

**JOSE J. PADILLA**

Research Associate Professor

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[www.vmasc.org](http://www.vmasc.org) | [www.storymodelers.org](http://www.storymodelers.org) | [Google Scholar](#)**OVERVIEW**

Modeler working on the nexus of systems and society to advance theory and methods in areas like Modeling and Simulation, societal resilience to migration flows, and social cohesion, among others. Interdisciplinary collaborator to make model creation accessible across domains. Co-founder and co-lead of the Storymodelers research collaborative.

**CAREER HIGHLIGHTS**

Co-Founder and Co-Lead (2020 - present) - Storymodelers Research Collaborative, home page: [storymodelers.org](http://storymodelers.org), X and Instagram: @storymodelers

Founder & Director (2013-2020)	Human Dynamics Lab at VMASC
Funded Projects	18 (PI on 7), \$14.9M in total; \$8M (\$3.5M as PI) awarded as Research Associate Professor
Students Graduated	6 PhD (1 as director), 5 MS (1 as director, 1 as co-director)
Students Mentored in Projects	40
Students Mentored (No Project)	5
Postdocs and Faculty Mentored	3
Publications	26 journal, 47 peer-review conference, 8 book chapter, h-index: 26, i10-index: 50, total citations: 2250
In-country Fieldwork	4 countries, 6 cities
Awards	1

## EDUCATION

Ph.D., Engineering Management, Old Dominion University	2010
MBA, Lynn University, Boca Raton, FL	2003
B.S., Industrial Engineering, U. Nacional de Colombia, Medellin, Colombia	1997

## ACADEMIC APPOINTMENTS (OLD DOMINION UNIVERSITY)

Research Associate Professor	2019 - current
Research Assistant Professor	2011 to 2019
Electrical Engineering Department - Adjunct Faculty	2015 – current
Research Scientist	2011
Postdoctoral Research Associate	2010 to 2011

## ON COLLABORATIONS

Collaboration has been essential to attaining grants and conducting research of high impact. As an associate professor, my focus was on radical interdisciplinarity working with international collaborators on challenges such as migration, resilience, and the modeling of social dynamics across countries and cultures. As an assistant professor, my focus was on working across technical domains with emphasis on applying human social cultural and behavioral models in areas like cybersecurity and healthcare.

- **University of Agder – UiA (Norway):** partners on migration and humanitarian response, including ethnographic simulation in Lesvos, and digital history. We have jointly conducted fieldwork.
- **York University (Canada):** collaborators on projects addressing science of team science and research in hard-to-reach environments.
- **Universidad del Norte (Colombia):** Partners in mixed-methods research on Venezuelan migration and host communities; co-led survey design and field implementation in Barranquilla and Cucuta. Have successfully placed five of their students at ODU: four in PhD programs (2 under project supervision) and one in master's program (graduated).
- **University of the Aegean (Greece) & University of the Western Cape (South Africa):** Co-authored qualitative, quantitative, and social simulation studies on resilience and absorptive capacity through U.S. Minerva-funded grants.
- **Hampton University (USA):** Collaborator on interdisciplinary studies of identity, resilience, and cross-cultural dynamics, including using arts-based methods.
- **University of Luxembourg:** Digital History collaborators, with a pilot digital histories workshop held in June 2025 at UiA's Metochi Study Center in collaboration with UiA.

- **University of Berkeley:** Digital History collaborators with one publication submitted and common participation two workshops.
- **Norfolk State University:** Worked together on a Center of Excellence with funding totaling ~\$5M.
- **Eastern Virginia Medical School:** Worked on research related to Live Virtual Constructive simulations for the healthcare sector.
- **ODU Departments, Schools, and Programs:** International Studies, Engineering Management, Philosophy, Computer Science, Women and Gender Studies, Mathematics, and School of Public Service to mention a few.

### **RESEARCH GRANTS (AWARDED – \$14.9M TOTAL, \$4.3M AS PI TOTAL, \$3.5M as PI since 2019)**

1. PI, Exploring Interoperability in the AI Area: Towards M&S 2.0, OERI/IRAD \$82,468.
2. Co-PI, Rapid Model Development for LVCs, OERI/IRAD, \$83,714.
3. Co-PI, Beyond the Clock: Understanding Cross-Cultural Temporal Orientation of Military Officers. (2024 – 2027). AFOSR: \$1,622,813. PI: E. Frydenlund (ODU).
4. PI, Un-Resilience: Drawing Insights from Societal Collapse. (2024 – 2027). ARO: \$1,574,284.
5. Co-PI, What's Missing? Innovating Interdisciplinary Methods for Hard-to-Reach Environments, (2022 –2025). AFOSR: \$1,703,894.00. PI; E. Frydenlund (ODU).
6. Co-PI, What's Missing: Innovating Interdisciplinary Methods for Hard-to-Reach Environments. Supplement (2024-2025). AFOSR: \$12,226. E. Frydenlund (ODU).
7. Co-PI, Graduate Research Opportunities and Workforce Readiness in Modeling and Simulation (GROW M&S) (2022 – 2025). US Department of Education: \$1,151,446. PI: Jessica Johnson (ODU).
8. PI, Support to Project (2024 – 2025). Internal: ODU/VMASC: \$117,661.
9. PI, Logistical Support to Project (2024 – 2025). Internal: ODU/VMASC: \$122,497.
10. PI, The Future of Modeling and Simulation (2022). NATO: \$10,000.
11. PI, Computational Framework for Assessing Absorptive Capacity, (2019 – 2022). ONR: \$1,490,946.
12. PI, Disruptive Technology Assessment Game - DTAG (2019). NATO Innovation Hub Synthetic Environment for Testing and Evaluation Study, NATO: \$40,000.
13. Co-PI, Center of Excellence in Cyber Security II. (2020-2021). Office of the Assistant Secretary of Defense for Research and Engineering through Norfolk State University: \$227,261. PI: S. Shetty (ODU).
14. PI, Center of Excellence in Cyber Security. (2015-2020). Office of the Assistant Secretary of Defense for Research and Engineering led by Norfolk State University and in collaboration with Tennessee State University: \$4,984,352. ODU PI portion: \$984,352.
15. Co-PI, Health Dynamics in Protracted Refugee Situations (2017-2018). Internal ODU: \$70,000. E. Frydenlund (ODU).
16. Co-PI, Towards a DoD Modeling and Simulation Enterprise (2014-2015). Naval Air Warfare Center TSD, \$149,995. PI: S. Diallo (ODU).

17. Co-PI, Cyberspace Command and Control Solution Refinement Project Modeling, Simulation, and Analysis Support (2012-2013). Naval Supply Logistics Center Norfolk; \$324,300. PI: B. Ezell (ODU).
18. Co-PI, Real-time evacuation planning tool for the national capital region (2012-2013). Virginia Department of Emergency Management. \$900,000. PI: M. Robinson (ODU).
19. Co-PI, Joint Advanced Concepts II – Follow US to Futures (2012-2013). Naval Supply Logistics Center Norfolk, \$417,300. PI: S. Diallo (ODU).
20. Other Professional, A Modeling and Simulation Market Study (2011). Hampton Roads Economic Development Administration. \$50,000. PI: J. Sokolowski (ODU).
21. Other Professional, Joint Advanced Concepts (2011-2012). Joint and Coalition Warfighting Center. \$430,000. PI: S. Diallo (ODU).
22. Postdoc, JWFC TDG M&S Support (2010). JFCOM: \$138,720. PI: A. Tolk (ODU).

