MARIA LEITE

Curriculum Vitae

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EDUCATION

PhD in Mathematics, 7/2005
UNIVERSITY OF HOUSTON, Houston, TX
Advisor: Professor Martin Golubitsky

Master of Science in Mathematics, 12/2001
UNIVERSITY OF PORTO, Porto, Portugal

Specialization in Engineering of Quality Systems, 04/1995
US equivalency: **Master of Science in Quality Compliance Engineering**
WELDING AND QUALITY INSTITUTE, Porto, Portugal

Bachelor of Science in Chemical Engineering, 12/1993
UNIVERSITY OF PORTO, Porto, Portugal

Teaching interests: courses across the entire undergraduate curriculum. Graduate courses in dynamical systems, bifurcation theory, nonlinear dynamics, mathematical biology, ordinary differential equations, and real analysis

Research interests: bifurcation theory, theory of nonlinear dynamical networks, dynamics with symmetry, and mathematical biology

AWARDS

1. Early Career Award, Mathematical Biosciences Institute (MBI), 12/2012.
2. Student Impact Award, University of Toledo, 12/2011.
3. Travel grants from NSF and other sources to participate in 27 professional meetings, 7/2005 to present.
4. Best Poster Award, SIAM Conference on Applications of Dynamical Systems, 5/2005.
5. Research Assistantship, University of Houston, Department of Mathematics, 1/2002 to 8/2005.
6. Research Assistantship, PRODEP Supported by the Portuguese and European Education Office Program, Department of Mathematics, ISEP, Portugal, 2/2001 to 12/2001.

GRANTS

1. **NSF-DMS PD 12-7334. Mathematical Biology**, Submitted
   "Collaborative Research: Applications of Non-autonomous Dynamical Systems Theory to Land Carbon Cycle Models," M. Leite (PI), Co-PI: B. Chen-Charpentier (Mathematics, University of Texas at Arlington), Co-PI: Y.Luo (Botany and Microbiology, University of Oklahoma).
2. **MBI Early Career Visitor**, "Fall 2013: Ecosystem Dynamics and Management," Aug. – Dec. 2013.
3. **National Institute for Mathematical and Biological Synthesis (NimBioS)**, Mar. 2013 – Feb. 2015 **"**Working Group on non-autonomous systems and terrestrial C-cycle,'' M. Leite (Co-PI) & Y. Luo (PI).
4. **NIH Exploratory Developmental Research Grant**, Jun 2011, Submitted but not funded
   "Modeling the dynamics of seasonal influenza transmission under changing climate and demography in Hong Kong," M. Leite (Co-PI), Co-PI: M.Zhu (Mathematics, University of Oklahoma), Co-PI: P. Chan

Continued…

(Microbiology, Chinese University of Hong Kong), PI: X. Xiao (Botany & Microbiology, University of Oklahoma).

PROFESSIONAL EXPERIENCE

UNIVERSITY OF TOLEDO, Toledo, OH

Assistant Professor, Department of Mathematics   8/2011 to Present

Play key role in cutting-edge research focused on Applied Mathematics. Foster collaboration with colleagues; deliver presentations at conferences and prepare manuscripts for publication in peer-reviewed journals. Contribute to weekly meetings, including inviting internal & external scientists and presenting research updates. Serve as a chair of Graduate Curriculum Committee and teach graduate and undergraduate courses. *Selected accomplishments & projects include…*

- Competitively selected for co-organizing (with colleague from University of Oklahoma) NIMBioS working group on Non-autonomous systems and terrestrial C-cycle.
- Conceptualized and conducted extensive research into "Climate driven dynamics of seasonal influenza in subtropical region" and prepared findings for publication.
- Partnered with colleague from the University of Oklahoma to coordinate Disturbance Regimes and Climate-Carbon Feedback workshop held at 2012 NIMBioS meeting.
- Teamed with environmental sciences colleague to design collaborative multi-disciplinary graduate course.
- Distinguished as one of only 25 recipients of the Student Impact Award open to all faculty in recognition of positively influencing students through enthusiasm, knowledge, dedication, and creativity.

MATHEMATICAL BIOSCIENCES INSTITUTE, Columbus, OH

Earlier Career Visitor   8/2013 to 15/12/2013

Aiming to develop research on Applied Mathematics, further deepening understanding the research state of art on ecosystem dynamics and management, extend professional network, and explore opportunities for collaborative research.

