

John A. Meluso

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Systems theorist studying topics in Management & Organizations, Communication, and Diversity as Complex Systems. Primary methodological strengths include agent-based modeling, network science, interviewing, and surveying.

EDUCATION

University of Michigan – Ann Arbor

Doctor of Philosophy in Design Science

Apr. 2017-May 2020

Committee: Jesse Austin-Breneman (advisor), Jose Uribe (co-advisor), Scott Page, Lynette Shaw

Concentrations: Management & Organizations, Complex System Design

Certificate: Complex Systems

Dissertation Title: *Networked Miscommunication: The Relationship Between Communication Networks, Misunderstandings, and Organizational Performance*

Master of Science in Design Science

Dec. 2017

Cornell University

Bachelor of Science in Engineering Physics

Jan. 2014

Concentration: Development Sociology

POSITIONS

Vermont Complex Systems Center at the University of Vermont

Open-source Complex Ecosystems And Networks (OCEAN) Postdoctoral Fellow

May 2020-present

Advisors: James Bagrow, Laurent Hébert-Dufresne

RESEARCH INTERESTS

Organizational Communication, Complex Systems, Social Networks, Diversity & Inclusion, Organizational Culture, High-Reliability Organizations, Open-Source Communities, Masculinity Contest Culture, Virtual Collaboration, Computational Social Science, Qualitative Methods, Agent-Based Modeling, Interviews, Surveys, Grounded Theory

PUBLICATIONS & PRESENTATIONS

Articles

1. **Meluso, J.**, Johnson, S., Bargrow, J. Making Virtual Teams Work: Redesigning Virtual Collaboration for the Future. *Working Paper*. <https://doi.org/10.31235/osf.io/wehsk>
2. Carnahan, S., Uribe, J., **Meluso, J.**, & Austin-Breneman, J. Do Employee Absences Help Managers Evaluate Individual Contributions to Team Production? Evidence from Plant Productivity Data. *Working Paper*
3. **Meluso, J.**, Austin-Breneman, J., & Uribe, J. (2020). Estimate Uncertainty: Miscommunication About Definitions of Engineering Terminology. *Journal of Mechanical Design*, 142. <https://doi.org/10.1115/1.4045671>
4. **Meluso, J.**, Austin-Breneman, J., & Shaw, L. (2019). An Agent-Based Model of Miscommunication in Complex System Engineering Organizations. *IEEE Systems Journal*. <https://dx.doi.org/10.1109/JSYST.2019.2940864>

5. **Meluso, J.**, & Austin-Breneman, J. (2018). Gaming the System: An Agent-Based Model of Estimation Strategies and their Effects on System Performance. *Journal of Mechanical Design*, 140(12), 121101–121109. <http://dx.doi.org/10.1115/1.4039494>

Conference Proceedings

1. Meluso, J., & Austin-Breneman, J. (2017). Gaming the System: An Agent-Based Model of Estimation Strategies and Their Effects on System Performance. In Proceedings of the ASME 2017 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (Vol. 2A-2017, p. V02AT03A050). Cleveland, Ohio. <https://doi.org/10.1115/DETC2017-68202>
2. Meluso, J., Crough, R., & Francisco, K. (2016). Application of Design Ethnography to Identify the Database as a Mechanism of Effective Communication in Systems Engineering. FPET 2016 Conference Proceedings.
3. Evans, R., & Meluso, J. (2013). Exploring the “how of engineering competence”: Using service-learning projects in an engineering communications course to facilitate the professional practice of undergraduate engineering students. ICEE/ICIT-2013 Conference Proceedings.

Presentations

1. An Agent-based Model of Miscommunication in Complex System Engineering Organizations (Oct. 23, 2019). *INFORMS 2019 Annual Meeting*.
2. An Agent-Based Model of Miscommunication in Complex System Engineering Organizations (Aug. 12, 2019). *2019 Academy of Management Annual Meeting, Technology & Innovation Management Division*.

Posters

1. Networks of Miscommunication: The Effects of Organizational Miscommunication on Complex System Performance (Oct. 22, 2019). *INFORMS 2019 Annual Meeting Poster Competition*.
2. The Effects of Organizational Miscommunication on Complex Engineered System Performance (Aug. 10, 2019). *2019 Academy of Management Annual Meeting, Organizational Communication & Information Systems Division*.
3. The Effects of Organizational “Miscommunication” on Complex System Performance (Apr. 12, 2019). *Likert Dissertation Poster Session*. Michigan Ross School of Business.

Media Appearances

1. Podcast appearance: Miscommunication in organizations (Oct. 29, 2019). *Marketplace: Make Me Smart*. On episode: “We have plug-in cars. Why not plug-in planes?”
2. Op-Ed: #UMichBetterThanThis: “The Chant” must change (Sept. 5, 2019). *The Michigan Daily*. <https://www.michigandaily.com/section/viewpoints/op-ed-after-metoo-“-chant”-must-change>
3. Podcast appearance: Design thinking in practice (July 24, 2018). *Marketplace: Make Me Smart*. On episode: “What do we do about Elon Musk?”

TEACHING EXPERIENCE

Graduate Student Instructor

- Winter, 2020. *DESCI 502: Design Process Models*.

Guest Lectures

- Simulating Communication & Miscommunication (Nov. 26, 2019). *CMPLXSYS 501: Foundations of Complex Systems*. University of Michigan.
- An Introduction to Systems Engineering (Sept. 14, 2018). *DESCI 790: Design Science Colloquium*. University of Michigan.
- Gaming the System: An Agent-Based Model of Estimation Strategies and their Effects on System Performance (Sept. 14, 2018). *DESCI 790: Design Science Colloquium*. University of Michigan.

