

# Ethan Lee Copple

EthanCopple.com | coppleet@oregonstate.edu

**Systems Thinker | Engineer & Anthropologist | Human & Technical Insights for Complex Systems Intervention**

## Education and Skills

---

**Oregon State University (OSU):** Expected Ph.D. Graduation Fall 2025 | GPA: 3.9

- o **Ph.D. Candidate Industrial Engineering**
- o **M.S. Industrial Engineering and Applied Anthropology** (Fall 2023)

**Kansas State University (KSU):** Fall 2016 to Spring 2021 | GPA: 3.96

- o B.S. Industrial and Manufacturing Systems Engineering (IMSE) and B.S. Anthropology
- o Study Abroad: Valencia, Spain at Universitat Politècnica de València (Spring 2019)

### Major Awards:

- o NSF Graduate Research Fellow (2022),
- o American Legion National Eagle Scout of the Year (2015),
- o Evans Family Humanitarian Engineering Fellow (2021, 2022),
- o Tau Beta Pi Engineering Underclassman of the Year KSU (2017-2018),
- o National Eagle Scout Association World Explorer – Cradle of Humankind (2016),
- o SIMIO Student Competition Semi-Finalist (2020),
- o 1<sup>st</sup> IISE SC Region Conf. Paper Competition (2021)

**Engineering Skills:** Transdisciplinary Research Design | Systems Thinking (Critical Systems Thinking, Purposeful Human Activity Systems, Cybernetics) | Quantitative Modeling, Analysis, and Visualization | Network Analysis, Graph Theory, and Structural Complexity Metrics | Operations Research | Decision Support Systems | Intermediate CPLEX, Gourbi, Python Programming | SIMIO | Six Sigma White Belt

**Anthropological Skills:** Proficient Spanish (Argentine and Spanish Regional Specialties) | Ethnographic Interviewing & Fieldwork | Participant Observation | NVIVO, Atlas.ti and Hand Coding | Literature Review | Human-Technical Systems Design | Multi-Stakeholder Systems Design | Policy & Institutional Analysis | Grounded Theory & Inductive Research Approaches | ArcGIS & QGIS, Tableau | Video Production | Grant Writing

## Research Experience

---

### Dissertation Research: Systems Approaches to Identify Barriers and Enablers to Healthcare Delivery

- Developed a transdisciplinary systems approach integrating engineering and social sciences to analyze complex, human-technical systems and optimize intervention planning.
- Designed and implemented a novel metrics to quantify the changeability and complexities of systemic to guide strategic decision-making in operations, logistics, and supply chain management.
- Conducted network analysis and modeling to identify key leverage points for improving system efficiency and reducing barriers to healthcare delivery.
- **Case Study:** Healthcare Delivery in the Province of Buenos Aires, Argentina
- **Field Visit in Winter 2024-5:** Conducted 150+ interviews with providers and patients in multisite rapid ethnography.

### Thesis Research: Barriers and Enablers to Healthcare Access, Buenos Aires, Argentina

(Fall 2021-Fall 2023)

- Exploratory Holistic Systems Science and Applied Anthropology Approach.
- Field Visit in summer 2021: Conducted 75+ interviews with providers and patients over 2 months in multisite rapid ethnography.
- Transcribed verbal fieldnotes, analyzed in NVIVO to inform human activity conceptual model and network complexity.

### 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)
- Co-authored peer-reviewed paper (*in review*), translating complex AI ethics concepts for technical and nontechnical audiences.
- Led international focus groups, survey recruitment, and analysis, to integrate user feedback into AI ethics research, bridging machine learning and social science perspectives.

### Qualitative Research Assistant, Purdue RED Lab

(Summer 2021-Fall 2021)

- Used NVIVO to qualitatively code interviews, created quantitatively-backed graphics, and assisted writing paper for the International Journal for Engineering Education, examining the impacts of COVID-19 on engineering higher education.