### **RESEARCH GRANTS (DECLINED – \$18.4M TOTAL, \$5M AS PI)**

1. Co-PI, Bringing Life to Data: Inclusive Portal to an Interdisciplinary Data Experience. (2024-2025). AFOSR: 1,604,126. PI: E. Frydenlund.
2. Co-PI, Bringing Life to Data: Inclusive Portal to an Interdisciplinary Data Experience. (2024-2025). ONR: 1,604,126. PI: K. Rechowicz.
3. Co-PI, DURIP: Bringing Life to Data: Inclusive Portal to an Interdisciplinary Data Experience. (2024-2025). ONR: \$541,180. PI: K. Rechowicz.
4. Co-PI, DURIP: Bringing Life to Data: Inclusive Portal to an Interdisciplinary Data Experience. (2024-2025). AFOSR: \$540,180. PI: E. Frydenlund.
5. Co-PI, Unfolding History: Web-based tool for Extracting Socio-Historical Concepts from Narratives (2024-2026). National Endowment for the Humanities: \$150,000. PI: E. Frydenlund.
6. PI: Modeling the Impact that Contested Governance and Climate Events have on Absorptive Capacity (2022-2024). Office of the Secretary of Defense: \$1,260,847
7. PI: STTR: DARPA-Semantic Model, Annotation, and Reasoning Technologies (SMART) (2021-2022). DARPA: 22,500, with Modus Operandi.
8. Co-PI, STTR: Public Observatory for Integrated Population Migration Data and Modeling (2022-2023). DARPA: \$75,000. PI: E. Frydenlund (PI), with Modus Operandi.
9. Co-PI, Humanitarian Chatbot to Support Venezuelan Migrants' Access to Local Services in Atlantico State (2020-2022). USAID: \$250,000. PI: E. Frydenlund.
10. PI, The Virtual Informal Access to STEM Disciplines Project (viaSTEM) (2020-2022). NSF via Center for Mind and Culture: \$104,623.
11. PI, The Virtual Informal Access to STEM Disciplines Project (viaSTEM) (2019-2021). NSF via Center for Mind and Culture: \$223,645.

12. Co-PI, Evolution and Mitigation of Protracted Refugee Situations (2019-2021). Office of the Secretary of Defense \$1,473,802. PI: E. Frydenlund.
13. Co-PI, The Role of Citizens Initiatives in Achieving the Sustainable Development Goals (CI4SDG). PI: E. Frydenlund NORGLOBAL (Norway): \$310,700 via the University of Agder.
14. PI, Increasing Inequalities During Times of Shrinking Civic Space: Exploring the Role of Citizen Initiatives for Global Solidarity. FRIPRO (Norway). \$310,700, via the University of Agder.
15. Co-PI, Quantifying and Modeling Unconventional Migration Dynamics (2017). Department of Homeland Security via University of Houston: \$336,024. PI: E. Frydenlund.
16. PI, Modeling the Effects of Human Actors in Cyber Risk Assessment (2017). National Security Agency: \$159,889.
17. Co-PI, Curricula and Workshop Development in Cyber Law, Cyber Regulations, and Cyber Policies: From High School to Community College, to Four-Year Institutions to the Workforce. National Security Agency: \$533,967. PI: B. Payne.
18. Co-PI, Via-STEM (2017). National Science Foundation via Center for Mind and Culture: \$1,188,932. PI: S. Diallo.
19. Co-PI, Topic Area: Agile Logistics and Risk Mitigation (2017). Commonwealth Center for Advanced Logistics Systems: \$50,000. PI: M. Seck.
20. Co-PI, Risk Assessment Techniques for Understanding and Quantifying Threats to Systems and Networks (2016). Naval Surface Weapons Center: \$450,000. PI: S. Shetty.
21. Co-PI, Computational Model for Identifying Refugee Settlement (2017-2019). Office of the Secretary of Defense: \$810,529. PI: E. Frydenlund.
22. PI, An Exploratory study on the impact of cloud-based simulation learning environments on simulation use and creation as part of STEM+C education (2015-2017). NSF: \$621,170.
23. Co-PI, Cyber Risk to Transportation Control Systems (2014-216). NSF: \$703,387. PI: B. Ezell.
24. Co-PI, Design, Development and Evaluation of a Smartphone Application to Promote and Evaluate Adherence to Treatment of Patients with HIV/AIDS in Cali-Colombia (2015-2017). National Institutes of Health: \$327,380. PI: V. A. M. Parodi.
25. PI, Development of a Cloud-based Simulation Tool (CLOUDSIM) (2014). Virginia Innovation Partnership: \$58,634.
26. PI, Modeling Adversarial Intent and the Propensity of Attacks to Arise (2015-2017). Defense Threat Reduction Agency: \$1,050,000.
27. Co-PI, CYBERSEES: TYPE 2: Collaborative research: integrated knowledge base and virtual stakeholder table for participatory governance of sustainable communities (2014-2018). National Science Foundation. \$666,760. PI: H.P. Plag.
28. PI, Policy Evaluation Advanced Computational Environment (PEACE) (2014-2016). W. M. Keck Foundation: \$648,808.

29. Co-PI, Climate Change Displacement and Vulnerable Communities: A Modeling and Simulation Tool for City Managers and Emergency Planners in China, UK and US. (2013). Department of State: \$250,000. PI: M. Robinson.
30. Co-PI, ISCIES – Improving Safety by Communicating ITS in-Emergency Situations, Safety, Congestion and Evacuation (2013-2015). US Department of Transportation: \$1,497,774. PI: M. Robinson.
31. PI, Design and Development of a Cloud-based Simulation Environment (Cloud-SE). (2013). J. Padilla (VMASC/ODU, PI). Virginia Innovation Partnership. \$76,249.
32. PI, SBIR - Mass Casualty Response System. (2013-2014). U of Virginia: \$30,000.
33. PI, A Physiological and Cognitive Agent-based model to Study Disease Dynamics (2011-2012). National Institutes of Health: \$306,000.
34. PI, Improving Warfighters Social Interaction Skills in Unfamiliar and Hostile Environments through Strategies for Generating, Updating, and Improving their Understanding (2011-2012). DARPA, Department of Defense: \$184,229.

## ON PUBLICATIONS

My publications are rich in collaboration with colleagues and students. Students (from high school to graduate) have been key in my academic progress, consistently appearing as principal or co-authors when actively participating. Publications emphasize interdisciplinary interests on the nature of modeling and simulation, methodological advances, application of models to different domains, exploration of theory and data, and tool development. A mixture of qualitative, quantitative, and computational methods and approaches are foundational to the research.

## PEER-REVIEWED JOURNALS (Students: \*PHD, <sup>M</sup>MASTER'S)

1. Llinas B. \*, Padilla J., Llinas H., Frydenlund E., and Palacio K. Modeling Rank Distribution and the Relative Importance Factor Index in Discrete Power-Law Models: Application to Social Resilience Using the Scopus Database. (2026). *Mathematics*, 14(6):966. <https://doi.org/10.3390/math14060966>.
2. Romero, L. <sup>M</sup>, Palacio, K., Ako Abang, Z., Silgado, V. <sup>M</sup>, Llinas, H., Gonzalez, L. <sup>M</sup>, Frydenlund, E., Bolivar, D. <sup>M</sup>, and Padilla, J. (2026). Social Safety and Social Security: Validating Context-Specific Instruments for Slums. *Social Indicators Research* 182, 1, <https://doi.org/10.1007/s11205-025-03732-5>.
3. Frydenlund, E., Martínez, J. <sup>M</sup>, Padilla, J.J., Palacio, K., and Shuttleworth, D.\* (2024). Modeler in a box: how can large language models aid in the simulation modeling process? *SIMULATION*, 100(7). <https://doi.org/10.1177/00375497241239360>
4. Botello, J.\*, Palacio, K., Frydenlund, E., Llinas, H.\*, and Padilla, J. (2024). Adapting and validating a survey to assess host communities support for migration. *Social Indicators Research*, 174, 697-720. <https://doi.org/10.1007/s11205-024-03397-6>
5. Romero, L. <sup>M</sup>, Padilla, J.J., Palacio, K., and Frydenlund, E. (2024). Mapping cooperation: insights into Colombia's humanitarian response to migration from Venezuela. *Frontiers in*

