

DIVINE T. WANDUKU

Department of Mathematical Sciences,
Georgia Southern University,
65 Georgia Ave. Room 3309

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dwanduku@georgiasouthern.edu;

ACADEMIC BACKGROUND

EDUCATION

Ph.D. Mathematics with Concentration in Statistics, University of South Florida, USA, 2012

- **Advisor:** Gangaram S. Ladde
- **Dissertation Title:** Stochastic modeling of Network Centric Epidemiological Processes <http://scholarcommons.usf.edu/etd/4252/>

M.A. Statistics, University of South Florida, USA, 2009

M.Sc. Mathematics, University of Buea, Cameroon, 2005

B.Sc. Mathematics (major) and Chemical Processing Technology (minor), University of Buea, Cameroon, 2000

CERTIFICATIONS:

2016 Teach Online Certificate, Georgia Southern University, USA

PROFESSIONAL EXPERIENCE

APPOINTMENTS

08/2021- current Tenured Associate Professor of Statistics,
Georgia Southern University (GSU)

08/2017- 05/2021 Assistant Professor of Statistics,
Georgia Southern University (GSU)

08/2015 - 5/2017 Lecturer of Statistics,
Georgia Southern University (GSU)

08/2012 - 07/2015 Ph.D. Mathematics and Statistics Instructor,
Keiser University (KU), Florida

- *My rank was called "Ph.D. full-time Instructor", and note that the rank, "Instructor" was the highest rank, and the only description used for faculty in this institution.*

2009 - 2012 Teaching Associate/Research Assistant,
University of South Florida (GSU)

2007 - 2009 Teaching Assistant,
University of South Florida (USF)

2005 – 2007 Instructor of Mathematics,
University of Buea (UB), Cameroon

2003 - 2005 Teaching Assistant,
University of Buea (UB), Cameroon

ACADEMIC AND SCHOLARSHIP SERVICE LEADERSHIP POSITIONS

Associate Editor

- **Journal of Stochastic Analysis and Applications (JSAA):**
The Journal Impact 2019-2020 of Stochastic Analysis and Applications is 1.035
 - **From May 5,2020-current**
<https://www.tandfonline.com/action/journalInformation?show=editorialBoard&journalCode=lsaa20>
- **Fractal and Fractional (Fractal Fract)**
 - **August 2021-current**
https://www.mdpi.com/journal/fractalfract/topic_editors

Core Assessment Coordinator

- **Department of Mathematical Sciences, Georgia Southern University**
 - Introductory Statistics I/ Elementary Statistics - STAT2231/STAT1401
 - **From 2017-current**
- **Keiser University, Lakeland campus**
 - **From 8/2012- 7/2015**

Director of Statistical Consulting Unit

- **Department of Mathematical Sciences, Georgia Southern University**
 - **From 2019- current**

Chair of Colloquium Committee

- **Department of Mathematical Sciences, Georgia Southern University**
 - **From 2019- current**

Coordinator of Statistics Seminar/Graduate Statistics Seminar

- **Department of Mathematical Sciences, Georgia Southern University**
 - **From 2019- current**

NOMINATIONS:

- College of Science and Mathematics (COSM) Excellence in Service Award for 2020 (Georgia Southern University; Not Won)

- College of Science and Mathematics (COSM) Excellence in Research Award for 2021 (Georgia Southern University; Decision pending.)

- Research paper nominated for 2011 Bellman prize in Journal of Mathematical Biosciences (Not Won)
 - D. Wanduku, G.S. Ladde, *A two-scale network dynamic model for human mobility process*, *Math. Biosciences*, 2011, vol. 229 (1):1-15

RESEARCH

GRANTS, HONORS, AWARDS AND AWARD NOMINATIONS

2015 – current

- **NSF- travel grant application postponed to May 17-19, 2021:** To attend the Biology and Medicine Through Mathematics Conference (BAMM), Virginia Commonwealth University (VCU), Richmond Virginia
 - o **Asking for \$1000**
 - o See my accepted abstract
<https://scholarscompass.vcu.edu/bamm/2020/talk/44/>

- **October 26-27, 2019:** NSF- travel grant to Southeastern Atlantic regional conference on differential equations, (39th searcde), Embry Riddle Aeronautical University, Daytona Beach, Florida (**\$350**)

- **May 15-17, 2019:** NSF- travel grant to Biology and Medicine Through Mathematics Conference (BAMM), Virginia Commonwealth University (VCU), Richmond Virginia (**\$415**)

- **May 07-11, 2018:** - travel grant to Institute for Mathematics and its Applications (IMA) workshop on Stochastic Control, Computational Methods, and Applications held in Minneapolis, MN. Additional information about the event is available at <http://ima.umn.edu/2017-2018.5/W5.7-11.18> (**\$700**)

- **May 15-17, 2017:** NSF- travel grant to SouthEastern probability conference (SEPC), Duke University, NC (**\$500**)

2010-2012

- **2011-2012:** Mathematical Science Division, US Army Research Office, Grants No. W911NF-12-1-0090,
- **2010:** Mathematical Science Division, US Army Research Office, Grants No. W911NF-07-1-0283,
- **January 2012:** AMS- Graduate Student Travel Grant to the Joint Mathematics Meetings, Boston
- **Spring 2009, 2010, 2011, 2012:** Tharp Scholarship cash award for outstanding graduate students Spring 2009, 2010, 2011, 2012 (USF)
- **Spring 2011:** The A. N. V. Rao Memorial Endowed Scholarship in Statistics Spring 2011 (USF)
- **Nomination for 2011 Bellman prize,** Journal of Mathematical Biosciences:
 - o **D. Wanduku, G.S. Ladde,** *A two-scale network dynamic model for human mobility process, Math. Biosciences, 2011, vol. 229 (1):1-15*
- **January 2010:** AMS- Graduate Student Travel Grant to the Joint Mathematics Meetings, New Orleans

2002-2005

- **December 2005:** Minister of Higher Education award to the **best M.Sc. Mathematics** Student, University of Buea, Cameroon.

