CHRISTOPHER J. LYNCH, PH.D.

Research Assistant Professor – Data Science, Analytics, and Health Informatics
Virginia Modeling, Analysis, and Simulation Center
Old Dominion University
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EDUCATION

Old Dominion University, Norfolk, VA
Ph.D. in Modeling and Simulation **2019**
Dissertation: A Lightweight, Feedback-Driven Runtime Verification Methodology

Old Dominion University, Norfolk, VA
M.S. in Modeling and Simulation **2012**
Thesis: A Multi-paradigm Modeling Framework for Modeling and Simulating Problem Situations

Old Dominion University, Norfolk, VA
B.S. in Electrical Engineering **2011**
Minor: Applied Mathematics
Minor: Modeling and Simulation

PROFESSIONAL PROFILES

Virginia Modeling, Analysis, and Simulation Center Staff Profile:
https://vmasc.org/staff-profiles/dr-christopher-lynch/

Web of Science Core Collection:
https://www.webofscience.com/wos/author/record/ABA-1054-2020

Google Scholar: https://scholar.google.com/citations?user=iB9cEj0AAAAJ&hl=en

ResearchGate: https://www.researchgate.net/profile/Christopher-Lynch-2

ORCiD: https://orcid.org/0000-0002-4830-7488

EMPLOYMENT

Old Dominion University
Research Assistant Professor – Virginia Modeling, Analysis and Simulation Center (VMASC) **August 2023 – Current**
Leads research at the intersection of Data Science and Modeling and Simulation to provide proper support and practical use of model outcomes. This requires maintaining transparent connections to a problem's context understanding and developing techniques and applications for easily and quickly molding complex and potentially immense sets of data into digestible insights and actionable outcomes.

George Mason University
Adjunct Faculty – Computational and Data Sciences (CDS) Department **August 2021 – Current**
Approved to teach CDS courses at the graduate and undergraduate levels.

Old Dominion University
Adjunct Assistant Professor – Computational Modeling and Simulation Engineering (CMSE) Department **August 2021 – August 2024**
Approved to teach CMSE courses at the graduate and undergraduate levels.

Old Dominion University - Virginia Modeling, Analysis and Simulation Center (VMASC)
Lead Project Scientist **April 2020 – August 2023**
Leads and supports research to advance knowledge in the discipline of computational modeling and simulation (M&S). Primary research topics includes data analytics, predictive analytics, and the theory and practice of verification and validation for simulation models in support of simulation credibility.

Old Dominion University - VMASC
Senior Project Scientist **June 2013 – April 2020**
Conducts and supports research to advance knowledge in the discipline of M&S. His primary research topics includes data analytics, predictive analytics, the theory and practice of verification and validation for simulation models, and model conceptualization.

Old Dominion University Research Foundation - VMASC
Graduate Research Assistant **May 2011 – June 2013**
Assist on research projects with a primary focus on the design and implementation of simulation models using multiple modeling paradigms.

CERTIFICATIONS

AWS Certified Cloud Practitioner Certification. Amazon Web Services. Active February 07, 2023 – February 07, 2026.

Graduate Teaching Assistant Instructors' Institute Certificate. Old Dominion University. August 2013.

AWARDS

AWARD	AWARDING ORGANIZATION	DATE AWARDED
Young Simulation Scientist (https://scs.org/scs-awards-and-recognition/)	The Society for Modeling and Simulation International (SCS)	August 2022
ODU Top 40 Under 40 (https://odu.edu/about/odu-publications/insideodu/2022/05/19/topstory4)	Old Dominion University Alumni Association	May 2022
Certificate of Outstanding Contribution for contributions in Reviewing	Journal Simulation Modelling Practice and Theory	October 2016
Certificate of Reviewing	Simulation Modelling Practice and Theory	September 2016
Certificate of Appreciation for contributions to the 2015 Spring Simulation Multi-Conference	Society for Modeling and Simulation International (SCS)	Spring 2015
Best Track Presentation for Homeland Security and Military	MS&V Student Capstone Conference 2013	2013
Certificate of Excellence in Undergraduate Research	Old Dominion University	Fall 2012
Recipient of the Research Experience for Undergraduates (REU) Grant	Old Dominion University	Spring 2012

ACADEMIC COMMUNITY ROLES

Associate Editor of the ACM SIGSIM M&S Knowledge Repository **Jan 2019 - Present**
Responsible for maintaining the CFP page for M&S related journal special issue calls and conferences pertaining to M&S.

RESEARCH GRANTS AWARDED AS PRINCIPAL INVESTIGATOR

Cumulative Total Awarded Funding as PI: $486,028.95.
Cumulative Total Awarded Funding Percent of Credit as PI: $233,194.63.

Virginia Modeling, Analysis and Simulation Center
PROJECT: UNOS Year 4 **October 2022 – October 2023**
FUNDER: United Network for Organ Sharing (UNOS)
Award $140,171.00. 45% of Credit: $63,076.95
Lynch, Christopher J. (Principal), Jordan, C. (Co-Principal), Gore, R. (Co-Principal), "UNOS Year 5," Sponsored by United Network for Organ Sharing, Private, $140,171.00. (October 16, 2022 – October 31, 2023).

For continued collaboration between ODU and the United Network of Organ Sharing (UNOS), this project phase involves getting the Heart simulation model to a publication ready status, expanding the Kidney-Pancreas model for an additional initialization avenue, and building model documentation for the completed and in-process simulation models.

Virginia Modeling, Analysis and Simulation Center
PROJECT: UNOS Year 4 **April 2022 – Oct 2022**
FUNDER: United Network for Organ Sharing (UNOS)
Award $71,226.00. 45% of Credit: $32,051.70
Lynch, Christopher J. (Principal), Jordan, C. (Co-Principal), Gore, R. (Co-Principal), "UNOS Year 4," Sponsored by United Network for Organ Sharing, Private, $71,226.00. (April 15, 2022 – October 15, 2022).

ODU and UNOS are jointly developing simulation models of the United States transplant process across organ types. This project phase involves performing research studies utilizing the Kidney-Pancreas model, developing a Shiny dashboard user interface, and beginning development of a verified and validated Heart simulation model.

Virginia Modeling, Analysis and Simulation Center
PROJECT: Integrated Gaming System (IGS) PWS **February 2014 – September 2014**
FUNDER: Cubic Applications, Inc.
Award $273,131.95. 50% of Credit: $136,565.98.
Lynch, Christopher J. (Principal), Diallo, S. (Co-Principal), Barraco, A. (Co-Principal), "Integrated Gaming System (IGS) PWS," Sponsored by Cubic Applications, Inc., Private, $273,131.95. (February 21, 2014 - September 30, 2014).

Provided simulation support and training for a wargaming event by using a commercial-off-the-shelf simulation software to support the outcomes of game moves. This included database development for the simulation, onsite M&S support during development and for event support, developing an analysis plan to examine the results of each move, and conducting a five-day training session to educate game controllers on how to implement simulation components and extract requirements from game participants.

Old Dominion University Research Experience for Undergraduates
PROJECT: Research Experience for Undergraduates (REU) Grant Spring 2011 –2012
FUNDER: Old Dominion University
Award $1,500.00. 100% of Credit: $1,500.00.
Lynch, Christopher J. (Principal), McKenzie, Frederic (Advising), "Research Experience for Undergraduates (REU) Grant," Sponsored by Old Dominion University - Undergraduate Research Program, Old Dominion University, $1,500.00. (January 2011 - May 2011).

The grant supported the project "Device and Method for Improved Pectus Carinatum Treatment." This research resulted in a device to improve the treatment process of Pectus Carinatum by incorporating continuous monitoring elements into the design of a chest brace used for treatment and providing a visual representation of the force applied by the brace to the patient to better inform physicians of when the brace needed to be tightened and the magnitude of the adjustment.

RESEARCH GRANTS AWARDED AS CO-PRINCIPAL INVESTIGATOR

Cumulative Total Awarded Funding as Co-PI: $5,161,659.00.
Cumulative Total Awarded Funding Percent of Credit as Co-PI: $747,144.05.

Gore, Ross (Principal), **Lynch, Christopher J.** (Co-Principle), Ezell, Barry (Co-Principle). "Individualized and Effective Cyber Risk Training Using Large Language Models", Sponsored by Old Dominion University, State, $50,000.00. (January 15, 2024 – January 31, 2025). **25% of Credit: $12,500.00**.

