BROLIN O'CONNELL
565 Pennsylvania Ave NW, Washington, DC 20001 • • • • brolin.oconnell@icloud.com • (970) 301-3683

EDUCATION

Johns Hopkins University   **Washington, DC**
School of Advanced International Studies (SAIS)   **May 2027**
Master of Arts in International Economics and Finance
- Merit-Based Fellowship Recipient (2025-2026)
- Johns Hopkins Whiting School of Engineering - Pursuing Optimization and Real Analysis I

Colorado State University   **Fort Collins, CO**
Bs in Statistics, Economics   **May 2025**
GPA: 3.770
Top 10% of Economics Class, Dean's List (Spring 2024, Spring 2025)
Member, Omicron Delta Epsilon (International Econ Honor Society)

University of Nebraska-Lincoln (Transferred)   **Lincoln, NE**
Coursework: Chemistry   **May 2023**
Scarlet Scholarship Recipient (2020-2023)

EXPERIENCE

Johns Hopkins QuantWorks Lab   **Washington, DC**
Co-Founder, Quantitative Research Lead   **November 2025 - Present**
- Founded and led a quantitative research lab centered on statistical inference, time-series modeling (ARIMA-class), regression theory, and computational analysis of dynamic systems

Stochastic Systems Modeling & Simulation Project   **Fort Collins, CO**
Quantitative Researcher   **November 2023 - March 2025**
- Simulated reflected Ornstein–Uhlenbeck stochastic differential equations, analyzing ergodicity, stationary distributions, boundary reflection, and long-run convergence of constrained stochastic systems

Quantitative Research Assistant (Stochastic Simulation)   **CO**
Department of Statistics Colorado State University   **January 2024 - May 2024**
- Mentored by Prof. Dongzhou Huang on advanced numerical simulation of the 2D reflected Ornstein–Uhlenbeck process; wrote and validated over 1,000 stochastic path simulations in R and synthesized key findings

Energy Systems Modeling & Time-Series Analysis Quantitative   **Fort Collins, CO**
Quantitative Analyst   **January 2025 - May 2025**
- Conducted panel and time-series regression analysis on 10+ years of regional electricity generation data, identifying statistically significant system response to price signals
- Utilized fixed-effects regressions and volatility models (ARIMA-GARCH) to assess price effects with 15+ years of carbon auction and generation data

Applied Time-Series Forecasting   **Fort Collins**
Quantitative Researcher   **January 2025 - May 2025**
- Built and assessed a Vector Error Correction Model, examining cointegrated stochastic processes, long-run equilibria, and short-run adjustment dynamics in a multivariate system
- Developed a VECM-based forecasting model operating with CPI-adjusted municipal tax data, achieving a mean absolute error (MAE) of $3.24M/month in out-of-sample forecasts for 2024

Multivariate System Modeling & Regression Analysis   **Colorado**
Student Researcher   **January 2025 - May 2025**
- Formulated and estimated a multivariate regression system, comparing alternative functional forms, analyzing specification error and variance structure, and selecting optimal models through diagnostic and goodness-of-fit analysis
- Collaborated in a team of 4 to build and compare linear, log-linear, and second-degree polynomial regression models estimating county-level cost of living; improved model explanatory power by 20+ percentage points with polynomial approach

Teaching Assistant   **Fort Collins, CO**
Applied Economic Modeling   **January 2024 - May 2024**
- Enhanced instruction emphasizing optimization, comparative statics, and mathematical interpretation of empirical models

ADDITIONAL INFORMATION
- Pursuing Optimization and Real Analysis I through the Johns Hopkins Whiting School of Engineering, alongside applied work building statistical models, Machine learning methods, and Python (NumPy) algorithms for data analysis and visualization.