

# Curriculum Vitae

## Thomas P. LoFaro

### Work Address:

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### Education

1. Ph.D., Boston University 1994 (Advisor: Nancy Kopell)
2. M.A., University of Missouri 1989
3. B.A., University of Missouri 1984

### Experience

1. Department Chair, 2010-2012, 2016-2018, 2021-present
2. Clifford M. Swanson Professor of Mathematics, 2013-present
3. Associate, Institute for the Interdisciplinary Study of Decision Making, New York University, 2014-present
4. Professor, Gustavus Adolphus College 2009-present
5. Associate Professor, Gustavus Adolphus College 2004-2009
6. Assistant Professor, Gustavus Adolphus College 2000-2004
7. Visiting Assistant Professor, Harvey Mudd College 1999-2000
8. Assistant Professor, Washington State University 1993-1999
9. Faculty Fellow, Pacific Northwest Laboratory 1994
10. Research Assistant, Boston University 1991-1993
11. Teaching Fellow, Boston University 1989-1991
12. Teaching Assistant, University of Missouri 1987-1989
13. Operations Research Analyst, Fort Ritchie, MD 1986-1987

### Publications

(\* - peer reviewed, ! - undergraduate co-author)

1. T. LoFaro & J. Ford (2024) Discovering Differential Equations Through Experiment & Inquiry, in progress.
2. \* T. LoFaro (2024) A Mathematician Joins the Band, *MAA Focus*, 44:2.
3. T. LoFaro and J. Ford (2021) Discovering Dynamical Systems Through Experiment & Inquiry, Chapman and Hall/CRC.

4. \* M. L. Frazier, T. LoFaro, and C. Dobler (2017) A Cross-discipline Modeling Capstone Experience, *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies*, 1-17.
5. \*! E. Hanson and T. LoFaro (2016) Odd Ghrist Templates are Universal, *International Journal of Bifurcations and Chaos* **26**:10.
6. \* T. LoFaro (2015) Crossing the Threshold: the role of density dependence and demographic stochasticity in the evolution of cooperation, *Letters in Biomathematics*, **2**(1), 79-90.
7. \* T. LoFaro, K. Louie, R. Webb, and P.W. Glimcher (2014) The Temporal Dynamics of Cortical Normalization Models in Decision-making Tasks, *Letters in Biomathematics*, **1**:209-220.
8. \* K. Louie, T. LoFaro, R. Webb, and P.W. Glimcher (2014) A dynamic normalization model predicts time-varying value coding in decision-related circuits, *Journal of Neuroscience*, **34**:16103-16116.
9. T. LoFaro (2012) The project *Murder at the Mayfair Diner* in *Differential Equations with Boundary-Value Problems 7<sup>th</sup> ed.* \_by D.G. Zill and M.R. Cullin, Brooks/Cole.
10. \*! H.G. Spencer, T. Dorn, and T. LoFaro (2006) Population models of genomic imprinting II. Maternal and fertility selection. *Genetics*, **173**:2391-2398.
11. \*! A Farahat, T. LoFaro, J. C. Miller, G. Rae and L. A. Ward (2006) Authority rankings from HITS, PageRank, and SALSA: existence, uniqueness, and effect of initialization. *SIAM Journal on Scientific Computing*. **27**:1181-1201.
12. T. LoFaro and K.D. Cooper (2003) Nine projects in *Differential Equations with Boundary-Value Problems 6<sup>th</sup> ed.* \_by D.G. Zill and M.R. Cullin, Brooks/Cole.
13. \*! T. LoFaro and R. Adams (2002) Chasing a polar goose, *The UMAP Journal*, **23**:113-120.
14. \* D. Slavitt, T. LoFaro and K.D. Cooper (2002) The use of simulations in developing relational understandings of the solutions of differential equations, *School Science and Mathematics*, **102**:380-390.
15. \* A. Farahat et. al. (2001) Modifications of Kleinberg's HITS algorithm using matrix exponentiation and web log records, in *Proceedings of the 24<sup>th</sup> Annual International ACM SIGIR Conference on Research and Development in Information Retrieval*.
16. T. LoFaro, J.M. McDill and A.M. Rash (2001) New visualization software for iterative systems, differential equations and applied calculus, in *Proceedings of the 13<sup>th</sup> Annual International Conference on Technology in Collegiate Mathematics*. Addison Wesley Longman.
17. T. LoFaro (2001) GraphicalAnalysis.m, *MathSource*, <http://www.mathsource.com>.
18. A. B. Ellis et. al. (2001) Improving Undergraduate Education in the Mathematical and Physical Sciences Through the Use of Technology, *Report to the National Science Foundation*.
19. \* D. Slavitt, T. LoFaro and K.D. Cooper (2000) What's the difference? Student learning in the technology-rich differential equations course, in *Proceedings of the 13<sup>th</sup> Annual International Conference on Technology in Collegiate Mathematics*. Addison Wesley Longman.