- **December 2002:** Minister of Higher Education scholarship to **outstanding B.Sc. Mathematics** Students, University of Buea, Cameroon.

PUBLICATIONS:**REFEREED JOURNAL ARTICLES:****2022:**

1. F. Chipepa, Oluyede B., **Wanduku D.**, Moakofi T. (2022) The Exponentiated Half Logistic-Topp-Leone-G Power Series Class of Distributions: Model, Properties and Applications. In: Singh J., Dutta H., Kumar D., Baleanu D., Hristov J. (eds) Methods of Mathematical Modelling and Computation for Complex Systems. Studies in Systems, Decision and Control, vol 373. Springer, Cham.
https://doi.org/10.1007/978-3-030-77169-0_14

2021:

2. **Divine Wanduku.** ESTIMATING WHITE NOISE INTENSITY REGIONS FOR COMPARABLE PROPERTIES OF A CLASS OF SEIRS STOCHASTIC AND DETERMINISTIC EPIDEMIC MODELS [J]. Journal of Applied Analysis & Computation, **2021**, 11(3): 1095-1037. doi: 10.11948/20190372; <https://doi.org/10.11948/20190372>
3. Fastel Chipepa, Broderick Oluyede, **Divine Wanduku**, The Exponentiated Half Logistic Odd Weibull-Topp-Leone-G: Model, Properties and Applications, Journal of Statistical Modelling: Theory and Applications, 2021, pp 1-23, Yazd University Press. Doi: [jsmata/jsmta.2021.14775.1016](https://doi.org/10.14775/1016)
4. Broderick Oluyede, Fastel Chipepa, **Divine Wanduku**, The odd Weibull-Topp-Leone-G power series family of distributions: model, properties, and applications, Journal of Nonlinear Sciences and Applications, 14 (2021), no. 4, 268-286

5. **D. Wanduku**, Finite- and multi-dimensional state representations and some fundamental asymptotic properties of a family of nonlinear multi-population models for HIV/AIDS with art treatment and distributed delays, **appearing in Discrete and Continuous Dynamical Systems Series S**, doi: [10.3934/dcdss.2021005](https://doi.org/10.3934/dcdss.2021005) ; <https://www.aims sciences.org/article/doi/10.3934/dcdss.2021005>

2020-2017

6. **D. Wanduku**, On the almost sure, and *pth* moment exponential convergence and stochastic exponential stabilities for nonlinear stochastic epidemic models, **Mathematics in Engineering, Science and Aerospace (MESA)**, **11 (2020)**, 719-737, <http://nonlinearstudies.com/index.php/ mesa/article/view/2410>
7. **D. Wanduku**, On the almost sure convergence of a stochastic process in a class of nonlinear multi-population behavioral models for HIV/AIDS with delayed ART treatment, **Stochastic Analysis and Applications**, **0 (2020)**, 1-162; doi:[10.1080/07362994.2020.1848593](https://doi.org/10.1080/07362994.2020.1848593)
8. **Divine Wanduku**, A nonlinear multi-population behavioral model to assess the roles of education campaigns, random supply of aids, and delayed ART treatment in HIV/AIDS epidemics. **Mathematical Biosciences and Engineering**, **2020**, **17(6)**: 6791-6837. doi: [10.3934/mbe.2020354](https://doi.org/10.3934/mbe.2020354)
9. Fastel Chipepa, **Divine Wanduku**, Broderick Oluyede,. Half Logistic Odd Weibull-Topp-Leone-G Family of Distributions: Model, Properties and Applications. **Afrika Statistika** . **2020**, **Volume 15(4)**, pp 2481-2510
Doi : <http://dx.doi.org/10.16929/as/2020.2481.169> , www.jafristat.net, projecteuclid.org/as

10. Fastel Chipepa, Broderick Oluyede, **Divine Wanduku** , Exponentiated Half Logistic-Power Generalized Weibull-G Family of Distributions: Model, Properties and Applications, **Eurasian Bulletin of Mathematics**, (2020), **VOL. 3, NO. 3, 134-161**
11. Hameed Jimoh, Broderick Oluyede, **Divine Wanduku** and Boikanyo Makubat, A New Generalized Log-Logistic Erlang Truncated Exponential Distribution with Applications, **Electronic Journal of Applied Statistical Analysis (EJASA)**, **13(2), 293-349, 2020.**
12. **D. Wanduku**, The stationary distribution and stochastic persistence for a class of disease models: Case study- malaria, **International Journal of Biomathematics**, Vol. 13, No. 04, 2050024 (2020)
<https://doi.org/10.1142/S1793524520500242>
13. **D. Wanduku**, B. Oluyede, Some asymptotic properties of SEIRS models with nonlinear incidence and random delays. **Nonlinear Analysis: Modelling and Control**, **25 (2020), 461–481.**
<https://doi.org/10.15388/namc.2020.25.16660>,
Original preprint available at [arXiv:1901.05026](https://arxiv.org/abs/1901.05026) [q-bio.PE]
14. Broderick Oluyede, Baitshphi Mashabe, Adeniyi Fagbamigbe, Boikanyo Makubate, **Divine Wanduku**, The Exponentiated Generalized Power Series Class of Distributions: Theory, Properties and Applications, **Heliyon 6 (2020) e04653**