- Human Dynamics: Dynamics of Migration and (Im)Mobility*, 6. <https://doi.org/10.3389/fhumd.2024.1345110>
6. Kavak, H., Padilla, J., Venon-Bido, D., Diallo, S., Gore, R., Shetty, S. (2021). Simulation for cybersecurity: state of the art and future directions. *Journal of Cybersecurity* 7(1). <https://doi.org/10.1093/cybsec/tyab005>
  7. Johnson, J., Padilla, J., and Diallo, S. (2020). Closing the Academic Achievement Gap: A System Dynamics Study. *Journal of Simulation*, 15(4), 284-308. <https://doi.org/10.1080/17477778.2020.1718021>
  8. Lynch, C., Diallo, S., Kavak, H., and Padilla, J. (2020). A content analysis-based approach to explore simulation verification and identify its current challenges. *Public Library of Science (PLoS) ONE*, 15(5): e0232929. <https://doi.org/10.1371/journal.pone.0232929>
  9. Padilla, J., Kavak, H\*, Lynch, C\*., Gore, R., and Diallo, S. (2018). Temporal and spatiotemporal investigation of tourist attraction sentiment on Twitter. *Public Library of Science (PLoS) ONE*, 13(6): e0198857. <https://doi.org/10.1371/journal.pone.0198857>
  10. Padilla, J., Diallo, S., and Armstrong, R. (2018). Towards live virtual constructive simulations in healthcare learning. *Simulation in Healthcare*, 13(3S), S35- S40. <https://doi.org/10.1097/SIH.0000000000000317>
  11. Padilla, J., Diallo, S., Lynch, C.\*, and Gore, R. (2018). Observations on the practice and profession of modeling and simulation: a survey approach. *Simulation: Transactions of the Society for Modeling and Simulation International*, 94(6), 493-506. <https://doi.org/10.1177/00375497177371>
  12. Gore, R., Diallo, S., Padilla, J. and Ezell, B. (2018). Assessing cyber-incidents using machine learning. *International Journal of Information and Computer Security*, 10(4), 341-360. <https://doi.org/10.1504/IJICS.2018.095298>
  13. Diallo, S., Gore, R., Padilla, J., Kavak, H.\*, and Lynch, C.\* (2017). Towards a World Wide Web of Simulation. *The Journal of Defense Modeling and Simulation*, 14(2), 159-170. <https://doi.org/10.1177/1548512915621974>
  14. Gore, R., Padilla, J. and Diallo, S. (2017). Markov Chain modeling of cyber threats. *The Journal of Defense Modeling and Simulation*, 14(3), 233-244. <https://doi.org/10.1177/1548512916683451>
  15. Gore, R. J., Diallo, S., Lynch, C.\* and Padilla, J. (2017). Augmenting Bottom-Up Metamodels with Predicates. *JASSS: The Journal of Artificial Societies and Social Simulation*, 20(1), 4. <https://doi.org/10.18564/jasss.3240>
  16. Padilla, J., Diallo, S., Kavak, H.\*, Sahin, O.\*, Sokolowski, J., and Gore, R. (2016). Semi-automated Initialization of Simulations: An Application to Healthcare. *The Journal of Defense Modeling and Simulation*, 13(2), 171-182. <https://doi.org/10.1177/1548512914565503>
  17. Diallo, S., Padilla, J., Papelis, Y., Gore, R., and Lynch, C.\* (2016). Content analysis to classify and compare Live, Virtual, Constructive simulations and System of Systems. *The Journal of Defense Modeling and Simulation*, 13(4), 367-380. <https://doi.org/10.1177/1548512915621972>
  18. Diallo, S., Lynch, C.\*, Gore, R., and Padilla, J. (2016). Emergent behavior identification within an agent- based model of the Ballistic Missile Defense System using statistical debugging.

- The Journal of Defense Modeling and Simulation*, 13(3), 275-289.  
<https://doi.org/10.1177/1548512915621973>
19. Diallo, S. Y., Lynch, C.\*, Gore, R. and Padilla, J. (2016). Identifying key papers within a journal via network centrality measures. *Scientometrics*, 107, 1005-1020.  
<https://doi.org/10.1007/s11192-016-1891-8>
  20. Gore, R., Diallo, S., and Padilla, J. (2016). Classifying modeling and simulation as a scientific discipline. *Scientometrics*, 109, 615-628. <https://doi.org/10.1007/s11192-016-2050-y>
  21. Diallo, S., Gore, R., Barraco, A., Padilla, J. and Lynch, C.\* (2016). Quantitative performance metrics for evaluation and comparison of middleware interoperability products. *The Journal of Defense Modeling and Simulation*, 13(2), 161-169.  
<https://doi.org/10.1177/1548512915570143>
  22. Gore, R. Diallo, S., and Padilla, J. (2015). You Are What You Tweet: Explaining the Geographic Variation of the Obesity Rate in the United States Through Twitter. *Public Library of Science (PLoS) ONE*, 10(9): e0133505. <https://doi.org/10.1371/journal.pone.0133505>
  23. Diallo, S., Gore, R., Padilla, J. and Lynch, C.\* (2015). An overview of modeling and simulation using content analysis, *Scientometrics*, 103, 977-1002. <https://doi.org/10.1007/s11192-015-1578-6>
  24. Gore, R., Reynolds, P., Kamensky, D., Diallo, S., and Padilla, J. (2015). Statistical debugging for simulations. *ACM Transactions on Modeling and Computer Simulation*, 25(3).  
<https://doi.org/10.1145/2699722>
  25. Gore, R., Diallo, S., and Padilla J. (2014). ConceVE: Conceptual Modeling and Formal Validation for Everyone. *ACM Transactions on Modeling and Computer Simulation (TOMACS)*, 24(2). <https://doi.org/10.1145/2567897>
  26. Diallo, S., Padilla, J., Gore, R., Herencia-Zapana, H., and Tolk, A. (2013). Toward a Formalism of Modeling and Simulation Using Model Theory. *Complexity*, 19(3), 56-63.  
<https://doi.org/10.1002/cplx.21478>
  27. Tolk, A, Diallo, S., Padilla, J., and Herencia-Zapana, H. (2013). Reference Modeling in support of M&S – Foundations and Applications. *Journal of Simulation*, 7, 69-82.  
<https://doi.org/10.1057/jos.2013.3>
  28. Keating, C., Padilla, J., and Adams, K., (2008), System of Systems Engineering Requirements: Challenges and Guidelines. *Engineering Management Journal*, 20(4), 24-31.  
<https://doi.org/10.1080/10429247.2008.11431785>

**PEER-REVIEWED CONFERENCES (Students: \*PHD, <sup>M</sup>MASTER’S, <sup>U</sup>UNDERGRADUATE, <sup>HS</sup>HIGH SCHOOL)**

1. J. Botello\*, B. Llinas\*, J. Padilla, and E. Frydenlund, "Toward Automating System Dynamics Modeling: Evaluating LLMs in the Transition From Narratives to Formal Structures," *2025 Winter Simulation Conference (WSC)*, Seattle, WA, USA, 2025, pp. 2380-2391, doi: 10.1109/WSC68292.2025.11338856.
2. J. Martínez<sup>M</sup>, B. Llinas\*, J. Botello\*, J. Padilla, and E. Frydenlund, "Enhancing GPT-3.5’s Proficiency in NetLogo Through Few-Shot Prompting and Retrieval-Augmented Generation,"

- 2024 Winter Simulation Conference (WSC), Orlando, FL, USA, 2024, pp. 666-677, doi: 10.1109/WSC63780.2024.10838967
3. J. Botello\*, L. Frew\*, J. Padilla and M. Weigle, "Exploring Large Language Models for Analyzing Changes in Web Archive Content: A Retrieval-Augmented Generation Approach," 2024 IEEE International Conference on Big Data (BigData), Washington, DC, USA, 2024, pp. 2410-2418, doi: 10.1109/BigData62323.2024.10826069
  4. P. Giabbanelli, J. Padilla and A. Agrawal, "Broadening Access to Simulations for End-Users via Large Language Models: Challenges and Opportunities," 2024 Winter Simulation Conference (WSC), Orlando, FL, USA, 2024, pp. 2535-2546, doi: 10.1109/WSC63780.2024.10838754
  5. O. Dobson\*, J. Padilla, G. Song, E. Frydenlund, "A Bayesian Approach of Predicting the Movement of Internally Displaced Persons." In: Thomson, R., Al-khateeb, S., Burger, A., Park, P., A. Pyke, A. (eds) Social, Cultural, and Behavioral Modeling: SBP-BRiMS 2023. Lecture Notes in Computer Science, vol 14161. Springer, Cham. doi: 10.1007/978-3-031-43129-6\_24
  6. B. Llinas\*, G. Huseynli\*, E. Frydenlund, K. Palacio, H. Llinas, J.J. Padilla, "Assessing Media's Representation of Frustration Towards Venezuelan Migrants in Colombia." In: Thomson, R., Al-khateeb, S., Burger, A., Park, P., A. Pyke, A. (eds) Social, Cultural, and Behavioral Modeling: SBP-BRiMS 2023. Lecture Notes in Computer Science, vol 14161. Springer, Cham. doi: 10.1007/978-3-031-43129-6\_13
  7. D. Shuttleworth\* and J. Padilla, "From Narratives to Conceptual Models via Natural Language Processing." 2022 Winter Simulation Conference (WSC), Singapore, 2022, pp. 2222-2233, doi: 10.1109/WSC57314.2022.10015274
  8. D. Shuttleworth\* and J. Padilla, "Towards Semi-Automatic Model Specification," 2021 Winter Simulation Conference (WSC), Phoenix, AZ, USA, 2021, pp. 1-12, doi: 10.1109/WSC52266.2021.9715393
  9. M. Clark<sup>M</sup>, E. Frydenlund, and J. Padilla, "Network Structures and Humanitarian Need." Thomson, R., Hussain, M.N., Dancy, C., Pyke, A. (eds) Social, Cultural, and Behavioral Modeling. SBP-BRiMS 2021. Lecture Notes in Computer Science, vol 12720. Springer, Cham. doi: 10.1007/978-3-030-80387-2\_21
  10. Y. Veysel, J. Padilla, and E. Frydenlund, "An Analysis of Global News Coverage of Refugees Using a Big Data Approach." In: Thomson, R., Hussain, M.N., Dancy, C., Pyke, A. (eds) Social, Cultural, and Behavioral Modeling. SBP-BRiMS 2021. Lecture Notes in Computer Science, vol 12720. Springer, Cham. doi: 10.1007/978-3-030-80387-2\_11
  11. A. Fretz\*, J. Padilla, and Erika Frydenlund, "The Integrated Game Transformation Framework and Cyberwar: What 2x2 Gamest Tells us about Cyberattacks." In: Thomson, R., Hussain, M.N., Dancy, C., Pyke, A. (eds) Social, Cultural, and Behavioral Modeling. SBP-BRiMS 2021. Lecture Notes in Computer Science, vol 12720. Springer, Cham. doi: 10.1007/978-3-030-80387-2\_17
  12. G.S. Nandakumar\*, and J. Padilla, "A Game-Transformation-Based Framework to Understand Initial Conditions and Outcomes in the Context of Cyber-Enabled Influence Operations (CIOs)." In: Thomson, R., Bisgin, H., Dancy, C., Hyder, A., Hussain, M. (eds)

