

OLUSEGUN MICHAEL OTUNUGA, PH.D.

Curriculum Vitae

Department of Mathematics
Augusta University
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Augusta, GA 30912

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Education

- ▶ **Ph.D., Pure & Applied Mathematics**, University of South Florida - Tampa, Fl. July 2014.
- ▶ **M.A., Mathematics**, Marshall University, Huntington, WV. May 2009.
- ▶ **B.Sc., Mathematical Sciences**, First Class Honors
Federal University of Agriculture, Abeokuta, Nigeria. September 2006.

Professional Experience

- ▶ **Associate Professor**, Department of Mathematics, Augusta University. August 2026 - Present.
- ▶ **Assistant Professor**, Courtesy Joint Appointment with Medical College of Georgia,
Department of Biostatistics, Data Science, and Epidemiology;
Augusta University. Jan 2023.
- ▶ **Assistant Professor**, Department of Mathematics, Augusta University. August 2021 - August 2026.
- ▶ **Assistant Professor**, Department of Mathematics, Marshall University. August 2014 - 2021.

Research Interests

1. Statistical Modeling and Analysis of Dynamical Systems
2. Stochastic Differential Equations, Analysis and Applications
3. Mathematical Modeling in Epidemiology
4. Computational Biology
5. Commodities Price Modeling and Valuation

Key Strength

1. **Data Mining and Analytics:** Ability to analyze complex, high dimensional data using innovative and/or existing statistical methods.
2. **Statistical Invention:** Development of patented innovative nonparametric approach for state and parameter estimation for dynamical systems.
3. **Team Work:** Effective and valuable team member, collaborated with peers and faculty on industrial and academic projects, developed new and improved undergraduate and graduate course curriculum.
4. **Communication Skills:** Presentations at international and local conferences. Taught several graduate and undergraduate courses.
5. **Computer and Software:** Experienced with statistical software (R, SPSS, SAS, Microsoft Excel), MATLAB, Mathematica, Python, Maple, VBA, Microsoft Office tools.

► United States Patent

Title: Local Lagged Adapted Generalized Method of Moments Dynamic Process (with Ladde Gangaram and Ladde Nathan.)