UNIVERSITY OF OKLAHOMA, Norman, OK

Visiting Assistant Professor, Department of Mathematics   8/2008 to 8/2011

Drove innovative research in the Applied Mathematics field. Worked closely with colleagues to conduct research projects and prepare findings for publication and presentation. Taught undergraduate courses, including preparing lectures, lesson plans, and instructional material; monitored and evaluated student performance. Communicated with colleagues at department meetings to provide updates on research projects and invited external researchers for short visits. Maintained full compliance with academic integrity standards and department policies. *Selected accomplishments & projects include…*

- Initiated multi-disciplinary project with mathematics and biological sciences colleagues to study ecosystem carbon content using a method applicable to physical, chemical, and other biological systems. Published a paper on the subject in a peer reviewed journal.
- Served as Co-Principal Investigator (Co-PI) on "Modeling the dynamics of seasonal influenza transmission under changing climate and demography in Hong Kong" under an NIH Exploratory Developmental Research Grant Program and submitted to the National Institute of Allergy and Infectious Diseases (NIAID).

- Integral member of team developing model for SEIR diseases with social isolation for '09 influenza pandemic in Mexico; described epidemic's observed pattern and explored epidemiological consequences of epidemic and containment measure.
- Teamed with peers to explore feedback loop dynamics in cell signaling systems that play an important role in maintaining normal cell activity; research indicated potential for key insights for understanding living systems.
- Developed targeted teaching strategies to maximize student performance resulting in a 90% retention and 95% passing rate for all courses.
- Secured financial support for attending meetings from the National Science Foundation (NSF) and other sources.

PURDUE UNIVERSITY, West Lafayette, IN
Research Assistant Professor, Department of Mathematics   8/2005 to 8/2008

Led comprehensive and innovative research in Applied Mathematics in collaboration with colleagues. Published findings in peer-reviewed journals and presented at conferences. Taught graduate-level Advanced Mathematics for Engineers and Physicists I and II and undergraduate-level Linear Algebra and Differential Equations, Differential Equations and Partial Differential Equations for Engineering and the Sciences, and Linear Algebra courses. Attended weekly research team meetings to share research developments and discuss research ideas. *Selected accomplishments & projects include…*

- Joined research team to focus on dynamics of biological systems; developed cutting-edge model coupling dynamics of HIV at population and cell levels.
- Collaborated on joint research into bifurcations in quotient networks to expand theory of coupled cell networks resulting in two published papers.
- Achieved exceptional pass and retention rates for graduate and undergraduate courses.

UNIVERSITY OF HOUSTON, Houston, TX
Research and Teaching Assistant, Department of Mathematics   1/2002 to 7/2005

Excelled in PhD research under the guidance of Professor Martin Golubitsky, and conducted recitations for undergraduate Linear Algebra and Honors Calculus I & II. Supervised computer labs for Differential Equations with MATLAB courses. *Selected accomplishments & projects include…*

- Designed and performed comprehensive research into study dynamical behavior of small networks using innovative mathematical approaches; *research directly contributed to development of Theory of Coupled Cell Networks highlighted in "The Rise, Fall, and Legacy of Catastrophe Theory" article (SIAM Journal, Jan / Feb 2010) and presented in peer-reviewed publication.*
- Served as mentor to up to 30 students per semester; assisted with academic performance and coursework.

ESCOLA TECNOLOGICA DE VALE DE CAMBRA, Vale de Cambra, Portugal
Invited Lecturer   1/1999 to 12/2001

Designed and provided instruction for Calculus III courses; course developed in collaboration with peer aiming to develop qualified engineers for regional implementations. Guided non-traditional Mechanical Engineer students, the majority being adult workers.

INSTITUTO SUPERIOR DE ENGENHARIA DO PORTO (ISEP), Porto, Portugal

Lecturer, Department of Mathematics, College of Engineering   1/1998 to 12/2001

Served as lecturer for Calculus I, II, and III. Prepared course material and lessons based on curriculum. Worked with students individually as needed to ensure academic success. Taught 16-hour Fire: Prevention and Extinguishing Techniques session as part of Working Safety, Hygiene, and Health Practices at Laboratories course.

 • Earned fellowship from Portuguese European Education office Program (PRODEP) to complete Master in Mathematics thesis**.**

 ASSN. FOR TECHNOLOGICAL DEVELOPMENT AND INNOVATION (ADITEC), Porto, Portugal

Head of Chemical & Physical Testing Labs & Quality Compliance Mgr.   1/1994 to 12/1997

Led Chemical and Physical Testing Laboratories and served as Quality Compliance Manager

 • Mentored 2 undergraduate and 3 graduate chemical engineering students completing mandated internships; instructed on original approaches to research and experimental work, as well as interpretation and presentation of results.

*~ Additional previous experience as **High School Chemistry and Mathematics Teacher** and also as **Middle School Mathematics Teacher** with the Portugal School System~*

PUBLICATIONS

1. B. Chen-Charpentier and **M. Leite**, "Modeling feedback interaction between wildfire and insect outbreak disturbances: deterministic versus stochastic,'' in preparation.

