal of Quantitative Analysis in Sports, Journal of Statistics & Data Science Education, The American Statistician, Technology Innovations in Statistics Education, Harvard Data Science Review 2012-present

At least one review

By The Numbers: Newsletter of the SABR Statistics Committee, R Journal, INFORMS Transactions on Education, National Academies of Sciences, Engineering, and Medicine, Teaching Statistics, IEEE Transactions on Mobile Computing, The Mathematical Intelligencer, IEEE Computer Graphics and Applications, American Political Thought, MIT Sloan Sports Analytics, Transactions on Knowledge and Data Engineering, Transactions on Sensor Networks, IEEE Journal on Selected Areas in Communications 2004-present

8.f. Professional statistical consulting

Consultant

Racial Equity Partners, Major League Baseball Players Association, RStudio, Inc., MassMutual Data Science Development Program, MVP Sports Group, Christine Doktor for State Representative, MassMutual Data Science Development Program Academic Advisory Board, New England Patriots, ?What If! Innovation, New York Mets, CUNY Research Foundation 2012-2022

8.g. External Program Reviews

Review Chair

Data Science , Siena College 2025-2025

Reviewer

- Mathematics, Statistics, and Computer Science , St. Olaf College
- Quantitative Analysis Center , Wesleyan University
- Mathematics, Statistics, and Computer Science , Macalester College 2022-2022

8.h. Editorial Service

Editorial Service

- Interim Editor (2023-2023) *Journal of Quantitative Analysis in Sports*
- Co-Editor (2022-2023)
- Associate Editor (2012-present) 2012-present

Editorial Service

Associate Editor (2024-present) *Journal of Statistics and Data Science Education*
2024-present

8.i. ASA Service

ASA

Member, ASA Data Science Ad Hoc Advisory Committee *American Statistical Association*
2019-2020

ASA DataFest Core Member,	<i>American Statistical Association</i> 2014-NA
Caucus of Academic Representatives Non-PhD Rep (candidate),	<i>American Statistical Association</i> 2025-2028
Section on Statistical Computing Program Chair, JSM 2026	<i>American Statistical Association</i> 2025-2026
Section on Statistical Learning and Data Science • Program Committee, ASA Symposium on Data Science and Statistics, co-sponsored by the Interface Foundation of North America • Council of Sections Rep,	<i>American Statistical Association</i> 2017-2019
Section on Statistics Education Current Committee,	<i>American Statistical Association</i> 2018-2019
Section on Statistics and Data Science Education • Member, Waller Education Awards Committee • Contributor, College GAISE Revision Writing Team • Mentor, Emily Robinson • Mentor, Julia Costacurta	<i>American Statistical Association</i> 2021-2027
Section on Statistics in Sports Program Chair, JSM 2022	<i>American Statistical Association</i> 2021-2022

8.j. Other External service

Member	<i>Holyoke Community College Computer Science Info Systems Advisory Board, 2026-2027</i>
Panel Reviewer	<i>NSF Data Science Corps, 2024</i>
University Partner Advisor	<i>Golda Meir Sports Analytics Club, 2022-2023</i>
Secretary/Treasurer	<i>Five College Statistics, 2019-2022</i>
MAA Board Representative	<i>ASA-MAA Joint Committee on Statistics Education, 2020-2023</i>
Program Observer	<i>ABET data science accreditation, 2021</i>
University Partner Advisor	<i>Jeremiah E. Burke Sports Analytics Club, 2020-2021</i>
Member	<i>Data Science for Common Good Advisory Board, UMass Center for Data Science, 2019-2020</i>
Smith representative	<i>Five College Statistics, 2016-2017</i>
Director	<i>Five College Statistics, 2015-2016, 2025-2026</i>
Webmaster	<i>Five College Statistics, 2013-2015</i>

8.k. Tenure and promotion review service

External Reviewer • [redacted], Statistics, Williams College • [redacted], Statistics, Emory University • [redacted], Statistics, Williams College • [redacted], Statistics, Carnegie Mellon University	2022-2025
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8.l. Graduate thesis service

External Reader • Nina Roche, M.A., Computer Science, University of Massachusetts, Amherst • Jesse Jeter, Ph.D., Statistics, The George Washington University	2018-2023
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9. Professional memberships

American Statistical Association (ASA)	2009-present
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Society for American Baseball Research (SABR)	2012-present
Mathematical Association of America (MAA)	2012-present
Sigma Xi	2013-present
Association for Computing Machinery (ACM)	2011-2015
American Mathematical Society (AMS)	2005-2015
Institute for Operations Research and the Management Sciences (INFORMS)	2010