U.S. Patent Number: 10719578

Issued: July 21, 2020

► Research Publications

1. **Otunuga, O.M.** From Outbreak to Endemicity or Control: Tracking First Passage Time in Infectious Diseases. *Bulletin of Mathematical Biology* **88**, **68** (2026). <https://doi.org/10.1007/s11538-026-01635-1>
2. **Otunuga, O.M.** Statistical Analysis of Stationary and Transition Probability Densities for Atmospheric Forcing in a Climate Change Model. *Stochastic Environmental Research and Risk Assessment* **40**(22) (2026)
3. **Otunuga, O.M.** Stochastic Modeling and First-Passage-Time Analysis of Oncological Time Metrics with Dynamic Tumor Barriers. *Scientific Reports* **15**, 14941 (2025).
4. **Otunuga, O.M.** Tumor growth and population modeling in a toxicant-stressed random environment. *Journal of Mathematical Biology* **88**(18), 2024, <https://doi.org/10.1007/s00285-023-02035-y>
5. **Otunuga, O.M.** Analysis of the impact of treatments on HIV/AIDS and Tuberculosis co-infected population under random perturbations. *Infectious Disease Modelling* **9**(1) (2024), Pages 27-55
6. **Otunuga, O.M.**, Yu, A. Vaccine breakthrough and rebound infections modeling: Analysis for the United States and the ten U.S. HHS regions. *Infectious Disease Modeling* **8** (2023) 717-741
7. Peters, S.O.J., Panigoro, H.S., Ibrahim, M.A., **Otunuga, O.M.**, Ayoola, T.A., Oladapo, A.O. Analysis and dynamics of measles with control strategies: a mathematical modeling approach. *International Journal of Dynamics and Control* **11**, (2023) 2538–2552. <https://doi.org/10.1007/s40435-022-01105-1>
8. Yemba, B.P., **Otunuga, O.M.**, Tang, B., Biswas, N. Nowcasting of Short-Run Euro-Dollar Exchange Rate with Economic Fundamentals and Time-Varying Parameters. *Finance Research Letter* **52** (2023)
9. **Otunuga, O.M.** Stochastic modeling and forecasting of Covid-19 deaths: Analysis for the fifty states in the United States. *Acta Biotheoretica* **70:25** (2022)
10. **Otunuga, O.M.** Analysis of multi-strain infection of vaccinated and recovered population through epidemic model: Application to COVID-19. *PLoS ONE* **17**(7) e0271446 (2022)
11. **Otunuga, O.M.** Estimation of epidemiological parameters for COVID-19 cases using a stochastic SEIRS epidemic model with vital dynamics. *Results in Physics* **28**, 104664 (2021)
12. **Otunuga, O.M.** Time-dependent probability distribution for number of infection in a stochastic SIS model: case study COVID-19. *Chaos, Solitons & Fractals* **147**, (2021)
13. **Otunuga, O.M.** Time-dependent probability density function for general stochastic logistic population model with harvesting effort. *Physica A* **573**, pp 1-33, (2021)
14. **Otunuga, O.M.** Two-Scale Network Dynamic Model for Energy Commodity Processes. *Journal of Energy* **2020**, Article ID 2075258 pp 1-59, (2020)
15. **Otunuga, O.M.**, Ogunsolu M.O. Qualitative analysis of a stochastic SEITR epidemic model with multiple stages of infection and treatment. *Infectious Disease Modelling* **5** (2020) 61-90.
16. **Otunuga, O.M.** Closed-form probability distribution of number of infections at a given time in a stochastic SIS epidemic model. *Heliyon* **5**(9), (2019), <https://doi.org/10.1016/j.heliyon.2019.e02499>
17. Mummert, A., **Otunuga, O.M.** Parameter identification for a stochastic SEIRS epidemic model: case study influenza. *Journal of Mathematical Biology* **79**(2) (2019) 705-729, <https://doi.org/10.1007/s00285-019-01374-z>
18. **Otunuga, O.M.**, Ladde G.S., Ladde, N. Local Lagged Adapted Generalized Method of Moments: An Innovative Estimation and Forecasting Approach and its Applications. *Journal of Time Series Econometrics* **11**(1), (2019), <https://doi.org/10.1515/jtse-2016-0024>
19. **Otunuga, O.M.** Global stability for a $2n + 1$ dimensional HIV/AIDS epidemic model with treatments. *Journal of Mathematical Biosciences* **299**, (2018): 138-152 <https://doi.org/10.1016/j.mbs.2018.03.013>
20. **Otunuga, O.M.** Time varying parameter estimation scheme for a linear stochastic differential

- equation. *International Journal of Statistics and Probability* **6(5)**, (2017), pp 84-100
21. **Otunuga, O.M.** Global Stability of Nonlinear Stochastic SEI Epidemic Model. *International Journal of Stochastic Analysis* (**2017**), Article ID 6313620, (2017) pp 1-7, doi:10.1155/2017/6313620.
 22. **Otunuga, O.M.**, Ladde, G.S., Ladde, N. Local Lagged Adapted Generalized Method of Moments and Applications. *Journal of Stochastic Analysis and Applications* **35(1)**, (2016), pp 1-34
 23. **Otunuga, O.M.** Second Order State and Covariance Estimation for Nonlinear Stochastic Systems. *Journal of Neural, Parallel and Scientific Computation* **22**, (2014), pp 89-126
 24. **Otunuga, O.M.** Stochastic Modeling of Energy Commodity Spot Price Processes with Delay in Volatility. *American International Journal of Contemporary Research* **4(5)**, (2014), 1-20
 25. **Otunuga, O.M.**, Basant, K., Lawrence, B. Positive Solutions of Boundary Value Dynamic Equations. *American Review of Mathematics and Statistics* **2(2)**, (2014), (2), 1-6.
 26. **Otunuga, O.M.** Finding Positive Solutions of Boundary Value Dynamic Equations on Time Scale. *Theses, Dissertations and Capstones*, (2009), Paper 734
 27. **Otunuga, O.M.** Stochastic Modeling and Applications of Energy Commodities Spot Price Processes, *Dissertations and Capstones*. Scholar Commons, (2014).