- Social, Cultural, and Behavioral Modeling. SBP-BRiMS 2020. Lecture Notes in Computer Science, vol 12268. Springer, Cham. doi: 10.1007/978-3-030-61255-9\_28
13. H. Kavak\*, J. Padilla, S. Diallo and A. Barraco, "Modeling the Modeler: An Empirical Study on how Modelers Learn to Create Simulations," 2020 Spring Simulation Conference (SpringSim), Fairfax, VA, USA, 2020, pp. 1-12, doi: 10.22360/SpringSim.2020.ANSS.008
  14. E. Frydenlund, J. Padilla, H. Haaland, and H. Wallevik, "The Rise and Fall of Humanitarian Citizen Initiatives: A Simulation-Based Approach." In: Thomson, R., Bisgin, H., Dancy, C., Hyder, A., Hussain, M. (eds) Social, Cultural, and Behavioral Modeling. SBP-BRiMS 2020. Lecture Notes in Computer Science, vol 12268. Springer, Cham. doi: 10.1007/978-3-030-61255-9\_25
  15. J. Padilla, D. Shuttleworth\* and K. O'Brien<sup>U</sup>, "Agent-Based Model Characterization Using Natural Language Processing," 2019 Winter Simulation Conference (WSC), National Harbor, MD, USA, 2019, pp. 560-571, doi: 10.1109/WSC40007.2019.9004895.
  16. J. Padilla, S. Diallo and H. Garcia, "From Analogue to Digital: Creating Simulations through Conceptualization Boards," 2018 Winter Simulation Conference (WSC), Gothenburg, Sweden, 2018, pp. 596-604, doi: 10.1109/WSC.2018.8632518
  17. K. Salimi\*, E. Frydenlund, J. Padilla, H. Haaland and H. Wallevik, "How Does Humanitarianism Spread? Modeling the Origins of Citizen Initiatives through Norm Diffusion," 2018 Winter Simulation Conference (WSC), Gothenburg, Sweden, 2018, pp. 33-44, doi: 10.1109/WSC.2018.8632287.
  18. E. Frydenlund, P. Foytik, J. Padilla and A. Ouattara, "Where Are They Headed Next? Modeling Emergent Displaced Camps in the DRC Using Agent-Based Models," 2018 Winter Simulation Conference (WSC), Gothenburg, Sweden, 2018, pp. 22-32, doi: 10.1109/WSC.2018.8632555.
  19. H. Kavak\*, D. Vernon-Bido\*, and J. Padilla, "Fine-scale Prediction of People's Home Location using Social Media Footprints." In: Thomson, R., Dancy, C., Hyder, A., Bisgin, H. (eds) Social, Cultural, and Behavioral Modeling. SBP-BRiMS 2018. Lecture Notes in Computer Science, vol 10899. Springer, Cham. doi: 10.1007/978-3-319-93372-6\_20
  20. J. Padilla, E. Frydenlund, H. Wallewik, and H. Haaland, "Model co-creation from a modeler's perspective: lessons learned from the collaboration between ethnographers and modelers." In: Thomson, R., Dancy, C., Hyder, A., Bisgin, H. (eds) Social, Cultural, and Behavioral Modeling. SBP-BRiMS 2018. Lecture Notes in Computer Science, vol 10899. Springer, Cham. Doi: 10.1007/978-3-319-93372-6\_8
  21. H. Kavak\*, J. Padilla, C. Lynch\*, and S. Diallo, "Big Data, Agents, and Machine Learning: Towards a Data-driven Agent-based Modeling Approach." Proceedings of the Annual Simulation Symposium (ANSS '18), Baltimore, Maryland. Society for Computer Simulation International, San Diego, CA, USA. doi: 10.5555/3213032.3213044
  22. D. Vernon-Bido\*, G. Grygorian\*, H. Kavak\*, and J. Padilla, "Assessing the Impact of Cyberloafing on Cyber Risk." Proceedings of the Annual Simulation Symposium (ANSS '18), Baltimore, Maryland. Society for Computer Simulation International, San Diego, CA, USA. doi: 10.5555/3213032.3213043

23. J. Johnson\*, J. Padilla, and S. Diallo, "The Achievement Gap Phenomenon: A Practical Application of Modeling and Simulation." Proceedings of the Annual Simulation Symposium (ANSS '18), Baltimore, Maryland. Society for Computer Simulation International, San Diego, CA, USA. doi: 10.5555/3213032.3213047
24. J. Deuro<sup>M</sup>, C. J. Lynch\*, H. Kavak\* and J. Padilla, "Incorporating sound in simulations," 2017 Winter Simulation Conference (WSC), Las Vegas, NV, USA, 2017, pp. 4209-4219, doi: 10.1109/WSC.2017.8248127.
25. E. Frydenlund, J. Padilla, and D. Earnest, "A Theoretical Model of Identity Shift in Protracted Refugee Situations." Proceedings of the Agent-Directed Simulation Symposium (ADS '17), Virginia Beach, Virginia. Society for Computer Simulation International, San Diego, CA, USA.
26. E. Frydenlund and J. Padilla, "Modeling the Impact of Protraction on Refugee Identity." In: Lee D., Lin YR., Osgood N., Thomson R. (eds) Social, Cultural, and Behavioral Modeling. SBP-BRiMS 2017. Lecture Notes in Computer Science, vol 10354. Springer, Cham. doi: 10.1007/978-3-319-60240-0\_25
27. J. Padilla, C. Lynch\*, H. Kavak\*, S. Evett<sup>HS</sup>, D. Nelson<sup>HS</sup>, C. Carson<sup>HS</sup>, and J. del Villar,<sup>HS</sup> "Storytelling and Simulation Creation." 2017 Winter Simulation Conference (WSC), Las Vegas, NV, USA, 2017, pp. 4288-4299, doi: 10.1109/WSC.2017.8248134.
28. H. Kavak\*, J. Padilla, D. Vernon-Bido\*, S. Diallo, and R. Gore, "The Spread of Wi-Fi Router Malware Revisited." Proceedings of the 20th Communications & Networking Symposium (CNS '17), Virginia Beach, Virginia. Society for Computer Simulation International, San Diego, CA, USA. doi: 10.5555/3107979.3107987
29. D. Vernon-Bido\*, E. Frydenlund, J. Padilla, and D. Earnest, "Durable Solutions and Potential Protraction: The Syrian Refugee Case." Proceedings of the 50th Annual Simulation Symposium (ANSS '17), Virginia Beach, Virginia. Society for Computer Simulation International, San Diego, CA, USA. doi: 10.5555/3106388.3106407
30. H. Kavak\*, J. Padilla, and D. Vernon-Bido\*, "A Characterization of Cybersecurity Simulation Scenarios." Proceedings of the 19th Communications & Networking Symposium (CNS '16), Pasadena, California. Society for Computer Simulation International, San Diego, CA, USA. doi:10.5555/2962686.2962689
31. D. Vernon-Bido\*, J. Padilla, S. Diallo, H. Kavak\*, and R. Gore, "Towards Modeling Factors that Enable an Attacker." Proceedings of the Summer Computer Simulation Conference (SCSC '16), Montreal, Canada. Society for Computer Simulation International, San Diego, CA, USA. do: 10.5555/3015574.3015620
32. S. Diallo, C. Lynch\*, J. Padilla and R. Gore, "The Impact of Modeling Paradigms on the Outcome of Simulation Studies: An Experimental Case Study," 2016 Winter Simulation Conference (WSC), Washington, DC, USA, 2016, pp. 1451-1462, doi: 10.1109/WSC.2016.7822197.
33. J. Padilla, C. Lynch\*, S. Diallo, R. Gore, A. Barraco, H. Kavak\*, and B. Jenkins<sup>HS</sup>, "Using simulation games for teaching and learning discrete-event simulation." 2016 Winter Simulation Conference (WSC), Washington, DC, USA, 2016, pp. 3375-3384, doi: 10.1109/WSC.2016.7822368.