Gore, Ross (Principal), **Lynch, Christopher J.** (Co-Principle), Nielsen, Alex (Co-Principal), Cordner, Jessica (Co-Principal). "Effective & Individualized Risk Communication", Sponsored by Old Dominion University, State, $75,557.00. (August 16, 2023 – May 15, 2024). **20% of Credit: $15,111.40**.

Gore, Ross (Principal), **Lynch, Christopher J.** (Co-Principle), Nielsen, Alex (Co-Principal), Cordner, Jessica (Co-Principal). "IRAD: Data Fusion & Intelligence Lab", Sponsored by Old Dominion University, State, $135,305.00. (July 1, 2022 – June 30, 2023). **25% of Credit: $33,826.25**.

Ezell, Barry (Principal), **Lynch, Christopher J.** (Co-Principle), Draper, D. (Co-Principle), Johnson, J. (Co-Principle), and Handley, H. (Co-Principle). "Curriculum Enhancement and Sim Support", Sponsored by Stevens Institute of Technology, $750,000.00. (September 17, 2021 – September 16, 2023). **20% of Credit: $150,000.00**.

Gore, Ross (Principal), Shull, John (Co-Principle), Nielsen, Alex (Co-Principle), Jordan, Craig (Co-Principle), **Lynch, Christopher J.** (Co-Principle), Aggarwal, Priyanka (Co-Principal). "IRAD: Digital Neighborhood", Sponsored by ODU, State, $476,800. (June 1, 2021 – December 31, 2022). **5% of Credit: $23,840.00**.

Ezell, Barry (Principal), Gore, Ross (Co-Principle), **Lynch, Christopher J.** (Co-Principle), "Covid 19 Forecasting and Analytic Support to VDEM and VDH," Sponsored by the Virginia Department of Emergency Management (VDEM), State, $88,200. (January 01, 2021 – July 31, 2021). **33% of Credit: $29,106.00**.

Jordan, Craig (Principal), **Lynch, Christopher J.** (Co-Principle), "UNOS Organ Donor Model – year 3," Sponsored by UNOS, Private, $140,701.00. (April 15, 2021 – April 14, 2022). **10% of Credit: $14,070.10**.

Padilla, Jose (Principal), Rechowicz, (Co-Principal), Pinto, Cesar, (Co-Principal), **Lynch, Christopher J.** (Co-Principal), Jordan, Craig, "NATO Innovation Hub Synthetic Environment for Testing and

Evaluation Study", Sponsored by North Atlantic Treaty Organization, Private, $40,000.00. (November 5, 2019 – December 31, 2019). **20% of Credit: $8,000**.

Collins, Andrew (Principal), **Lynch, Christopher J.** (Co-Principal), Gore, Ross (Co-Principal), Barraco, Anthony (Co-Principal), Leathrum, James (Co-Principal), and Cotter, T. (Co-Principal), "Automation Tools and Analytics Courses for the Naval Shipyard Project Extension," Sponsored by Naval Sea Systems Command, Private, $1,679,378.00. (September 28, 2019 – March 31, 2023). **5% of Credit: $83,968.90**.

Collins, A., (Principal), **Lynch, Christopher J.** (Co-Principal), Ezell, Barry, (Co-Principal), "Department of Defense's Modeling and Simulation Technology Readiness", Sponsored by Naval Air Warfare Center TSD, Private, $60,000.00. (March 12, 2019 – October 28, 2019). **35% of Credit: $21,000.00**.

Collins, Andrew (Principal), **Lynch, Christopher J.** (Co-Principal), Gore, Ross (Co-Principal), Barraco, Anthony (Co-Principal), Leathrum, James (Co-Principal), and Cotter, T. (Co-Principal), "Automation Tools and Analytics Courses for the Naval Shipyard," Sponsored by Naval Sea Systems Command, Private, $1,192,843.00. (September 28, 2018 – March 31, 2023). **10% of Credit: $119,284.30**.

Diallo, S. (Principal), **Lynch, Christopher J.** (Co-Principal), Barraco, Anthony (Co-Principal), "Civilization Transformation Model Year 3", Sponsored by Center for Mind and Culture, Private, $163,597.00. (July 1, 2017 – June 30, 2018). **50% of Credit: $81,798.50**.

Diallo, S. (Principal), **Lynch, Christopher J.** (Co-Principal), Barraco, Anthony (Co-Principal), "Modeling Religion: Simulating the Social Effects of Religion", Sponsored by Boston VA Research Institute, Inc., Private, $135,850.00. (July 1, 2015 – July 2, 2017). **50% of Credit: $67,925.00**.

Diallo, Saikou (Principal), **Lynch, Christopher J.** (Co-Principal), Barraco, Anthony (Co-Principal), "TRADOC ARCIC Future Warfare Study Program," Sponsored by Cubic Applications Inc, Private, $173,428.00. (May 30, 2013 - September 30, 2013). **50% of Credit: $86,714.00**.

TRAVEL GRANTS

Lynch, Christopher J. "Graduate Student Travel Award" ODU Student Engagement and Enrollment Services. $500.00 (September 2011).

TEACHING EXPERIENCE – ACADEMIA, FULL COURSE

George Mason University, Fairfax, VA

CSI 639: Ethics in Scientific Research (10 students: 4 MS and 6 PhD) Fall 2022

Reviews purpose of scientific research and principles for evaluating ethical issues. Teaches skills for survival through training in moral reasoning and responsible conduct. Discusses ethical issues and applying critical-thinking skills to design, execution, and analysis of experiments. Issues include using animals, humans in research; ethical standards in computer community; research fraud; and currently accepted guidelines for data ownership, manuscript preparation, and conduct of those in authority.

George Mason University, Fairfax, VA

CSI 639: Ethics in Scientific Research (6 students: 4 MS and 2 PhD) Fall 2021

Reviews purpose of scientific research and principles for evaluating ethical issues. Teaches skills for survival through training in moral reasoning and responsible conduct. Discusses ethical issues and applying critical-thinking skills to design, execution, and analysis of experiments. Issues include using humans in research; ethical standards in computer community; research fraud; and currently accepted guidelines for data ownership, manuscript preparation, and conduct of those in authority.

Old Dominion University, Norfolk, VA

MSIM 281: Discrete Event Simulation Lab **Spring 2014**

A laboratory course designed to provide a hands-on introduction to the development and application of discrete event simulation. Topics included an introduction to several discrete event simulation tools, common modeling constructs, data gathering and input data modeling, design of simulation experiments, output data analysis, and verification and validation.

TEACHING EXPERIENCE – ACADEMIA, INVITED LECTURES

George Mason University, Fairfax, VA

Invited Lecturer – CSI 709/CSS 739: Lightweight, Feedback-Driven Runtime Verification – Sept 19, 2022 **Fall 2022**

Conducted a lecture on the lightweight, feedback-driven runtime verification (LFV) methodology. Provided a historical background on Runtime Verification in M&S, an overview of the LFV to address existing shortcomings, and provided hands-on examples with implementing and interpreting runtime verification using the LFV of Discrete Event Simulations.

George Mason University, Fairfax, VA

Invited Lecturer – CSI 709/CSS 739: Lightweight, Feedback-Driven Runtime Verification – Sept 20, 2021 **Fall 2021**

Conducted a lecture on the lightweight, feedback-driven runtime verification (LFV) methodology. Provided a historical background on Runtime Verification in M&S, an overview of the LFV to address existing shortcomings, and provided hands-on examples with implementing and interpreting runtime verification using the LFV of Discrete Event Simulations.

George Mason University, Fairfax, VA

Invited Lecturer – CSI 709/CSS 739: Verification and Validation of Models – Sept 20, 2020 **Fall 2020**

Conducted a lecture on the lightweight, feedback-driven runtime verification (LFV) methodology. Provided a historical background on Runtime Verification in M&S, an overview of the LFV to address existing shortcomings, and provided hands-on examples with implementing and interpreting runtime verification using the LFV of Discrete Event Simulations.

Old Dominion University, Norfolk, VA

Guest Lecturer – MSIM 601: Introduction to M&S – April 17, 2018 **Spring 2018**

Created a lecture on current challenges in Modeling and Simulation and grand challenge areas in other domains that Modeling and Simulation can assist in addressing. Lecture given by John Schull.

Old Dominion University, Norfolk, VA

Guest Lecturer – MSIM 601: Introduction to M&S – March 13, 2018 **Spring 2018**

Conducted a lecture on Multi-paradigm Modeling with a specific focus on its role within M&S, when to use multiple paradigms, and the challenges that arise in a multi-paradigm setting. Discussed a framework for building multi-paradigm models and discussed existing tools that facilitate building these types of models.