Book

► Book Chapter

1. **Olusegun M. Otunuga.** Transition probability density function for number of infections in a population satisfying a stochastic SIS-epidemic model. *Applied Mathematical Analysis and Computations II. Springer Proceedings in Mathematics & Statistics* **471 & 472**, (2024).

Contributed Presentations/Conferences

1. Otunuga, O. M. (January 5, 2026). From Outbreak to Endemic: Tracking the First Time to Endemic in Infectious Diseases [Conference presentation]. The 2026 Joint Mathematical Meetings, Washington, DC.
2. Otunuga O.M. (March 21, 2025). Biostatistics and Data Analysis using R [Seminar presentation]. POPUPS Workshop, College of Science and Mathematics, Augusta University
3. Building Teams to Build Better Epidemiological Models Conference, Duke University. Collaboration only: Development of innovative modeling approaches in social, biological, economic, medical, and behavioral sciences. January 17, 2025.
4. Otunuga, O. M. (February 3, 2025). Grant Dialogues: Navigating Funding + Grant in Undergraduate Research. The Council on Undergraduate Research (CUR)
5. Otunuga, O. M. (January 10, 2025). Modeling tumor growth barriers, age, and remission time in a random environment [Conference presentation]. The 2025 Joint Mathematical Meetings, Seattle Convention Center, Seattle, WA, USA.
6. Otunuga, O. M. (January 8, 2025). Analysis of the transition probability density function for an atmospheric forcing process in a climate change model [Conference presentation]. The 2025 Joint Mathematical Meetings, Seattle Convention Center, Seattle, WA, USA.
7. Otunuga O.M. (October 2024). Biostatistics and Data Analysis using R [Seminar presentation]. POPUPS Workshop, College of Science and Mathematics, Augusta University
8. Otunuga, O. M. (January 24, 2024). Modeling the Growth and Age of Tumor in a Random Stressed Environment [Seminar presentation]. Biological and Computational Mathematics Seminar, Augusta University Health Sciences Campus, EC 2234.
9. Otunuga, O. M. (January 3-6, 2024). Tumor growth and population modeling in a toxicant-stressed random environment [Conference presentation]. The 2024 Joint Mathematical Meetings, Moscone North/South, Moscone Center, San Francisco, CA.
10. Otunuga O.M. (October 24, 2023). Biostatistics and Data Analysis using R [Seminar presentation]. POPUPS Workshop, College of Science and Mathematics, Augusta University

