

Javier Flores

College of Public Health Curriculum Vitae
Department of Biostatistics
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Educational and Professional History

Degrees Earned

2014	BS, Chemistry, University of Texas at Brownsville, Brownsville, Texas
2017	MS, Biostatistics, University of Iowa, Iowa City, Iowa
2021	PhD, Biostatistics, University of Iowa, Iowa City, Iowa

Employment History

2010 - 2011	Registered Pharmacy Technician, Autrey Pharmacy, Brownsville, Texas
2014	Undergraduate Research Assistant, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa
2011 - 2015	Tutor, University of Texas at Brownsville, Brownsville, Texas
2019	Visiting Instructor, Grinnell College, Grinnell, Iowa
2016 - 2019	Summer REU Advisor, University of Iowa, Iowa City, Iowa
2015 - 2021	Statistical Consultant, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa
2021 - 2022	Data Scientist II, Pacific Northwest National Laboratory, San Benito, Texas
2022 - 2025	Data Scientist III, Earth and Biological Sciences Directorate, Pacific Northwest National Laboratory, San Benito, Texas
2025 - Present	Research Assistant Professor, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa

Honors and Awards

2010	University Scholar, University of Texas at Brownsville, Brownsville, Texas
2010	Texas Top 10% Scholar, University of Texas at Brownsville, Brownsville, Texas
2014	Summa Cum Laude, College of Science, University of Texas at Brownsville, Brownsville, Texas
2010 - 2014	University Dean's List, College of Science, University of Texas at Brownsville, Brownsville, Texas
2010 - 2014	University President's List, University of Texas at Brownsville, Brownsville, Texas
2015	Alfred P. Sloan Scholar, Sloan Center of Exemplary Mentoring, University of Iowa, Iowa City, Iowa
2015	Iowa Recruitment Fellowship, Graduate College, University of Iowa, Iowa City, Iowa
2015	Diversity Recruitment Fellowship, College of Public Health, University of Iowa, Iowa City, Iowa

- 2016 Kathryn M. Chaloner Memorial Scholarship, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa
- 2017 Leon F. Burmeister Graduate Student Service Award, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa
- 2018 Research Week Poster Award, College of Public Health, University of Iowa, Iowa City, Iowa
- 2019 William R. Clarke Graduate Student Research Assistant Award, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa
- 2020 Hancher-Finkbine Distinguished Student Leader Award, University of Iowa, Iowa City, Iowa
One of the university's highest honors.
- 2023 Scientist and Engineer Rising Leader, Pacific Northwest National Laboratory, San Benito, Texas

Scholarship/Professional Productivity

Publications or creative works

Peer-reviewed papers and journal articles

1. Hatzenbuehler ML, **Flores JE**, Cavanaugh JE, et al. Anti-bullying policies and disparities in bullying: a state-level analysis. *Am J Prev Med*. 2017 Aug;53(2):S187-S195. doi:10.1016/j.amepre.2017.02.004
2. Neath AA, **Flores JE**, Cavanaugh JE. Bayesian multiple comparisons and model selection. *WIREs Comput Stat*. 2018;10:e1420. doi:10.1002/wics.1420
3. **Flores JE**, Cavanaugh JE. Partial Likelihood. *Wiley StatsRef*. 2018 Dec 10;1-5. doi:10.1002/9781118445112.stat05932.pub2
4. Ramirez M, Woods-Jaeger B, Peek-Asa C, **et al**. Comparing two approaches to help parents support their children's social and emotional recovery after a serious accidental injury. *Patient-Centered Outcomes Research Institute*. 2020. doi:10.25302/07.2020.CER.130602918
5. Ramirez M, **Flores JE**, Cheng G, Peek-Asa C, Cavanaugh JE. An approach to analyzing correlated contextual factors: an application for studies on violence. *Inj Prev*. 2021 Aug;27(4):161–165. doi:10.1136/injuryprev-2020-043967.
6. **Flores JE**, Cavanaugh JE. Akaike Information Criterion. In: Frey BB, editor. *The SAGE Encyclopedia of Research Design*. 2nd ed. Thousand Oaks (CA): SAGE Publications; 2021. p. 32–34.
7. Degnan DJ, **Flores JE**, Brayfindley ER, et al. Characterizing families of spectral similarity scores and their use cases for gas chromatography–mass spectrometry small molecule identification. *Metabolites*. 2023 Oct 21;13(10):1101. doi:10.3390/metabo13101101
8. **Flores JE**, Bramer LM, Degnan DJ, et al. Gaussian mixture modeling extensions for improved false discovery rate estimation in GC-MS metabolomics. *J Am Soc Mass Spectrom*. 2023 Jun;34(6):1096–1104. doi:10.1021/jasms.3c00039
9. **Flores JE**, Claborne DM, Weller ZD, et al. Missing data in multi-omics integration: recent advances through artificial intelligence. *Front Artif Intell*. 2023 Feb 9;6:1098308. doi:10.3389/frai.2023.1098308
10. Webb-Robertson BJM, Nakayasu ES, Dong F, **et al**. Decrease in multiple complement proteins associated with development of islet autoimmunity and type 1 diabetes. *iScience*. 2023;27(2):108769. doi:10.1016/j.isci.2023.108769
11. Degnan DJ, Bramer LM, **Flores JE**, et al. Evaluating retention index score assumptions to refine GC–MS metabolite identification. *Anal Chem*. 2023;95(19):7536–7544. doi:10.1021/acs.analchem.2c05783