Old Dominion University, Norfolk, VA

Guest Lecturer – MSIM 601: Introduction to M&S – Feb 13, 2018 **Spring 2018**

Conducted a lecture on the CLOUDES Discrete Event Simulation (DES) platform. Discussed high level overview of DES and why and how CLOUDES was created to reduce the barriers of entry for building simulations. Focused on conceptual model building, data collection and scheduling tools, model construction and testing, and viewing results.

Old Dominion University, Norfolk, VA
Guest Lecturer – MSIM 601: Introduction to M&S – Nov 16, 2017 **Fall 2017**
Conducted a lecture on Multi-paradigm Modeling with a specific focus on its role within M&S, when to use multiple paradigms, and the challenges that arise in a multi-paradigm setting. Discussed a framework for building multi-paradigm models and discussed existing tools that facilitate building these types of models.

Old Dominion University, Norfolk, VA
Guest Lecturer – MSIM 601: Introduction to M&S – Jan 31, 2017 **Spring 2017**
Conducted a lecture entitled "Verification and Validation in M&S." Focus on the role of verification and validation (V&V) within M&S studies and the challenges that V&V seeks to address. Provide the application of three techniques to an existing model, including visual validation, ANOVA, and the V&V Calculator.

Old Dominion University, Norfolk, VA
Guest Lecturer – MSIM 601: Introduction to M&S – Nov 3, 2016 **Fall 2016**
Conducted an overview on Multi-paradigm Modeling with a specific focus on when to use multiple paradigms and the challenges that arise in a multi-paradigm setting. Discussed a framework for building multi-paradigm models and discussed tools that facilitate building these types of models.

Old Dominion University, Norfolk, VA
Guest Lecturer – MSIM 601: Introduction to M&S – Oct 20, 2016 **Fall 2016**
Conducted an overview and discussion on various Modeling and Simulation tools for designing conceptual models, implementing simulations in various modeling paradigms, and tools designed to collect data to be used within simulations.

Old Dominion University, Norfolk, VA
Guest Lecturer – MSIM 602: Simulation Fundamentals – Nov 24, 2015 **Fall 2015**
Conducted a lecture on Multi-paradigm Modeling with a specific focus on its role within M&S, when to use multiple paradigms, and the challenges that arise in a multi-paradigm setting. Discussed a framework for building multi-paradigm models and discussed existing tools that facilitate building these types of models.

Old Dominion University, Norfolk, VA
Guest Lecturer – MSIM 602: Simulation Fundamentals – Sept 8, 2015 **Fall 2015**
Conducted a lecture on the use of conceptual models to support the model design process and how to transfer from a conceptual model into a simulation model. Talk revolved around the Modeling and Simulation – System Development Framework (MS-SDF).

Old Dominion University, Norfolk, VA
Guest Lecturer – MSIM 601: Introduction to M&S – Sept 3, 2015 **Fall 2015**
Conducted a lecture discussing various Modeling and Simulation tools for designing conceptual models, implementing simulations in various modeling paradigms, and tools designed to collect data to be used within simulations.

Old Dominion University, Norfolk, VA
Guest Lecturer – MSIM 601: Introduction to M&S – April 2015 **Spring 2015**
Conducted a lecture on multi-paradigm modeling and the value that conceptual modeling adds to implementing multi-paradigm models. Students were given exposure to The Brain and Enterprise Architect for building conceptual models and AnyLogic for implementing multi-paradigm simulations. Utilized a use case exploring factors that contribute to individuals' weight changes.

Old Dominion University, Norfolk, VA

Guest Lecturer – MSIM 601: Introduction to M&S – Jan 28, 2015 Spring 2015

Conducted an introductory discussion on Discrete Event Simulation (DES) and the CLOUDES simulation tool for building Discrete Event Simulations. The lecture included creating a reference model and a conceptual model of a toll booth and its implementation into a DES simulation.

Old Dominion University, Norfolk, VA

Guest Lecturer – MSIM 601: Introduction to M&S – Oct 1, 2014 Fall 2014

Conducted an introductory discussion on Discrete Event Simulation (DES) and the CLOUDES simulation tool for building Discrete Event Simulations. The discussion included the creation of a reference model and a conceptual model of a toll booth and its implementation into a DES simulation.

TEACHING EXPERIENCE – PROFESSIONAL & INDUSTRY TRAININGS

ODU - VMASC, Suffolk, VA

Data Modeling Prototype Bootcamp – NAVSEA Training, VMASC/Online Aug 10-14, 2020

Participated in a week-long Data Modeling training bootcamp. This bootcamp is designed to teach advanced data modeling capabilities to NAVSEA personnel across the Naval shipyards. Training bootcamp focuses on data modeling, using the R statistical software, Python, data wrangling, missing data, and empirical model building. The overarching goal is to help NAVSEA facilitate a paradigm shift off using MS Excel towards a focus on concepts and the use of exploratory programming languages. This is the third bootcamp topic in a series of six courses.

ODU - VMASC, Suffolk, VA

Data Analytics Bootcamp – NAVSEA Training, Portsmouth, NH March 9-13, 2020

Conducted a week-long data analytics bootcamp to NAVSEA analytics personnel. Course topics include how to use the R statistical software, descriptive and sampling statistics, machine learning, and visualization.

ODU - VMASC, Suffolk, VA

Predictive Analytics Bootcamp – NAVSEA Training, Honolulu, HI Dec 2-6, 2019

Conducted a week-long predictive analytics bootcamp to NAVSEA personnel. Course topics include how to use the R statistical software, generalized linear models, time series forecasting, and advanced visualization techniques.

ODU - VMASC, Suffolk, VA

Predictive Analytics Bootcamp – NAVSEA Training, VMASC Oct 21-25, 2019

Conducted a week-long predictive analytics bootcamp to NAVSEA personnel. Course topics include how to use the R statistical software, generalized linear models, time series forecasting, and advanced visualization techniques.

ODU - VMASC, Suffolk, VA

Predictive Analytics Prototype Bootcamp – NAVSEA Training, VMASC Aug 19-23, 2019

Developed and presented a Generalized Linear Models module within a week-long Predictive Analytics training bootcamp. This bootcamp is designed to teach advanced predictive analytic capabilities to NAVSEA personnel across the Naval shipyards. Training bootcamp focuses on predictive analytic capabilities, such as time series forecasting, generalized linear models, deep learning, and visualization. The overarching goal is to help NAVSEA facilitate a paradigm shift off using MS Excel towards a focus on analytics concepts and the use of exploratory programming languages for analytics personnel. This is the second bootcamp topic in a series of six courses.

ODU - VMASC, Suffolk, VA

Data Analytics Bootcamp – NAVSEA Training, Seattle, WA **May 20-24, 2019**

Conducted a week-long data analytics bootcamp to NAVSEA analytics personnel. Course topics include how to use the R statistical software, descriptive and sampling statistics, machine learning, and visualization.

ODU - VMASC, Suffolk, VA

Data Analytics Bootcamp – NAVSEA Training, Honolulu, HI **March 11-15, 2019**

Conducted a week-long data analytics bootcamp to NAVSEA analytics personnel. Course topics include how to use the R statistical software, descriptive and sampling statistics, machine learning, and visualization.

ODU - VMASC, Suffolk, VA

Data Analytics Prototype Bootcamp – NAVSEA Training, Suffolk, VA **Dec 3-7, 2018**

Developed and presented two statistics modules within a week-long Data Analytics training bootcamp designed to teach advanced data analytic capabilities to NAVSEA personnel across the Naval shipyards. Training bootcamp focuses on analytics capabilities, visualization, and interpretation of results. The goal is to help NAVSEA facilitate a paradigm shift off using MS Excel towards a focus on analytics concepts and the use of exploratory programming languages for analytics personnel. This is the first bootcamp topic in a series of six bootcamps.

ODU - VMASC, Suffolk, VA

Professional Training Session – Integrated Gaming System Controller Training **April 7-11, 2014**

Developed and conducted a week-long training on the Integrated Gaming System (IGS) simulation platform to educate game controllers in (1) the proper implementation of simulation constructs and (2) how to elicit the needed requirements from game participants.