11. Otunuga, O. M. (September 22-24, 2023). Tumor growth and population modeling in a toxicant-stressed random environment. [Conference presentation]. International Conference on Approximation and Potential Theory, Georgia Southern University, Savannah, Georgia.
12. The Third Annual Workshop: Emerging Data Science Methods For Complex Biomedical and Cyber Data, Georgia Cyber Center, Augusta, GA. March 16-17, 2023.
13. Otunuga, O. M. (March 9-11, 2023). Stochastic Modeling and Forecasting of Covid 19 Deaths: Analysis for the Fifty States in the United States. [Conference presentation]. MAA Southeastern Section Meeting, Coastal Carolina University in Conway, SC.
14. Society for Mathematical Biology Epi-PDEE Mini-Conference. Joint meeting between the Mathematical Epidemiology and Population Dynamics, Ecology, & Evolution Subgroups. February 26-28, 2023.
15. Otunuga, O. M. (January 4-7, 2023). Mathematical modeling of vaccine breakthrough infection and rebound infection: analysis for the United States and the ten U.S. HHS regions [Conference Presentation]. The 2023 Joint Mathematical Meetings, John B. Hynes Veterans Memorial Convention Center, Boston Marriott Hotel, and Boston Sheraton Hotel, Boston, MA.
16. Otunuga, O. M. (January 4-7, 2023). Transition probability density function for the number of infections in a population satisfying a stochastic SIS epidemic model [Conference presentation]. The 2023 Joint Mathematical Meetings, John B. Hynes Veterans Memorial Convention Center, Boston Marriott Hotel, and Boston Sheraton Hotel, Boston, MA.
17. Otunuga, O. M. (October 13-15, 2022). Time-dependent probability density function for general stochastic logistic population model with harvesting effort. [Conference presentation]. International Conference on Statistical Distributions and Applications (ICOSDA 2022), Huntington, WV.
18. Otunuga, O. M. (May 18-20, 2022). Multi-strain epidemic model with infected vaccinated, and re-infected recovered population: application to COVID-19 pandemic [Conference presentation]. Biology and Medicine Through Mathematics Conference (BAMM), Virginia Commonwealth University, Richmond, VA.
19. Otunuga, O. M. (June 18, 2021). Time-dependent Probability Distribution for Number of Infections in a Stochastic SIS Epidemic Model: Case Study COVID-19 [Conference presentation]. Central Botswana Mathematics and Statistical Sciences Conference, Zoom.
20. Otunuga, O. M. (January 29, 2021). Time Dependent Probability Density Function for Number of Infections in a Stochastic SIS Epidemic Model [Colloquium presentation]. University of Memphis Mathematics Colloquium, Memphis, TN.
21. Otunuga, O. M. (October 21, 2020). Time Dependent Probability Density Function for Number of Infections in a Stochastic SIS Epidemic Model [Colloquium presentation]. Marshall University Mathematics Colloquium, Huntington, WV.
22. Otunuga, O. M. (October 10-12, 2019). Closed form probability distribution of number of infections at a given time in a stochastic SIS epidemic model [Conference presentation]. International Conference on Statistical Distributions and Applications, ICOSDA 2019, Grand Rapids, MI, USA.
23. Otunuga, O. M. (May 16, 2019). Parameter Identification for a Stochastic SEIRS Epidemic Model: Case Study Influenza [Conference presentation]. Biology and Medicine Through Mathematics (BAMM) Conference, Virginia Commonwealth University, Richmond, VA.
24. Otunuga, O. M. (April 30, 2019). Time Varying Parameter Estimation Scheme for a Stochastic Dynamical System Using the LLGMM Method [Symposium presentation]. 3rd Computer Science Symposium on Emerging Technologies, Department of Computer Science, Marshall University, Huntington, WV.
25. Otunuga, O. M. (February 21, 2018). Global stability for a $(2n + 1)$ - dimensional HIV/AIDS epidemic model with treatments [Colloquium presentation]. Marshall University Colloquium, Huntington, WV.
26. Otunuga, O. M. (January 10-13, 2018). Global stability for a system of HIV epidemic stochastic model with treatments [Conference presentation]. The 2018 Joint Mathematical Meetings, American Mathematical Society, San Diego Convention Center, and Marriott Marquis, San Diego, CA.
27. Otunuga, O. M. (January 4-7, 2017). Parameter Identification for the SEIRS Epidemic Model: Case Study Influenza [Conference presentation]. The 2017 Joint Mathematical Meetings, American Mathematical Society, Hyatt Regency Atlanta, and Marriott Atlanta Marquis, Atlanta, GA.
28. Otunuga, O. M. (October 14-16, 2016). Distribution Models of Energy Commodity Spot Price Processes [Conference presentation]. International Conference on Statistical Distributions and Applications, ICOSDA 2016, Crowne Plaza, Niagara Falls, Canada.

