CURRICULUM VITAE
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Patrick Nelson, PhD

Work Address
Department of Mathematics and Computer Science
Lawrence Technological University
Chair and Associate Professor
21000 W. Ten Mile Rd
Southfield, MI, 48757

Contact Information
pnelson@ltu.edu
W: 248-204-3560
C: 734-678-7821

Academic Record

2023 - Lawrence Technological University, Southfield, MI
Interim Dean, College of Arts and Sciences

2022 - Lawrence Technological University, Southfield, MI
Associate Dean for Research, College of Arts and Sciences

2015 - 2023 Lawrence Technological University, Southfield, MI
Chair, Mathematics and Computer Science Department

2013 – 2020 University of Michigan, Ann Arbor, MI
Visiting Professor of Mathematics

2012 – 2023 Lawrence Technological University, Southfield, MI
Associate Professor, Department of Mathematics and Computer Science

2010 – 2012 Lawrence Technological University, Southfield, MI
Adjunct Professor of Mathematics

2008 – 2012 University of Michigan Medical School, Ann Arbor, MI
Research Professor, Center for Computational Medicine and Bioinformatics

2003 – 2005 University of Michigan Medical School, Ann Arbor, MI
Researcher in Dr. Kathleen Collins Lab, Department of Microbiology and Immunology

2002 – 2008 University of Michigan, Ann Arbor, MI
Assistant Professor (tenure-track), Department of Mathematics

2000 – 2002 University of Michigan, Ann Arbor, MI
Assistant Professor (non-tenure track), Department of Mathematics

1999 – 2000 Duke University, Durham, NC
Postdoctoral Fellow with Dr. Mike Reed, Department of Mathematics

1998 – 1999 University of Minnesota, Minneapolis, MN
Postdoctoral Fellow, Institute for Mathematics and its Application

Education

1995 – 1998 University of Washington, Seattle, WA
PhD Applied Mathematics under Professor James D. Murray

1994 – 1995 University of Washington, Seattle, WA
MS Applied Mathematics

1990 – 1994 Arizona State University, Tempe, AZ
BS Mathematics

Professional Experience and Honors

2017 - Board of Directors – President, Jefferson-Douglas Academy, K-8, Detroit
2015 - Associate Editor, MDPI Journals
2012 - King, Chavez and Parks (KCP), Macro Program Director for Mathematics, LTU
2015 International Program Committee, IFAC Time Delay Systems (TDS), UM
2011 Organizing Committee, 2nd World Conference on Diabetes and Metabolism
2011 – 2016 Associate Editor, Journal of Diabetes and Metabolism
2007 – 2018 Associate Editor, Mathematical Biosciences and Engineering
2007 – 2010 Board of Directors, Society for Mathematical Biology
2006 – 2012 Director and PI**,** University of Michigan Undergraduate Program in Math Biology
NSF-UBM, Grant, $945,000
2002 – 2010 Burroughs Wellcome Fellow
Career Award at the Scientific Interface
1994 Nominated, for outstanding graduating senior
College of Liberal Arts and Sciences at Arizona State University

Grants

Recent

2021 NSF HDR DSC (Joint with UM, Wayne State, Oakland and LTU) Jagadish (PI), Nelson(Co-PI) Closing the Digital Loop with SUCCEEDS: Supporting Urban Communities through Collaboration and Education in Ethical Data Science. (Reviewed extremely high but not funded. Plans to resubmit in 2022) **LTU %** $**101,114**
(Brought Professor Lauren onto this project as well)

Completed Research Support

2013 – 2016 NIH-NIDDK Pietropaolo (PI), Nelson (Co-PI) **$450,000**
A Novel Approach Applying CGM Metrics to Identify a Pre-diabetic State
Role: Co-PI with 20 % effort

2010 – 2015 NIH RO1 Pietropaolo (PI) **$1,750,000**
Investigating the role of new immunologic biomarkers in first degree relatives of T1DM patients with and without T1DM from the same geographical area.
Role: Consultant (Modeler with 5 % effort)

2006 - 2010 NSF CMMI-0555765 Ulsoy (PI) Nelson (Co-PI) **$276,300**
Analysis of Time-Delayed Systems via Lambert Functions

