Ryan K. Vaughn, PhD | 415-420-5350 | rkvaughn@gmail.com | Quantitative Management | Strategic Communications

May-2025

Senior economist, research lead, and strategic leader with extensive experience in real estate finance, risk management, climate risks, and analytics. Proven track record of managing cross-functional teams, driving strategic initiatives, and communicating complex information to senior executives, clients, and regulators. Expertise spans data science, valuation methodologies, natural disaster risk, catastrophe risk models, market analytics, risk frameworks, and climate finance.

Relevant Achievements

- Led the entire lifecycle of multiple model development and product initiatives, from the initial design stages to ensuring compliance with regulatory standards and governance frameworks.
- Developed and directed Freddie Mac's climate and natural disaster scenario analysis framework.
- Pioneered innovative valuation methodologies incorporating emerging risk factors such as climate risk, shaping industry best practices, and compliance.

Relevant Professional Experience

Risk Analytics and Research Director, Freddie Mac, Single-Family *(2022 – Present)*

- Integrated robust catastrophe and climate analytics to enhance property valuation frameworks.
- Managed strategic communications of advanced analytics to senior management and regulators.
- Demonstrated strong leadership and strategic thinking by playing a key role in defining the strategy to integrate climate-risk analytics into business operations..
- Defined risk division research strategy for climate and natural disaster risk assessment
- Developed scenario analysis frameworks combining property-level data with risk modeling to inform valuation and portfolio management.

Technical Product Manager, Jupiter Intelligence *(2021 - 2022)*

- Delivered scalable solutions and provided clear insights to senior executives and external stakeholders.
- Collaborated closely with clients (REITs, non-profits, global enterprises) to develop customized climate-risk financial models.
- Developed tailored climate-risk dashboards using Python and Tableau.
- Directed various short-term projects, such as examining optimal grape vineyard locations for California coastal wineries, researching heat stress impacts in Sierra Leone, and assessing drought vulnerabilities in Colombia.

SVP, Collateral Valuations & Quantitative Analytics, Bank of America *(2011 – 2021)*

- Directed large-scale initiatives to improve the accuracy and transparency of real estate valuation methods, supporting strategic decision-making and regulatory compliance.
- Managed cross-functional teams (analytics, IT, compliance) through the full product lifecycle, delivering measurable improvements to business performance and stakeholder satisfaction.
- Created ROI analyses and strategic presentations that supported executive decision-making on real estate analytics investments.
- Integrated innovative climate risk assessment approaches into property valuation and risk management, aligning with TCFD and ESG guidelines.

Other Experience

- California State University, San Marcos, Adjunct Professor *(08/2013 – 06/2015)*
- UCLA Anderson School of Management, Visiting Scholar *(06/2011 – 08/2014)*
- California State University Northridge, Adjunct Professor *(08/2009 - 01/2010)*

Customer and Business-Focused Skills:

- Translating complex analytics into easy-to-follow insights
- Strategic climate risk communication
- Model Lifecycle Management
- Regulatory Reporting (FHFA, OCC)
- Climate risk scenario analysis
- Expertise in urban economics, environmental economics, and econometrics

Technical Skills:

- Data Analytics: R, Python, SQL, Tableau,
- Spatial Data Analytics: Python, QGIS, ArcGIS
- Agile Project Management
- Catastrophe (CAT) and Climate Modeling Tools: KatRisk, Verisk, RMS, First Street, Jupiter

Recent Certifications:

- GARP SCR certification, 10/2021
- CEEM (Verisk), 03/2024
- University of Maryland - Climate Finance and Risk Management Certificate, 03/2025

Education

- Ph.D., Environmental and Urban Economics, UCLA
- M.A., Economics, San Francisco State University
- B.A., Economics & Mathematics, UC San Diego

References available upon request