15. **D. Wanduku**, Lyapunov Functionals and Stochastic Stability Analyses for Highly Random Nonlinear Functional Epidemic Dynamical Systems with Multiple Distributed Delays. **In: Dutta, H. (Ed.). (2020). Mathematical Methods in Engineering and Applied Sciences. Boca Raton: CRC Press, <http://dx.doi.org/10.1201/9780429343537-9>**

16. **D. Wanduku**, C. Newman, O. Jegede, B. Oluyede: Modeling the stochastic dynamics of influenza epidemics with vaccination control, and the maximum likelihood estimation of model parameters **In: Hemen Dutta (editor), Mathematical Modelling in Health, Social and Applied Sciences, Ch.2, 1st edition**, Springer Singapore, 2020, DOI 10.1007/978-981-15-2286-4; https://link.springer.com/chapter/10.1007/978-981-15-2286-4_2 preprint available at [arXiv:1901.05315](https://arxiv.org/abs/1901.05315) [q-bio.PE]

17. **D. Wanduku**, Modeling Highly Random Dynamical Infectious Systems. In: Dutta H., Peters J. (eds) Applied Mathematical Analysis: Theory, Methods, and Applications. Studies in Systems, Decision and Control, vol 177 (2020). Springer, Cham; https://link.springer.com/chapter/10.1007/978-3-319-99918-0_17

18. **Divine Wanduku**. The stochastic extinction and stability conditions for nonlinear malaria epidemics. *Mathematical Biosciences and Engineering*, 2019, 16(5):3771-3806. doi: 10.3934/mbe.2019187

19. Hameed Jimoh, Broderick Oluyede, **Divine Wanduku** and Boikanyo Makubat, The Gamma Log-Logistic Erlang Truncated Exponential Distribution with Applications, *Afrika Statistika*, Vol. 14 (4), 2019, pages 2141 - 2164.
DOI: <http://dx.doi.org/10.16929/as/2019.2141.152>
(projecteuclid.org/euclid.as, www.jafristat.net)

20. **D. Wanduku**, Threshold conditions for a family of epidemic dynamic models for malaria with distributed delays in a non-random environment, **International Journal of Biomathematics Vol. 11, No. 6 (2018) 1850085 (46 pages), DOI: 10.1142/S1793524518500857**
21. **D. Wanduku**, Complete global analysis of a two-scale network SIRS epidemic dynamic model with distributed delay and random perturbations, **Applied Mathematics and Computation 294 (2017) 49–76**
22. B.O. Oluyede, B. Makubate , **D. Wanduku**, I. Elbatal, V. Sherina , The Gamma-Generalized Inverse Weibull distribution with Applications to Pricing and Lifetime Data, **Journal of Computations & Modelling, vol.7, no.2, 2017, 1-28**
23. **D. Wanduku**, G.S. Ladde, The global analysis of a stochastic two-scale Network Epidemic Dynamic Model With Varying Immunity Period, **Journal of Applied Mathematics and Physics, 2017, 5,1150-1173**

2016-2010

24. **D. Wanduku**, G.S. Ladde, Global properties of a two-scale network stochastic delayed human epidemic dynamic model, **Nonlinear Analysis: Real World Applications 13(2012) 794-816**
25. **D. Wanduku**, G.S. Ladde, A two-scale network dynamic model for human mobility process, **Math. Biosciences, 2011, vol. 229 (1), 1-15**

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26. **D. Wanduku**, G.S. Ladde, Fundamental Properties of a Two-scale Network stochastic human epidemic Dynamic model, **Neural, Parallel, and Scientific Computations 19 (2011) 229-270**

 27. **D. Wanduku**, G.S. Ladde, Global Stability of Two-Scale Network Human Epidemic Dynamic Model, **Neural, Parallel, and Scientific Computations 19 (2011) 65-90**

 28. **D. Wanduku**, Two-Scale Network Epidemic Dynamic Model for Vector Borne Diseases, **Proceedings of Dynamic Systems and Applications 6 (2016) 228–232**

 29. **D. Wanduku**, G.S. Ladde, Global stability of a two-scale network SIR delayed epidemic dynamic model, **Proceedings of Dynamic Systems and Applications 6 (2012) 437–441**

 30. **D. Wanduku**, G.S. Ladde, Two-scale Stochastic Network Dynamic Epidemic Models, **Proceedings of Neural, Parallel & Scientific Computations 4 (2010) 397-399**

PAPERS SUBMITTED (PREPRINTS AVAILABLE)

31. **Divine Wanduku**, Chinmoy Rahul, Omotomilola Jegede, Broderick Oluyede, Oluwaseun Farotimi, On a SVEIRS Markov chain epidemic model with multiple discrete delay times and sensitivity analysis to determine vaccination effects, **submitted as Elsevier book chapter to *Advances in Epidemiological Modeling and Control of Viruses*, 2021.**

32. **D. Wanduku**, The Multilevel Hierarchical Data EM-Algorithm. Applications to Discrete-time Markov Chain Epidemic Models, **Submitted, 2021**

33. **D. Wanduku**, Stochastic modeling , maximum likelihood estimation, EM algorithm and statistical inference for SEIR epidemic models: theoretical development, **submitted, 2020, preprint available at arXiv:1907.10679 [q-bio.PE]**

