

Department of Mathematics and Statistics at UNM Publications

Compiled by María Cristina Pereyra

Papers published/accepted/in press in 2025

1. **M. D. Blair*** and **C. Park††**, *L^q estimates on the restriction of Schrödinger eigenfunctions with singular potentials*. Comm.Partial Differential Equations **50**, no. 10-12, 1234–1290 (2025). <https://doi.org/10.1080/03605302.2025.2551500>
2. **M. D. Blair***, X. Huang, and C. D. Sogge, *Improved spectral projection estimates*. J. Eur. Math. Soc. (JEMS) (2024) (online first 12/11/2024). <https://doi.org/10.4171/JEMS/1571>
3. **C. P. Boyer**** and Christina Tønnesen-Friedman, *Constant Scalar Curvature Sasaki Metrics*. In: Ornea, L. (eds) Real and Complex Geometry. Springer, Cham., 75–92 (2025). https://doi.org/10.1007/978-3-031-92297-8_3
4. B. Zhu, K. Hean, S. Wong, Y. Wang, R. Banerjee, H. Xue, Q. Wang, **A. Cerjan*****, Q. J. Wang, W. Chang, and Y. D. Chong, *Topological photonic crystal fibre*. Science Advances **11** (46), eady1476 (2025). <https://doi.org/10.1126/sciadv.ady14>
5. **A. Cerjan*****, *A Compact Topological Microwave Isolator: Photonic devices*. Nat. Photon. **19**, 1035–1036 (2025). <https://doi.org/10.1038/s41566-025-01761-7>
6. S. Wong, **A. Cerjan*****, K. G. Makris, M. Khajavikhan, D. Christodoulides, and S. S. Oh, *Nonlinear topological photonics: capturing nonlinear dynamics and optical thermodynamics*. ACS Photonics **12** (5), 2291–2303 (2025). <https://doi.org/10.1021/acsphotonics.4c02430>
7. **A. Cerjan*****, *Classifying topology in open and nonlinear photonic systems*. Proceedings Volume PC13577, Metamaterials, Metadevices, and Metasystems 2025; PC13577II (2025). <https://doi.org/10.1117/12.3063694>
8. C. D. Spataru, W. Pan, and **A. Cerjan*****, *Topological Phenomena in Artificial Quantum Materials Revealed by Local Chern Markers*. Phys. Rev. Lett. **134** (12), 126601, 8pp. (2025). <https://doi.org/10.1103/PhysRevLett.134.126601>
9. P. Sentz, **J. H. Chaudhry***, and L. N. Olson, *On computing coercivity constants in linear variational problems through eigenvalue analysis*. IMA Journal of Numerical Analysis, draf110 (2025). <https://doi.org/10.1093/imanum/draf110>