29. Otunuga, O. M. (October 21, 2015). Stochastic Modeling of Energy Commodity Spot Price Processes [Colloquium presentation]. Marshall University Colloquium, Huntington, WV.
30. Otunuga, O. M. (March 27-28, 2015). A Local Lagged Adapted Generalized Method of Moments and Applications [Conference presentation]. 99th Annual Meeting of MAA, Ohio Section, Marshall University, Huntington, WV, USA.
31. Otunuga, O. M. (January 12, 2015). Two-scale Network Dynamic Model for Energy Commodity Process [Conference presentation]. The 2015 Joint Mathematical Meetings, American Mathematical Society, San Antonio, Texas.
32. Otunuga, O. M. (January 2014). Multivariate Stochastic Dynamic Model of Energy Commodities Under External Interventions [Conference presentation]. Joint Mathematical Meetings, American Mathematical Society, Baltimore, Maryland.
33. Otunuga, O. M. (January 9-10, 2013). Non-linear Stochastic Energy Spot Prices Processes with Delayed Volatility [Conference presentation]. The 2013 Joint Mathematical Meetings, American Mathematical Society, San Diego, USA.
34. Otunuga, O. M. (March 10-11, 2012). Development of a Stochastic Model by Using Natural Gas Price Data [Conference presentation]. 1079th American Mathematical Society Meeting, University of South Florida, Tampa, FL, USA.
35. RMMS - Recent Developments in Dynamic Equations on Time Scales, Wyoming University, Laramie, Wyoming State, USA. June 8-19, 2009.
36. Appalachian Association of Mathematics Teacher Education, Marshall University, Huntington, WV, USA. January 2008.
37. Ohio Mathematical Association of America, Spring Meeting, Marietta College, Marietta, Ohio, USA. April 11-12, 2008.
38. Fall meeting of the Mathematical Association of America, Capital University, USA. *Riemann Hypothesis*. Oct 24-25, 2008.
39. Otunuga, O. M. (October 26-27, 2007). Fermat's Last Theorem using the properties of the solution of a Cubic Equation [Conference presentation]. Fall Meeting of the Mathematical Association of America (MAA), Wittenberg University, Springfield, Ohio, USA.
40. Otunuga, O. M. (September 28-29, 2007). General Solution to all Real-Roots Cubic Equations [Conference presentation]. 34th Annual Pi Mu Epsilon Student Conference, Miami University, USA.

Grant Activity

► Funded

Current Research: Augusta University

1. Grant # 1930341 (PI Name: Angela Spencer)
 Name of Funding Organization: National Science Foundation
 Amount Awarded: \$905,444
 Period of Grant Award: 01/2020-12/2024
 Title of Project: Promoting Opportunities and Pathways for Undergraduate Persistence in Science, Engineering, Technology, and Mathematics
 Role on Project (Co-PI)
2. The Society for Mathematical Biology Travel Grant, February 2025.
3. The Affordable Learning Georgia Affordable Materials Grant, Grant Number 773 (PI Anastasia Wilson); April 2025.
 Amount Awarded: \$30,000

► Pending

REU Site (2025): Data Science and Machine Learning Approaches in Biological and Computational Mathematics. **Olusegun Otunuga (PI)**, Durga Kutal (Co-PI), Eric Numfor (Senior Personnel)

► Not Funded

1. NSF 24-088 Collaborative Research: MPOPHC: Adaptive Policy Modeling for Respiratory Infections with Age Structure, **Olusegun Otunuga (PI)**, Eric Numfor (Co-PI), Ebenezer George (Co-PI), Xinhua Yu (Senior Personnel)
2. NIH 39847. Resolution of inflammation: Role of macrophages in chronic neurological deficits and dementia post-TBI. Kumar Vaibhav (PI), Babak Baban (Co-PI), Ali Arbab (Co-PI), Evila da Silva Lopes Salles (Co-PI), Olusegun Otunuga (Co-PI), Mayuri Gulhane (Technician).
3. NSF 22-054. RAISE: IHBEM Innovative media-informed stochastic modeling of disease transmission dynamics, **Olusegun Otunuga (PI)**, Eric Numfor (Co-PI), Ebenezer George (Co-PI), Kenneth Ward (Senior Personnel), Xinhua Yu (Senior Personnel), and Shelley White-Means (Research Associate), May 16, 2022.
4. NSF 22-503. LEAPS MPS: Stochastic modeling, analysis, and control of the spread of multi-strain infectious diseases: Case study COVID-19 and influenza, **Olusegun Otunuga (PI)**, January 2022.
5. NSF 23-546. IHBEM: Stochastic modeling of disease dynamics: Social determinants of health, media awareness and synergistic interactions, **Olusegun Otunuga (PI)**, Eric Numfor (Co-PI), Ebenezer George (Co-PI), Thomas Hagen (Senior Personnel), Xinhua Yu (Senior Personnel), and Shelley White-Means (Senior Personnel), April 14, 2023.
6. Simons Foundation (2024): MPS-TSM-00013288. Olusegun Otunuga. Augusta University Research Institute, Inc. *Stochastic Modeling and Distribution of the Age of Tumor and Remission Time*.
7. REU Site (2024): Incorporating Data Science in Biological and Computational Mathematics. **Olusegun Otunuga (PI)**, Durga Kutal (Co-PI), Eric Numfor (Senior Personnel)