34. B. Sanders\*, D. Shuttleworth\*, J. Deuro<sup>M</sup>, and J. Padilla, "Learning Discrete-event Simulation Design Methodology Via Interactive and Collaborative Projects." Proceedings of the 49th Annual Simulation Symposium (ANSS '16), Pasadena, CA. Society for Computer Simulation International, San Diego, CA, USA. doi: 10.5555/2962374.2962390
35. N. Mustafee, J. Powell, S. C. Brailsford, S. Diallo, J. Padilla and A. Tolk, "Hybrid Simulation Studies and Hybrid Simulation Systems: Definitions, Challenges, and Benefits," 2015 Winter Simulation Conference (WSC), Huntington Beach, CA, USA, 2015, pp. 1678-1692, doi: 10.1109/WSC.2015.7408287.
36. J. Padilla, E. Romero-Hall, S. Diallo, A. Barraco, H. Kavak\*, C. Lynch\*, R. Gore, and M. Seth-Chandra, "Modeling and Simulation as a Service (MSaaS) for Education: Learning STEM Concepts Through Simulation Use and Building." Proceedings of the Conference on Summer Computer Simulation (SummerSim '15), Chicago, IL. Society for Computer Simulation International, San Diego, CA, USA. doi: 10.5555/2874916.2874966
37. C. Lynch\*, J. Padilla, S. Diallo, J. Sokolowski and C. Banks, "A Multi-paradigm Modeling Framework for Modeling and Simulating Problem Situations," Proceedings of the Winter Simulation Conference 2014, Savannah, GA, USA, 2014, pp. 1688-1699, doi: 10.1109/WSC.2014.7020019.
38. J. Padilla, S. Diallo, A. Barraco, C. Lynch and H. Kavak\*, "Cloud-based Simulators: Making Simulations Accessible to Non-experts and Experts Alike," Proceedings of the Winter Simulation Conference 2014, Savannah, GA, USA, 2014, pp. 3630-3639, doi: 10.1109/WSC.2014.7020192.
39. J. Padilla, S. Diallo, H. Kavak\*, O. Sahin\*, and B. Nicholson\*, "Leveraging Social Media Data in Agent-based Simulations." Proceedings of the 2014 Annual Simulation Symposium (ANSS '14), Tampa, Florida. Society for Computer Simulation International, San Diego, CA, USA. doi: 10.5555/2664292.2664309
40. A. Tolk, B. Heath, M. Ihrig, J. Padilla, E. Page, D. Suarez, C. Szabo, P. Weirich, and L. Yilmaz, Epistemology of Modeling and Simulation, 2013 Winter Simulations Conference (WSC), Washington, DC, USA, 2013, pp. 1152-1166, doi: 10.1109/WSC.2013.6721504
41. J. Padilla, A. Tolk, and S. Diallo. "M&S Methodological Challenges. Proceedings of the Emerging M&S Applications in Industry & Academia / Modeling and Humanities Symposium (EAIA and Math '13), San Diego, CA. Society for Computer Simulation International, San Diego, CA, USA. doi: 10.5555/2499751.2499761
42. J. Sokolowski, C. Banks, S. Diallo, J. Padilla, and C. Lynch\*, "A Simulation Analysis to Weigh the Impact of Obesity: Corresponding Patient Need with Medical Capacity." Proceedings of the 2013 Summer Computer Simulation Conference (SCSC '13). Toronto, ON, Canada. Society for Modeling & Simulation International, Vista, CA. doi: 10.5555/2557696.2557704
43. J. Sokolowski, C. Banks, S. Diallo, J. Padilla and C. Lynch\*, "A Methodology for Engaging Modeling and Simulation to Assess a Corollary Problem to the Obesity Epidemic. Proceedings of The International Workshop on Applied Modeling and Simulation (WAMS). Rome, Italy. [https://www.msc-les.org/proceedings/wams/wams2012/wams2012\\_30.html](https://www.msc-les.org/proceedings/wams/wams2012/wams2012_30.html)
44. A. Tolk, S. Diallo and J. Padilla, "Semiotics, Entropy, and Interoperability of Simulation Systems - Mathematical Foundations of M&S Standardization," Proceedings of the 2012

- Winter Simulation Conference (WSC), Berlin, Germany, 2012, pp. 1-12, doi: 10.1109/WSC.2012.6465095.
45. A. Tolk, S. Diallo, J. Padilla and H. Herencia-Zapana, "Model Theoretic Implications for Agent Languages in Support of Interoperability and Composability," Proceedings of the 2011 Winter Simulation Conference (WSC), Phoenix, AZ, USA, 2011, pp. 309-320, doi: 10.1109/WSC.2011.6147759
  46. S. Diallo, H. Herencia-Zapana, J. Padilla, and A. Tolk, "Understanding Interoperability." Proceedings of the 2011 Emerging M&S Applications in Industry and Academia Symposium (EAIA '11). Boston, MA. Society for Computer Simulation International, San Diego, CA. doi: 10.5555/2048513.2048530
  47. C. Turnitsa, J. Padilla and A. Tolk, "Ontology for Modeling and Simulation," Proceedings of the 2010 Winter Simulation Conference, Baltimore, MD, USA, 2010, pp. 643-651, doi: 10.1109/WSC.2010.5679124.
  48. S. Diallo, J. Padilla, and A. Tolk, "Why is Interoperability Bad: Towards a Paradigm Shift in Simulation Composition." Proceedings of the Fall Simulation Interoperability Workshop, 20-24, Orlando, FL.

## BOOK CHAPTERS

1. Frydenlund, E., Haaland, H., Padilla, J., and Wallevik, H. (alphabetical). (2023). "Citizen Initiatives in Humanitarian Aid: Lesbos, Greece as a case in bottom-up humanitarian assistance mobilization" In H. Haaland, S. Kinsbergen, L. Schulpen, and H. Wallevik (Eds.), *The Rise of Small-Scale Development Organisations: The Emergence, Positioning, and Role of Citizen Aid Actors* (pp. 170-183).
2. Frydenlund, E. and Padilla, J. (2022). "Opportunities and Challenges of using Computer-Based Simulation in Migration and Displacement Research: A Focus on Lesbos, Greece." In K. Grabska, and C. Clark-Kazak (Eds.), *Documenting Displacement: Questioning Methodological Boundaries in Forced Migration Research*. Montreal, Canada: McGill-Queen's University Press (pp. 279-308).
3. Frydenlund, E., Jones, E.\*, and Padilla, J. (2019) "Mobility in crisis: An agent-based model of refugees' flight to safety." In S. Y. Diallo, W. J. Wildman, F. L. Shults, and A. Tolk (eds.) *Human Simulation: Perspectives, Insights, and Applications. New Approaches to the Scientific Study of Religion*, vol 7. (pp. 191-208). Springer, Cham.
4. Johnson, J. and Padilla, J. (2018). An ontology of emergence. In L. Rainey and M. Jamshidi (Eds.): *Engineering Emergence: A Modeling and Simulation Approach* (pp. 185-198). CRC Press.
5. Padilla, J. (2013). Understanding and Complex Situations. In S. Kovacic and A. Sousa-Poza (Eds.): *Managing and Engineering in Complex Situations* (pp. 79-93). Springer
6. Diallo, S., Padilla, J., Bozkurt, I., and Tolk, A., (2013). Modeling and simulation as a theory building paradigm. In A. Tolk (Ed): *Ontology, Epistemology, and Teleology for Modeling and Simulation* (pp. 193-206). Springer Berlin Heidelberg.
7. Padilla, J. (2012). Annex 2: Military Simulation Systems. In A. Tolk (Ed.) *Engineering Principles of Combat Modeling and Distributed Simulation* (pp. 851-868). Wiley.