10. College or departmental service and other college service

10.a. Special studies

SDS capstone project, Sifan (Carol) Liu, Zoleka Mosaih, Ziheng (Ruby) Ru, Yutai (Nichole) Yao, Yujia (Starry) Zhou	Fall 2020
Sports analytics, Jasmine Horan, Leah Marcus, Clara Rosenberg, Kara Van Allen	Spring 2018
Topological data analysis, Yixuan (Monica) Zhang	Fall 2017
ETL operations research, Rutendo Madziwo	Fall 2017
ETL for Medium Data, Weijia (Vega) Zhang, Wencong (Priscilla) Li, Trang Le, Aakanksha Sinha, Eva Gjekmarkaj	Fall 2016
Medium Data, Weijia (Vega) Zhang, Wencong (Priscilla) Li	Spring 2016
Network Science, Jordan Menter	Fall 2015
Data Science, Marie-Jacques Seignon	Fall 2014
Non-autographs, Yijin Wei	Fall 2014
Data Analysis, Jingyang (Judy) Zhang	Fall 2014

10.b. STRIDE advising

Predicting WNBA Performance Based On Draft Position, Cecily Kolko	2022--2023
Interactive Coding for Data Science, Rose Porta	2019--2021
Curating Medium Data Sets, Natalia Iannucci	2019--2021
Conditions for Optimal Reproducibility, Audrey Bertin	Spring 2019

10.c. Research advising

Does Not Playing Hockey Make You Worse At Hockey?, Michele Sezgin	2022--2023
Campaign finance data from the Federal Election Commission, Marium Tapal	2021
Changepoint detection during baseball's offseason, Sophia Tannir	2019--2020
Conditions for Optimal Reproducibility, Audrey Bertin	2019--2020

10.d. MTH 301 research advising

The Perfect Bracket, Loren Santana, Sara Stoudt	Spring 2014
Ability of Collaborative Social Networks to Complete A Directed Acyclic Task Graph, Maneka Puligandla, Kelly Zaccheo, Qingyang (Rallye) Shen, J. Zhang	Spring 2013

10.e. Early research advising

Getting Things Done, Yixin Bao, Aixin Li, Keara Phillips-Vabre	Spring 2014
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10.f. Liberal arts advising

Members of the class of 2019 Melanie Bancilhon, Mackenzie Godinez, Julia Lee, Gwenyth (Rison) Naness, Andria Polk, Zoe Riell	Smith College 2015-2017
Members of the class of 2023 Rachel Aliwalas, Rose Porta, Christina Sherpa, Yanning Tan, Allison Wong, Aliaksandra Yeutseyeva, Zhulian Yu	Smith College 2019-2021

10.g. Honors advising

- White, Q. (2023). *Using sensitivity analyses to approximate total COVID-19 infections: State and county level in the united states, march 2021–march 2022* ["Undergraduate Honors Thesis", Smith College]. <http://scholarworks.smith.edu/theses/>

2. Iannucci, N. (2022). *Probabilistic modeling of mutational signatures to assess whether a signal is one or two separate signatures* ["Undergraduate Honors Thesis", Smith College]. <http://scholarworks.smith.edu/theses/>
3. Bertin, A. M. (2021). *Tackling reproducibility education through R package development* ["Undergraduate Honors Thesis", Smith College]. <http://scholarworks.smith.edu/theses/2317>
4. Alvord, J. (2019). *Modeling racially disproportionate language on Twitter during NFL gameplay* (pp. 1–97) ["Undergraduate Honors Thesis", Smith College]. <http://scholarworks.smith.edu/theses/2108>
5. Li, W. (2018). *Tools for understanding taxicab and e-hail service use in New York City* (pp. 1–101) [Undergraduate Honors Thesis, Smith College]. <http://scholarworks.smith.edu/theses/2032>
6. Zhang, W. (2017). *Improving access to open-source data about the NYC bike sharing system (Citi Bike)* (pp. 1–84) [Undergraduate Honors Thesis, Smith College]. <http://scholarworks.smith.edu/theses/1871/>
7. Stoudt, S. A. (2015). *Geostatistical models for the spatial distribution of uranium in the continental United States* (pp. 1–164) [Undergraduate Honors Thesis, Smith College]. <http://scholarworks.smith.edu/theses/1588/>