34. **D. Wanduku**, D. Denu, A stochastic model to assess the roles of delayed treatment, information intervention and random supply of domestic and foreign aids on HIV/ADS epidemics (based on stochastic exponential extinction)

35. B. Oluyede, B. Makubate, **D. Wanduku**, S. Huang, The log-exponentiated kumaraswamy-Dagum distribution with applications to income and lifetime data, **submitted to *Electronic journal of Applied Statistical Analysis-EJASA* (2019),**

36. **D. Wanduku**, Analyzing the qualitative properties of white noise on a family of infectious disease models in a highly random environment, **preprint available at arXiv:1808.09842 [q-bio.PE]**

37. D. Wanduku, A comparative stochastic and deterministic study of a class of epidemic dynamic models for malaria II: exploring the impacts of noise on eradication and persistence of disease, **preprint available at [arXiv:1809.03897](https://arxiv.org/abs/1809.03897) [q-bio.PE]**

RESEARCH IN PROGRESS:

38.D. Wanduku, N. Hallman, Modeling the stochastic dynamics, and statistical inference for the COVID-19 pandemic

39.D. Wanduku, C. Rahul, Complete maximum likelihood estimation for SEIR epidemic models with birth and death processes: theoretical development,

40.D. Wanduku, The extinction and persistence of disease in a stochastic multipopulation HIV/AIDS model with treatment. (to be submitted 2020)

41.D. Wanduku, On a family of stochastic SVIR influenza epidemic models and maximum likelihood estimation-part II : uncorrelated vaccination and infection rates

42.(with B. Oluyede et al), The Log-logistic Weibull-Geometric Distribution Model, Theory and Applications (in progress)

43.D. Wanduku, W. Tharanga: Asymptotic properties of a stochastic HIV/AIDS model with treatment (to be submitted 2019)

ONGOING RESEARCH PROJECTS WITH GRADUATE STUDENTS

44. **D. Wanduku**, M. Monem: Stochastic modelling of rumour epidemics in a social network and statistical inferences.

45. **D. Wanduku**, O. Jegede; A stochastic model for salmonella typhi-typhoid fever epidemic and parameter estimation.

BOOK PROJECTS IN PROGRESS:

46. **D. Wanduku**, G.S. Ladde: Mathematical Modeling of Network Centric Epidemiological Processes-Deterministic and Stochastic Formulations

47. **D. Wanduku**; Stochastic modeling and control for highly random nonlinear functional epidemic systems in book T&F book series: *Mathematics and its Applications: Modelling, Engineering, and Social Sciences*, Series Editor: Hemen Dutta (monograph)

PRESENTATIONS:

RESEARCH PRESENTATIONS:

INVITED TALKS (AT LEAST HALF-HOUR PRESENTATIONS)

- **June 18, 2021**, Session organizer for “Mathematical Biology, Stochastic Differential Equations & Disease Modelling” in Central Botswana Mathematics and Statistical Sciences Conference (CBMSSC), <https://sites.google.com/biust.ac.bw/mathstats-conference2021/schedule?authuser=0>
- **June 13-17, 2021**, Mathematical Epidemiology Subgroup (MEPI), Minisymposium (MSo7-MEPI), Celebrating Dr. Ngwa's 55th birthday with talks honoring his mathematical modeling work including malaria mosquitoes. Virtual SMB 2021, Annual meeting; <http://schedule.smb2021.org/MEPI/>
- **May 17-19, 2021 (postponed)**: Biology and Medicine Through Mathematics Conference (BAMM), Virginia Commonwealth University (VCU), Richmond Virginia. This conference cancelled in 2020 due to covid-19 is postponed to 2021. See my accepted abstract <https://scholarscompass.vcu.edu/bamm/2020/talk/44/>
- **June 5- July 3, 2020**, 2020 SIAM Conference on the Life Sciences, initially scheduled for June 8-11, 2020 at the Hyatt Regency Orange County in Garden Grove, California, U.S., took place virtually. See my abstract https://meetings.siam.org/ess/dsp_programsess.cfm?SESSIONCODE=68592
- **October 26-27, 2019: NSF- 39th** Southeastern Atlantic regional conference on differential equations, (39th searcde), Embry Riddle Aeronautical University, Daytona Beach, Florida

- **May 15-17, 2019:** Biology and Medicine Through Mathematics Conference (BAMM), Virginia Commonwealth University (VCU), Richmond Virginia
- **October 6-7, 2018 :** 38th southern-Atlantic Regional Conference on Differential Equations: University of North Georgia, Gainesville GA
- **January 26, 2018 :** Joint Statistics Seminar, Joint Mathematics and Statistics Colloquiums, Department of Mathematical Sciences, Georgia Southern University, 65 Georgia Ave. Room 2045A P.O. Box 8093, Statesboro, GA 30460, Friday January 26, 2018
- **January 10-13, 2018:** AMS Special Session on Stochastic Processes, Stochastic Optimization and Control, Numerics and Applications (1135-60-1011), San Diego, CA
- **October 7-8, 2017 :** 37th southern-Atlantic Regional Conference on Differential Equations: Kennesaw State University, Kennesaw GA
- **May 15-17, 2017:** SouthEastern probability conference (SEPC), Duke University, Durham, NC
- **January 4-7, 2017:** AMS Special Session on Fractional, Stochastic, and Hybrid Dynamic Systems with Applications , 123rd Annual Meeting of the American Mathematical Society (AMS), Atlanta, GA,
- **November 28, 2016:** Joint Mathematics and Statistics Colloquiums, Department of Mathematical Sciences, Georgia Southern University, 65 Georgia Ave. Room 2045A P.O. Box 8093, Statesboro, GA 30460, Friday November 28, 2016