ODU - VMASC, Suffolk, VA

Professional Training Session – Integrated Gaming System Controller Training **June 25-27, 2013**

Developed and conducted a three-day training on the Integrated Gaming System (IGS) simulation platform to educate game controllers on (1) how to properly implement simulation constructs and (2) how to elicit the needed requirements from game participants.

ADVISING– PH.D. STUDENTS

Erik Jensen, *Finding Data-Independent Events with Event Graphs for Safe Parallel Execution in PDES*. Modeling and Simulation Department. In Progress. Committee Co-Chair.

Daniele Vernon-Bido, *Finding Core Members of Hedonic Games*. Modeling and Simulation Department. Graduated May 2022. Committee Member.

ADVISING– HIGH SCHOOL STUDENTS

Old Dominion University - VMASC, Suffolk, VA

Taylor Copeland – Project LAUNCH, Summer Intern **Summer 2013**

Mentored and advised the intern through the design and implementation of code for an engineering-based robot project.

Old Dominion University - VMASC, Suffolk, VA

Florian Tolk – Summer Intern **Summer 2012**

Mentored and advised the intern through the design and implementation of code for an engineering-based robot project.

IN THE NEWS

TELEVISION

NorfolkTV-48 (NorfolkTV). September 28, 2022. "Hampton Roads Datathon 2022" https://www.youtube.com/watch?v=nDObhM29jwo.

Norfolk 10 News. WAVY.com. April 23, 2020. "ODU creates daily COVID-19 forecast model to predict future cases in your area". https://www.wavy.com/news/health/coronavirus/odu-creates-daily-covid-19-forecast-model-to-predict-future-cases-in-your-area/.

13 News Now. April 16, 2020. "ODU research team launches COVID-19 forecasting model". https://www.13newsnow.com/article/news/health/coronavirus/odu-research-team-launches-covid-19-forecasting-model/291-6fb510e7-85ca-462f-bd1b-dfa3939f2c6a.

PRINT

VMASC. August 25, 2023. "VMASC research team published new article on the dangers of extreme heat and prolonged exposure to direct sunlight due to lack of tree canopies in Norfolk, VA". https://vmasc.org/vmasc-research-team-published-new-article-on-the-dangers-of-extreme-heat-and-prolonged-exposure-to-direct-sunlight-due-to-the-lack-of-tree-canopies-in-norfolk-va/.

CivicLab Norfolk. 2023. "Hampton Roads Datathon 2023 – Project Summaries". https://www.norfolk.gov/DocumentCenter/View/81246/Hampton-Roads-Datathon-2023-Project-Summaries.

InsideODU. May 19, 2022. "ODU Alumni Association Announces Its 40 Under 40 2022 Class". https://odu.edu/about/odu-publications/insideodu/2022/05/19/topstory4

Old Dominion University Alumni Association (ODUAA). May 17, 2022. "Old Dominion University Announces its 40 Under 40 2022 Class". https://www.odu.edu/article/odu-alumni-association-announces-its-40-under-40-2022-class.

CivicLab Norfolk. 2022. "The Inaugural Hampton Roads Datathon". https://www.norfolk.gov/5495/The-Inaugural-Hampton-Roads-Datathon.

ODU News. June 10, 2022. "ODU-Led Project Team Wins Navy Excellence Award". https://www.odu.edu/engineering/article/odu-led-project-team-wins-navy-excellence-award.

The Observer. March 2022. "NAVSEA's Ship Maintenance Performance Group selected as 2022 Department of the Navy Information Technology Award". Print only.

Department of Navy Chief Information Officer (doncio.navy.mil). February 16, 2022. "Congratulations to the 2022 DON IT Excellence Awards Winners – Information Technology Excellence "Workforce" Award". https://www.doncio.navy.mil/ContentView.aspx?ID=15436.

ODU News. April 8, 2021. "ODU Research Helping Virginia Plot COVID-19 Vaccine Strategy". https://www.odu.edu/about/odu-publications/insideodu/2021/04/08/feature1.

The Virginian-Pilot. March 28, 2021. "How best to predict where coronavirus strikes? ODU forecasters have spent the past year trying". https://www.pilotonline.com/2021/03/28/how-best-to-predict-where-coronavirus-strikes-odu-forecasters-have-spent-the-past-year-trying/.

Digital Health Science News. March 23, 2021. "ODU Researchers Publish Two Papers Based on Their Real-Time Platform That Forecasts the Spread of COVID-19 in Virginia".

https://www.digitalhealthscience.org/2021/03/23/odu-researchers-publish-two-papers-based-on-their-real-time-platform-that-forecasts-the-spread-of-covid-19-in-virginia/

ODU Press Release. March 23, 2021. "ODU Researchers Publish Two Papers Based on Their Real-Time Platform that Forecasts the Spread of COVID-19 in Virginia". https://vmasc.shinyapps.io/va-county-covid-forecast/_w_94a212a1/press-release-2.pdf.

Newsbreak.com. 2020. "ODU center launches COVID-19 prediction tool online". https://www.newsbreak.com/virginia/norfolk/news/1547134275914/odu-center-launches-covid-19-prediction-tool-online.

Monarch Magazine (ODU). Summer 2020 Issue. "Getting a step ahead of COVID". https://ww1.odu.edu/about/odu-publications/monarch-magazine/issue/summer-2020/covid.

ODU News. May 21, 2020. "ODU and GMU Researchers Publish Study Exploring Challenges in Communicating Simulation Correctness". https://www.odu.edu/article/odu-and-gmu-researchers-publish-study-exploring-challenges-communicating-simulation.

Williamsburg Yorktown Daily (WYDAILY.com). May 5, 2020. "Predicting the spread of coronavirus in your area: This Hampton Roads university developed a model". https://wydaily.com/news/local/2020/05/05/predicting-the-spread-of-coronavirus-in-your-area-this-hampton-roads-university-developed-a-model/

Medium. April 30, 2020. "With data-driven models, every day of COVID-19 can tell us more about what happens next." https://medium.com/modeling-innovation/with-data-driven-models-every-day-of-covid-19-can-tell-us-more-about-what-happens-next-3527a99549de.

ODU News. April 17, 2020. "VMASC Develops Real-Time Platform That Predicts Spread of COVID-19 in Virginia". https://www.odu.edu/article/vmasc-develops-real-time-platform-predicts-spread-of-covid-19-virginia#.Xqr0XVNKjAI.

10 ON YOUR SIDE (WAVY.com). April 14, 2020. "ODU center launches COVID-19 prediction tool online". https://www.wavy.com/news/education/odu-center-launches-covid-19-prediction-tool-online/.

ODU Press Release. April 14, 2020. "ODU's Virginia Modeling, Analysis and Simulation Center (VMASC) Launches COVID-19 Prediction Site". https://vmasc.shinyapps.io/va-county-covid-forecast/_w_94a212a1/press-release.pdf.

ODU News. March 2, 2012. "VMASC Researchers Developing 100-Year Sea Level Rise Research Model". https://ww1.odu.edu/news/2012/3/vmasc_researchers_de.

ODU News. February 13, 2012. "VMASC Researchers Developing 100-year Sea Level Rise Decision Model". https://ww1.odu.edu/impact/initiatives/resiliencecollaborative/news/2012/2/vmasc_researchers_de.

WEBINARS AND TUTORIALS

Lynch, C. J., Gore, R., Jensen, E., O'Brien, K., and Zamponi, V. (2023) Sensitivity Assessment for Simulations: Gaining quantified insight about how simulation outcomes arise. Virtual presentation for the Modeling and Simulation (M&S) Community of Interest (COI) within the M&S Technology Center at the DHS Science and Technology Directorate. Presented on April 05, 2023.

Lynch, C. J., Gore, R., Jensen, E., O'Brien, K., and Zamponi, V. (2022). Sensitivity Assessment for Simulations: Gaining quantified insight about how simulation outcomes arise. Seminar conducted for the Virginia Modeling, Analysis, and Simulation Center's researchers and project

scientists and industry members. Presented both in-person and virtually on September 29, 2022.

Lynch, C. J., and Gore, R. (2022). Sensitivity Assessment for Simulations: Gaining quantified insight about how simulation outcomes arise. Virtual presentation for the George Mason University (GMU) CDS/CSI/CSS Colloquium. Presented online on September 23, 2022.

Gore, R., **Lynch, C.J.**, Jordan, C., Zamponi, V., O'Brien, K., and Jensen, E. (2022) Sensitivity analysis within HASH simulations: Identify conditions and variables that drive simulations towards unexpected outcomes. HASH Developer Blog, Posted September 15, 2022. URL: https://hash.dev/blog/sensitivity-assessor.