8. Diallo, S. and Padilla, J. (2012). Military interoperability challenges. In J. Sokolowski and C. Banks (Eds), *Handbook of Real-World Applications in Modeling and Simulation* (pp. 298-327), Wiley.

### **IN-THE-PIPELINE MANUSCRIPTS (\*PHD, \*MASTER'S)**

1. Padilla, J. Software Engineering Principles for Simulation (Subsection 1.4). *Journal of Simulation*, 20-year Commemorative Issue (invited, under edition).
2. Botello, J.\*, J. Padilla, E. Frydenlund, K. Rechowicz, & E. Weisel. "How can AI find my model? A model-finding experimental study considering data formats, embeddings and retrieval strategies." (Wintersim 2026, under review).
3. Martinez, J., Miller-Felton, M.\*, Padilla, J., Frydenlund, E., and Palacio, K. Multidimensional Analysis of Social Discourse on X (Twitter) around Venezuelan Migration in Colombia (journal - under review).
4. Botello, J.\*, Sumertas, M., Padilla, J., Philliou, C., Frydenlund, E., and Anderson, A. Reconstructing Migratory Movements from Ottoman Census Registers: An AI-driven Approach (journal – extended abstract accepted).

### **TECHNICAL REPORTS**

1. Padilla, Jose J. (2023) "Computational Framework for Assessing Absorptive Capacity" Office of Naval Research.
2. Padilla, Jose J. and Erika Frydenlund. (2023) "The Future of Modeling and Simulation." NATO OPEN Publications 8(5). ISSN 2957-7160 (Online), 2957-7799 (Print). [https://issuu.com/spp\\_plp/docs/the\\_future\\_of\\_modeling\\_and\\_simulation?fr=xPf96ChQ](https://issuu.com/spp_plp/docs/the_future_of_modeling_and_simulation?fr=xPf96ChQ)

### **IN-COUNTRY FIELDWORK**

- Peru 2017. Spent five days in Lima conducting interviews about the migrant and locals' dynamics in relation to the Venezuelan situation.
- Greece 2017, 2018, 2019, 2022: Spent over a month of total time conducting interviews and observations on the different dynamics of different migration flows (Syrian, Afghan, and Congolese, among others, in Lesvos).
- South Africa 2020: Spent two weeks in Cape Town conducting interviews and observations on the dynamics of locals and their perceptions of people from other provinces in South Africa and foreigners.
- Colombia 2017, 2018, 2019, 2021, 2022: Spent over two months of total time conducting interviews and observations in the cities of Cucuta (border with Venezuela), Barranquilla, and Necocli (near the border with Panama) exploring the perceptions and interactions with different migrant flows (Venezuelan, Haitian, and from Asian and African countries).

### **MEDIA, DATASETS & OTHER**

- Software Development: Lead design and development of three software platforms ([cloudes.me](http://cloudes.me), [referencer.org](http://referencer.org), and [metaphr.org](http://metaphr.org) -discontinued-) that bring modeling into the hands of non-programmers. *CLOUDES*, to our knowledge, was the first cloud-based platform that allowed discrete-event simulation creation and execution online. It is still available and maintained by the team. *Referencer* was born out of the need to establish model traceability: from reference model to simulation model. It is our current playground for exploring GenAI to Model functionalities (limited access). *Metaphr* was designed to facilitate the online creation and execution of agent-based models. It is not currently supported.
- Silgado, V., Abang, Z., Bolivar, D., Gonzalez, L., Palacio, K., Llinas, H., Frydenlund, E., and Padilla, J. Dataset on Community and Subjective Well-Being Variables in Site C, Khayelitsha. <https://osf.io/kjsnt/>
- Romero, L., Palacio, K., Abang, Z., Silgado, V., Llinas, H., Gonzalez, L., Frydenlund, E., Bolivar, D., and Padilla, J. Social Safety and Social Security Database. <https://osf.io/vytc9/>
- Martinez, J., Padilla, J., Frydenlund, E., Palacio, K., and Martinez, R. (2025). Twitter (X) Posts on Venezuelan Migration in Colombia: 2014-2022 Dataset: <https://osf.io/j8p6s/>
- Cleveland, L., Gonzalez, M., Castillo, L., Fydenlund, E., Palacio, K., and Padilla, J. (2023). A Codebook for Analyzing Host Communities' Frustration within Migration Situations. DOI 10.17605/OSF.IO/6MVGR. <https://osf.io/6mvgr/>.
- Padilla, Jose J. and Erika Frydenlund (March 2022). "The Ukrainian refugee crisis could last years – but host communities might not be prepared." *The Conversation US*. Retrieved from: <https://theconversation.com/the-ukrainian-refugee-crisis-could-last-years-but-host-communities-might-not-be-prepared-178482>
- Frydenlund, Erika, Jose J. Padilla, & Katherine Palacio (April 2021). "Colombia gives nearly 1 million Venezuelan migrants legal status and right to work." *The Conversation US*. Retrieved from: <https://theconversation.com/colombia-gives-nearly-1-million-venezuelan-migrants-legal-status-and-right-to-work-155448>
- Padilla, Jose, Erika Frydenlund, Katherine Palacio (March 2021). "Colombia is letting hundreds of thousands of Venezuelans stay. What can other countries learn?" *The Monkey Cage* blog on *The Washington Post*. Retrieved from: <https://www.washingtonpost.com/politics/2021/03/11/columbia-is-letting-hundreds-thousands-venezuelans-stay-what-can-other-countries-learn/>
- Tolk, A., Diallo, S., Padilla, J., and Turnitsa, C. (2013). How is M&S Interoperability different from other Interoperability Domains? *M&S Journal*, 7(3), 5-14.
- Tolk, A., Diallo, S., and Padilla, J. (2011). Interoperability Standards for Medical Simulation Systems. *MODSIM*, Virginia Beach, VA.
- Padilla, J., S. Diallo and A. Tolk (2011). Do We Need M&S Science? *SCS M&S Magazine*, 2(4), 161-166.

**PRESENTATIONS AT PROFESSIONAL MEETINGS**

- Invited. Modeling History, Lesvos Digital History Workshop (Jun 2025)
- Invited. Digital History: Using AI to Query History Books and News Articles. With: Sean Takats, Andreas Fickers, Valerie Schafer, and Inna Ganschow. University of Luxembourg (Jan 2025)
- Invited. Modeling History: Exploring Ottoman Census Records. With: Chritine Philliou, Apostolos Spanos, Adam Anderson, Melike Sümertaş, Ayşe Ozil, and Panagiotis Poulos. UC Berkeley (Jan 2024)
- Invited. Digital History: Using Models and AI to Explore History. With: Apostolos Spanos, Turgay Celik, and Andreas Fickers. University of Agder (Sep 2023)
- Invited (online). Generative AI (ChatGPT) in Education and Research: A Hybrid Panel Discussion. With: Helen Crompton. University of Namibia (Oct 2023).
- Invited (online). Opportunities and Challenges of Using Computer-Based Simulation in Migration and Displacement Research: A focus on Lesbos, Greece. University of Ottawa (Jul 2022).
- Invited (online). Advancing Public Health with Systems Science & Simulation Modeling. With: Ana Diez Roux, Philippe Giabbanelli, Andrew Brouwer, Nathaniel Osgood, Saikou Diallo, Scott Page, Patty Mabry, and Kellina Craig-Hendersen. Hariri Institute for Computing, Boston University (Jun 2022).
- Invited. Computational Framework for Absorptive Capacity. Minerva Meeting, Washington DC. (2019).
- Panel. Monitoring and Modeling the Refugee Crisis. Lesbos Dialogues: Technology and the Refugee Crisis. With LeRon Shults, Erika Frydenlund, Carlos Lemos, and Barten Van Der Walle. Mytilene, Greece, (Nov 2017).
- Panel. Context-based Research: Live Virtual Constructive Simulations. SSH Research Summit. With: R. Armstrong, H. Robinson, and W. Yates. Orlando, FL, (Jan 2017).
- Panel. Hybrid simulation studies and hybrid simulation systems: definitions, challenges, and benefits. With: Navonil Mustafee, John Powell, Sally Brailsford, Andreas Tolk, and Saikou Diallo. Winter Simulation Conference, Huntington Beach, CA (Dec 2015).
- Panel: Epistemology of modeling and simulation. With: Andreas Tolk, Martin Ihrig, Ernest Poage, Claudia Szabo, Brian Heath, Dante Suarez, Paul Weirich, and Levent Yilmaz. Winter Simulation Conference, Washington DC (Dec 2015).
- Panel: New Tools – New Rules – New Year. Cox Business Executive Discussion Series. Cathy Lewis (Moderator). With: M. Ferebee, C. Hollingsworth, and T. Walker. Chesapeake, VA. (2011).