20. K.D. Cooper and T. LoFaro (2000) Creating Java applets on the fly, in *Proceedings of the 13<sup>th</sup> Annual International Conference on Technology in Collegiate Mathematics*. Addison Wesley Longman.
21. \* T. LoFaro and R. Gomulkiewicz (1999) Adaptation versus migration in demographically unstable populations, *Journal of Mathematical Biology*, **38**:571-584.
22. \* T. LoFaro and N. Kopell (1999) Timing regulation in a network reduced from voltage-gated conductance equations, *Journal of Mathematical Biology*, **38**:479-533.
23. \* K.D. Cooper, R. Huffaker and T. LoFaro (1999) The resilience of grassland ecosystems, *The UMAP Journal*, **20**:29-46.
24. \* R. Huffaker, K.D. Cooper and T. LoFaro (1999) Small mammal dispersion, *The UMAP Journal*, **20**:47-65.
25. K.D. Cooper and T. LoFaro (1999) Differential equations on the internet, in *Revolutions in Differential Equations: Exploring ODEs with Modern Technology*, MAA Notes **50**, ed. M. Kallaher, Mathematical Association of America.
26. T. LoFaro (1998) Module on discrete dynamical systems, in *ODE Architect*, eds. R. Borrelli and C. Coleman, John Wiley and Sons.
27. K.D. Cooper and T. LoFaro (1998) A Java code generation tool, in *Proceedings of the 11<sup>th</sup> Annual International Conference on Technology in Collegiate Mathematics*. Addison Wesley Longman.
28. T. LoFaro and K.D. Cooper (1998) Boundary value problems in a first differential equations course, in *Proceedings of the 11<sup>th</sup> Annual International Conference on Technology in Collegiate Mathematics*. Addison Wesley Longman.
29. \* T. LoFaro (1997) A model of the dynamics of the Newton-Leipnik attractor, *International Journal of Bifurcations and Chaos*, **7**:2723-2733.
30. \* T. LoFaro (1997) The dynamics of symmetric bimodal maps, *International Journal of Bifurcations and Chaos*, **7**:2734-2744.
31. K.D. Cooper et. al. (1997) Calculus notebooks with *Mathematica 3.0*, Prentice Hall.
32. K.D. Cooper and T. LoFaro (1997) What's the IDEA? *CODEE Newsletter*, Winter-Spring 1997.
33. R. Huffaker, K.D. Cooper and T. LoFaro (1996) Small mammal dispersion, *CODEE Newsletter*, Spring 1996.
34. \* T.A. Newton and T. LoFaro (1996) On using flows to visualize functions of a complex variable, *Mathematics Magazine*, **69**:28-34.
35. \* T. LoFaro (1996) Period-adding bifurcations in a one-parameter family of interval maps, *Mathematical and Computer Modeling*, **24**:27-41.
36. \* T. LoFaro and N. Kopell (1996) Compression and model reduction: a case study, in *Neural Networks in Environment, Energy and Health*, eds. P.E. Keller, S. Hashem, L.J. Kangas and R.T. Kouzes, World Scientific.
37. T. LoFaro and K.D. Cooper (1996) IDEA: Internet Differential Equations Activities, in *The Electronic Proceedings of the ICTCM*.
38. T. LoFaro, K.D. Cooper and R. Huffaker (1995) Model neurons and fast-slow systems, *CODEE Newsletter*, Spring 1995.

39. K.D. Cooper, R. Huffaker and T. LoFaro (1995) Rangeland ecosystems, *CODEE Newsletter*, Winter 1995.
40. \* T. LoFaro, N. Kopell, E. Marder and S. Hooper (1994) The effects of  $i_h$  currents on bursting patterns of pairs of coupled neurons, in *Computation and Neural Systems*, ed. F.A. Eeckman, Kluwer Academic Publishers.
41. \* T. LoFaro, N. Kopell, E. Marder and S. Hooper (1994) Subharmonic coordination in networks of neurons with slow conductances, *Neural Computation*, **6**:69-84.

## Invited Addresses

1. St. Olaf Mathematical Biology Symposium, 2025
2. Department of Mathematics, Creighton University, 2025
3. Little School Dynamical Systems Group, 2021
4. Session on "The Mathematics of Uncertainty," MathFest 2019
5. Department of Mathematics, Harvey Mudd College, 2018
6. Department of Mathematics, St. Olaf College, 2016
7. Department of Anatomy & Physiology, Washington University, 2015
8. Department of Mathematics, Muhlenberg College, 2014
9. Center for Neural Science, New York University, 2012
10. Department of Mathematics, Minnesota State University, Mankato, 2006
11. Center for Applied Mathematics, University of Saint Thomas, 2005
12. Allan Wilson Centre, Massey University, 2004
13. Department of Mathematics, University of Wisconsin, Stevens Point, 2001
14. Department of Mathematics, Northern Kentucky University, 2000
15. Department of Mathematics, University of Southern California, 2000
16. Department of Mathematics, University of Minnesota, Duluth, 2000
17. Department of Mathematics, Gustavus Adolphus College, 2000
18. Department of Mathematics, Harvey Mudd College, 1999
19. Department of Mathematics, Marshall University, 1999
20. Department of Mathematics, Central Washington University, 1999
21. Department of Mathematics, Metropolitan State College of Denver, 1999
22. Department of Mathematics, University of Idaho, 1998
23. Pacific Northwest Workshop on Mathematical Biology, 1998
24. AMS/MAA Southern California Regional Conference, 1997
25. Midwest Dynamical Systems Conference, 1997
26. Department of Zoology, University of Washington, 1997
27. Department of Mathematics, University of Southern California, 1997
28. Department of Mathematics, University of Washington, 1996
29. Department of Mathematics, University of Missouri, Rolla, 1996
30. Department of Mathematics, Boston University, 1995
31. Pacific Northwest Laboratories, 1994
32. Department of Mathematics, Washington State University, 1993
33. Regional Institute in Dynamical Systems, Boston University, 1992

