Konrad Gomez-Haibach

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EDUCATION

University of Connecticut, Storrs, CT — 2025–Present
PhD Student, Department of Statistics
Worcester Polytechnic Institute, Worcester, MA — May 2025
B.S. Mathematics; Minor in Interactive Media and Game Design

GRADUATE COURSEWORK

Theoretical Foundations & Core Models
Mathematical Statistics I & II; Linear Models I; Linear Models II (Planned Spring 2027)
Spatio-Temporal & Advanced Computing
Applied Spatio-Temporal Statistics; Statistical Computing; Time Series Analysis (Planned Spring 2027)
Biostatistics & Experimental Design
Epidemiology; Design of Experiments; Applied Statistics I & II

TECHNICAL & RESEARCH SKILLS

Statistical Modeling: linear models, experimental design, probabilistic modeling, spatio-temporal methods.
Optimization: simulated annealing; discrete optimization for incomplete markets; convexified maximin/minimax structures.
Graph Theory & Networks: centrality measures; graph-theoretic visualization; pathway analysis in scientific systems.
Scientific Computing: numerical methods; iterative algorithms; graph-based computation; simulations.
Programming: R, Python, Java, C/C++, MATLAB, Mathematica, Linux.
Tools: Overleaf (LaTeX), Microsoft Office, STELLA, Twine.

AWARDS

Gottfried Noether Award, University of Connecticut — 2025–2026
For achieving the highest scholastic excellence, demonstrating profound logical rigor, and exhiting a superior understanding of mathematical statistics.
WPI Tuition Exchange Scholarship — 2021–2025
Tuition merit scholarship.
NSF Idea Machine Blue Ribbon Prize (Top 14 National Finalist) — 2019
Recognized for designing an open-world scientific simulation concept integrating human intelligence with computational modeling.

PUBLICATIONS

Gomez-Haibach, K., Nguyen, D., Sanseverino, M., & Gomez, M. A. (2026). *Graph-theoretic visualization of ion conduction pathways: Concepts and a tutorial. MRS Bulletin*, 51, 885–896. DOI: 10.1557/s43577-026-01109-8
Gomez-Haibach, K. (2025). *Toward Discrete, Incomplete Market Cost Efficiency.* Mathematical Finance Project 2024/25 : Worcester Polytechnic Institute. Digital WPI ID: d217qt77t
Gomez-Haibach, K., Ehrensperger, C., Amin, M., Kratman, A., & Malnicof, A. (2024). *Ham Radio as a Gateway for STEM Education.* Worcester Polytechnic Institute. Digital WPI ID: 3484zn197
Gomez-Haibach, K. S., & Gomez, M. A. (2023). *Revised centrality measures tell a robust story of ion conduction in solids. J. Phys. Chem. B*, 127(43), 9258–9266. DOI: 10.1021/acs.jpcb.3c03886
Patel, M., Zhong, J., Gomez-Haibach, K. S., Gomez, M. A., & King, G. (2020). *Low-energy $Sr_2MSbO_{5.5}$ structures show significant distortions near oxygen vacancies. Int. J. Quantum Chem.*, 120, e26356. DOI: 10.1002/qua.26356