10.h. Major advising

8 member(s) of the class of 2025	<i>Smith College</i>
Rachael An, Destiny Cecchi Samuels, Sophia Dai, Grace Darby (MST), Laura Fay, Emma Ruckle, Lala Rukh, Tillie Slosser	2025
8 member(s) of the class of 2024	<i>Smith College</i>
Jack Brandano, Meaghan Brennan, Frankie Fan, Parunjodhi Munisamy, Abbey O’Meara, Sophia Silovsky, Tint Tha Ra Wun, Julia Ting	2024
18 member(s) of the class of 2023	<i>Smith College</i>
Rachel Aliwalas, Elda Cervantes, Rose Evard, Vibha Gogu, Aushanae Haller, Alejandra Muñoz Garcia, Annah Mutaya, Michiru Nozawa (MTH/SDS), Salwa Ouachtouki, Sonia Paredes, Rose Porta, Michele Sezgin, Christina Sherpa, Liwen Xu, Ziyue Yang, Summer Yu, Rosemary Zhang (MST), Yue Zhang (Mackie) Zhou	2023
13 member(s) of the class of 2022	<i>Smith College</i>
Amrita Acharya, Dianne Caravela, Emilia Field, Michelle Flesaker, Sarah Gillespie, Grace Hartley, Natalia Iannucci (MTH/SDS), Huiqing (Lily) Jin, Emma Kornberg, Ananda Montoly, Wayne Ndlovu, Sunni Raleigh, Gabrielle Whalen	2022
10 member(s) of the class of 2021	<i>Smith College</i>
Audrey Bertin, Phuong Chau, Olivia Handoko, Marlene Jackson, Chhiring Lama, Lauren Low, Dayana Meza Giraldo, Sakaiza Rasolofomanana Rajery, Ziheng (Ruby) Ru, Yanwan Zhu	2021
5 member(s) of the class of 2020	<i>Smith College</i>
Lizette Carpenter, Clara Rosenberg, Sophia Tannir, Xiaonan (Maggie) Wang, Yujia (Starry) Zhou	2020
7 member(s) of the class of 2019	<i>Smith College</i>
Stephanie Foukaris, Marta Garcia, Jingjing (Jocelyn) Hu, Julia Lee, Rutendo Madziwo, Cas Sweeney, Yi Wang	2019
6 member(s) of the class of 2018	<i>Smith College</i>
Erina Fukuda, Shuli Hu, Minji Kang, Wencong (Priscilla) Li, Syeda Zainab Rizvi, Aakanksha Sinha	2018
4 member(s) of the class of 2017	<i>Smith College</i>
Diana Fierros-Pina, Lydia Jin, Maria Lopez, Weijia (Vega) Zhang	2017
1 member(s) of the class of 2016	<i>Smith College</i>
Yiwen Zhu	2016

10.i. Minor advising

1 member(s) of the class of 2025	<i>Smith College</i>
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Emma Ruckle	2025
4 member(s) of the class of 2024 Mack Case, Hebe Guo, Phaidra Martin, Jackie Ochoa Acevedo	<i>Smith College</i> 2024
7 member(s) of the class of 2022 Nana Ansah, Sethatevy Bong, Kacey Jean-Jacques, Miagoto Benedicte Nemadjilembaye, Anh Nguyen, Catherine Peppers, Lindsay Rosenthal	<i>Smith College</i> 2022
2 member(s) of the class of 2021 Sara Khan, Emma Westgate	<i>Smith College</i> 2021
2 member(s) of the class of 2020 Kimberly Barrios (AC), Yuri Furukawa	<i>Smith College</i> 2020
3 member(s) of the class of 2019 Gabrielle Drew, Emily Halstead, Cathy Lee	<i>Smith College</i> 2019
1 member(s) of the class of 2018 Marisa Youngblood	<i>Smith College</i> 2018
1 member(s) of the class of 2017 Yipeng Lai	<i>Smith College</i> 2017
2 member(s) of the class of 2016 Erika Correll, Martha Miller (AC)	<i>Smith College</i> 2016
2 member(s) of the class of 2015 Anna Cojocar (AC), Stephanie Huynh	<i>Smith College</i> 2015

10.j. Concentration advising

Community Engagement and Social Change Audrey Kim '24, Maria Fernanda Negrete Espinoza '27, Una Gogstetter '27	<i>Smith College</i> 2024-2027
Journalism Laura Fay '25, Esther Clair '27, Maya Hruskar '27, Mia Huang '28	<i>Smith College</i> 2025-2028