10. N. Panda, **J. H. Chaudhry***, N. Klein, J. Carzon, and T. Butler, *Local Stochastic Sensitivity Analysis For Dynamical Systems*. Proceeding's of the he 28th International Conference on Artificial Intelligence and Statistics (AISTAT), Mai Khao, Thailand. PMLR **258** (2025). <https://proceedings.mlr.press/v258/panda25b.html>
11. M. A. Achondo, **J. H. Chaudhry***, and C. D. Cooper, *An Investigation of Physics Informed Neural Networks to solve the Poisson-Boltzmann Equation in Molecular Electrostatics*. J. Chem. Theory Comput. **21** (7), (2025), 3726–3744. <https://doi.org/10.1021/acs.jctc.4c01747>
12. **S.K. Alver†**, **F.G.W. Christensen***, and **J.H. Degnan***, *Improvement to GLASS/ maximum tree method of species tree inference using measurement error modified single linkage clustering*. in IEEE Transactions on Computational Biology and Bioinformatics **22** (2), 710–720, March-April 2025. <https://doi.org/10.1109/TCBBI0.2025.3531790>
13. **R. Christensen***, *Linear Model Estimation and Prediction for $p > n$* . The American Statistician, 1–16 (2025). <https://doi.org/10.1080/00031305.2025.2566251>
14. **R. Christensen***, *Log-Linear Models and Logistic Regression. Third Edition*. Springer Texts in Statistics 2025 (xxi +545pp). <https://doi.org/10.1007/978-3-031-69038-9>
15. **M. Dewaskar***, C. Tosh, J. Knoblauch, and D. B. Dunson, *Robustifying likelihoods by optimistically re-weighting data*. J. Amer. Stat. Assoc. **120** (551), 1787–1798 (2025). <https://doi.org/10.1080/01621459.2025.2468012>
16. **E. B. Erhardt***, A. R. Mayer, H. C. Lin, et al, *The influence of intermittent hypercapnia on cerebrospinal fluid flow and clearance in Parkinson's disease and healthy older adults*. npj Parkinsons Dis. **11** (1), 334 (2025). <https://doi.org/10.1038/s41531-025-01179-6>
17. U. Nathaniel, **E. B. Erhardt***, D. S. Kumar, J. Wu, S. D. Miller, and P. Chauhan, *Optimizing pediatric “Mild” traumatic brain injury assessments: A multi-domain random forest analysis of diagnosis and outcomes*. International Journal of Clinical and Health Psychology **25** (3), 100600 (2025). <https://doi.org/10.1016/j.ijchp.2025.100600>.
18. **E. Erhardt*** and E. A. Allen, *Data Visualization*. In: Lovric, M. (eds) International Encyclopedia of Statistical Science, Springer, Berlin, Heidelberg, 627–638 (2025). https://doi.org/10.1007/978-3-662-69359-9_158.
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20. A. R. Mayer, T. V. Wick, J. R. McQuaid, M.L. Boucher, A. B. Dodd, C. R. Robertson-Benta, H. J. van der Horn, **E. B. Erhardt***, R. E. Sapien, R. Tarawneh, and R. Mannix, *Blood-based biomarkers suggest prolonged axonal Injury following pediatric mild traumatic brain injury*. Scientific Reports **15** (1), 4189 (2025). <https://doi.org/10.1038/s41598-024-84053-4>
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22. M. Kiebs, O. Ousdal, D. Farrar, M. Laroy, **E. Erhardt***, and C. Abbott, *Cortical and subcortical gray matter volume change and cognitive performance after Electroconvulsive Therapy*. Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation **18** (1), 268 (2025). <https://doi.org/10.1016/j.brs.2024.12.16>
23. H. J. van der Horn, A. B. Dodd, T. V. Wick, C. Robertson-Benta, J. R. McQuaid, **E. B. Erhardt***, S. D. Miller, D. Sasi Kumar, U.Nathaniel, J. M. Ling, S. G. Ryman, A. A. Vakhtin, R. E. Sapien, J. P. Phillips, R. A. Campbell, and A. R. Mayer, *Alterations of cerebrovascular reactivity following pediatric mild traumatic brain injury are independent of neurodevelopmental changes*. J. Cerebral Blood Flow & Metabolism **45** (1), 125–139 (2025). <https://doi.org/10.1177/0271678X241270531>
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25. **C. P. Boyer****, **H. Huang***, E. Legendre, and C. W. Tonnesen-Friedman, *Twins in Kähler and Sasaki geometry*. Journal of Geometry and Physics **216** (2025), 105591. <https://doi.org/10.1016/j.geomphys.2025.105591>
26. **K. N. Rumsey††**, D. Francom, G. C. Gibson, J. D. Tucker, and **G. Huerta*****, *Bayesian Adaptive Polynomial Chaos Expansions*. Accepted Stat (2025), preprint arXiv:2510.25036
27. R. C. Garrett, L. Shand, **J. G. Huerta*****, *A Multivariate Space-Time Dynamic Model for Characterizing the Atmospheric Impacts Following the Mt Pinatubo Eruptio*. Environmetrics **36** (6) e70030, 18pp. (2025). <https://doi.org/10.1002/env.70030>
28. G. Hutchings, **K. Rumsey††**, D. Bingham, and **G. Huerta*****, *Enhancing Approximate Modular Bayesian Inference by Emulating the Conditional Posterior*. Computational Statistics & Data Analysis **212**, 108235, 15pp. (2025). <https://doi.org/10.1016/j.csda.2025.108235>
29. D. Francom, J. D. Tucker, **G. Huerta*****, K. Shuler, and D. Ries, *Elastic Bayesian Model Calibration*. SIAM/ASA Journal on Uncertainty Quantification **13** (1), 195–227 (2025). <https://doi.org/10.1137/24M1644092>
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31. A. Duwenig, K. Eifler, P. Ganesan, **L. Ismert*****, V. Meschitti, S. Plosker, and K. Strung, *The Operator Algebras Mentor Network: Impact of Community-Based Mentoring*. Journal of Humanistic Mathematics **15** (1), 334–354 (2025).
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32. **S. R. Lau***, *Dual perturbation method for spectral solution of block-posed harmonic problems*. Wiley Journal Numerical Linear Algebra with Applications **32** (1), e2587, 27pp. (2025).
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<https://doi.org/10.1038/s42005-025-02382-w>
34. **T. A. Loring***, *Transforming antiunitary symmetries to a normal form*. Expositiones Mathematicae (2025). <https://doi.org/10.1016/j.exmath.2025.12573>
35. K. Y. Lee, S. Wong, S. Vaidya, **T. A. Loring***, **A Cerjan*****, *Classification of Fragile Topology Enabled by Matrix Homotopy*. Phys. Rev. Research **7**, 033235 (2025).
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41. **A. C. Nelson***, S. A. McKinley, M. M. Rolls, and M.-V. Ciocanel, *Emergent microtubule properties in a model of filament turnover and nucleation*. Journal of Theoretical Biology **616**, 112254, 12pp. (2026). <https://doi.org/10.1016/j.jtbi.2025.112254>

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43. **M. Nitsche***, A. U. Oza, and M. I. Siegel, *On the stability of an in-line formation of hydrodynamically interacting flapping plates*. J. Fluid Mech. **1013**, A14, 32pp. (2025).
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47. **D. Chung††**, **J. C. Moraes††**, **M. C. Pereyra***, and B. D. Wick, *Two-weight estimates for the square function and t -Haar multipliers*. J. Geom. Anal. **36**, 1 (2026).
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61. **D. R. Stewart†**, S. E. Sesnie, P. Schmidt, et al., *Assessing trends and density of bird species in bottomland hardwood forests and riparian forests using simulation and sample size optimization for surveys*. Sci Rep **15**, 7137 (2025). <https://doi.org/10.1038/s41598-025-91804-4>
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In addition the following volumes of Poetry, Essays and Reviews were edited and published by our own PTI Billy Brown.

- **Billy Brown*****, *Fixed and Free Quarterly: Volume 4, Issue 4, Winter 2025*. Independently Published, ISBN-13: 979-8274946070
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- **Billy Brown*****, *Fixed and Free Quarterly: Volume 4, Issue 2, Summer 2025*. Independently Published, ISBN-13: 979-8282651140
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