12. Webb-Robertson BM, Wu W, Flores JE, **et al.** RNA splicing events in circulation distinguish individuals with and without new-onset type 1 diabetes. *J Clin Endocrinol Metab.* 2025;110(4):1148–1157. doi:10.1210/clinem/dgae622
13. Adamczyk PA, Hwang HJ, Chang T-H, **et al.** The oleaginous yeast *Rhodospiridium toruloides* engineered for biomass hydrolysate-derived (E)- α -bisabolene production. *Metab Eng.* 2025;90:92–105. doi:10.1016/j.ymben.2025.02.014
14. Bramer LM, Nakayasu ES, **Flores JE**, et al. Data from a multi-year targeted proteomics study of a longitudinal birth cohort of type 1 diabetes. *Sci Data.* 2025;12(1):112. doi:10.1038/s41597-024-04249-1
15. **Flores JE**, Prymolenna AV, Logan LA, et al. nmRanalysis: an open-source web application for semi-automated NMR metabolite profiling. *Anal Chem.* 2025;97(13):7037–7046. doi:10.1021/acs.analchem.4c05104
16. **Flores JE**, Cavanaugh JE, Neath AA. A new class of information criteria for improved prediction in the presence of training/validation data heterogeneity. *Comput Stat.* 2025;40(5):2389–2423. doi:10.1007/s00180-024-01559-1
17. Claborne DM, Jensen MH, **Flores JE**, Bramer LM and Erwin SH (2026). GenrAltOR: Generative AI for 'Omics Research. *J Open Source Softw*
18. Claborne DM, **Flores JE**, Erwin SH, Durell JL, Richardson RE, Fore RA and Bramer LM (2026). Consistency of Feature Attribution in Deep Learning Architectures for Multi-Omics. *Sci Rep*
19. **Flores JE**, Degnan DJ, Eberlim de Corilo Y, Clendinen CS and Bramer LM (2026). The Power of Many: An Ensemble Approach to Spectral Similarity. *Anal Chem.*

Grants and Contracts

Active (Funded)

1. Transfer Learning for More Efficient Experimental Design and Discovery; Predictive Phenomics Initiative, PNNL Lab Directed R&D; Flores, Javier E. and Stratton, Kelly (Principal Investigators)
 - Oct 1, 2024 - Dec 1, 2026
 - Amount: \$516,000.00

Completed

1. Semi-Automated NMR Metabolite Profiling Software; Earth and Molecular Sciences Laboratory, PNNL Lab Directed R&D; Flores, Javier E. (Principal Investigator)
 - Jul 1, 2021 - Oct 1, 2022
 - Amount: \$230,232.00
2. Semi-Automated NMR Metabolite Identification via Machine Learning; Earth and Molecular Sciences Laboratory, PNNL Lab Directed R&D; Flores, Javier E. (Principal Investigator)
 - Oct 1, 2022 - Dec 31, 2023
 - Amount: \$224,981.00
3. A Robust, Ensemble Machine Learning Integration Approach for Meta- and Multi-Omic Modeling of Soil Systems; Earth and Biological Sciences Directorate, PNNL Directed R&D; Flores, Javier E. and Degnan, David (Principal Investigators)
 - Oct 1, 2024 - Oct 1, 2025
 - Amount: \$175,000.00
4. A Novel, Integrative Multi-Omics Network Visualization Tool; Earth and Molecular Sciences Laboratory, PNNL Directed R&D; Flores, Javier E. (Principal Investigator)
 - Jul 1, 2025 - Jan 1, 2026
 - Amount: \$59,917.00