- **November 10, 2015:** Disease Dynamics Seminars, College of Public Health, Georgia Southern University, 65 Georgia Ave. Room 2045A P.O. Box 8093, Statesboro, GA 30460, November 10, 2015, 12.30pm – 1.30pm
- **May 27-30, 2015:** Workshop on Stochastic Analysis and Application, 7th International conference on Dynamic Systems and Applications, Morehouse College, Atlanta, Georgia 30314, USA May 27-30, 2015.
- **January 10-13, 2015:** AMS Special Session on Fractional, Stochastic, and Hybrid Dynamic Systems with Applications , 121th Annual Meeting of the American Mathematical Society (AMS), San Antonio, TX, January 10-13, 2015
- **September 18, 2015:** Statistics Colloquiums, Department of Mathematical Sciences, Georgia Southern University, 65 Georgia Ave. Room 2045A P.O. Box 8093, Statesboro, GA 30460, Friday September 18, 2015
- **January 15-18, 2014:** AMS Special Session on Fractional, Stochastic, and Hybrid Dynamic Systems with Applications , 120th Annual Meeting of the American Mathematical Society (AMS), Baltimore, MD, January 15-18, 2014
- **December 5, 2014:** MAA Special Session, 39th Annual Suncoast Regional MAA meeting, USF Sarasota/Manatee Florida, December 5, 2014
- **January 9-12, 2013:** AMS Special Session on “Stochastic Analysis of Stochastic Differential Equations and Stochastic Partial Differential Equations”, 119th Annual Meeting of the American Mathematical Society (AMS), San Diego, CA, January 9-12, 2013

- **March 10-11, 2012** : AMS Sectional Meeting, Special Session on Stochastic Analysis and Applications, 2012 Spring Southeastern Section Meeting, University of South Florida, Tampa, FL, March 10-11, 2012 (Saturday - Sunday), Meeting #1079
- **January 4-7, 2012**: AMS-Special Session on " Stochastic fractional, and Hybrid Dynamic Systems with Applications", 118th Annual Meeting of the American Mathematical Society (AMS), Boston, MA, January 4-7, 2012
- **January 6-9, 2011**: AMS-Special Session on " Stochastic fractional, and Hybrid Dynamic Systems with Applications", 117th Annual Meeting of the American Mathematical Society (AMS), New Orleans, LA, January 6-9, 2011
- **2011**: Special Session on " Stochastic Analysis and Application" The sixth International Conference on Dynamic Systems and Applications, Morehouse College, Atlanta, GA 30314, USA (2011)
- **December 15-18, 2010** : Special Session on "Stochastic Analysis and Applications" The 7th International Conference on Differential Equations and Dynamical Systems, Tampa, FL, December 15-18, 2010
- **April 24, 2009**: Special Session on "Stochastic Application and Algorithms", the fourth international conference on Neural, Parallel & Scientific Computations, Atlanta, Georgia, August 11-14, 2010-Frontiers in Applied Statistics, Tampa, FL, April 24, 2009
- Statistics Colloquiums, Department of Mathematics and Statistics, University of South Florida, Tampa, FL, 2009
- Participated in several mini University of South Florida workshops in Statistics and its applications

RESEARCH PRESENTATIONS WITH GRADUATE STUDENTS

- **June 18, 2021, (with graduate student-Mymuna Monem, Florida International University, FL):** Session on “Mathematical Biology, Stochastic Differential Equations & Disease Modelling” in Central Botswana Mathematics and Statistical Sciences Conference (CBMSSC), <https://sites.google.com/biust.ac.bw/mathsstats-conference2021/schedule?authuser=0>
- **June 18, 2021, (with graduate student- Omotomilola Jegede, Old Dominion University, VA):** Session on “Mathematical Biology, Stochastic Differential Equations & Disease Modelling” in Central Botswana Mathematics and Statistical Sciences Conference (CBMSSC), <https://sites.google.com/biust.ac.bw/mathsstats-conference2021/schedule?authuser=0>
- **April 3, 2021 (with graduate student-Noah Hallman, Georgia Southern University, GA):** Special Session in Trends in Biomedical Mathematics, Southern Georgia Mathematics Conference, Georgia Southern University, <https://cosm.georgiasouthern.edu/wp-content/uploads/SGMC-ABSTRACT-BOOKLET.pdf>
Title “Modeling COVID-19 with Discrete-Time Markov Chains”
- **April 3, 2021 (with graduate student-Omotomilola Jegede, Old Dominion University, VA):** Special Session in Trends in Biomedical Mathematics, Southern Georgia Mathematics Conference, Georgia Southern University, <https://cosm.georgiasouthern.edu/wp-content/uploads/SGMC-ABSTRACT-BOOKLET.pdf>
Title “On a SVEIRS Markov chain epidemic model with multiple discrete delay times and sensitivity analysis to determine vaccination effects”
- **September 11, 2020 (with graduate student-Noah Hallman):** Joint Statistics Seminar, Joint Statistics Graduate Seminars, in MP 3314, Department of Mathematical Sciences, Georgia Southern University, 65 Georgia Ave. Room 3314 & Zoom, P.O. Box 8093, Statesboro, GA 30460.
Title: *”Modeling the stochastic dynamics of Covid-19 pandemic, Part I”*