### Research Assistant, Wildland Firefighter Fatality Blame, Dr. Trevor Durbin

(Spring 2020- Fall 2020)

# Ethan Lee Copple - 2

**Research Interests:** Systems thinking and complexity analysis, Quantitative modeling and metrics, Network analysis and structural complexity, Transdisciplinary methodologies integrating engineering and social sciences

## Professional Experience

---

- National Science Foundation Graduate Research Fellow, Oregon State University** (Fall 2022-Current)  
**Graduate Research Assistant, Human-in-the-Loop Fairness in Machine Learning** (Fall 2021-Fall 2023)  
**Graduate Teaching Assistant, Engineering for Global Development, OSU** (Fall 2021)  
**Teaching Assistant, Introduction to Cultural Anthropology, KSU** (Spring 2019, Fall 2019, 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, and created opportunity for >\$1.3M increased yearly sales.
  - 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 to improve data collection.

## Publications, Conferences, and Lectures

---

### Publications:

- (In Review) (First Author) **Development of a Systems-Informed Methodology for a Systems and Anthropological Examination of Healthcare Delivery Improvement** with Dr. Javier Calvo-Amodio, Dr. Shaozeng Zhang | *Systems Research and Behavioral Science*
- (In Review) (First Author) **Return AI to Human Control: Developing A Machine Learning Framework for User-Operable Algorithms** with Dr. Shaozeng Zhang, Dr. Fuxin Li, Ali Behnoudfar, Ana Carolina de Assis Nunes | *AI and Ethics*
- **The Missing Study Groups: Liminality and Communitas in the Time of COVID-19** with Dr. Elizabeth Briody Dr. Fredy Rodriguez, Dr. Edward Berger | *Annals of Anthropological Practice*
- **Integrating Systemic and Applied Anthropology Approaches to Identify Barriers and Enablers to Accessing Healthcare in the Province of Buenos Aires, Argentina** | Master's Thesis in ScholarsArchive@OSU at Oregon State University
- **Catholic Infrastructures and Inquiries of Digital Technologies and the Church**
- **The Intersection of Big Data and Anthropology** | Published in K-Rex (Kansas State Research Exchange) (Kirmser Undergraduate Research Award Honorable Mention)

### Conferences:

- **Can Applied Anthropology Revitalize the Discipline?** | Panel Presentation at the Society of Applied Anthropology Annual Meeting (March 2025)
- **Systems Approaches to Identify Barriers and Enablers to Healthcare Delivery** | Conference Paper Presentation at American Society for Engineering Management (October 2024)
- **Integrating Systemic and Applied Anthropology Approaches to Identify Barriers and Enablers to Accessing Healthcare** | Conference Paper Presentation at American Society for Engineering Management (October 2023)
- **Integrating Anthropology and Industrial Engineering: A Holistic Approach to Healthcare Access Understanding and Improvement** | Conference Paper Presentation at Society of Applied Anthropology (March 2023)
- **Collaboration Of Anthropologists And Computer Scientists In Artificial Intelligence Design** | Conference Panel Facilitator and Member at American Anthropological Association Annual Conference (November 2022)
- **On Catholic Infrastructure** | Conference Paper Presentation at Society of Applied Anthropology (March 2022)
- **Rural Healthcare Access in Joyabaj, Guatemala: A Methodological Inquiry to the Value of Mixed Operations Research and Anthropological Studies** | Institute of Industrial and Systems Engineers (IISE) Student Conference Paper Competition (1st Place Award SC Region Conference March 2021 and International Conference in May 2021)

# Ethan Lee Copple - 3

## Guest Lectures:

- **Systems Thinking and Approaches to Supply Chain from Healthcare Delivery Research** | Guest Lecture, KSU Facilities Layout & Design Course (April 2025)
- **The Human and the Technical: Systems Approaches and Healthcare Delivery** | Guest Graduate Seminar at KSU (October 2024)
- **Practicing anthropology: stories about the collaboration between computer scientists and anthropologists in artificial intelligence design** | Anthropology Tan Sack Series, OSU with Ana Carolina de Assís Nunes (November 2022)
- **The Reality of Problem Definition and Applying Learnings to an Internship** | Guest Lecture, KSU Facilities Layout & Design Course with Mauricio de la Serna (March 2021)
- **Narrative Creation and Skill Building: A Different Approach to Undergraduate Studies** | KSU Initiation to Anthropology and Practicing Anthropology Courses (March 2021, April 2021)
- **Research Rural Healthcare in Joyabaj, Guatemala** | KSU Medical Anthropology (May 2018)