Presentations

Oral Presentations

- 2017 **Flores, J. E.**, Hatzenbuehler, M. L., Cavanaugh, J. E., Onwuachi-Willig, Angela, & Ramirez, M. R. Anti bullying policies and disparities in bullying: A state-level analysis. Presented at the James
- 2017 **Flores, J. E.**, Hatzenbuehler, M. L., Cavanaugh, J. E., Onwuachi-Willig, Angela, & Ramirez, M. R. Anti bullying policies and disparities in bullying: A state-level analysis. Presented at the University of Iowa Research Week Symposium, Iowa City, IA.
- 2017 Neath, A. A., **Flores, J. E.**, & Cavanaugh, J. E. Bayesian multiple comparisons and model selection. Presented at the University of Iowa Department of Biostatistics Journal Club, Iowa City, IA.
- 2017 **Flores, J. E.**, & Cavanaugh, J. E. Multiple comparisons: A bayesian model selection approach (with an application to the effect of state policy in reducing disparities in bullying). Presented at the University of Iowa Department of Biostatistics Preceptorship Symposium, Iowa City, IA.
- 2018 **Flores, J. E.**, Neath, A. A., & Cavanaugh, J. E. A bayesian model selection approach to multiple comparisons. Presented at the James F. Jakobsen Memorial Graduate Conference, Iowa City, IA.
- 2018 **Flores, J. E.**, Neath, A. A., & Cavanaugh, J. E. A bayesian model selection approach to multiple comparisons. Presented at the University of Iowa Research Week Symposium, Iowa City, IA.
- 2018 **Flores, J. E.**, Neath, A. A., & Cavanaugh, J. E. A bayesian model selection approach to multiple comparisons. Presented at the Joint Statistical Meetings, Vancouver, BC.
- 2020 **Flores, J. E.**, & Cavanaugh, J. E. A-i-(don't)-c the future: A new class of selection criteria geared towards(better) prediction. Presented Virtually at the Joint Statistical Meetings.
- 2021 **Flores, J. E.**, & Cavanaugh, J. E. A-i-(don't)-c the future: A new class of selection criteria geared towards(better) prediction. Presented Virtually at the Joint Mathematics Meetings.
- 2021 **Flores, J. E.** Unsupervised learning. Presented Virtually at the Pacific Northwest National Laboratory.
- 2021 **Flores, J. E.** Playing in PNNL's Backyard. Invited Presentation for the "Statistical Scientists of the Math Alliance: A Focus on Diversity & Recent Graduates" Invited Program at the 2023 Joint Statistical Meetings.
- 2022 **Flores, J. E.** nmRanalysis: Open-source software for semi-automated NMR metabolite quantification. Presented at the 2022 Environmental and Molecular Sciences Laboratory Integration Meeting.
- 2022 **Flores, J. E.**, & Prymolenna, A. V. Semi-automated NMR metabolite profiling software. Presented Virtually at the 2022 Pacific Northwest National Laboratory Techfest.
- 2023 **Flores, J. E.** The power of simulation: Using simulation to answer statistical questions. Presented at the 2023 Environmental and Molecular Laboratory Summer School Program.
- 2023 **Flores, J. E.** Unsupervised learning. Presented at the 2023 Environmental and Molecular Laboratory Summer School Program.

- 2024 **Flores, J. E.** Mathematics and government service panel. Invited Panelist for the Career Paths in the Mathematical Sciences Workshop Hosted by the Institute for Mathematical and Statistical Innovation at the University of Chicago.
- 2024 **Flores, J. E.** nmRanalysis: An open-source web application for semi-automated NMR metabolite profiling. Invited Poster Presented at the 2024 Environmental and Molecular Sciences Laboratory Science and Technology Advisory Committee Meeting.
- 2025 **Flores, J. E., & VonKaenel, E.** Data requirements for the use of transfer learning to optimize experimental design. Presented Virtually at the 2025 Pacific Northwest National Laboratory Techfest.

Service

Professional Service

National/International Committees

- 2023 Summer School Program, Earth and Molecular Sciences Laboratory, Pacific Northwest National Laboratory, San Benito, Texas (Co-Director)

University, College, Department Service

University

- 2015 - 2016 Graduate Student Senate, University of Iowa, Iowa City, Iowa (Student Representative)
- 2018 - 2019 Graduate and Professional Student Government, University of Iowa, Iowa City, Iowa (Student Representative)

College

- 2015 - 2016 Diversity Committee, College of Public Health, University of Iowa, Iowa City, Iowa (Student Representative)
- 2016 - 2018 Operations and Logistics, Graduate Student Association, College of Public Health, University of Iowa, Iowa City, Iowa (Chair)
- 2017 - 2018 Dean Search Committee, College of Public Health, University of Iowa, Iowa City, Iowa (Student Representative)
- 2018 - 2019 Graduate Student Association, College of Public Health, University of Iowa, Iowa City, Iowa (President)

Department

- 2016 - 2018 Student Organization, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa (Vice President)
- 2018 - 2019 Student Organization, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa (President)
- 2018 - 2021 Student Advisory Committee, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa (Student Representative)
- 2024 - 2025 Summer Institute in Biostatistics, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa (Panelist)

Media Contributions

- 2017 **Flores, J. E.** BMSMC. <https://github.com/javenrflo/BMSMC>
Software
- 2022 **Flores, J. E.** picR. <https://cran.r-project.org/web/packages/picR/index.html>
Software
- 2023 **Flores, J. E.**, Prymolenna, A. V., Lewis, L. A., Winans, N. M., Eder, E. K., Kew, W., Young, R. P., & Bramer, L. M. nmRanalysis. <https://nmRanalysis.emsl.pnnl.gov/app/nmranalysis>
Software