2005 – 2012 NSF DMS-06-541 NSF-UBM Nelson (PI) **$945,000**
Supplying Undergraduate Biology and Mathematics Education and Research Group Experiences to Students at The University of Michigan

2002 – 2011 Burroughs Welcome Career Award at the Scientific Interface **$525,000**

	A Theoretical Study of HIV-1 Pathogenesis: From Primary Infection, through Latency, to Effective Drug Therapy or Progression to AIDS,	
2003 – 2004	Howard Hughes Bioinformatics Pilot Grant Nelson (PI) Developing computational models for HIV, University of Michigan	**$55,000**
2001	University of Michigan, Rackham Fellowship	**$7,000**
1997	University of Washington, NSF Fellowship, Department of Zoology	**$10,000**

Peer-review publications (Citations total over 4900 as of March 2022)

Books/Book Chapters

1. Yi S, Duan S, **Nelson P**, Ulsoy G**,** Analysis and Control of Time Delay Systems Using the LambertW DDE Toolbox, Delay Systems, Advances in Delays and Dynamics 1, **Springer International Publishing**, 2014

2. **Nelson PW**. Dynamical Systems Theory, Delay Differential Equations. **Springer, Encyclopedia of Systems Biology**, Book Chapter, 2013

3. Yi S, **Nelson PW**, Ulsoy G. Analysis and control of time delay systems via the Lambert W function. **World Scientific Press**. 2010

Papers/Articles since 2017

55. Liddy R, **Anyaiwe D, Nelson P**. Using Statistical Methods to Determine Patterns in the Death Rates of People in Different States, In Progress

54. **Pell B, Johnston M**, **Nelson P**. A Data-Validated Temporary Immunity Model of Covid-19 Spread in Michigan, **Mathematical Biosciences and Enginnering**, 2022

53. **Nelson P**, What are the best practices for a chair to change the culture, Submitting

52. **Anyaiwe O**, Schulte J, **Nelson P.** Variability Analysis and Machine Learning of SELDI-TOF-MS Saliva Data for Alzheimer's Disease Diagnoses, Accepted

51. **Johnston M, Pell B**, **Nelson P**. A Mathematical Study of Covid-19 Spread by Vaccination Status in Virginia, **Applied Sciences 12(3), Dynamic Models of Biology and Medicine VIII,** https://doi.org/10.3390/app12031723, 2022

50. Darrell M. Wilson*[1], Susan L. Pietropaolo*[2], Maria Acevedo-Calado*[2], Shuai Huang[3], **Destiny Anyaiwe**[3], David Scheinker[1], Andrea K. Steck[4], Madhuri M. Vasudevan[2], Siripoom V. McKay[2], Jennifer Sherr[5], Kevan C. Herold[5], Jessica L. Dunne[6], Carla J. Greenbaum[7], Michael J. Haller[8], Desmond A. Schatz[8], Mark A. Atkinson[8], **Patrick W. Nelson[3]**, and Massimo Pietropaolo[2] CGM Metrics Identify Dysglycemic States in Subjects from the TrialNet Pathway to Prevention Study – Baseline Data, **Diabetes Care– Co-Senior Author, In Revisions, 2022**

49. **Nelson, P.** Covid 19 and Why it Sucks, LTU New Article, November 2020

48. Franco Delogu[a*], Michelle Nelson[f], Shannon C. Timmons[c], Melinda Weinstein[a], Paul Jaussen[a], Mazin Al-Hamando[b], LaVetta Appleby[c], Bhubanjyoti Bhattacharya[c], Wisam Bukaita[b], Chan-Jin Chung[b], Matthew Cole[d], Ty Faulkner[a], Margaret M. Glembocki[c], Christopher C. Harris[a], Matthew Johnston[b], Vivian Kao[a], Aleksandra Kuzmanov[c], Paula Lauren[b], Kineta Morgan-Paisley[a], Jeffery Morrissette[c], George Moschelli[c], **Patrick Nelson[b]**, Bruce Pell[b], Joy Schaefer[a], Randy Schantz[a], Daniel Shargel[a], Fauzia Siddiq[c], Meng Zhou[c], Julie Zwiesler-Vollick[c], Na Yu[e], Hsiao-Ping Moore[c,] **Frontiers in Education 2023**