Undergraduate and Graduate Research Work

1. **Master's Thesis Advisor**, Department of Mathematics, Augusta University, Spring 2025.
 Advising one project research
 Topic: "Stochastic Modeling and Analysis of Tumor Growth in the Presence of Chemotherapy"
 (with Selassie Hatekah)
2. **Summer Scholars Program: CURS**, Department of Mathematics, Augusta University, Summer 2024.
 Advising an undergraduate student on Biological & Computational Mathematics:
 Topic: "Tumor and Cancer Stem Cells Modeling in the Presence of Chemotherapy"
 (with Joseph Puetz)
3. **Capstone Advisor**, Department of Mathematics, Augusta University, Spring 2024.
 Advising three undergraduate research projects
 Topic: "Modeling the Treatments of Tumor and Cancer Stem Cells with CAR-T Therapy and Inhibition of TGF- β "
 (with Rhys Cowling; Rebecca Walker; Jonathan Acuna-Robles)
4. **Master's Thesis Advisor**, Department of Mathematics, Augusta University, Spring 2024.
 Advising one project research
 Topic: "Modeling the Predator-Prey Dynamic of Sharks with Multiple Prey"
 (with Carson Morrison)
5. **Capstone Advisor**, Department of Mathematics, Augusta University, Fall 2023.
 Advising an undergraduate student on their senior capstone:
 Topic: "Probability distribution of the number of infections"
 (with Noah Allen)
6. **Summer Scholars Program: CURS**, Department of Mathematics, Augusta University, Summer 2023.
 Advising an undergraduate student on Mathematical Biology:
 Topic: "Vaccine breakthrough and rebound infections modeling: Analysis for the United States and the ten U.S. HHS regions"

(with Jonathan Acuna-Robles)

7. **Capstone Advisor**, Department of Mathematics, Augusta University, Spring 2023.
Serving as the capstone adviser for senior undergraduate students:
“Mathematical Modeling of Multi-Strain Infection Case”
(with Joseph McElmurray)
8. **Honors Prospectus Capstone Advisor**, Department of Mathematics, Augusta University, 2022-Present.
Serving as the thesis prospectus adviser for honors undergraduate students: 2022-2023.
“Mathematical modeling and analysis of the spread of infectious diseases: Case study Covid-19”
(with Michael Ford) Spring 2022
9. **Honors Prospectus Capstone Reader**, Department of Mathematics, Augusta University, 2022-Present.
Serving as the thesis prospectus reader for honors undergraduate students: 2022-2023.
“Mathematical Modeling of Post-exposure Prophylaxis of SARS-CoV-2”
(with Makayla Preston) Spring 2022
10. **Summer Scholars Program: CURS**, Department of Mathematics, Augusta University, Summer 2022.
Advising an undergraduate student on Mathematical Biology:
Topic: “Mathematical Modeling of Multi-Strain Infection Cases”
(with Alexandra Yu)
Status: Published as ”Vaccine breakthrough and rebound infections modeling: Analysis for the United States and the ten U.S. HHS regions, Journal of Infectious Disease Modelling, 8 (2023) 717-741
11. **Masters Thesis Supervision: Marshall University.**
Title: Radial Basis Function Methods With Accelerated Newton Iteration For Nonlinear Boundary Value Problems
Student: Ayodele Ashefon (Thesis Incomplete) Spring-Summer 2019
12. **Chair, Oral Master’s Program Comprehensive Exam Supervision: Marshall University.**
Student: Ayodele Ashefon Summer 2019
13. **Senior Capstone Research Advisor**, Department of Mathematics, Marshall University.
Served as the capstone adviser for senior undergraduate students:
 - i. “Dynamic Modeling and Forecasting of Energy Commodity Prices” (with Estep, R.) Spring 2015.
 - ii. ”Modeling the Spread of Infectious Diseases”, (with Morisue, J.) Fall 2015.
 - iii. “Estimating time varying parameters in a linear stochastic model for energy commodity spot price processes”, (with Lockhart, T.) Spring 2017.
 - iv. “New Innovative Numerical Integration Scheme using Radial Basis Function (RBF) method”,
(with Lim, B.)
My student won the Marshall University Undergraduate Creative Discovery and Research Scholar Awards (Summer 2018), with an award amount of \$4,000 Spring 2018.
 - v. “Mathematical Analysis of Transmission of Infectious Diseases: Case study Influenza ”,
(with Powers, C.) Fall 2018.
 - vi. “Stationary Probability Distribution for a Stochastic SIS Model”, (with Wallace, C.)
Spring 2019.
 - vii. “Optimal Control of Infectious Disease using a SEITR Model”, (with Hoops, K.)
Spring 2020.
 - viii. “Modeling SARS-CoV-2 Transmission using SEIRS Model”, (with Krznaric, J.)
My student won the WV NASA student fellowship grant for this research Fall 2020.
 - ix. “Evaluating the Black-Scholes option pricing model using hedging simulations”, (Incomplete) (with Patino, A.)