## Awards

1. Faculty Service Award, 2019
2. Pew Scholars Fellowship Finalist, 1999
3. *Invision* Award from *NewMedia* Magazine for *ODE Architect*, 1998
4. Undergraduate Computational Science Award, Ames Laboratory, 1994
5. Associated Western Universities Faculty Fellowship, 1994

## Funding

1. Differential Equations Across the Collegiate Curriculum, 2011, NSF, \$32,163, 2011
2. Gustavus Adolphus College RSC grant, \$2,200, 2001-2002
3. IDEA: Internet Differential Equations Activities, NSF, \$119,000, 1998-2000
4. IDEA: Internet Differential Equations Activities, NSF, \$99,270, 1996-1998

## Professional Service

1. Member, MAA Haimo Award Selection Committee, 2022-present
2. Coordinator of all minicourses at JMM 2019
3. Member, MAA Committee on Minicourses, 2014-2020
4. Referee, *CODEE Journal*, 2014
5. MAA minicourse, *Teaching Differential Equations with Modeling*, with Ami Radunskaya and Daniel Flath, 2013
6. MAA minicourse, *Teaching Differential Equations with Modeling*, with Michael Huber and Daniel Flath, 2012
7. Accuracy reviewer for Academic Press, 2003
8. Proposal reviewer, NSF, 2002
9. Proposal reviewer, W.M. Keck Foundation, 2002
10. Referee, *International Journal of Bifurcations and Chaos*, 2001
11. Participant, PKAL F21 National Assembly, 2001
12. Proposal reviewer, NSF (2 proposals), 2000
13. Participant, NSF sponsored Tech Ed99, 1999

## Professional Organizations

1. Mathematical Association of America
2. American Mathematical Society

## Courses Taught

1. Chaos & Culture (FTS 100)
2. Let's Gamble!?! (FTS 100)
3. Nature of Mathematics (MCS 115)
4. Calculus with Precalculus Review 1A (MCS 118)
5. Calculus with Precalculus Review 1B (MCS 119)
6. Pre-calculus Mathematics (MCS 120)

7. Calculus I (MCS 121)
8. Calculus II (MCS 122)
9. Discrete Mathematics (MCS 150)
10. Introduction to Computer Science Lab (MCS 177)
11. Introduction to Computer Science Lecture (MCS 177)
12. Introduction to Analysis (MCS 220)
13. Linear Algebra (MCS 221)
14. Multivariable Calculus (MCS 222)
15. Applied Mathematics for Physics and Engineering (PHY 230)
16. Mathematical Methods in Biology (MCS 231)
17. Differential Equations (MCS 253)
18. Intermediate Differential Equations (at WSU)
19. Advanced Differential Equations (graduate) (at WSU)
20. Applied Analysis (MCS 353)
21. Complex Variables (MCS 321 and at WSU)
22. Discrete Dynamical Systems (MCS 357)
23. Dynamical Systems (MCS 357 revised from above)
24. Mathematical Model Building (MCS 358)
25. Advanced Mathematical Methods in Physics (PHY 370)

## **College Service**

1. Faculty Compensation Commission Chair (2024-present)
2. Nobel Conference 2021 Co-Chair
3. Faculty Compensation Committee (2019-2023)
4. Curriculum Committee (2012-2018) - Chair (2013-2018)
5. Academic Affairs Committee of the Board of Trustees (2015-2018)
6. Academic Working Group: Strategic Action Team (2015)
7. Department Chairs and Program Directors Committee (2010-2012) – Chair (2011-2012)
8. College Harassment Grievance Office (2010-2015)
9. Faculty Personnel Committee (2009-2011)
10. Director, Rydell Professor Program (2005-2010)
11. Provost Council (2007-2010)
12. Instructional Infrastructure Advisory Committee – Chair (2005-2007)
13. Academic Operations Committee (2005-2008)
14. Curriculum Committee (2004-2005)
15. Faculty Development Committee (2003-2004)
16. Faculty Committee on Student Life (2001-2003)
17. Faculty Mentor (2007-2009)
18. Nobel Conference Host (2005 and 2011)
19. Task Force on High-Risk Alcohol Use (2002-2003)
20. Hughes Grant Planning Committee (2002-2003)
21. Rydell Professor Faculty Host (2002)
22. Facilitator, Freshman Wilderness Experience (3 times)