Gore, R., and **Lynch, C. J.** (2022). Data Science in Support of Public Health Awareness and Informed Decision Making: COVID-19 Case and Vaccine Count Forecasting. Seminar presented as part of the ODU Data Science Seminar Series. Old Dominion University, Norfolk, VA. Presented Online on June 22, 2022.

Lynch, C. J. (2015). From Concept to Multi-Paradigm Simulation. Tutorial presented at the Spring Simulation Multi-Conference 2015, 12 April 2015, Alexandria, VA. In *2015 SpringSim: Program Book*. Vista, CA: SCS, 17.

PUBLICLY AND FREELY AVAILABLE TOOLS AND PLATFORMS

COVID-19 Daily County Forecasting App: Daily cumulative COVID-19 case and vaccine distribution counts for each county in Virginia. Link: https://vmasc.shinyapps.io/va-county-covid-forecast/.

Systematic Review – Abstract Reviewer Platform: Platform to facilitate groups conducting the abstract review phase of a formal Systematic Review. Reviewer assignments can be generated through the app and each reviewer's responses can be provided back to the coordinator for aggregation. Link: https://vmasc.shinyapps.io/systematic-review-abstract-review-facilitator/.

Sensitivity Assessor: Platform to pull in data, conduct exploration, and explore conditions contributing to outcomes of interest for data sets. Outcomes and interpretations are provided in easy to understand language for users. Link: https://vmasc.shinyapps.io/SensitivityAssessor/.

Biodiversity of Significant Trees in Norfolk, VA by Census Tract: Platform containing VMASC's contribution to the Inaugural CivicLab Norfolk's Datathon. This solution took honorable mention but is entirely reproducible. Link: https://vmasc-datathon-2022.github.io/

V&V Calculator: Platform to explore verification, validation, and exploratory hypotheses for suspicious behaviors in simulation outcomes. This is a rebuild of the original Java platform implemented at VMASC by Ross Gore. Link: https://vmasc.shinyapps.io/VandVCalculator/

CLOUDES: Discrete Event Simulation platform that is publicly available and free to use. Focus on ease of use and keeping model components simply. Link: https://beta.cloudes.me/.

CONFERENCE SUPPORT

Track Co-chair for Simulation in Education – 2023 Winter Simulation Conference

Track Co-chair for Simulation Education – 2022 Winter Simulation Conference

Track Co-chair for Simulation Education – 2021 Winter Simulation Conference

Program Committee Member – ACM SIGSPATIAL International Workshop on Geospatial Simulation (GeoSim 2020)

Program Committee Member – ACM SIGSPATIAL 2019 International Workshop on Geospatial Simulation

Proceedings Co-Chair for the 2019 Spring Simulation Conference

Co-Chair for the Student Colloquium and Demo Track of the 2019 Spring Simulation Conference

Program Committee Member – ACM SIGSPATIAL 2018 International Workshop on Geospatial Simulation

Proceedings Co-Editor for the 2018 Summer Simulation Multi-Conference (SCSC, SPECTS, and ICBGM)

Committee Member: Events Chair for Swarmfest 2017

Program Committee Member – Simulation Education Track of the 2017 Winter Simulation Conference

PUBLICATIONS- SUMMARY

Google Scholar Profile: https://scholar.google.com/citations?user=iB9cEj0AAAAJ&hl=en

Key: Google Cite Count (GCC) as of January 16, 2024.

Summary Statistics as of January 16, 2024:

Total GCC: 962. Since 2019: 752.
Cumulative h-index: 18.
Cumulative i10-index: 25.
5-year (since 2019) h-index: 15.
5-year (since 2019) i10-index: 21.

PUBLICATIONS – JOURNAL

*Key: Google Cite Count (GCC) as of January 16, 2024. * indicates graduate student at time of publication for articles published 2019 and beyond. Impact Factor (IF) is the 2022 Impact Factor reported by the Journal.*

Summary Statistics:

25 Published, Peer-Reviewed Journal Articles since 2015. First author on 4.
Cumulative Google Cite Count (GCC): 569.
Mean/Median GCC of all Peer-Reviewed Journal Articles: 22.76, 14.
Cumulative Google Cite Count when First author: 46.
Mean/Median GCC when first author: 11.5, 11.0.

Collins, A.J., Koehler, M., and **Lynch, C.J.** (Forthcoming) Methods that support the validation of agent-based models: An overview and discussion. *Journal of Artificial Societies and Social Simulation*. **2022 IF: 4.33. GCC: 0.**

Lynch, C.J., Jensen, E.J., Zamponi, V., O'Brien, K.*, Frydenlund, E., Gore, R. (2023) A structured narrative prompt for prompting narratives from Large Language Models: Sentiment assessment of ChatGPT-generated narratives and real tweets. *Future Internet*, *15*, 375. DOI: 10.3390/fi15120375. **2022 IF: 4.33. GCC: 1.**

Collins, A.J., Butler, B.M., Leathrum Jr., J.F., and **Lynch, C.J.** (2023) Teaching analytics online: A self-study of professional practice. *Studying Teacher Education*, DOI: 10.1080/17425964.2023.2282546. **2022 IF: 1.67. GCC: 0.**

Zamponi, V.*, O'Brien, K.*, Jensen, E.*, Feldhaus, B., Moore, R., **Lynch, C. J.**, and Gore, R. (2023). Understanding and assessing demographic (in) equity resulting from extreme heat and direct sunlight exposure due to lack of tree canopies in Norfolk, VA using agent-based modeling. *Ecological Modelling*, 483, 110445. DOI: 10.1016/j.ecolmodel.2023.110445. **2022 IF: 3.20. GCC: 1.**

Gore, R., **Lynch, C. J.**, Jordan, C. A., Collins, A., Robinson, R. M., Fuller, G.*, Ames, P., Keerthi, P., and Kandukuri, Y. (2022). Estimating the health effects of adding bicycle and pedestrian paths at the census tract level: multiple model comparison. *JMIR Public Health and Surveillance*, *8(8)*, e37379. DOI: 10.2196/37379. PMID: 36001362. PMCID: 9453587. **2022 IF: 8.05. GCC: 5.**

Collins, A. J., Frydenlund, E., **Lynch, C. J.**, and Robinson, R. M. (2022). Acceptance sampling to aid in the verification of computational simulations. *International Journal of Modeling, Simulation, and Scientific Computing*, 2250044. **2022 IF: 0.233. GCC: 0.**

Ezell, B., **Lynch, C.J.**; Hester, P.T. (2021). Methods for Weighting Decisions to Assist Modelers and Decision Analysists: A Review of Ratio Assignment and Approximate Techniques. *Applied Sciences,* 11(21), 10397. https://doi.org/10.3390/app112110397. **2022 IF: 3.20. GCC: 14.**

Lynch, C. J., & Gore, R. (2021). Short-Range Forecasting of COVID-19 During Early Onset at County, Health District, and State Geographic Levels Using Seven Methods: Comparative Forecasting Study. *J Med Internet Res, 23*(3), e24925. DOI: 10.2196/24925. **2022 IF: 8.13. GCC: 23.**

Lynch, C. J., & Gore, R. (2021). Application of one-, three-, and seven-day forecasts during early onset on the COVID-19 epidemic dataset using moving average, autoregressive, autoregressive moving average, autoregressive integrated moving average, and naïve forecasting methods. *Data in Brief, 35*(), 106759. DOI: 10.1016/j.dib.2021.106759. **2022 IF: 1.48. GCC: 14.**

Lynch, C. J., Diallo, S., Kavak, H., & Padilla, J. (2020). A content analysis-based approach to explore simulation verification and identify its current challenges. *PLoS One, 15*(5), e0232929. DOI: 10.1371/journal.pone.0232929. **2022 IF: 3.75. GCC: 8.**

Shults, F. L., Wildman, W. J., Lane, J. E., **Lynch, C. J.**, & Diallo, S. D. (2018). Multiple Axialities: A Computational Model of the Axial Age. *Journal of Cognition and Culture*, *18*(5), 537-564. DOI: 10.1163/15685373-12340043. *Special Issue of Computer Modeling and Simulation*. **2022 IF: 0.39. GCC: 21.**