47. Wilson D, **Nelson P**, Scheinker P, Pietropaolo S, Acevedo-Calado M, Steck M, Dunne J, Greenbaum C, Ebrahimi M, Pietropaolo M. CGM Metrics Identify Dysglycemic States in Subjects with Normal OGTT from the TrialNet Pathway to Prevention Study, **American Diabetes Association 79th Scientific Sessions,** 2019

46. Greenfield B, Reed S, Shaked S, Marrs C, **Nelson P**, Raxter I, Xi C, McKone T, Jolliet O. Modeling the emergence of antibiotic resistance in the environment: an analytical solution for the minimum selection concentration, **Antimicrobial Agents & Chemo.** V62(3) e01686, 2017

Papers 2012 – 2015

45. Yi S, Ulsoy G, **Nelson P. (2015)** Experimental Evaluation of Vision-Based DC Motor Position Control with Time Delay, **IEEE**

44. Yi S, Duan S, **Nelson P**, Ulsoy G. (**2014**). Analysis and control of time delay systems using the LambertWDDE toolbox, Delay Systems 271-284.

43. Jaiswal M, McKeon K, Comment N, Henderson J, Swanson S, Plunkett R, **Nelson P,** and Pop-Busui R. **(2014**). Association between Impaired Cardiovascular Autonomic Function and Hypoglycemia in Patients with Type 1 Diabetes Mellitus. **Diabetes Care**, 37, 2616-2621.

42. Jaiswal M, Plunkett C, Henderson J, Comment N, **Nelson P**, Pop-Busui R, Feldman E. (**2013**). The Impact of Glycemic Variability on CAN in Patients with Type 1 Diabetes.

41. Yi S, **Nelson, PW**, Ulsoy AG **(2013**). Proportional-Integral Control of First- Order Time-Delay Systems via Eigenvalue Assignment. **IEEE Transactions on Control Systems Technology**, 21(5), 1586-1594.

40. Yi S, Duan S, **Nelson PW**, Ulsoy AG (**2012**). The Lambert W Function Approach to Time Delay Systems and the LambertW_DDE Toolbox. Paper presented at the **10-th IFAC Workshop on Time Delay Systems**, Boston, pp. 114-119.

39. Simonov M, Rawlings R, Reed S, Shi X, **Nelson P**. Modeling adaptive regulatory T-cell dynamics during early HIV infection**, PLOS one**, V7 (4), **2012**, e33924.

Papers/Articles 2010 – 2011

2011:

35. Rawlings RA, Shi H, Yuan L, Brehm W, Pop-Busui R, **Nelson P**, Translating glucose variability metrics into the clinic via Continuous Glucose Monitoring: a Graphical User Interface for Diabetes Evaluation (CGM-GUIDE), **Diabetes Technology and Therapeutics**, V13(12), 2011, pgs 1241-48.

36. Yi S, **Nelson PW**, Ulsoy AG, PI Control of first order time-delay systems via eigenvalue

assignment. **American Control Conference**, 2011, pp. 4213-4218, San Francisco, CA, USA.

37. Yi S, **Nelson PW**, Ulsoy AG, DC Motor Control Using the Lambert W Function Approach, 10-th **IFAC Workshop on Time Delay Systems** 2011

38. Yi S, **Nelson PW**, Ulsoy AG, The Lambert W Function Approach to Time Delay Systems and the Lambert W_DDE Toolbox, **10-th IFAC Workshop on Time Delay Systems,** 2011

2010:

30. Yi S, Ulsoy AG, **Nelson PW**. Feedback control via Eigenvalue assignment for time delayed systems using the Lambert W Function. **Journal of Vibration and Control** 2010; (published on-line 2010).

31. Yi S, **Nelson PW**, Ulsoy AG. Robust control and time-domain specifications for systems of delay differential equations via eigenvalue assignment. **Journal of Dynamic Systems Measurement and Control** 2010; 132:3.27-38.

32. Nypaver CM, Thornton MM, Yin SM, Brach DO, **Nelson PW**, Jones AE, Bortz DM Younger JG. Dynamics of human complement-mediated killing of Klebsiella pneumoniae, **Am. J. Respir. Cell Mol. Biol.,** V43(5), 2010, 585.