10.k. SURF advising

Wencong (Priscilla) Li, Weijia (Vega) Zhang	2016
Jing Xia	2015

10.l. Pedagogical Partners

Sarah Susnea , Integrating the data ethics and project-based curricula of SDS 410	<i>Spring 2025</i>
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10.m. Courses assisted, guest lectured, or co-taught

BCH 390 2 times: Spring 2017, Spring 2015	<i>Smith College</i> <i>Spring 2015-Spring 2017</i>
BIO 507 2 times: Fall 2016, Fall 2015	<i>Smith College</i> <i>Fall 2015-Fall 2016</i>
BMX 100 2 times: Fall 2016, Fall 2015	<i>Smith College</i> <i>Fall 2015-Fall 2016</i>
ENV 202 2 times: Fall 2015, Fall 2014	<i>Smith College</i> <i>Fall 2014-Fall 2015</i>
BIO 206 1 times: Spring 2015	<i>Smith College</i> <i>Spring 2015-Spring 2015</i>
BIO 132 1 times: Fall 2017	<i>Smith College</i> <i>Fall 2017-Fall 2017</i>

10.n. Courses taught

Introduction to Statistics 13 times: Spring 2026, Fall 2022, Fall 2016, Fall 2016, Fall 2015, Fall 2015, Spring 2015, Fall 2014, Spring 2014, Spring 2014, Spring 2013, Spring 2013, Fall 2012	<i>Smith College</i> <i>2012-2026</i>
Introduction to Data Science 8 times: Spring 2021, Fall 2020, Spring 2020, Spring 2019, Spring 2018, Fall 2017, Spring 2017, Spring 2016	<i>Smith College</i> <i>2016-2021</i>
Statistical & Data Sciences Capstone 8 times: Spring 2025, Fall 2024, Spring 2022, Fall 2021, Spring 2021, Fall 2019, Spring 2019, Spring 2018	<i>Smith College</i> <i>2018-2025</i>
Data Journalism 4 times: Spring 2026, Spring 2025, Spring 2023, Spring 2020	<i>Smith College</i> <i>2020-2026</i>
Advanced Programming for Data Science in R 3 times: Fall 2024, Spring 2022, Fall 2019	<i>Smith College</i> <i>2019-2024</i>
Elementary Probability and Statistics 3 times: Fall 2009, Spring 2009, Fall 2008	<i>Hunter College</i> <i>2008-2009</i>
Multiple Regression 3 times: Fall 2025, Spring 2015, Fall 2012	<i>Smith College</i> <i>2012-2025</i>
Data Science 2 times: Fall 2014, Fall 2013	<i>Smith College</i> <i>2013-2014</i>
Introduction to Discrete Mathematics 2 times: Fall 2013, Spring 2013	<i>Smith College</i> <i>2013-2013</i>
Combinatorics 1 times: Fall 2010	<i>Queens College</i> <i>2010-2010</i>
Reproducible Scientific Computing with Data 1 times: Fall 2022	<i>Smith College</i> <i>2022-2022</i>
Sports Analytics 1 times: Fall 2025	<i>Smith College</i> <i>2025-2025</i>

10.o. Online courses taught or assisted

Instructor • Multiple Regression • Correlation and Regression	<i>DataCamp</i> <i>2017-present</i>
Instructor SQL and R - Introduction to Database Queries	<i>Statistics.com</i> <i>2014-present</i>
Instructor Sabermetrics 101	<i>edX (Boston University)</i> <i>2014-2014</i>

10.p. Departmental service

Adviser SDS: Study Abroad (2016-2021)	<i>Smith College</i> <i>2016-2021</i>
Chair	<i>Smith College</i>

- MST: Mathematical Statistics Committee (2024-2025)
- CSC: Promotion Review Committee (Crouser) (2024-2025)
- SDS: Tenure and Promotion Review Committee (Kim) (2022-2023)
- SDS: Reappointment Review Committee (LaCombe) (2022-2023)
- SDS: Tenure and Promotion Review Committee (Garcia) (2021-2022)
- SDS: Tenure and Promotion Review Committee (Ott) (2020-2021)

2020-2025

Coordinator

SDS: Statistics Teaching Assistants (2013-2018)

Smith College

2013-2018

Director

SDS: Honors (2019-2023)

Smith College

2019-2023

Member

- SDS: Reappointment Review Committee (Kurtz-Garcia) (2025-2026)
- MST: Mathematical Statistics Committee (2025-2026)
- SDS: Tenure and Promotion Review Committee (Poirier) (2025-2026)
- SDS: Reappointment Review Committee (Cook) (2024-2025)
- SDS: Reappointment Review Committee (Cao) (2024-2025)
- SDS: Tenure and Promotion Review Committee (Kinnaird) (2023-2024)
- SDS: Reappointment Review Committee (Poirier) (2023-2024)
- SDS: Reappointment Review Committee (Kim) (2020-2021)