- **April 12, 2019 (with graduate student-Mymuna Monem):** Joint Statistics Seminar, Joint Mathematics and Statistics Colloquiums, in MP 3314, Department of Mathematical Sciences, Georgia Southern University, 65 Georgia Ave. Room 3314, P.O. Box 8093, Statesboro, GA 30460.
Title: “*Modeling the stochastic dynamics of rumors on complex online social networks.*”
- **March 15, 2019 (with graduate student-Chinmoy Rahul)** gave a presentation on his research at the “Graduate Student Seminar” Friday 3/15/2019 in MP 3314, Department of Mathematical Sciences, Georgia Southern University, 65 Georgia Ave. Room 2045A P.O. Box 8093, Statesboro, GA 30460.
Title: “*A chain-binomial model for Streptococcus pneumonia epidemics*”.
- **March 28, 2019 (with graduate student - Chinmoy Rahul)** gave a joint presentation at “Follow your curiosity by Tribeta”, hosted by TriBeta Biological Honor Society, at 6:00-8:30pm, Biological Science building:, Georgia Southern University,
WWW.FOLLOWYOURCURIOSITY2018.COM.
Title: “*A mathematical model for pneumonia epidemics.*”
- **March 28, 2019 (with graduate student – Mymuna Monem)** gave a joint presentation at “Follow your curiosity by Tribeta”, hosted by TriBeta Biological Honor Society, at 6:00-8:30pm, Biological Science building:, Georgia Southern University,
WWW.FOLLOWYOURCURIOSITY2018.COM.
Title: “*A mathematical model for the spread of rumors on social media networks.*”
- **April 18, 2019 (with graduate student - Chinmoy Rahul)** , at Georgia Southern University Student Research Symposium 2019.
Title: “*Stochastic modeling of Streptococcus pneumonia epidemics*”

- **April 18, 2019 (with graduate student – Mymuna Monem)** , at Georgia Southern University Student Research Symposium 2019.
Title: *“Modeling the stochastic spread of rumors and terroristic ideas on complex social media networks”*
- **April 18, 2019 (with graduate student – Omotomilola Jegede)** , at Georgia Southern University Student Research Symposium 2019.
Title: *“Modeling the stochastic spread of typhoid fever epidemics”*
- **October 26, 2018 (with graduate student-Cameron Newman)** gave a presentation about his research at the “Graduate Student Seminar” Friday 10/26/2018 in MP 3314, Department of Mathematical Sciences, Georgia Southern University, 65 Georgia Ave. Room 2045A P.O. Box 8093, Statesboro, GA 30460.
Title: *“A chain-binomial model for influenza with treatment option: exploring the impacts of vaccination on influenza epidemics”*
- **April 18, 2018 (with graduate student -Omotomilola Jegede)** gave a joint presentation at “Follow your curiosity by Tribeta”, hosted by TriBeta Biological Honor Society, at 5:30-8:00pm, Biological Science building, Georgia Southern University,
WWW.FOLLOWYOURCURIOSITY2018.COM.
Title: *“Substance abuse: a mathematical model for the spread of malicious habits for additive substances.”*

SCHOLARLY EVENTS & CONFERENCES ORGANIZED:

■ **ORGANIZER OF DISTINGUISHED LECTURE:**

- **Distinguished Stone Lecture, Fall 2019**

■ **FOUNDER, ORGANIZER, CORDINATOR AND HOST: THE SPECIAL COLLOQUIUM SERIES FOR MATHEMATICAL SCIENCES, GEORGIA SOUTHERN UNIVERSITY**

- **A Special Day for Statistics mini-conference, October 30, 2020**
- **A Special Day for Pure Math mini-conference, November 20, 2020**
- **April 2-3, 2021, Southern Georgia Mathematics Conference, Georgia Southern University, <https://cosm.georgiasouthern.edu/math/southern-georgia-mathematics-conference/>**
- **June 18, 2021, Session on “Mathematical Biology, Stochastic Differential Equations & Disease Modelling” in Central Botswana Mathematics and Statistical Sciences Conference (CBMSSC), <https://sites.google.com/biust.ac.bw/mathstats-conference2021/schedule?authuser=0>**
- **CHAIR, COLLOQUIUM COMMITTEE**
 - Organized and hosted all weekly colloquiums from 2019-current.

TEACHING

STATISTICS

- Stochastic Processes for Biological Systems (BIOS 9134, Department of biostatistics, in GSU)
- Applied Stochastic Processes (STAT7432, in GSU),
- Statistical Methods I&II(STAT 5531G&5532G; in GSU),
- Design of Experiments I&II(STAT 7231&7232; in GSU),
- Applied Regression Analysis (STAT7132; in GSU),
- Mathematical Statistics I&II (STAT 7331&7332; assigned and prepared in GSU),
- Reliability Analysis (STAT 7436; assigned in GSU)
- Applied Time Series Analysis (STAT 7434; assigned and prepared in GSU)
- Introduction to Statistics (STAT2231, STAT 1401, STA 2023; in GSU and USF),
- Probability (MATH3337; in GSU), Probability Theory (STA4442; in USF),
- Statistical Methods I&II (STAT 5531&5532; in GSU)
- Nonparametric Statistics (STAT 4502; in USF)
- Intermediate Statistics (STA3163; in KU),
- Quantitative Approach for Business Decisions (Statistics for Managers) (QMB3200; in KU),

- Research Methods for Dietetics students (quantitative research methods) (DIE4564; in KU),

MATHEMATICS

- Mathematical Methods for Life Sciences (MAT 2019; in UB),
- Mathematical Methods for Chemistry and Engineering sciences (MAT 207; in UB),
- Advanced Calculus (MAT 201& MAT 202; in UB),
- Real Analysis (MAT 302; in UB)
- Pre-calculus Algebra and Trigonometry(MAC1147; in USF),
- Finite mathematics (MGF1106; in USF),
- College Algebra (MAC1105; in USF & KU),
- Mathematics for Liberal Arts (MGF 1107; in USF),
- Life Science calculus (MAC 2241; in USF),
- Business Science calculus (MAC 2233; in USF),
- College Algebra (MAC2105; in USF),
- Intermediate Algebra (MAT1033; in KU),
- Basic Mathematics (MAT0020; in KU).