33. Morran M, Casu A, **Nelson P**, Arena V, Pietropaolo S, Zhang Y, Satin L, Omenn G, Trlcco M, Becker D, and Pietropaolo M. Humoral autoimmunity against multiple extracellular epitopes of the neuroendocrine autoantigen IA-2 heightens the risk of Type 1 Diabetes, **Endocrinology**, V151, 2010, pgs 2528-37

34. Yi S. Ulsoy AG, **Nelson PW**. Design of observer-based feedback control for time-delay systems with application to automotive powertrain control. **Journal of Franklin Institute** 2010; 347:1:358-376 (invited).

Earlier Papers in chronological order

1. Perelson AS, Nelson PW. Mathematical Models of HIV-Dynamics in vivo. SIAM Review 1999: 41:1:3-44.

2. Nelson PW, Murray JD, Perelson AS. A model of HIV pathogenesis that includes an intracellular delay. Mathematical Biosciences 2000; 163:2:201-215.

3. Perelson AS, Nelson PW. Modeling Viral Infections. An Introduction to Mathematical Modeling in Physiology, Cell Biology and Immunology 2001; AMS Providence, RI.

4. Nelson PW, Mittler J, Perelson AS. Effect of drug efficacy and the eclipse phase of the viral life cycle on the estimates of HIV viral dynamic parameters. Journal of Aids 2001; 26:5:405-412.

5. Nelson P, Hernandez J. Modeling the immune response to parasitic infections: Leishmaniasis and Chagas disease. Comments on Theoretical Biology 2002; 6:2:1-15.

6. Nelson PW, Perelson AS. Mathematical Analysis of delay differential equations models of HIV-1 infection. Mathematical Biosciences 2002; 179:1:73-94.

7. Bortz D, Nelson P. Sensitivity Analysis of Nonlinear Lumped Parameter Models of HIV Infection Dynamics. Bulletin of Mathematical Biology 2004; 66:1009-26.

8. Criminale WO, Jackson TL, Nelson PW. Limit cycle-strange attractor competition. Studies in Applied Mathematics 2004; 112:133-60.

9. Forde J, Nelson, P. Applications of Sturm Sequences to Bifurcation Analysis of Delay Differential Equation Models. Journal of Mathematical Analysis and Applications 2004; 300:2:273-284.

10. Nelson PW, Gilchrist M, Coombs D, Hyman J, Perelson AS. An Age-structured model of HIV infection that allows for variations in the production rate of viral particles and the death rate of productively infected cells. Mathematical Biosciences and Engineering 2004; 1:2:267-88.

11. Ciupe S, De Bivort B, Bortz D, Nelson P. Estimating kinetic parameters from HIV primary infection data through the eyes of three different mathematical models. Mathematical Biosciences 2006; 200:1 – 27.

12. Bortz D, Nelson, P. Model Selection and Mixed-Effects Modeling of HIV Infection Dynamics. Bulletin of Mathematical Biology 2006; 68:8:2005-25.

13. Yi S, Ulsoy G, Nelson P. Solution of systems of linear delay differential equations via Laplace Transformations, Proceedings 45th IEEE Conference on Decision and Control 2006;2535-40.

14. Yi S, Nelson PW, Ulsoy AG. Survey on analysis of time delayed systems via the Lambert W function, Dynamics of Continuous, Discrete and Impulsive Systems (Series A) 2007; 14:s2:296-301. [Also presented at Proc. 5th Int. Conf. on Differential Equations and Dynamical Systems, Edinburg, Texas, Dec. 2006]

15. Yi S, Nelson PW, Ulsoy AG. Chatter stability analysis using the matrix Lambert function and bifurcation analysis. Proc. International Conference on Manufacturing Science and Engineering 2006; MSEC.

16. Ciupe S, Ribeiro R, Nelson P, Dusheiko G, Perelson AS. The role of cells refractory to productive infection in acute hepatitis B viral dynamics. Proceedings of the National Academy of Science 2007; 104:5050-55.

17. Ciupe S, Nelson P, Rubiero R, Perelson A. Modeling the mechanisms of acute hepatitis B virus infection. Journal of Theoretical Biology 2007; 247:1:23-35.

18. Greineder N, Nelson P, Dressel A, Erba H, and Younger J. An in-vitro and in-silico analysis of the utility of Annexin V binding to lymphocytes as a biomarker in Emergency Department's studies of Sepsis, Academic Emergency Medicine, V14(9), 2007, pgs 763-771

19. Yi, S., Nelson, P., and Ulsoy, G. Delay differential equations via the Matrix Lambert W Function and bifurcation analysis: Application to machine tool chatter. Mathematical Biosciences and Engineering 2007; 4:2:355-368.

