Dana Annalise Golden

PhD Candidate Economics · Stony Brook University

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Education

Stony Brook University	*Stony Brook, New York*
DOCTOR OF PHILOSOPHY, ECONOMICS	*2021 - 2026*

- Advisors: Yiyi Zhou and Steven Stern
- Certificate in Artificial Intelligence

Georgia Institute of Technology	*Atlanta, Georgia*
MASTER OF SCIENCE, ANALYTICS	*2020 - 2022*

Concentration: Machine Learning

Georgia Institute of Technology	*Atlanta, Georgia*
MASTER OF SCIENCE, ECONOMICS	*2018 - 2019*

Georgia Institute of Technology	*Atlanta, Georgia*
BACHLEOR OF SCIENCE, ECONOMICS	*2016 - 2018*

Professional Experience

2025	**Research Analyst**, Food and Resource Economics, University of Florida
2023-2025	**NSF Funded Research Fellow**, BIAS-NRT: Detecting and Addressing Bias in Data, Humans, and Institutions
Summer 2023-May 2024	**Graduate Research Assistant**, Spellman High Voltage Power Electronics Lab
2023	**Graduate Research Assistant**, Eva Carceles-Poveda
2022-2024	**Writing Center Tutor**, Stony Brook Writing Center
Summer 2023	**Data Scientist Intern**, Bureau of the Fiscal Service
Summer 2023	**Economist Intern**, USDA Economic Research Service
2022-2023	**Microenomics PhD Tutor**, Stony Brook Economics Department
Summer 2022	**Economist intern**, Federal Energy Regulatory Commission
2019-2021	**Agricultural Economist**, USDA Economic Research Service
2017-2019	**Peer Tutor**, Georgia Tech Athletic Association
Summer 2017	**Financial Management Student Intern**, Defense Finance and Accounting Service

Job Market Paper

Investment and the Transfer of Power: Dynamic Effects of Transmission in Electricity Markets.

Renewable resources are required for energy transition, but not all locations have abundant renewables. Additional transmission provides a potential solution and allows for transfer of renewable power from renewables-rich to renewables-poor areas. I examine the impacts of increased long-distance transfer of electricity on the investment choices of fossil fuel and renewable generators. I detail and estimate a dynamic model for generator behavior consisting of a short-run optimal-dispatch problem for the operations market with consideration of the effects of line losses and transmission constraints between zones and a long run dynamic game for the capacity market. I run counterfactual experiments to analyze the impacts to consumer welfare, emissions, and reliability as well as incentives for investment in renewable energy.

Publications

Deepi Singh, Dana Golden, Gaurav Bhansali, Ali Anwar, Shreepooja Singh, Fang Luo, Yiyi Zhou. 2023. Offshore Horizons: HVDC Wind Farms - Exploring Techno-Economic Dimensions. (IEEE Access)

High Voltage Direct Current (HVDC) technology is a cornerstone of efficient Offshore Wind Farm (OWF) power transmission. This review examines HVDC OWF connections through four interlinked dimensions: economic considerations, connection topologies, converter designs, and technical modeling. It begins with an in-depth economic analysis, evaluating cost-effectiveness, reliability, and market dynamics, focusing on investment, operational costs, and lifecycle expenses. Building on this foundation, the review explores various collection and transmission architectures, highlighting their technical trade-offs, and evaluates power converter designs for efficiency, reliability, and offshore adaptability. Finally, advanced modeling and simulation techniques are reviewed to optimize system performance, enhance reliability, and balance computational efficiency. Together, these insights provide a holistic framework for sustainable and economically viable offshore wind energy transmission systems.

Working Papers

Non Linear Dividend Taxation and Shareholder Disagreement. (with Alexis Anagnostopoulos, Eva Carceles-Poveda, and Gabriel Mihalachel)

In 2020, nearly 50% of U.S. dividend income faced a different marginal tax rate than the top bracket, with the tax wedge from differential dividend taxation fluctuating significantly since 1983. This has unintentionally fueled shareholder disagreement over firm investment levels. Using ISS data, we show that such disagreement is more pronounced for investment and financial policies than for issues like director elections. To explore these dynamics, we develop a heterogeneous agent, general equilibrium model where differential dividend taxation generates shareholder conflict over firm decisions. We illustrate how voting can resolve this while preserving price-taking behavior and competitive, forward-looking investment. Changes in the median shareholder—driven by both shocks and capital dynamics—amplify capital fluctuations, increasing investment and stock price volatility.

Works in Progress

Industrial Policies in a Market with Environmental Externalities: Evidence from the Chinese Solar Panel Industry. (with Yiyi Zhou and Xiangjun Ma)

Monocrystalline silicon (c-Si) technology has dominated in the Solar Photovoltaics (PV) manufacturing and the production costs have declined significantly over the past decade. This study investigates the role of learning-by-doing (LBD) in driving this cost reduction and forming the technological pathway of the industry, and its interaction with input price and government subsidy policies.

Commodity Markets LLM-based Futures Forecasting. (with Dikshya Mohanty, and Khushboo Singh.)