## Fellowships and Awards

---

### **National Science Foundation Graduate Research Fellow** (Fall 2022-Current)

- Received National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) Offer to fund continued graduate studies and research valued at \$186,000.

### **Evans Family Graduate Fellow in Humanitarian Engineering, Buenos Aires, Argentina** (Fall 2021, Winter 2022)

- Received \$11,000 in total fellowship funding to support integrated anthropology and engineering fieldwork

### **Chapman Scholars Program: Researching Rural Health Care: Joyabaj, Quiché, Guatemala** (Summer 2018- Spring 2020)

- **Research Lead** - Led a research expedition to gather statistical and qualitative information including videoing 9+ hours of interviews, conducting 50+ semi-structured, ethnographic interviews.
- **Independent Study** (Spring 2020) – Completed statistical analysis of health data, plotted health statistics on GIS software, and created optimization model of health worker distribution with flex variable, population variables, and location data.

## Collegiate Experience and Projects

---

### **Society for Applied Anthropology (SfAA)** (Spring 2022-Spring 2024)

- **Student Committee Member** – Student Endowed Award Committee Member and advised SfAA Board of Directors

### **Oregon State Newman Center: Catholic Campus Ministry** (Fall 2021-Fall 2023)

- **Executive Committee** (Fall 2021-Current) – Directed new student outreach for missionaries and student leaders.
- **Greek Ministry Team** (Fall 2021-Spring 2022)

### **Alpha Pi Mu (Industrial Engineering Honors Society): OSU and KSU** (Spring 2020-Current)

- **Vice President** – (Winter 2023-Winter 2024) – Oregon State University
- **Secretary** – (Spring 2020-Spring 2021) - Kansas State University

### **Field Assistant** (Summer 2018) - Worked with EWB Regional Coordinator to evaluate possible school projects and collaborated with

### **Ferrer Revitalization Project (FPR) Research** (Spring 2018-Current)

- **Founder** - Conducted ethnographic and participant observation-based fieldwork in Dodge City, KS, Valencia, Spain, and Joyabaj, Guatemala to understand contemporary Catholic trends and recommend improved enactment of Catholic Social Teaching.
- Directed multilingual narrative interviews about working conditions and worker exploitation to direct social causes.

### **COVID-19 Response Projects** (Spring 2020-Spring 2021)

- **COVID-19 Clinic Improvement** (Spring 2021) – Team Leader for IMSE Senior Design. Serving 35k+ from Riley County, KS. Advised Public Health Department on systems improvement and throughput increases.
- **COVID-19 Testing Facility Planning** (Spring 2020) - Designed covered drive-thru testing for Riley County, KS.

### **Engineers Without Borders KSU Chapter: Guatemala International Team** (Spring 2017-Fall 2020)

- **Advisor** (Fall 2019-Fall 2020) - Advised International Project Team in kitchen project design, travel, and in-country resources. Worked with leadership to identify and understand partner desires and project limitations.
- **International Team Leader** (Spring 2017-Fall 2018) - Elected to lead interdisciplinary International Team (15+) in design development, trip planning, and project assessment for sanitation system and retaining wall.
- **Field Assistant** (Summer 2018) - Worked with EWB Regional Coordinator to evaluate possible school projects and collaborated with community stakeholders and in-country teams to assess future school buildings.
- **Assessment and Planning, Monitoring, Evaluation, & Learning (PMEL) Travel Team Leader** (January 2018)

**Other Interests:** Trekking, Watercolor Painting, Ballroom Dancing, Barefoot Running, Aviation, Mountaineering, & Kayaking