Teaching Experience

► **Augusta University:** Course Title and Description.

MATH 6630-A: Topics in Mathematical Biology
MATH 6980-A: Special Topics (Stochastic Modeling and Applications)
MATH 6200-A: Applied PDE
MATH 4990-C: Undergraduate Research
MATH 4950-A: Theory of Interest
MATH 4510-A: Complex Variables
MATH 4251-A: Probability and Statistics I
MATH 4252-A: Probability and Statistics II
MATH 3280-A: Linear Algebra
MATH 3250-A: Intro Stat & Data Analysis
MATH 3020-A: Differential Equations
CURS 2990-S: Undergraduate Research
MATH 2013-A: Calculus & Analytic Geometry III
MATH 2012-A: Calculus & Analytic Geometry II
MATH 2011-C: Calculus & Analytic Geometry I
MATH 1401: Elementary Statistics
MATH 1113: Precalculus

► **Marshall University:** Course Title and Description.

MTH 640: Complex Analysis
MTH 616: Advanced Differential Equations
MTH 528: Advanced Calculus II
MTH 428: Advanced Calculus II
MTH 416: Advanced Differential Equations
MTH 360: Complex Variable
MTH 335: Differential Equations
MTH 231: Calculus with Analytic Geometry III
MTH 230: Calculus with Analytic Geometry II
MTH 229: Calculus with Analytic Geometry I (CT)
MTH 140: Applied Calculus
MTH 132: Pre-Calculus
MTH 130: College Algebra
MTH 127: College Algebra-Expanded
MTH 122: Plane trigonometry
STA 225: Introductory Statistics (CT)

► **University of South Florida:** Course Title and Description.

COP 4313: Symbolic Computation in Mathematics
MAC 2241-2242: Life Science Calculus,
MAC 2233: Business Calculus
MAC 1105: College Algebra

Department and University Service: Augusta University

- ▶ **Curriculum and Academic Policies Committee, COSM.** July 2025 - Present.
- ▶ **USG Record Management Project Committee, COSM.** Spring 2025 - Fall 2025.
- ▶ **Advisor, Pi Mu Epsilon Georgia Lambda Chapter, Augusta University.** Spring 2023 - Present.
- ▶ **Chair, Math Contest Committee.** Fall 2023.
- ▶ **Member, Undergraduate Curriculum Committee.** Fall 2023.
- ▶ **Member, Statistics Committee.** Fall 2023.
- ▶ **Member, Screening Committee.** Fall 2023.
- ▶ **Installation of Augusta University's Pi Mu Epsilon Club, Georgia Lambda Chapter.** Spring 2023.
- ▶ **Recruitment and Public Relations Committee, Augusta University.** Fall 2022-Present.
- ▶ **Undergraduate Curriculum Committee, Augusta University.** Fall 2022-Present.
- ▶ **Faculty Development and Recognition Committee, Augusta University.** Fall 2022-Present.
- ▶ **Hiring Committee, Augusta University.** Fall 2021-Present.
- ▶ **Member, Graduate Committee, Augusta University.** Fall 2021-Present.
- ▶ **Goldwater Scholarship advisor for CSM students, Augusta University.** Fall 2021-Present.
- ▶ **Statistics Track Committee, Augusta University.** Fall 2021-Present.