2. A. Arsie, M. Golubitsky, and **M. Leite**, "Strongly Feedforward Networks: Linear Structure and Bifurcations," in preparation.

3. **M. Leite,** X. Xiao, S. Tang, and M. Zhu, "Predicting Seasonal Dynamics of Human Influenza along the Latitudinal Gradient," submitted.

4. B. Chen-Charpentier and **M. Leite**, "A Model for Coupling Fire and Insect Outbreaks in Forests", Ecological Modelling, accepted with revision.

5. Wang, Y. P., Chen, B. C., Wieder, W. R., Luo, Y. Q., **Leite, M**., Medlyn, B. E., Rasmussen, M., Smith, M. J., Agusto, F. B., and Hoffman, F.: Oscillatory behavior of two nonlinear microbial models of soil carbon decomposition, Biogeosciences Discuss., 10, 19661-19700, doi:10.5194/bgd-10-19661-2013, 2013

6. **M. Leite**, N. Petrov, and E. Weng, "Stationary distributions of semistochastic processes with disturbances at random times and random severity," Nonlinear Analysis: Real World Applications 13 (2012) 497–512.

7. Z. Feng, J. Velasco-Hernandez, B. Tapia-Santos and **M. Leite**, "A model for coupling within-host and between-host dynamics in an infectious disease," Nonlinear Dyn (2011), DOI:10.1007/s11071-011-0291-0

8. J. Velasco-Hernandez and **M. Leite**, "A model for SEIR diseases with social isolation," Salud Publica de Mexico 53 (1) (2011) 40-47.

9. **M. Leite** and Y. Wang, "Multistability, Oscillations, and Bifurcations in Feedback Loops," Math. Biosci. Eng. 7 (1) (2010) 83–97.

10. M.A.D. Aguiar, A.P.S. Dias, M. Golubistky, and **M. Leite**, "Bifurcations from Regular Quotient Networks: A First Insight," Physica D 238 (2009) 137–155.

11. M.A.D. Aguiar, A.P.S. Dias, M. Golubistky, and **M. Leite**, "Homogeneous Coupled Cell Networks with S3-symmetric Quotient," Discrete and Continuous Dynamical Systems. Supplement (2007) 1–9.

12. **M. Leite** and M. Golubitsky, "Homogeneous Three-cell Networks," Nonlinearity 19 (2006) 2313–2363.

INVITED RESEARCH VISITS

National Institute for Mathematical and Biological Synthesis (NimBioS) (May 17 to May 24, 2013)
- Held discussions with B. Chen-Charpentier regarding project on ``A model for coupling fire and insect outbreak disturbances in forests'' and advance manuscript preparation for publication.

Mathematical Biosciences Institute (MBI), Ohio (October 25 - 28, 2012)
- Discussions with M. Golubitsky and A. Arsie to further advance preparation of the manuscript on "Strongly Feedforward Networks: Linear Structure and Bifurcations.''

University of Texas at Arlington, Department of Mathematics, Texas (July 11 to July 14, 2012)
- Discussed with professor B. Chen research ideas to develop an innovative mathematical framework to describe/investigate disturbances in ecological systems and their interactions with climate factors. The aim is to better understand the link between disturbances and terrestrial ecosystem carbon processes.

MBI, Ohio (June 10 to June 24, 2010)
- Collaborated with Y. Wang, M. Golubitsky, and local experts to explore questions in the theory of coupled cell networks; discussions led to a two possible new projects.

Utah State University, Department of Mathematics, Utah (August 5 to August 11, 2009)
- Shared research results in mathematical biology field to a research team and discussed ideas about how to integrate movement into ecological models.

National Institute for Mathematical and Biological Synthesis (NimBioS) (July 14 to July 24, 2009)
- Held discussions regarding project on coupling within-host and between-host dynamics in HIV with Z. Feng and J. Hernandez-Velasco. Initiated the project on modeling influenza dynamics with Hernandez-Velasco. Met and interacted with S. Lenhart, which led to her collaboration on the HIV-1 model with latently infected cells and optimal drug treatment strategies project.

Instituto Nacional de Matematica Pura e Aplicada (IMPA), Rio de Janeiro, Brazil (June 1 to June 8, 2008)
- Interfaced with local experts on mathematical biology to provide research generating ideas to further develop work on project focused on coupling within-host and between-host dynamics in HIV.

University of Porto, Department of Mathematics, Porto, Portugal (June to July 2006)
- Interacted with researchers A.P.S. Dias and M.A.D. Aguiar, gave presentation at departmental Dynamical Systems Seminar, and finished preparation of manuscript "Homogeneous Coupled Cell Networks with S3-symmetric Quotient" for publication. Started to develop research work that led to the paper "Bifurcations from Regular Quotient Networks: A First Insight".