Wood, C., Diallo, S. Y., Gore, R., & **Lynch, C. J.** (2018). Trance, Dissociation, and Shamanism: A Cross-Cultural Model. *Journal of Cognition and Culture*, *18*(5), 508-536. DOI: 10.1163/15685373-12340042. *Special Issue of Computer Modeling and Simulation*. **2022 IF: 0.39. GCC: 1.**

Shults, F. L., Gore, R., Wildman, W. J., **Lynch, C. J.**, Lane, J. E., & Toft, M. D. (2018). A Generative Model of the Mutual Escalation of Anxiety Between Religious Groups. *Journal of Artificial Societies and Social Simulation*, *21*(4), 1-25. DOI: 10.18564/jasss.3840. **2022 IF: 4.33. GCC: 76.**

Padilla J. J., Kavak H., **Lynch C. J.**, Gore R.J., & Diallo S. Y. (2018) Temporal and spatiotemporal investigation of tourist attraction visit sentiment on Twitter. *PLOS ONE 13*(6): e0198857. https://doi.org/10.1371/journal.pone.0198857. **2022 IF: 3.75. GCC: 110.**

Shults, F. L., Lane, J. E., Wildman, W. J., Diallo, S. Y., **Lynch, C. J.**, & Gore, R. (2018). Modeling Terror Management Theory: Computer simulations of the impact of mortality salience on religiosity. *Religion, Brain, and Behavior: Special Issue: Terror Management Theory*, *8*(1), 77-100. Doi: http://dx.doi.org/10.1080/2153599X.2016.1238846. **2022 IF: 1.25. GCC: 93.**

Padilla, J., Diallo, S., **Lynch, C. J.,** and Gore, R. (2018) Observations on the practice and profession of Modeling and Simulation: A survey approach. *SIMULATION Transactions for the Society for Modeling and Simulation International*, 94(6), 493-506, DOI: 10.1177/0037549717737159. **GCC: 37.**

Gore, R., Diallo, S., **Lynch, C. J.**, & Padillla, J. (2017). Augmenting bottom-up metamodels with predicates. *Journal of Artificial Societies and Social Simulation*, *20*(1), 1-20, doi: 10.18564/jasss.3240. **2022 IF: 4.33. GCC: 22.**

Gore, R. J., **Lynch, C. J.**, & Kavak, H. (2016). Applying statistical debugging for enhanced trace validation of agent-based models. *Simulation: Transactions of the Society for Modeling and Simulation International*, 93(4), 273-284, doi: 10.1177/0037549716659707. *Special Issue of SIMULATION: Modeling and Simulation in the Era of Big Data and Cloud Computing: Theory, Framework, and Tools*. **GCC: 30.**

Diallo, S. Y., Gore, R., **Lynch, C. J.**, & Padilla, J. J. (2016). Formal methods, statistical debugging and exploratory analysis in support of system development: Towards a verification and validation calculator tool. *International Journal of Modeling, Simulation, and Scientific Computing*, *7*(1), 1-22, doi: 10.1142/S1793962316410014. **IF: 0.233. GCC: 20.**

Diallo, S. Y., **Lynch, C. J.**, Gore, R., & Padilla, J. J. (2016). Identifying key papers within a journal via network centrality measures. *Scientometrics*, *107*(3), 1-16, doi: 10.1007/s11192-016-1891-8. **2022 IF: 3.71. GCC: 34.**

Diallo, S. Y., **Lynch, C. J.**, Gore, R., & Padilla, J. 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: Applications, Methodology, Technology*, *13*(3), 275-289, doi: 10.1177/1548512915621973. **2022 IF: 0.95. GCC: 12.**

Diallo, S. Y., Gore, R., Padilla, J. J., Kavak, H., & **Lynch, C. J.** (2015). Towards a World Wide Web of Simulation. *The Journal of Defense Modeling and Simulation: Applications, Methodology, Technology*, 14(2), 159-170, doi:10.1177/1548512915621974. *Special Issue: Modeling & Simulation of Systems*. **2022 IF: 0.95. GCC: 6.**

Diallo, S. Y., Padilla, J. J., Papelis, Y., Gore, R., & **Lynch, C. J.** (2015). Content analysis to classify and compare Live, Virtual, Constructive simulations and System of Systems. *The Journal of Defense Modeling and Simulation: Applications, Methodology, Technology*, *13*(4), 367-380, doi:10.1177/1548512915621972. *Special Issue: Modeling & Simulation of Systems*. **2022 IF: 0.95. GCC: 10.**

Diallo, S. Y., Gore, R. J., Barraco, A., Padilla, J. J., & **Lynch, C.** (2015). Quantitative performance metrics for evaluation and comparison of middleware interoperability products. *The Journal of Defense Modeling and Simulation: Applications, Methodology, Technology*, *13*(2): 161-169, doi:10.1177/1548512915570143. **2022 IF: 0.95. GCC: 2.**

Diallo, S. Y., Gore, R. J., Padilla, J. J., & **Lynch, C. J.** (2015). An overview of modeling and simulation using content analysis. *Scientometrics*, *103*(3), 977-1002, doi: 10.1007/s11192-015-1578-6. **2022 IF: 3.71. GCC: 29.**

PUBLICATIONS – CONFERENCE (PEER REVIEWED)

*Key: Google Cite Count (GCC) as of January 16, 2024. * indicates graduate student at time of publication for articles published 2019 and beyond.*

Summary Statistics:

22 Published, Peer-Reviewed Conference since 2011. First author on 5.
Cumulative Google Cite Count (GCC): 371.
Mean/Median GCC of all Peer-Reviewed Conference papers: 17.67, 8.
Cumulative Google Cite Count when First author: 82.
Mean/Median GCC when first author: 16.4, 12.

Zamponi, V.*, O'Brien, K.*, Gore, R., and **Lynch, C.J.** (2023). Growing an explanation of health inequities in Norfolk, VA with an Agent-Based Model. In: Mazal, J., et al. (eds.) *Modelling and Simulation for Autonomous Systems. MESAS 2022*. Lecture Notes in Computer Science, vol

13866. Springer, Cham, 326-338. DOI: 10.1007/978-3-031-31268-7_20. Historical Acceptance Rate: 70%. **GCC: 1.**

Lynch, C. J., Gore, R., Collins, A. J., Cotter, T. S., Grigoryan, G.*, & Leathrum, J. F. (2021). Increased need for Data Analytics education in support of verification and validation. In *Proceedings of the 2021 Winter Simulation Conference*, edited by S. Kim, B. Feng, K. Smith, S. Masoud, Z. Zheng, C. Szabo, and M. Loper. Piscataway, NJ: IEEE Press, 1-12. DOI: 10.1109/WSC52266.2021.9715485. Historical Acceptance Rate: 75%. **GCC: 3.**

Leathrum Jr., J. F., Collins, A. J., Cotter, T. S., **Lynch, C. J.**, & Gore, R. (2020). Education in analytics needed for the Modeling & Simulation process. In *Proceedings of the 2020 Winter Simulation Conference*, edited by K.-H. Bae, B. Feng, S. Kim, S. Lazarova-Molnar, Z. Zheng, T. Roeder, and R. Thiesing. Piscataway, NJ: IEEE Press, 3236-3247. DOI: 10.1109/WSC48552.2020.9384122. **GCC: 4.**

Diallo, S. Y., **Lynch, C. J.**, Rechowicz, K. J. & Zacharewicz, G. (2018). How to create empathy and understanding: Narrative analytics in Agent-based Modeling. In *Proceedings of the 2018 Winter Simulation Conference*, edited by M. Rabe, A. A. Juan, N. Mustafee, A. Skoogh, and B. Johansson. Piscataway, NJ: IEEE Press, 1286-1297. DOI: 10.1109/wsc.2018.8632267. Historical Acceptance Rate: 75%. **GCC: 5.**

Kavak, H., Padilla, J. J., **Lynch, C. J.**, and Diallo, S. Y. (2018). Big Data, Agents, and Machine Learning: Towards a Data-Driven Agent-based Modeling Approach. In *Proceedings of the 2018 Spring Simulation Multi-Conference – Annual Simulation Symposium (ANSS)*, *Baltimore, MD, 15-18 April 2018*, 1-12. Vista, CA: SCS. ISBN: 978-1-5108-6014-8. Historical Acceptance Rate: 52%. **GCC: 83.**