20. Yi S, Nelson PW, Ulsoy AG. Controllability and Observability of Systems of Linear Delay Differential Equations via the Matrix Lambert W Function. Proceedings of the American Control Conference 2007;5631-36.

21. Yi S, Nelson PW, Ulsoy AG. Feedback control via eigenvalue assignment for time delayed systems using the Lambert W function, in Proc. 6th International Conference on Multibody Systems, Nonlinear Dynamics, and Control (MSNDC) IDETC, Las Vegas, NV, Sept. 2007;DETC2007-35711 (invited paper).

22. Yi S, Nelson PW, Ulsoy AG. Controllability and Observability of Systems of Linear Delay Differential Equations via the Matrix Lambert Function. IEEE Trans. Aut. Cont. 2008;53:3:854-60.

23. Yi S, Nelson PW, Ulsoy AG. Eigenvalues and Sensitivity Analysis for a Model of HIV-1 Pathogenesis with an Intracellular Delay. ASME Dynamic Systems and Control Conference, Ann Arbor, MI, Oct. 2008;DSCC2008-2408 (invited paper).

24. Yi S, Nelson PW, Ulsoy AG. Analysis and control of time delayed systems via the Lambert W function. IFAC 2008;13414-19.

25. Yi S, Nelson PW, Ulsoy AG. Robust control and time-domain specifications for systems for delay differential equations via eigenvalue assignment. American Control Conference 2008; 4928-33.

26. Ulsoy AG, Nelson PW. Yi S. Analysis of time delayed systems via Lambert functions. Proc. 2008 NSF CMMI Engineering Research and Innovation Conference, Knoxville, TN. Jan. 2008.

27. Pietropaolo M, Surhigh J, Nelson P, and Eisenbarth G. Perspectives in Diabetes, Primer: Immunity and Autoimmunity, Diabetes, 2008, pgs 2872-82.

28. Yi S, Ulsoy AG, Nelson PW. Design of observer-based feedback control for time-delay systems with application to automotive powertrain control. Proc. 2009 ASME Dynamic Systems and Control Conference, Hollywood, CA, Oct. 2009; DSCC2009-2590.

29. Nelson P, Smith N, Ciupe S, Zou W, Omenn G, and Pietropaolo M. Modeling dynamic fluctuations in type 1 diabetes progression: Quantifying ß-cell variation after the appearance of islet marker antibodies, Mathematical Biosciences and Engineering, V6(4), 2009, pgs 753-78.

Recent Invited Talks

2022	**Arizona State University**, Mathematical Biology Seminar Series	**Tempe, Az**
2022	**UC Berkeley**, Mathematical Science Research Institute	**Berkeley, CA**
2020	Institute of Mathematics Marseille, Math Biology	**France**
2018	Society of Mathematical Biology, Annual Meeting	**Sydney**
2015	**Arizona State University**, Department of Mathematics	**Tempe, Az**
2013	Workshop of Diabetes Systems Biology	**Toronto**
2014	International Conference on Numerical Analysis and Applied Math	**Greece**
2014	6^{rth} World Congress of Industrial Biotechnology	**China**

Summer Teaching/Mentoring Activities/Outreach

2021	**Math Coordinator** for Students Deficient in Math, Lincoln-King HS	Detroit
2015 -	**KCP** – Summer Connect Pre Calculus Reviews Summer	LTU

2013 – 2018 **Math Coordinator** for Circuit Learning's **Detroit** Schools Math Improvement Program K-12,
- Developing new teaching methods for kids in K-12 in low-income neighborhoods.
- Mentoring teachers in the classroom with innovative ways to educate.