Smith College

2020-2026

SDS Subcommittee Chair

- SDS: Mentoring & Outreach subcommittee (2023-2023)
- SDS: Curriculum & Planning subcommittee (2022-2023)

Smith College

2022-2023

SDS Subcommittee Member

- SDS: Mentoring & Outreach subcommittee (2025-2025)
- SDS: Curriculum & Planning subcommittee (2024-2025)

Smith College

2024-2025

Search Committee Chair

- SDS: SDS/JNX Search Committee (?) (2026-2026)
- SDS: VAP Search Committee (Joseph) (2022-2022)
- SDS: VAP Search Committee (Sanogo) (2021-2021)
- SDS: VAP Search Committee (Rockoff) (2018-2018)
- SDS: VAP Search Committee (McNamara, Crouser) (2015-2015)

Smith College

2015-2026

Search Committee Member

- SDS: TT Search Committee (Kirschbaum) (2025-2025)
- SDS: TT Search Committee (Stevens) (2024-2024)
- SDS: TT Search Committee (Beltz-Mohrmann) (2024-2024)
- SDS: TT Search Committee (Kurtz-Garcia) (2022-2022)
- SDS: TT Search Committee (Berger) (2022-2022)
- SDS: TT Search Committee (failed) (2021-2021)
- SDS: MM2 TT Search Committee (Cao) (2021-2021)
- SDS: MM1 TT Search Committee (Poirier) (2020-2020)
- SDS: VAP Search Committee (Stoudt) (2020-2020)
- SDS: Lab instructor Search Committee (Smetzer) (2018-2018)
- SDS: TT Search Committee (Ott, Kim) (2016-2017)
- SDS: Claire Boothe Luce Search Committee (Kinnaird) (2016-2017)

Smith College

2016-2025

Unit Chair

- SDS: Statistical & Data Sciences (2014-2016)
- SDS: Statistical & Data Sciences (2018-2018)
- SDS: Statistical & Data Sciences (2020-2023)

Smith College

2014-2023

Webmaster

MTH: Mathematics & Statistics (2012-2014)

Smith College

2012-2014

10.q. College service

Advisory Committee	<i>Smith College</i>
• Journalism Concentration (2022-2027)	
• Community Engagement and Social Change Concentration (2020-2026)	<i>2020-2027</i>
Candidate (not elected)	<i>Smith College</i>
Committee on Faculty Compensation and Development (2024-2024)	<i>2024-2024</i>
Faculty Co-Director	<i>Smith College</i>
Journalism Concentration (2025-2027)	<i>2025-2027</i>
Faculty Liaison	<i>Smith College</i>
Smith Varsity Basketball Team (2014-2015)	<i>2014-2015</i>
Member	<i>Smith College</i>
• Committee on Athletics (2024-2025)	
• Ethics Across the Curriculum Group (2021-2021)	
• Committee on Educational Technology (2019-2020)	
• Science Center Administrative Assistant Search Committee (2015-2015)	
• Task Force on Statistical & Data Sciences (2014-2014)	
• Linux Systems Administrator Search Committee (2013-2013)	<i>2013-2025</i>
Teller	<i>Smith College</i>
• Smith Faculty Meetings (2027-2027)	
• Smith Faculty Meetings (2018-2018)	<i>2018-2027</i>

10.r. Community service

Assistant Coach	<i>Northampton Suburban Basketball</i>
Girls 5th & 6th grade basketball	<i>2025-2026</i>
Head Coach	<i>Northampton Baseball & Softball League</i>
12U Girls softball	<i>2025-2026</i>
Head Coach	<i>Northampton Recreation Department</i>
• Girls 5th & 6th grade Quabbin basketball	
• Girls Skills & Drills basketball	<i>2021-2025</i>
Treasurer	<i>Nonotuck Community School</i>
	<i>2019-2022</i>
Vice President	<i>Bay State Village Association</i>
	<i>2018-2019</i>

11. Skills

Languages

English (native), Spanish (B2; lived in Colombia for 11.5 months), German (B1; lived in Germany for six months)

Programming

R (expert), SQL (master), PHP (experienced), Python (novice), Java (novice), C++ (novice)

Tools

git/GitHub (experienced), Linux/bash (experienced)