Padilla, J. J., **Lynch, C. J.**, Kavak, H., Evett, S., Nelson, D., Carson, C., and del Villar, J. (2017). Storytelling and Simulation Creation. In *Proceedings of the 2017 Winter Simulation Conference*, *Las Vegas, NV, 3-6 December 2017*, edited by W. K. V. Chan, A. D'Ambrogio, G. Zacharewicz, N. Mustafee, G. Wainer, and E. Page, 4288-4299. Piscataway, NJ: IEEE Press. DOI: 10.1109/WSC.2017.8248134. Historical Acceptance Rate: 75%. **GCC: 12.**

Deuro J., **Lynch, C. J.**, Kavak, H., and Padilla, J. J. (2017). Incorporating Sound in Simulations. In *Proceedings of the 2017 Winter Simulation Conference*, *Las Vegas, NV, 3-6 December 2017*, edited by W. K. V. Chan, A. D'Ambrogio, G. Zacharewicz, N. Mustafee, G. Wainer, and E. Page, 4209-4219. Piscataway, NJ: IEEE Press. DOI: 10.1109/WSC.2017.8248127. Historical Acceptance Rate: 75%. **GCC: 8.**

Shults, F. L., Gore, R., Wildman, W. J., **Lynch, C. J.**, Lane, J. E., & Toft, M. D. (2017). Mutually escalating religious violence: A generative model. *Paper presented at the 2017 Social Simulation Conference*. Dublin, Ireland. 1-12. **GCC: 15.**

Cornelius, C. V. M., **Lynch, C. J.**, and Gore, R. (2017). Aging out of crime: Exploring the relationship between age and crime with agent based modeling. In *Proceedings of the 2017 Spring Simulation Multi-Conference – Agent Directed Simulation (ADS) Symposium, Virginia Beach, VA, 23-26 April 2017,* edited by Y. Zhang and G. Madey. Vista, CA: SCS, 25-36. Historical Acceptance Rate: 52%. **GCC: 42.**

Diallo, S. Y., **Lynch, C. J.**, Padilla, J. J. & Gore, R. (2016). The impact of modeling paradigms on the outcome of simulation studies: An experimental case study. In *Proceedings of the 2016 Winter Simulation Conference*, edited by T. M. K. Roeder, P. I. Frazier, R. Szechtman, E. Zhou, T. Huschka, and S. E. Chick. Piscataway, NJ: IEEE Press, 1451-1462. DOI: 10.1109/WSC.2016.7822197. Historical Acceptance Rate: 75%. **GCC: 4.**

Padilla, J. J., **Lynch, C. J.**, Kavak, H., Diallo, S. Y., Gore, R., Barraco, A., & Jenkins, B. (2016). Using simulation games for teaching and learning Discrete-Event Simulation. In *Proceedings of the 2016 Winter Simulation Conference*, edited by T. M. K. Roeder, P. I. Frazier, R. Szechtman, E. Zhou, T. Huschka, and S. E. Chick. Piscataway, NJ: IEEE Press, 3375-3384. DOI: 10.1109/WSC.2016.7822368. Historical Acceptance Rate: 75%. **GCC: 39.**

Balaban, M. A., **Lynch, C. J.**, & Mastaglio, T. W. (2016). Analysis of future UAS-based delivery. In *Proceedings of the 2016 Winter Simulation Conference*, edited by T. M. K. Roeder, P. I. Frazier, R. Szechtman, E. Zhou, T. Huschka, and S. E. Chick. Piscataway, NJ: IEEE Press, 1595-1606. DOI: 10.1109/WSC.2016.7822209. Historical Acceptance Rate: 75%. **GCC: 26.**

Balaban, M. A., **Lynch, C. J.**, & Mastaglio, T. W. (2016). Towards airspace rules for future UAS-based delivery. In *Proceedings of the 2016 Winter Simulation Conference*, edited by T. M. K. Roeder, P. I. Frazier, R. Szechtman, E. Zhou, T. Huschka, and S. E. Chick. Piscataway, NJ: IEEE Press, 1619-1629. DOI: 10.1109/WSC.2016.7822211. Historical Acceptance Rate: 75%. **GCC: 2.**

Lynch, C. J., & Diallo, S. Y. (2015). A taxonomy for classifying terminologies that describe simulations with multiple models. In *Proceedings of the 2015 Winter Simulation Conference*, edited by L. Yilmaz, W. Chan, I. Moon, T. Roeder, C. Macal, and M. Rossetti. Piscataway, NJ: IEEE Press, 1621-1632. DOI: 10.1109/WSC.2015.7408282. Historical Acceptance Rate: 75%. **GCC: 29.**

Padilla, J. J., Romero-Hall, E., Diallo, S., Barraco, A., Kavak, H., **Lynch, C. J.**, Gore, R., & Sheth-Chandra, M. (2015). Modeling and Simulation as a Service (MSaaS) for education: Learning STEM concepts through simulation use and building. In *Proceedings of the 2015 Summer Computer Simulation Conference (SCSC)*. Vista, CA: SCS, 1-9. Historical Acceptance Rate: 71%. **GCC: 3.**

Lynch, C. J., Padilla, J. J., Diallo, S. Y., Sokolowski, J. A., & Banks, C. M. (2014). A multi-paradigm modeling framework for modeling and simulating problem situations. In *Proceedings of the 2014 Winter Simulation Conference (WSC)*, edited by A. Tolk, S. Diallo, I. Ryzhov, L. Yilmaz, S. Buckley, and J. Miller. Piscataway, NJ: IEEE Press, 1688-1699, DOI: 10.1109/WSC.2014.7020019. Historical Acceptance Rate: 75%. **GCC: 37.**

Padilla, J., Diallo, S., Barraco, A., **Lynch, C.**, & Kavak, H. (2014). Cloud-based simulators: Making simulations accessible to non-experts and experts alike. In *Proceedings of the 2014 Winter Simulation Conference (WSC)*, edited by A. Tolk, S. Diallo, I. Ryzhov, L. Yilmaz, S. Buckley, and J. Miller. Piscataway, NJ: IEEE Press, 3630-3639, DOI: 10.1109/WSC.2014.7020192. Historical Acceptance Rate: 75%. **GCC: 40.**

Sokolowski, J. A., Banks, C. M., Diallo, S. Y., Padilla, J. J., & **Lynch, C. J.** (2013). A simulation analysis to weigh the impact of obesity: corresponding patient need with medical capacity. In *Proceedings of the 2013 Summer Computer Simulation Conference*. Vista, CA: SCS, 1-8. Historical Acceptance Rate: 71%. **GCC: 3.**

Lynch, C. J., Diallo, S. Y., & Tolk, A. (2013). Representing the ballistic missile defense system using agent-based modeling. In *Proceedings of the 2013 Spring Simulation Multi-Conference – Symposium on Military Modeling & Simulation (MMS)*. Vista, CA: SCS, 1-8. Historical Acceptance Rate: 52%. **GCC: 12.**

Sokolowski, J. A., Banks, C. M., Diallo, S. Y., Padilla, J. J., & **Lynch, C. J.** (2012). A methodology for engaging modeling and simulation to assess a corollary problem to the obesity epidemic. In *Proceedings of the International Workshop on Applied Modeling & Simulation (WAMS) 2012*, edited by Bruzzone, Buck, Cayirci, and Longo, 30-37. **GCC: 2.**

Lynch, C., Lambert, R., McKenzie, F. D., & Williams, A. (2011). A remote monitoring system for treating Pectus Carinatum. In *Proceedings of the 4th International Conference on Biomedical*

Engineering and Informatics (BMEI). Piscataway, NJ: IEEE, 2365-2369, DOI: 10.1109/BMEI.2011.6098770. **GCC: 1.**

PUBLICATIONS – BOOK CHAPTERS

Key: Google Cite Count (GCC) as of January 10, 2024.

