KENNETH COX

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EDUCATION

Massachusetts Institute of Technology *August 2018 - June 2023*
Bachelor of Science in Biology GPA: 4.6/5.0

RESEARCH EXPERIENCE

EPPA Model Data Analysis - Jennifer Morris, MIT Global Change *January 2021 - Present*

- Use machine learning and data mining methods such as CART to analyze global renewable energy adoption over the 21st century, leading to two publications and a forthcoming lead authorship (**Publications 1, 2, 3)**
- Created a data visualization tool using Flask, Plotly, and SQL to simplify and democratize our analysis pipeline, efficiently able to display and analyze over 1 million data points produced by the EPPA model

Nucleic Acid Observatory - Kevin Esvelt, MIT Media Lab *Summer 2022*

- Conducted a literature review and wrote a report on using phagemids as a proof of concept of a nucleic acid observatory system that was used to plan future experiments
- Automated qPCR analysis pipeline with Python scripts hosted on this GitHub repository

DNA Repair in *S. Pombe* - Megan King, Yale School of Medicine *June 2017 - August 2018*

- Performed cell transformations, replica plating, mating, fluorescence microscopy, PCR, qPCR, and other basic lab techniques to study double-strand break repair in yeast
- Analyzed and reported experimental results, leading to a publication in the journal *Molecular Biology of the Cell*

SKILLS

Modeling and Analysis	Python (including pandas, sklearn, Keras, Plotly)
Software & Tools	MS Office, LaTeX, Github, SQL, ReactJS, Ableton Live
Other Proficiencies	Science communication/teaching, fullstack webdev

PUBLICATIONS (3/4)

1. Morris, J., Reilly, J., Paltsev, S., Sokolov, A., & Cox, K. (2022). Representing socioeconomic uncertainty in human system models. Earth's Future, 10(4), e2021EF002239.
2. Morris, J. F., & Cox, K. (2024). Application of Scenario Discovery Techniques to Probabilistic Ensembles in Exploration of Energy Futures. AGU23. (*Pending*)
3. Kanyako, F., Lamontagne, J., Snyder, A., Morris, J., Iyer, G., Dolan, F., ... & Cox, K. (2024). Compounding uncertainties in economic and population growth increase tail risks for relevant outcomes across sectors. Earth's Future, 12(1), e2023EF003930.

LEADERSHIP

MIT Momentum *Summer 2022*

- Taught the basics of data science and machine learning to over 50 high school students over two weeks
- Planned social events and coordinated logistics for the group of 20 staff members

MIT Undergraduate Association Comittee on COVID-19 *Fall 2020 - Spring 2021*

- Met with administrators to understand the Institute's decision-making process and advised student leaders accordingly, resulting in the return of social activities around campus

MIT Educational Studies Program *Fall 2018 - Present*

- Taught over a dozen classes to both middle and high school students on a wide array of topics, including mathematical modeling, existential risks, and astrobiology