INDEPENDENT STUDIES

- Stochastic Calculus I&II (Graduate; in GSU)
- Statistical Inference for Stochastic Systems (Graduate; in GSU)
- Mathematical Statistics I (Undergraduate; in GSU)
- Stochastic modeling (Undergraduate; in GSU)
- Introduction to Financial Mathematics I (Undergraduate; in GSU)
- Probability and Stochastic Models I (Graduate; in GSU)

ADVISING:

DIRECTOR OF THESES

✚ CHAIR:

- **Newman, Charles C.**, *"Stochastic Modeling and Parameter Estimation for Influenza Epidemics"* (2018). Electronic Theses and Dissertations. 1839.
<https://digitalcommons.georgiasouthern.edu/etd/1839>

- **Rahul, Chinmoy Roy**, *"Studying The Stochastic Dynamics Of Pneumonia Epidemics: Chain-Binomial Modeling, Maximum Likelihood Estimation And Expectation Maximization Algorithm"* (2019). Electronic Theses and Dissertations. 1898.
<https://digitalcommons.georgiasouthern.edu/etd/1898>

- **Mymuna Monem**, *Stochastic Modeling and Statistical Estimation for Social Network Epidemics: Markov Chain Modeling, Maximum Likelihood Estimation and Expectation Maximization Algorithm, Spring 2019* <https://digitalcommons.georgiasouthern.edu/etd/1938/>

- **Jegade, Omotomilola Onaopemipo**, *"Modelling The Stochastic Dynamics of Typhoid Fever and Statistical Determination of Epidemiological Outcomes"* (2019). Electronic Theses and Dissertations. 1977.
<https://digitalcommons.georgiasouthern.edu/etd/1977>

- **Noah Hallman**, *"A Theoretical Study of the Coronavirus Disease 2019 (Covid-19): Stochastic Modeling, Statistical Analysis and Prediction"* (completed on May 14, 2021)

 **CO-CHAIR:**

- **Raheem, Soliu A.**, *"Some New Generalized Distribution via Lindley-Weibull and Lindley-Log-Logistic Distributions with Applications" (2019)*. Electronic Theses and Dissertations. 2008. <https://digitalcommons.georgiasouthern.edu/etd/2008>

SUCCESS OF STUDENTS BEYOND GSU

- As evidence of my effort to give my students quality education that prepares them for further studies and professions, the following are the current positions of some of my former graduate students
 - **Chinmoy Roy Rahul**, Ph.D. student in the Department of Mathematics and Statistics, University of Calgary, Canada
 - **Omotomilola Jegede**, Ph.D. students in the Department of Mathematics and Statistics, Old Dominion University, VA, USA
 - **Mymuna Monem**, Ph.D. students in the Department of Mathematics and Statistics, Florida International University, FL, USA
 - **Cameron Newman**, Visiting instructor, University of North Georgia
 - **Soliu Raheem**, Mathematics Instructor, Coastal Pines Technical College, Jesup Campus, GA, USA

MEMBER OF THESIS COMMITTEES

- **Russel Land**, MS. Georgia Southern U. –completed **spring 2021**
- **Elizabeth Kenkwo**, MS. Georgia Southern U. –completed **spring 2020**
- **Ibrahim Alliu**, MS. Georgia Southern U. –completed **spring 2020**
- **Lingling Chen**, MS. Georgia Southern U. –completed **spring 2020**
- **Rachel Lewis**, MS. Georgia Southern U. –completed **spring 2019**
- **Anthony Bush**, MS. Georgia Southern U. –completed **spring 2019**
- **Oleh Sorokin**, MS. Georgia Southern U. –completed **spring 2019**
- **Trevor Camper**, MS. Georgia Southern U. –completed **spring 2019**
- **Abdullah Mamoun**, MS. Georgia Southern U. –completed **spring 2018**
- **Hameed Abiodun Jimoh**, MS. Georgia Southern U. –completed **Fall 2018**
- **Ayoola Ademola**- M.S. Georgia Southern U. – completed **Summer 2018**
- **Toktam Naderimoghaddam**- M.S. Georgia Southern U. –completed **Summer 2018**
- **Ayoku, Sarah** - M.S. Georgia Southern U. – completed **Summer 2017**
- **Susan, Foya** - M.S. Botswana International University of Science and Technology- **completed 2017**
- **Galetlhakanelwe, Motsewabagale** - M.S. Botswana International University of Science and Technology- **2016- current**

SERVICE:**DEPARTMENT, UNIVERSITY AND COMMUNITY SERVICES****GEORGIA SOUTHERN UNIVERSITY (From 08/2015 – current)**** STATISTICAL CONSULTING**

- **Director**, Statistical Consulting Unit (2019-current)
- **Member**, Statistical Consulting Unit (2015-current)

 NEW PROGRAM AND COURSE DEVELOPMENTS

- **Member**, Ph.D. Environmental Science Proposal Committee, (2016- current)
- **Member**, MS/BS. Environmental Science Proposal Committee, (2019- current)
- **Member**, Professional Master Degree Proposal Committee, (2018-2019)
- **Member**, Graduate Certificate in Statistics Proposal Committee, (2018-2019)
- **Member**, Statistics Minor Proposal Committee, (2018-2019)
- **Member**, New Data Science Course in Statistics Proposal Committee, (2018-2019)
 - **STAT 5660: STATISTICAL Data ANALYTICS**