Diallo, S., **Lynch, C. J.**, Padilla, J. J., & Gore R. (2021). An Agent-Based Model of Obesity and Policy Implications. In E. Elliott and L. D. Kiel (Eds.), *Complex Systems in the Social and Behavioral Sciences: Theory, Method and Application,* pp. 204-238. Ann Arbor, MI: University of Michigan Press. DOI: 10.3998/mpub.10155018. ISBN: 978-0-472-12892-1. **GCC: 0.**

Lynch, C. J., Kavak, H., Gore, R., and Vernon-Bido, D. (2019). Identifying Unexpected Behaviors in Agent-Based Models through Spatial Plots and Heat Maps. In T. Carmichael, A. Collins, & M. Hadžikadić. *Complex Adaptive Systems: Views from the Physical, Natural, and Social Sciences*. Series in Understanding Complex Systems (UCS), pp.129-142. Cham, Switzerland AG: Springer. DOI: 10.1007/978-3-030-20309-2. ISBN: 978-3-030-20307-8. **GCC: 9.**

Diallo, S. Y. & **Lynch, C. J.** (2018). Examination of Emergent Behavior in the Ballistic Missile Defense System: A Modeling and Simulation Approach. In L. Rainey & M. Jamshidi. *Engineering Emergence: A Modeling and Simulation Approach* (pp.319-328). Boca Raton: CRC Press. eBook ISBN: 9781351694858. **GCC: 2.**

Diallo, S. Y., **Lynch, C. J.**, & Mustafee, N. (2017). Funding an Academic Simulation Project: The Economics of M&S. In A. Tolk & U. Ören (Eds.), *The Profession of Modeling and Simulation: Discipline, Ethics, Education, Vocation, Societies, and Economics*. Hoboken, NJ: John Wiley & Sons, Inc., 267-285, DOI: 10.1002/9781119288091.ch13. ISBN: 978-1-119-28808-4. **GCC: 1.**

Diallo, S. Y., & **Lynch, C. J.** (2015). A roadmap for building a digital patient system. In C. D. Combs, J. A. Sokolowski, & C. M. Banks (Eds.), *The Digital Patient: Advancing Healthcare, Research, and Education*. Hoboken, NJ: John Wiley & Sons, Inc., 209-224, DOI: 10.1002/9781118952788.ch15. ISBN: 978-1-118-95275-7. **GCC: 1.**

PUBLICATIONS – DATASETS

Key: Google Cite Count (GCC) as of January 10, 2024.

Lynch, C.J., Gore, R., and Jensen, E. (2023). Large Language Model-Driven Narrative Generation Study Data: ChatGPT-Generated Narratives, Real Tweets, and Source Code. *Mendeley Data*, *V2*, DOI: 10.17632/nyxndvwfsh.2. **GCC: 0**.

Gore, R., **Lynch, C.J.**, Jordan, C.A., Collins, A.J., Robinson, R.M., Fuller, G., Ames, P., Keerthi, P., and Kandukuri, Y. (2022). Modeling The Health Effects of Adding Bicycle & Pedestrian Paths At The Census Tract-Level Supplementary Information. Mendeley Data, V4, DOI: 10.17632/6rpf6r3nvb.4. **GCC: 0**.

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PUBLICATIONS – PROTOCOLS AND PREREGISTRATIONS

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PUBLICATIONS – PREPRINT

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Gore, R., **Lynch, C.J.**, Jordan, C.A., Collins, A., Robinson, R.M., Fuller, G., Ames, P., Keerthi, P., and Kandukuri, Y. (2022). Modeling the Health Effects of Adding Bicycle & Pedestrian Paths at the Census Tract-Level. *JMIR Preprints*. 11/04/2022:37379.

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Frydenlund, E., Collins, A., **Lynch, C. J.**, & Robinson, R. M. (Posted April 16, 2019). Acceptance Sampling to Aid in Verification of Computational Simulation Models. *SSRN*. http://dx.doi.org/10.2139/ssrn.3373344.

PUBLICATIONS – DISSERTATION

Key: Google Cite Count (GCC) as of January 10, 2024.

Lynch, C. J. (2019). A Lightweight, Feedback-Driven Runtime Verification Methodology (Doctoral Dissertation). Old Dominion University Theses: Modeling and Simulation. College of Engineering and Technology: Norfolk, VA, United States of America, 1-323. ProQuest Number: 22619686. **GCC: 4.**

PUBLICATIONS – THESIS

Lynch, C. J. (2012). A Multi-Paradigm Modeling Framework for Modeling and Simulating Problem Situations (Master's Thesis). Old Dominion University Theses: Modeling and Simulation. College of Engineering and Technology: Norfolk, VA, United States of America, 1-133. OCLC: 827224773. http://www.worldcat.org/oclc/827224773.

REVIEWER - JOURNAL

Web of Science: https://www.webofscience.com/wos/author/record/ABA-1054-2020

Summary: 45 Verified Peer Reviews from 2014-2023 across 17 journals.

PLOS One – December 2023
Advances in Public Health – November 2023
PLOS One – October 2023
PLOS Computational Biology – August 2023
Discrete Dynamics in Nature and Society – August 2023

Data in Brief – July 2023
Advances in Public Health – July 2023
PLOS One – July 2023
Journal of Medical Internet Research – June 2023
Journal of Medical Internet Research – June 2023
Emergency Medicine International – October 2022
Journal of Simulation – September 2022
BMJ Open – September 2022
Journal of Simulation – June 2022
BMJ Open – May 2022
Data in Brief – April 2022
PLOS One – April 2022
Journal of Medical Internet Research – March 2022
Simulation: Transaction of the Society for Modeling and Simulation International – February 2022
Journal of Simulation – February 2022
Data in Brief – February 2022
BMJ Open – February 2022
Data in Brief – January 2022
Data in Brief – November 2021
Simulation: Transaction of the Society for Modeling and Simulation International – October 2021
Data in Brief – October 2021
Journal of Medical Internet Research – September 2021
Data in Brief – September 2021
Software: Practice and Experience – August 2021
Journal of Mathematical and Fundamental Sciences – August 2021
Journal of Medical Internet Research – August 2021
Journal of Medical Internet Research PrePrints – August 2021
Software: Practice and Experience – July 2021
Population, Space and Place – June 2021
Journal of Medical Internet Research – June 2021
Journal of Medical Internet Research – June 2021
Simulation: Transaction of the Society for Modeling and Simulation International – June 2021
Journal of Medical Internet Research – June 2021
Advances in Environmental and Engineering Research – June 2021
Advances in Environmental and Engineering Research – May 2021
Software: Practice and Experience – May 2021
Journal of Medical Internet Research – May 2021
Advances in Environmental and Engineering Research – April 2021
Computers in Human Behavior Reports – March 2021
Software: Practice and Experience – Jan 2021
Population, Space and Place – Oct 2020
Simulation: Transaction of the Society for Modeling and Simulation International – Sept 2020
Journal of Defense Modeling and Simulation – Dec 2016
Simulation Modelling Practice and Theory – Sept 2016
Religion, Brain, & Behavior – 2015 (2015 3-Year IF 0.548)

REVIEWER - CONFERENCE

Winter Simulation Conference: Simulation Education Track – Dec 2023

Winter Simulation Conference: Simulation Education Track – Dec 2022
ACM SIGSPATIAL 2021 International Workshop on Geospatial Simulation (GeoSim 2021)
Winter Simulation Conference: Simulation Education Track – Dec 2021
ACM SIGSPATIAL 2020 International Workshop on Geospatial Simulation (GeoSim 2020)
Winter Simulation Conference: Simulation Education Track – Dec 2020
ACM SIGSPATIAL 2019 International Workshop on Geospatial Simulation (GeoSim 2019)
Summer Simulation Conference 2019 – Humans, Societies, and Artificial Agents (HSA) Track (SCSC'19)
Spring Simulation Conference 2019 – Annual Simulation Symposium (ANSS'19)
Winter Simulation Conference: Simulation Education Track – Dec 2018
ACM SIGSPATIAL 2018 International Workshop on Geospatial Simulation (GeoSim 2018)
Modeling and Simulation Visualization Capstone Conference 2018 (MSVCC 2018)
Spring Simulation Multi-Conference: Annual Simulation Symposium (ANSS'18)
Winter Simulation Conference: Simulation Education Track – Dec 2017
Spring Simulation Multi-Conference: Annual Simulation Symposium (ANSS'17)
Spring Simulation Multi-Conference: Annual Simulation Symposium (ANSS'16)
wwwAfrica2016: A special event of www2016
Spring Simulation Multi-Conference - Annual Simulation Symposium (ANSS'15)
2015 Modeling and Simulation Student Capstone Conference
Spring Simulation Multi-Conference 2014 - Military Modeling and Simulation (MMS) Track
Spring Simulation Multi-Conference 2013 - Military Modeling and Simulation (MMS) Track

REVIEWER – EDITED BOOK

Human Simulation: Perspectives, Insights, and Applications, by Diallo, Wildman, Shults, and Tolk – June 2018
Emergent Behavior in Complex Systems Engineering: A M&S Approach by Mittal, Diallo, and Tolk – Aug 2017

MEMBERSHIPS

The Society for Modeling and Simulation International (SCS): 2014, 2016-Present