Commodity markets are inherently more physically-driven and information based than equities markets. The knowledge requirements in commodities has typically made these markets more reliant on text-based information than other markets are. A cottage industry exists of economists using text data to understand commodity market movements. New transformer-based architectures have revolutionized the practice of natural language processing. However, many commodities predictions trained on news sources suffer from a lack of validity due to an inability to separate fact from opinion in news reports. Our paper solves this problem by utilizing the government reports commonly published in commodity markets to train a transformer-based model on a form of text ground truth and then fine-tuning the model on news reports. The model is tested on news reports from out of the sample, and results are reported.

AI Efficiency and United States Power Quality and Emissions. (With Aruna Balasubramanian and Niranjan Balasubramanian)
Data centers have proven a major source of load growth throughout the 21st century. Artificial Intelligence has We analyze the impacts of improvements in artificial intelligence efficiency on power quality and availability in the United States. We further examine the effects of data center power consumption on emissions in the presence of mitigating power procurement policies such as Power Purchase Agreements (PPAs) and Renewable Energy Certificates (RECs).

Taxation with Debt Default. (With Eva Carceles-Poveda and Xavier Mateos-Planas.)

The International Determinants of Shareholder Disagreement. (with Alexis Anagnostopoulos and Eva Carceles-Poveda)

Conference Presentations

Eva Carceles-Poveda, Alexis Anagnostopoulos, Dana Golden, and Gabriel Mihalachel. Non-Linear Dividend Taxation and Shareholder Disagreement 2025. Society for Economic Dynamics.*

Dana Golden, Dikshya Mohanty, and Khushboo Singh. 2025. Commodity Markets LLM-based Futures Forecasting. Southern Agricultural Economics Association.

Dana Golden, Dikshya Mohanty, and Khushboo Singh. 2024. Transformers but not the Kind You're Thinking of: Commodity Market Forecasting using Natural Language Processing. Economics & Computation. Poster.

Eva Carceles-Poveda, Alexis Anagnostopoulos, Dana Golden, and Gabriel Mihalachel. 2024. Non Linear Dividend Taxation and Shareholder Disagreement. Midwestern Macro.*

Dana Golden. 2020. Can an AI figure out whether an AI can take my job? Structural Blueprint for AI-generated Academic Papers in Economics. AAEA.

Dana Golden. 2020. Solving the Basis Aggregation Problem. AAEA. Poster.

Dana Golden. 2020. Agricultural basis from a game theoretic perspective. AAEA. Poster.

Government and Industry Publications

Comparative Study & Networked Benchmarking of Power Electronics Architectures for HVDC OSW Energy Integration: May 2024

Oilseeds Outlook Report: May 2020-July 2021

Wheat Outlook Report: December 2020-January 2021

Awards, Fellowships, & Grants

2024-2025	**OVPR Seed Grant (with Eva Carceles-Poveda and Ria Rajiv Shah)**, Stony Brook University Office of Proposal Development	*$ 40,000*
2023-2025	**NSF BIAS-NRT Research Fellowship**, National Science Foundation	*$ 74,000*
2021-2026	**Department of Economics Diversity Fellowship**, Stony Brook University Economics	*$ 75,000*

Teaching Experience

Fall 2025	**Economics of Environmental and Natural Resources**, Instructor	
Summer 2025	**Data Science and Machine Learning**, Instructor	
Winter 2025	**Economics of Environmental and Natural Resources**, Instructor	
Summer 2024	**Data Science and Machine Learning**, Teaching Assistant	
Fall 2023	**Economics and Sustainability**, Instructor	
Spring 2023	**Economics and Sustainability**, Instructor	
Spring 2023	**Econometrics (graduate)**, Teaching Assistant	
Fall 2022	**Mathematical Statistics (graduate)**, Teaching Assistant	
Spring 2022	**Introduction to Economics**, Teaching Assistant	
Fall 2021	**Introduction to Economics**, Teaching Assistant	
Spring 2019	**Philosophy of Science, Technology, and Human Values**, Teaching Assistant	*Georgia Tech*

Outreach & Professional Development

SERVICE AND OUTREACH

2025	**IEEE Access**, Reviewer
2022-2023	**Graduate Student Organization**, Chair of Board of Appeals
2024	**Stony Brook University Game Theory Conference**, Volunteer
2022-2023	**Economics Graduate Student Departmental Grievance Committee**, Student Representative
2021-2025	**Graduate Student Organization**, Economics Senator
2020-2021	**Books Not Bombs**, Tutor
2020-2021	**AEA LGBT Mentoring Program**, Mentor
2017-2022	**Georgia Tech and Archer high school debate teams**, Debate Judge
2019	**Pipeline Project**, Mentor

Skills

- **Programming and Scripting:**

- Python (NumPy·Pandas·GeoPandas·PyTorch·TensorFlow)

- Julia, R, Matlab, Stata, SQL (PostgreSQL/BigQuery)

- Scala, Dask, &PySpark / Spark SQL

- Fortran & CUDA accelerated JAX

- JavaScript (D3/Plotly) & Tableau

- **Machine Learning / AI**:

- Supervised & unsupervised ML (Isolation Forest, PCA, SVM; ARIMA/LSTM time series)

- Reinforcement Learning (Rllib, Gym, deep Q-learning)

- Transformers, Computer vision, & LLM fine tuning (HuggingFace, LoRA/PEFT, OpenCV, NLTK)