

Ethan Lee Copple

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Systems Scientist | Engineer & Anthropologist | Human & Technical Insights for Complex Systems Intervention

Education and Skills

Oregon State University (OSU): Expected Ph.D. Graduation: September 2025 | GPA: 3.93

- **Ph.D. Candidate Industrial Engineering** (All graduate work **completed in 4 years**)
- **Dual M.S. Industrial Engineering and Applied Anthropology** (Fall 2023)

Kansas State University (KSU): Summa cum laude | GPA: 3.96

- B.S. Industrial and Manufacturing Systems Engineering (IMSE) and B.S. Anthropology

Engineering Skills: Transdisciplinary Research Design | Systems Science | Network Analysis and Structural Complexity | Operations Research | Six Sigma White Belt | Economic Analysis | Facility Layout & Design | Metric Development & Cybernetics | Statistical Experimental Design | Simulation (Simio) | Python (Gourbi), CPLEX | Quantitative Modeling, Analysis, and Visualization

Anthropological Skills: Spanish Proficiency | Interviewing & Fieldwork | Wilderness First Responder | Coding & Sentiment Analysis (NVIVO, Atlas.ti) | Policy & Institutional Analysis | GIS (ArcGIS, QGIS, Tableau) | R Project | Literature Review | Grant Writing

Professional Experience

National Science Foundation Graduate Research Fellow, Oregon State University

(Fall 2022-Current)

Dissertation Research: Systems Approaches to Healthcare Delivery Improvement

- Led a multi-year, self-directed, international, consulting-styled research project from scoping, executing, and delivering insights.
- Developed a transdisciplinary framework integrating systems engineering and the social sciences to analyze how infrastructures, policy, and social dynamics shape healthcare access and plan strategic, operational, and tactical interventions.
- Created and applied novel cybernetic metrics to assess the adaptability and complexity of healthcare systems, enabling resource-constrained decision-making for public-sector and institutional stakeholders.
- Conducted network and systems modeling to identify high-leverage intervention points and forecast cascading impacts, uncovering hidden inefficiencies and informing data-driven resource allocation and policy intervention.
- Executed over 230+ Spanish-language stakeholder interviews with administrators, clinicians, and patients; adapted engagement strategies to diverse institutional and cultural contexts.
- Maintained outreach and engagement pipelines via spreadsheet CRM; ensured follow-up across 50+ partners.
- Delivered practical insights to system administrators under constraints of political volatility, bureaucracy, and resource scarcity.

– **Case Study:** Healthcare Delivery in the Province of Buenos Aires, Argentina

Graduate Research Assistant, Human-in-the-Loop Fairness in Machine Learning, OSU

(Summer 2021-Fall 2023)

- NSF EAGER Project to study human-in-the-loop artificial intelligence (AI) and algorithmic fairness in machine learning (ML).
- Advanced socio-technical methods for interpretability and public accountability in machine learning systems.
- Co-authored peer-reviewed paper (*in review*), translating complex AI ethics concepts for technical and nontechnical audiences.
- Led international focus groups, survey deployments, and analysis; integrated user feedback into AI ethics research, bridging machine learning and social science perspectives for human-centered design with algorithmic fairness research.

Research Assistant, Purdue University RED Lab

(Summer 2021-Fall 2021)

Riley County Health Department Testing Clinic Operations Improvement

(Spring 2020-Spring 2021)

- Advised Public Health Department on systems improvement and throughput increases for a clinic/testing center to serve 35k+.

Research Assistant, Wildland Firefighter Fatality Blame

(Spring 2020- Fall 2020)

Supply Chain Analyst, Electromech Technologies

(Summer 2020)

- Implemented QR scanned lot tracking system resulting in \$24K direct (2.7% department labor costs) and \$101K indirect reduced costs, decreased recall risks.
- Modeled improved factory layout and material flow, reducing walking distances for key product lines by ~35%, freed ~13% of factory workspace.

Special Projects Associate, EnVisage Consulting

(Summer 2018)

- Led process improvement initiative for Department of Homeland Security Grants in Kansas to improve data collection.

Selected Achievements, Publications, and Involvement

Key Awards and Fellowships:

- **American Legion National Eagle Scout of the Year** (2015), **National Eagle Scout Association World Explorer** (2017)
- **NSF Graduate Research Fellow** (2022), **Evans Family Humanitarian Engineering Fellow** (2021, 2022)

Publications:

- (*In Review*) (*First Author*) **Development of a Systems-Informed Methodology for a Systems and Anthropological Examination of Healthcare Delivery Improvement** | *Systems Research and Behavioral Science*
- (*In Review*) (*First Author*) **Developing A Machine Learning Framework for User-Operable Algorithms** | *AI and Ethics*
- **The Missing Study Groups: Liminality and Communitas in the Time of COVID-19** | *Annals of Anthropological Practice*