**NON-PEER-REVIEWED CONFERENCES**

- Botello, Jhon\*, Katherine Palacio, Erika Frydenlund, Jose J. Padilla, Humberto Llinás. (2024). “Assessing community support to migration: Insights from Barranquilla, Colombia.” ISA 2024 Annual Convention. San Francisco, CA.
- Palacio, Katherine, Castillo, Lia, Romero, Liss, and Padilla, Jose (2023). Host Communities’ Coordination and Cooperation Dynamics in Response to Forced Displacement. ISA 2023 Annual Convention. Montreal, Canada.
- Frydenlund, Erika, Jose J. Padilla, Madison Gonzalez\*, and Veysel Yesilbas (2022). “Which Countries Drive the News About Refugees?” Prepared for the first Georgetown University Big Data Conference on Forced Migration. Washington, D.C.
- Gonzalez, Madison\*, Lydia Sa\*, Erika Frydenlund, Jose J. Padilla. (2021). “A Newspaper Analysis to Understand Refugee Host Fatigue.” Prepared for the Canadian Association of Refugee and Forced Migration Studies (CARFMS) 2021 Annual Conference. Canada/Online.
- Joseph Martinez\*, Katherine Palacio, Jose J. Padilla, Erika Frydenlund, (2021). “What are the locals saying related to the migration in Colombia.” Prepared for the Canadian Association of Refugee and Forced Migration Studies (CARFMS) 2021 Annual Conference. Canada/Online.
- Lydia Sa\*, Lia Castillo\*, Katherine Palacio, Jose J. Padilla, Erika Frydenlund. (2021). “Striving for Health as a Human Right in Colombia: An Analysis of Absorptive Capacity.” Prepared for the Canadian Association of Refugee and Forced Migration Studies (CARFMS) 2021 Annual Conference. Canada/Online: October 2021. <https://arcg.is/SvjX1>
- Haaland, Hanne, Hege Wallevik, Erika Frydenlund, Jose J Padilla (2020). Modelers and Ethnographers as Co-Creators of Knowledge: Do We Belong Together? Proceedings of the 17th ISCRAM Conference – Blacksburg, VA.
- Clark, Mackenzie\*, Erika Frydenlund, Jose J. Padilla. (2020, September 28-30). The Social Networks of Humanitarian Aid: Power Laws, Political Interests, and Political Economy. Content Meets Structure: Integrating Different Perspectives on Social Networks, Heidelberg, Germany
- Clark, Mackenzie\*, Erika Frydenlund, Jose J. Padilla. (2021, January 6-9). Diversification of Humanitarian Aid: Emphasizing donor diversity to increase network resilience. Southern Political Science Association: 2021 Annual Meeting, online. “What would a computational model of refugee integration look like?” Prepared for the Canadian Association of Refugee and Forced Migration Studies (CARFMS) 2019 Annual Conference. Toronto, Canada.
- Frydenlund, Erika, Hanne Haaland, Jose Padilla, and Hege Wallevik. “Ethnographers and modelers as co-creators of knowledge: Developing an ethnographic model of the refugee situations in Lesvos.” Prepared for the ARNOVA 2018 Panel: Citizen Initiatives for Global Solidarity. Austin, Texas.

- Frydenlund, Erika and Jose J. Padilla. "Health Dynamics in Protracted Refugee Situations." Prepared for the International Association of the Study of Forced Migration. Thessaloniki, Greece, 2018.

## IN THE NEWS

- Vanderklippe, N. (2021). Inside the Darien Gap: Desperate Haitian migrants make a terrifying trek as U.S. efforts fail to deter them. *The Globe and Mail*. <https://web.archive.org/web/20240724150821/https://www.theglobeandmail.com/world/article-at-the-darien-gap-haitian-migrants-in-colombia-stay-on-a-perilous-path/>.
- Velsaquez Mendoza, M. (2023). 3 preguntas con Erika Frydenlund and Jose Padilla. *Publimetro*. <https://www.publimetro.com.mx/nacional/2023/10/18/cumbre-de-paises-latinoamericanos-en-chiapas-temas-urgentes-que-deben-atender/>
- Huddle, Sarah. (October 2019). "ODU Researchers to Study Host Regions' Ability to Manage an Influx of Displaced Populations." News @ ODU. Retrieved from: [https://www.odu.edu/news/2019/10/minerva\\_grant#.XhS4HPVKhaQ](https://www.odu.edu/news/2019/10/minerva_grant#.XhS4HPVKhaQ)

## ON TEACHING

While teaching is not part of the research faculty mandate, I have enjoyed the opportunity to lead many students in project-related activities and few as advisor or committee member. I received the Provost's Awards for Leadership in International Education. The first and so far, only research faculty to have received the honor.

## TEACHING EXPERIENCE (OLD DOMINION UNIVERSITY)

- Spring 2017 – MSIM 601: Introduction to Modeling and Simulation
- Fall 2015 – MSIM 602: Simulation Fundamentals

## AWARDS

Provost's Award for Leadership in International Education	2022
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## MENTORSHIP/SUPERVISING

### *Faculty*

Katherine Palacio, Universidad del Norte	2020-2024
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### *Postdocs*

Veysel Yesilbas	2021-2022
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Tabasum Wolayat

2022-2023

***Doctoral Thesis: Director***

- Shuttleworth, David (Estimated 2026). Conceptual Model Development using Natural Language Processing. Electrical Engineering Dept. Old Dominion University, Norfolk, VA.
- Kavak, Hamdi (2019). A Data-driven Approach for Modeling Agents. Modeling, Simulation and Visualization Engineering Dept. Old Dominion University, Norfolk, VA.

***Master's Thesis: Director***

- Romero, Liss (2024). Exploring the Relationship between Social Safety, Social Security, and their Influence on Quality of Life in Informal Settlements. Master's Thesis (Cum Laude), Industrial Engineering, Barranquilla, Colombia (Co-director with Katherine Palacio).
- Sahin, Olcay (2012). "Semi-Automatic Simulation Initialization by Mining Structured and Unstructured Data Formats from Local and Web Data Sources" Master's Thesis, Batten College of Engineering, Old Dominion University, Norfolk, VA

***Doctoral Thesis: Committee Member***

- Jones, Shawn (2021). Improving Collection Understanding for Web Archives with Storytelling: Shining Light Into Dark and Stormy Archives. Computer Science Dept. Old Dominion University, Norfolk, VA.
- Toba, Ange-Lionel (2018). Understanding the Impact of Large-Scale Power Grid Architectures on Performance. Engineering Management and Systems Engineering Dept. Old Dominion University, Norfolk, VA.
- Lynch, Christopher (2019). A Lightweight, Feedback-driven Runtime Verification Methodology. Modeling, Simulation and Visualization Engineering Dept. Old Dominion University, Norfolk, VA.
- Quintero, Santiago (2016). Aprendizaje de los Sistemas Regionales de Innovacion: Un Modelo Basado en Agents. Departamento de Ingenieria de la Organizacion, Universidad Nacional de Colombia, Medellin, Colombia.
- Johnson, John (2016). A General Theory of Emergence in Engineered Systems. Engineering Management and Systems Engineering Dept. Old Dominion University, Norfolk, VA.

***Master's Thesis: Committee Member***

- Baniukiewicz, Magda (2017). Analyzing, Simulating, and Visualizing Complex Social Systems. Computer Science Dept., Northern Illinois University, De Kalb, IL.