2013 **Teaching Director** of Osborn Schools Initiative (Detroit Public Schools, 1st – 4th)
- Detroit Public Schools 6 week summer program
- Developed teaching methods and mentored tutors for students in 1st – 4th grade

2011 – 2016 UM Summer Institute 8 Week Bridge course for underrepresented groups
- Teach dynamical systems to incoming PhD students
- Introduce learning techniques to help the student better prepare for success at the PhD level

2011 UM - Introduction to Mathematical and Computational Techniques for Informatics and Life Sciences

Student/Faculty Mentorship

Supervision of Postdoctoral Fellows

2003 – 2006 ***David Bortz*, PhD North Carolina State University**
Current position: Professor of Mathematics, University of Colorado Boulder

2004 – 2007 ***David Gammack***, **PhD Oxford University**
Current position - Deputy Head of School (Education), Director of Programmes at University of Southampton

2010 – 2012 ***Afi Rawlings*, PhD University of Michigan**
Current position - Accelerating Data & AI Development and Diversity | Executive Director, The South Big Data Innovation Hub | CEO, The Data Career Academy

2011 **Sun Yi, PhD University of Michigan**
Current position - Professor of Mechanical Engineering, North Carolina A&T

PhD/MS Student Advisees (All at University of Michigan)

2003 - 2005 **Stanca Ciupe**, **PhD**
Dissertation: Development and Applications of Mathematical Tools in Models of Infectious Diseases and Biological Phenomenon
Current position; Associate Professor of Mathematics, Virginia Tech University

2003 - 2005 **Jonathan Forde**, **PhD**
Dissertation: Delay Differential Equation Models in Mathematical Biology
Current position; Associate Professor of Mathematics and Computer Science, Hobart and William Smith Colleges

2006 - 2010 **Sun Yi**, **PhD (Co-Advisor)**
Dissertation: Time-Delay Systems: Analysis and Control using the Lambert W Function
Current position; Professor of Mechanical Engineering, North Carolina A&T

2013 - 2015 **Dingsheng Li**, **PhD (Committee member)**
University of Michigan, School of Public Health

2012 - 2014 **James Henderson**, **PhD (Mentor)** University of Michigan, Statistics
Current Position: Research Associate University of Michigan Cancer Research Center

2010 - 2012 **Nick Comment, MS** Bioinformatics
Current: Private Industry in Boston

2008 - 2011 **Michael Simonov**, **UBM** MD University of Michigan, Residency Yale University
Current position: Medical Information Officer for Research, Yale University

Undergraduate Student Advisor at University of Michigan (Mentor)

2008 – 2010 **Noah Smith BS University of Michigan**
Accepted into MD Program at University of Michigan

2009 – 2011 **Michael Simonov BS University of Michigan**
Accepted into MD/PhD program at University of Michigan
Current position: Medical Information Officer for Research, Yale University

2009 – 2011 **Xiaoyu Shi BS University of Michigan**
Accepted into PhD program at UC San Diego

2010 – 2011 **Helen Shi BS University of Michigan**
Accepted into MD program at University of Michigan

2010 – 2012 **Lo-Hua Yuan BS University of Michigan**
Accepted into PhD program, Harvard University - Biostatistics
Current Position: Data Scientist Airbnb

2011 – 2013 **Natasha Patel-Murray BS University of Michigan**
Accepted into PhD program, MIT - Computational Biology
Current position: Investigator at Novartis Institute for Biomedical Research

2012 – 2013 **Chris Katanski** BS University of Michigan
Accepted into PhD program at University of Chicago – Computational Biology

Faculty Mentor – Lawrence Technological University

2019 -	Professor Matthew Johnston	Assistant Professor
2019 -	Professor Bruce Pell	Assistant Professor
2018 -	Professor Destiny Anyaiwe	Assistant Professor
2018 – 2019	Professor Mahdi Ebrahimi	Assistant Professor, now at Cal St. Full.
2015 – 2018	Professor Michael Dabkowski	Assistant Professor, now at UM Dearborn
2014 – 2019	Professor Na Yu	Assistant Professor, now at Ryerson University

Student Mentor – LTU

2013 – 2015	Paul Conlin	LTU, Math & CS
2013 – 2015	Kelsey Haener	LTU, Math & CS
2016 – 2017	Caleb Stollenburg	LTU, Math & CS

LTU Administrative Services and Activity

2020	Provost search committee
2018	Core curriculum committee
2016	Chair, faculty hiring committee
2015	Chair, math core curriculum
2015	Chair, faculty hiring committee
2014	Chair, faculty hiring committee
2013	Co-Chair, hiring committee
2012 -	KCP macro director
2013 -	Kern Fellow
2013	Member, design task force
2013	Member, higher learning commission
2012	Member, graduate council