Department and University Service: Marshall University

- ▶ **Advisor, Pi Mu Epsilon WV Beta Chapter, Marshall University.** Fall 2015 - Spring 2021.
- ▶ **Member, Calculus Course Committee, Marshall University.** Spring 2016 - 2017.
- ▶ **Member, Calculus Course Committee, Marshall University.** Spring 2019 - 2020.

Awards and Honors

- ▶ **College of Science and Mathematics Faculty Research and Development Support, Augusta University (\$2,690).** Spring 2025.
- ▶ **The Society for Mathematical Biology Travel Grant (\$700).** Spring 2025.
- ▶ **Excellence in Research Award, College of Science & Mathematics, Augusta University.** Spring 2024.
- ▶ **Center for Undergraduate Research and Scholarship (CURS), Augusta University.** Summer 2022-2024.
- ▶ **John Marshall Scholar for Summer 2021, Marshall University.** Summer 2021.
- ▶ **Research Committee Funding, Faculty Senate, Marshall University.** Fall 2019.
- ▶ **Undergraduate Creative Discovery Summer Grant, Marshall University.** Spring 2018.
- ▶ **Research Committee Funding, Faculty Senate, Marshall University.** Spring 2017.
- ▶ **Graduate Research Assistantship, U.S. Army Research Office, Math. Sciences.** Summer 2012-14.
- ▶ **Tharp Endowed Award, College of Arts and Sciences, Univ. South Florida** Summer 2011-13.
- ▶ **Travel Grant AMS/MAA Joint Mathematical Meeting, San Diego, California.** Spring 2013.
- ▶ **Travel Grant AMS/MAA Joint Mathematical Meeting, Univ. South Florida.** Spring 2012.
- ▶ **Lamina Faye Maynard Queen Memorial Graduate Research Scholarship, Marshall University.** Summer 2009.
- ▶ **International Student Award, Marshall University, Huntington, WV.** Spring 2009.
- ▶ **Pi Mu Epsilon Best Student of the Month, Marshall University, Huntington, WV.** Spring 2009.
- ▶ **First Class Graduating Mathematical Student, Federal Univ. of Agriculture, Ogun, Nigeria.** 2006.

Professional Services

- ▶ Associate Editor - Journal of Stochastic Analysis and Applications. Spring 2025.
- ▶ Reviewer - National Science Foundation (NSF). Spring 2024.
- ▶ Reviewer - AU Research Scholarship & Creative Activity (RSCA) Grant. Fall 2023.
- ▶ Reviewer - National Science Foundation (NSF). Spring 2023.
- ▶ Editorial Member - International Journal of Statistics and Probability. 2018-Present.
- ▶ Reviewer - Scientific Reports. 2022-Present.
- ▶ Reviewer - PLOS One. 2020-Present.
- ▶ Reviewer - Heliyon. 2020-Present.
- ▶ Reviewer - International Journal of Biomathematics. 2019-Present.
- ▶ Reviewer - Journal of Computational and Mathematical Methods. 2019-Present.
- ▶ Reviewer - Journal of Advances in Mathematics and Computer Science. 2018-Present.
- ▶ Reviewer - Journal of Mathematical Biosciences. 2018-Present.
- ▶ Reviewer - Journal of Stochastic Analysis and Applications. 2016-Present.
- ▶ Reviewer - Journal of Nigerian Mathematical Society, (JNMS). 2016-Present.

Professional Organizations

- ▶ Member, Society for Mathematical Biology. 2021-present.
- ▶ Member, American Mathematical Society. 2010-present.
- ▶ Member, Mathematical Association of America. 2007-present.
- ▶ Member, Pi Mu Epsilon Mathematics Society. 2007-present.