- Brelsford, Jeffrey (2013). Measuring the Value of Conceptual Modeling: A return on Investment (ROI) Analysis. Batten College of Engineering, Old Dominion University, Norfolk, VA.
- Lynch, Christopher J. (2012). “A Multi-Paradigm Modeling Framework for Modeling and Simulating Problem Situations” Master’s Thesis, Batten College of Engineering, Old Dominion University, Norfolk, VA.

**Independent Study Courses**

- Grygorian, Gayane (2018). Agent-based conceptualization and specification: Techniques and Frameworks. Modeling, Simulation and Visualization Engineering Dept. Old Dominion University, Norfolk, VA.
- Shuttleworth, David (2017). Agent-based conceptualization: Techniques and Frameworks. Modeling, Simulation and Visualization Engineering Dept. Old Dominion University, Norfolk, VA.
- Lynch, Christopher (2014). Making agent-based modeling and simulation more accessible through the application of a model design interface. Modeling, Simulation and Visualization Engineering Dept. Old Dominion University, Norfolk, VA.
- Kavak, Hamdi (2013). Knowledge representation formalism and methods. Modeling, Simulation and Visualization Engineering Dept. Old Dominion University, Norfolk, VA.
- Johnson, John (2013). Evaluation of the concept of complexity, related terms and simulation options.

**Students Supervised/Mentored as PI or Co-PI (40) Students<sup>1</sup>: \*PHD, <sup>M</sup>MASTER’S, <sup>U</sup>UNDERGRADUATE**

1	Isaiah M. Gamble, ODU Computer Science <sup>U</sup>	Summer 2025
2	Leidy Gonzalez, Universidad del Norte <sup>M</sup> - International Internship	Spring 2025
3	Meaghan Mazingo, ODU Instructional Design & Technology*	2023-current
4	Melissa Miller-Felton, ODU International Studies*	2022-current
5, 6	Jhon Botello, Universidad del Norte <sup>M</sup> & Old Dominion U <sup>*</sup>	2021-current
7, 8	Brian Llinas, Universidad del Norte <sup>U</sup> & Old Dominion U <sup>*</sup>	2022-current

<sup>1</sup> Some students have double entries as they were mentored for two different degrees or on internships. Total Individuals = 36

9, 10	Joseph Martinez, Universidad del Norte <sup>U</sup> & Old Dominion U <sup>M</sup>	2020-current
11	Liss Romero, Universidad del Norte <sup>U,M</sup> & Old Dominion U <sup>*</sup>	2020-current
12	Valeria Silgado, Universidad del Norte, Industrial Engineering <sup>M</sup>	2022-current
13	Leidy Gonzalez, Universidad del Norte, Dept. of Psychology <sup>M</sup>	2022-current
14	Daniel Bolivar, Universidad del Norte, Dept. of Psychology <sup>M</sup>	2022-current
15	Lawrence Obiuewewi, ODU Department of Computer Science <sup>*</sup>	2022-current
16	Himarsha Jayanetti, ODU Department of Computer Science <sup>*</sup>	2022-current
17	Valentina Estor, Universidad del Norte, Industrial Engineering <sup>U</sup>	2024-current
18	Rafael Martinez, Universidad del Norte, Industrial Engineering <sup>U</sup>	2024-current
19	Guljannat Huseynli, ODU International Studies <sup>*</sup>	Summer 23/25
20	Bolu Ayankojo, ODU International Studies <sup>M</sup>	Summer 2023
21	Obed Dobson, ODU Mathematics and Statistics <sup>*</sup>	2022-2023
22	Thomas Marine, École des Mines d'Alès <sup>U</sup> , France - International Internship	Summer 2023
23	Lia Castillo, Universidad del Norte, Industrial Engineering <sup>U</sup>	2020-2023, 2024-current
24	Mackenzie Clark, ODU International Studies <sup>M</sup>	2020-2022
25	Gina Perez, Universidad del Norte, Industrial Engineering <sup>U</sup>	2020-2021
26	Daniel Aristizabal, Universidad del Norte, Industrial Engineering <sup>U</sup>	2020-2021
27	Lydia Cleveland, ODU International Studies <sup>M</sup>	2020-2022
28	Jario Gonzalez, Universidad del Norte, Industrial Engineering <sup>U</sup>	2021-2022
29	Madison Gonzalez, ODU International Studies <sup>M</sup>	2021-2022

30	Alexander Fretz, ODU International Studies*	2020-2021
31	Nikita Lumijoie, ODU International Studies*	2020-2021
32	Travis Holmes, ODU International Studies*	2019-2021
33	Girish Nandakumar, ODU International Studies*	2019-2020
34	Sarah Nelson, ODU International Studies <sup>M</sup>	2020
35	Gayane Grygorian, ODU Modeling and Simulation*	2018-2019
36	Alex Korb, ODU International Studies*	Fall 2020
37	Kevin O'Brien, ODU, Computer Science <sup>U</sup>	2017
38	Vernon-Bido, Daniele, ODU Modeling and Simulation*	2015-2019
39	Hamdi Kavak, ODU Modeling and Simulation*	2013-2019
40	Brit Nicholson, ODU Modeling and Simulation*	2012

**Students Mentored *WITHOUT PROJECT* (5) (<sup>U</sup>UNDERGRADUATE)**

1	Angie Alba de Grueso, Universidad del Norte, Industrial Engineering <sup>U</sup>	Fall 2025
2	Daniela Nuñez, Universidad del Norte, Mathematics <sup>U</sup>	Fall 2025
3	Johan Ramirez, Universidad del Norte, Industrial Engineering <sup>U</sup>	Fall 2025
4	Laura Garay, Universidad del Norte, Industrial Engineering <sup>U</sup>	Fall 2025
5	Lorena Charris, Universidad del Norte, Industrial Engineering <sup>U</sup>	Fall 2025

**ON SERVICE**

The culture of service at VMASC has been “be ready to support.” This has allowed me to engage with colleagues in a variety of activities ranging from several hiring committees to supporting the development of university research strategy. I have mentored several high school students.

**UNIVERSITY SERVICE**

- Professional Enrichment and Growth (PEG) grant to establish medical students’ pipeline to interdisciplinary research (ongoing)
- PEG grant to establish AI support for clinical investigators (ongoing)

- Research strategy development at ODU – support role (Aug 2024-April 2025)
- SATTL (spectrum advanced training technology lab) subject-matter support
- ODU grievance committee (2023)
- Two OERI promotion committee (2022, 2023)
- ODU Data science program (multiple positions) selection committee (2023).
- OERI Committee for the development of research faculty procedures (2023).
- ICAR Faculty Advisory Board (2021-current).
- One VMASC/ODU research faculty search committee (2011)
- One VMASC/ODU project scientist search committee (2011)

## **PROFESSIONAL SERVICE**

### ***Reviewer***

- Human Agents and Cooperative Artificial Societies (HACAS) at ANNSIM (2026)
- ACM Transactions on Modeling and Computer Simulation (TOMACS) (2026)
- Journal of Simulation (2026)
- Journal of Defense Modeling and Simulation
- Simulation Modeling Practice and Theory
- SIMULATION, Transactions of the Society for Modeling and Simulation
- ACM Winter Simulation Conference
- SCS Springsim/Summersim
- International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRIMS)

### ***Conference Organizing***

- Wintersim PhD Colloquium (2018-2021 commitment, 2020 as chair).
- Proceedings Co-Chair – 2018 SCS Summer Simulation Conference, Bordeaux, France.
- Publicity Chair – 2018 SCS Summer Simulation Conference, Bordeaux, France.
- Proceedings Co-Chair – 2018 SCS Spring Simulation Conference, Baltimore, MD.
- General Co-Chair – 2017 Annual Simulation Symposium (ANSS), SCS Spring Simulation Conference, Virginia Beach, VA.
- General Chair – 2016 Annual Simulation Symposium (ANSS), SCS Spring Simulation Conference, Pasadena, CA
- Program Chair – 2015 Annual Simulation Symposium (ANSS), SCS Spring Simulation Conference, Alexandria, VA.

### ***Professional Membership***

Association for Computing Machinery (ACM)

## **COMMUNITY SERVICE**

- STEM Outreach 2018 – Mentored three high school seniors from the Pruden Center, Suffolk.
- STEM Outreach 2017 – Mentored four high school seniors from the Pruden Center, Suffolk.
- STEM Outreach 2016 – Mentored four high school seniors from the Pruden Center, Suffolk.
- STEM Outreach 2015 – Mentored four high school seniors from the Pruden Center, Suffolk.
- Global Changers STEAM Summer Camp, Churchland High School, Summer 2015 – Mentored nine students.