Discussion Sections & Workshops

- An Introduction to Agent-Based Modeling: the Schelling Model of Segregation (Sept. 10, 2019). *CMPLXSYS 501: Foundations of Complex Systems*. University of Michigan.
- What is Design Science? (Sept. 6, 2019) *DESCI 790: Design Science Colloquium*. University of Michigan.
- Agent-Based Model Construction Workshop (March 12, 2019). *CMPLXSYS 530: Computer Modeling of Complex Systems*. University of Michigan.

SERVICE

Academic Journal Reviewer

- IEEE Systems 2019-present
- Design Science (Journal) 2019
- American Society of Mechanical Engineers International Design Engineering Technical Conferences 2017-18

Other Activities

- Design Science Graduate Student Mentor Sept. 2017-May 2020
- Graduate Society of Women Engineers (GradSWE) Jan. 2019-May 2020
- Design Science 2019 Orientation Coordination Committee July 2019-Aug. 2019
- Design Science 2018 Annual Recruitment Event Coordination Committee Jan.-Apr. 2018
- Design Science 2017 Annual Recruitment Event Coordination Committee Jan.-Apr. 2017
- Cornell University Engineering Communications Program Advisory Council Apr. 2014-Sep. 2016

PROFESSIONAL ORGANIZATIONS

- Academy of Management (AoM) Jan. 2019-present
- The Institute for Operations Research and the Management Sciences (INFORMS) May 2019-present

HONORS & AWARDS

- University of Michigan College of Engineering Distinguished Leadership Award 2020
- University of Michigan Division of Integrative Systems + Design Leadership Award for Diversity, Equity, and Inclusion 2020
- 2nd Place, INFORMS 2019 Annual Meeting Poster Competition 2019
- Rackham Travel Grant for INFORMS 2019 Annual Meeting 2019
- Rackham Professional Development Grant for INFORMS 2019 Teaching Effectiveness Colloquium 2019
- Academy of Management Annual Conference Organizational Communication & Information Systems Professional Development Grant 2019
- Michigan Engineering Co-Curricular Development Grant for Academy of Management 2019
- Rackham Travel Grant for American Society of Mechanical Engineers International Design Engineering Technical Conferences 2017
- Roger K. Berman Memorial Prize for oral presentation Nominee 2014
- Meinig Family Cornell National Scholar for leadership 2013

PROFESSIONAL DEVELOPMENT

- INFORMS Teaching Effectiveness Workshop Oct. 18-19, 2019
- University of Michigan Graduate Student Instructor Orientation Aug. 26-27, 2019

- Inclusive Teaching Workshop
- Facilitating Discussions in Humanities & the Social Sciences
- Practice Teaching Workshop
- Evaluating Student Writing
- Academy of Management Annual Conference Organizational Communication & Information Systems Professional Development Workshop Aug. 9, 2019

INDUSTRY EXPERIENCE

Orbital ATK Inc., Dulles, Virginia, USA

Deputy Lead Systems Engineer & FlatSat Manager, ICON Space Weather Satellite *May 2015-July 2016*

- Established and managed tasking for a small team of test engineers
- Designed, tested, and verified utility scripts, Relative Time Sequences, and Telemetry Monitors
- Identified and resolved multi-program, systemic FlatSat lab hazards
- Coordinated and maintained the daily operations of a suite of spacecraft test platforms

Software Systems Engineer, SORCE Solar Radiation Detection Satellite *Sept. 2014-July 2016*

- Interpreted and compiled customer software update requirements for an on-orbit satellite
- Coordinated stakeholders to identify necessary and desired flight software updates
- Created procedures for updating on-orbit software to meet new customer requirements
- Tested and verified new flight software builds on FlatSat

Propulsion Systems Engineer, Eagles Air-Launched Rocket Development Program *Feb.-Sept. 2014*

- Saved the company \$620,000 in three months via process improvements
- Developed system requirements for liquid upper stage engines and interfaces
- Designed and implemented an innovative cross-disciplinary interface management method to increase transparency and reduce redundancy
- Designed, implemented, and maintained an instrumentation management tool to meet the needs of multiple stakeholders
- Crafted program office customer communications including presentation and status report development

Electrical Systems Engineering Intern, COTS ISS Delivery Capsule *June-Aug. 2013*

- Verified electronics box requirements and identified noncompliant components
- Coordinated requirement contributors to expedite compliance confirmation

Operations Engineering Intern, HYLAS 2 Geo Communications Satellite *May-Aug. 2012*

- Developed a metric and algorithms to determine customer satellite availability
- Executed on-orbit operations after obtaining flight controller certification

Scitor Corporation, Colorado Springs, Colorado, USA

Cyber Security Policy Analysis and Systems Engineering Intern *May-Aug. 2011*

- Conducted research and stakeholder analysis in support of Presidential Executive Order 13587 (released October 7, 2011), a National Strategy, Concept of Operations, and Implementation Plan for sharing and safeguarding classified information
- Designed a Concept of Operations and SharePoint to support multi-corporation proposal work
- Developed lesson plans and briefings on Cyberspace and Cyberspace Operations
- Coauthored article on safeguarding information
- Supported the organization and hosting of an important annual Space Symposium

dpiX LLC, Colorado Springs, Colorado, USA

Research & Development and Test Engineering Intern *June-July 2010*

- Researched and designed hydrogenated amorphous silicon neutron detectors
- Conducted manual probe sensing diode I-V curve experiments

REFERENCES

Jesse Austin-Breneman, Ph.D.

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College of Engineering
University of Michigan – Ann Arbor
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Jose Uribe, Ph.D.

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Michigan Ross School of Business
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Lynette Shaw, Ph.D.

Assistant Professor of Complex Systems
College of Literature, Science, & the Arts
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