OTHER DEPARTMENT, COLLEGE, AND UNIVERSITY COMMITTEES IN GSU

■ **CORE ASSESSMENT AND COURSE COORDINATOR**

- **Coordinator**, Introductory Statistics I/ Elementary Statistics - STAT2231/STAT1401 **(2017-current)**

■ **CHAIR, COLLOQUIUM COMMITTEE**

- From 2019-current

■ **MEMBER, STATISTICS GROUP**

- From 2015-current

■ **MEMBER, STRATEGIC PLANNING COMMITTEE**

- From 2019-current

■ **MEMBER, PEER REVIEW COMMITTEE**

- From 2017-current

■ **MEMBER, JUNIOR VARSITY MATH TOURNAMENT COMMITTEE**

- From 2015-current

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- **ALTERNATE MEMBER, SENATE**
 - From 2018-2019

 - **SENATOR**
 - From 2020-current

 - **MEMBER, STATISTICS LECTURER SEARCH COMMITTEE**
 - Spring 2018

 - **MEMBER, STATISTICS ASSISTANT PROFESSOR SEARCH COMMITTEE**
 - Spring 2018

 - **ORGANIZER OF DISTINGUISHED LECTURE:**
 - **Distinguished Stone Lecture, Fall 2019**

 - **FOUNDER, SPECIAL COLLOQUIUM SERIES FOR MATHEMATICAL SCIENCES**
 - **A Special Day for Statistics mini-conference, October 30, 2020**
 - **A Special Day for Pure Math mini-conference, November 20, 2020**
 - **A Special Day for Applied Math mini-conference, spring, 2021**
 - **A Special Day for Math Education mini-conference, spring, 2021**
 - **A Special Day for Undergraduate Math mini-conference, spring, 2021**

KEISER UNIVERSITY, LAKELAND CAMPUS (From 08/2012-07/2015)

- **COORDINATOR, CORE ASSESSMENTS ON LAKELAND CAMPUS,**

- **MEMBER, SACS ACCREDITATION WRITING COMMITTEE**

- **MEMBER, RETENTION COMMITTEE.**

SERVICE IN OTHER ORGANIZATIONS

- **REGIONAL COORDINATOR, THE INTERNATIONAL FEDERATION OF NONLINEAR ANALYSTS (2009 – 2012)**

- **SECRETARY, JOURNAL OF STOCHASTIC ANALYSIS AND APPLICATIONS (Summer 2010)**

✚ SERVICE IN SCHOLARSHIP: CONFERENCES ORGANIZED, EDITORIAL SERVICE, PEER REVIEW FOR ACADEMIC JOURNALS

- **FOUNDER, ORGANIZER, COORDINATOR AND HOST: THE SPECIAL COLLOQUIUM SERIES FOR MATHEMATICAL SCIENCES, GEORGIA SOUTHERN UNIVERSITY**

➤ **Successful Events:**

- **Distinguished Stone Lecture, Fall 2019**
- **A Special Day for Statistics mini-conference, October 30, 2020**
- **A Special Day for Pure Math mini-conference, November 20, 2020**
- **Southern Georgia Mathematics conference, April 2-3, 2021**

■ **ASSOCIATE EDITOR OF ACADEMIC JOURNALS:**

- **Journal of Stochastic Analysis and Applications (JSAA):**
The Journal Impact 2019-2020 of Stochastic Analysis and Applications is 1.035
 - **From May 5, 2020-current**
<https://www.tandfonline.com/action/journalInformation?show=editorialBoard&journalCode=lsaa20>

■ REFEREE OF ACADEMIC JOURNALS:

- Journal: Stochastic Analysis and Applications (JSAA-Taylor and Francis)
- Journal of Applied Mathematics and Computation (JAMC-Elsevier)
- Journal of Applied Mathematics and Computing (JAMC-Springer)
- Journal of Advances in Difference Equations (JADE-Springer)
- Journal of Franklin Institute
- International journal of biomathematics
- Journal of International medical research
- Journal of statistical theory and practice
- Mathematical and computational applications
- Advances in difference equations
- International conference on physics, mathematics and statistics
- Journal of Theoretical Biology
- Bulletin of Mathematical Biology
- Plos Neglected Tropical diseases
- Pakistan journal of Statistics and operations research.
- Journal of Mathematical biosciences

- Special Matrices
- Journal of Testing and Evaluation
- Punjab University Journal of Mathematics
- Mathematical biosciences
- Mathematical biosciences and engineering
- Mathematics of Planet Earth (book)
- Sankhya A
- Pakistan journal of Statistics
- Contemporary Research in Mathematical Biology(book)
- Songklanakarin Journal of Science and Technology

PROFESSIONAL SOCIETIES

- 2007-Present Member of American Statistical Association
- 2007-Present Member of American Mathematical Society
- 2010 -present Member of the International Federation of Nonlinear Analysts

COMPUTER SKILLS:

- SAS, Excel, R, SPSS, Minitab, S-plus, Mathematica, Fortran 90, Turbo Pascal, Latex, beamer-Latex, Word, power point, WordPerfect, CorelDRAW

LANGUAGES

- Other than English: French (reading, writing), Pidgin (lingua franca of Anglo-W. Africa), Metta (spoken among indigenous Metta people of Cameroon).