Course/Program Development and Supervision

2022 Introduced **research seminar** for faculty in MCS
2021 Developed new program in **Data Science**
2015 LTU, Developed new undergraduate program in Applied Mathematics with focus on Applied Sciences and Pre-Med. This new program took the place of existing B.S degree in Math.
2013 LTU, New class on Advanced Topics in Applied Mathematics
2012 LTU, New class in Mathematical Biology
2011 **Bioinf 601**, Introduction to Mathematical Techniques for Informatics and Life Science (UM)
2004 **Math 651**, Applied PDE's and Multiple Scales
2001 **Math 462**, Mathematical Modeling
2000 **Math 463**, Mathematical Biology
1999 **Duke University**, Mathematical Immunology

Courses taught recently

2020/2022	Differential Equations, Math Modeling, Probability & Statistics, Dynamical Systems
2019/2020	Mathematical Modeling, Probabilty & Stats, Calculus I
2017/18	Intermediate Algebra, Differential Equations, Prob. & Stats.
2016	Advanced Mathematics for Engineers, Probability and Statistics

2015	Differential Equations, Mathematical Modeling, Partial Differential Equations
2014	Intermediate Algebra, Differential Equations, Probability & Statistics, Calculus I
2013	Mathematical Biology, Calculus III, Algebra Concepts, Topics course on Delay Differential Eqts.

Earlier experiences and talks (Prior to 2007)

Professional Associations

2007	**Board of Directors**	Society for Mathematical Biology
2006	**Review Panelist, NSF**	Mathematical Biology
2005	**External PhD reviewer**	Arizona State U. and U. Western Ontario
2005	**Review Panelist, NSF/NIH**	
2004	**Assistant Director**	Michigan Math and Science Scholars
2004	**Associate Editor**	Mathematical Biosciences and Engineering
2004	**Chair, SMB's annual meeting**	
2002	**Co-Organizer**	Distinguished Lecture Series in Mathematical Biology
2000	**Co-Director**	UM's Mathematical Biology Research Group
2000	**Chairman**	First Annual Conference on Mathematical Immunology, Duke University, April 23-26, 2000
1999 -	**Reviewer**	Mathematical Biosciences, JTB, JMB, BMB, Physica A and D, SIAM and IEEE
1999 -	**Book reviewer**	Bulletin of Mathematical Biology and Siam Review
1998 -	**Visiting Research Scientist,**	Los Alamos National Lab.
1998	**Co-Organizer**	Sixth annual Pacific Northwest Workshop in Mathematical Biology
1998 -	**Member**	SMB, SIAM, AMS, MAA

Invited/Contributed Talks

2008	Lawrence Tech University	Southfield
2006	**SIAM Annual Meeting**	Boston
2006	**Arizona State University**	Phoenix
2005	**University of Iowa**	Cedar Rapids
2005	**UM Alumni and Rotary Club**	Battle Creek
2004	**Michigan State University**	Lansing
2004	**Society for Mathematical Biology's Annual Meeting**	Ann Arbor
2004	**AMS Annual Meeting**	Phoenix
2003	**SIAM Annual Meeting**	Montreal
2003	U**niversity of Iowa**	Cedar Rapids
2002	**Arizona State University**	Phoenix
2002	**University of Michigan**	Ann Arbor
2002	**Rutgers University**	New Jersey
2002	**Burroughs Wellcome Meeting**	Durham, NC,
2002	**Society for Mathematical Biology's Annual meeting**	Knoxville

2001 International conference honoring John Jacquez, Oct: Ann Arbor: **Arizona State University**, December: **University of Michigan**, April: Applied and Interdisciplinary Seminar Series. **AMS/MAA Joint Meeting**, Jan.: New Orleans

2000 University of Michigan, Feb: Department of Mathematics: **University of North Carolina,** April: School of Public Health: **Duke University**, May: Workshop on Mathematical Biology

1999 Arizona State University, April: **University of Minnesota**, May: **Duke University**, May: **Duke University**, Oct

1998 Washington State University, January: Microbiology Colloquium, Department of Microbiology: **Washington State University**, January: Mathematics Colloquium, Department of Pure and Applied Mathematics: **Pacific Northwest Workshop in Mathematical Biology**, March: **University of Minnesota** Nov: IMA