PROFESSIONAL SERVICE

Journal Reviewer

1. Journal of Biological Dynamics, January 2013 to Present
2. Mathematical Bioscience Engineering, December 2012 to present
3. SIAM Journal on Applied Dynamical Systems, December 2012 to present.
4. Physica D, December 2012 to present.
5. Nonlinearity, May 2012 to present.
6. Applied Mathematics and Computation, January 2010 to present.
7. Discrete and Continuous Dynamical Systems, November 2010 to present.

Working Group Co-Organizer

1. Working group on Non-autonomous systems and terrestrial C-cycle, NIMBioS, Knoxville, Tennessee, March 2013 – February 2015.
   - First meeting, May 13-17, 2013

Workshop Co-Organizer

1. *Disturbance Regimes and Climate-Carbon Feedback*, NIMBioS, Knoxville, Tennessee, February 2012

Minisymposium Co-Organizer

1. *Structure and Dynamics of Biochemical Reaction Networks*, The 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Dresden, Germany, May 2010.

2. *Relating Structure and Dynamics in Biochemical Networks*, Joint SIAM / RSME-SCM-SEMA Meeting Emerging Topics in Dynamical Systems and Partial Differential Equations DSPDEs10, Barcelona, Spain, May 2010.

3. *Bridging Theory of Coupled Cell Systems and Biological Modeling*, SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, May 2009.

4. *Networks Structure and Dynamics*, SIAM Conference on The Life Sciences, Montreal, Quebec, Canada, August 2008.

5. *Recent Advances in Mathematical Epidemiology*, Joint SIAM Conference on The Life Sciences, Raleigh, North Carolina, August 2006.

Curriculum Development

1. Structured, in collaboration with peer in Environmental Sciences Department, a two/three-hour/week discussion of research in the broad field of mathematical biology for Masters/PhD students from various academic disciplines including Biology, Environmental Sciences, Life Sciences, Health Sciences, Computer Science, Mathematics, and Statistics; University of Toledo, Toledo, OH, Fall2011/Fall2012.

2. Designed Calculus III course in collaboration with peer aiming to develop qualified engineers for regional implementations; Escola Tecnologica de Vale de Cambra, Vale de Cambra, Portugal, December 1998.

GUEST LECTURER

1. Modeling population dynamics driven by external factors, Mathematical Biosciences Institute, MBI Visitor Seminars, Columbus, Ohio, November 19, 2013.

2. Mathematical models and oscillatory dynamics in biological systems, Northern Illinois University, Department of Mathematical Sciences Colloquium, DeKalb, Illinois, April 6, 2012.

3. Mathematical modeling of ecosystems undergoing disturbances, Seminar for high school teachers, University of Toledo, Toledo, Ohio, February 29, 2012.

4. Series of two lectures on Theory of Coupled Cell Networks, Applied Mathematics / Dynamical Systems Seminar, University of Toledo, Toledo, Ohio, Spring 2012.

5. Mathematical modeling of ecosystems undergoing disturbances, Utah State University, Department of Mathematics and Statistics Colloquium, Logan, Utah, February 2012.

6. Mathematical models and temporal dynamics of viruses, University of Toledo, Department of Biology Colloquium, Toledo, Ohio, January 20, 2012.

7. Modeling seasonal dynamics of influenza under changing climate in Hong Kong and Beijing: one peak versus double peaks, Seminar for high school teachers, University of Toledo, Toledo, Ohio, October 5 2011.

8. Stationary distributions of semi-stochastic processes with disturbances at random times and with random severity, *University of Oklahoma, Department of* Botany & Microbiology Seminar, Norman, Oklahoma, June 17, 2011.

9. Oscillatory Patterns in Cell Signal Networks and Influenza Epidemics, University of Toledo, Department of Mathematics Colloquium, Toledo, Ohio, February 28, 2011.

10. Oscillatory Patterns in Cell Signal Networks and Influenza Epidemics, University of Texas at Arlington, Department of Mathematics Colloquium, Arlington, Texas, February 17, 2011.

11. *SEIR Model and Patterns of Influenza Epidemics*, University of Oklahoma, Department of Mathematics Graduate Student Seminar, Norman, Oklahoma, February 7, 2011.

12. *Modeling H1N1 Influenza in Mexico and Study HIV Optimal Drug Treatment*, University of Oklahoma, Department of Botany & Microbiology Seminar, Norman, Oklahoma, August 11, 2010.

13. *Dynamics in Regulatory Networks and HIV Disease*, Clarkson University, Department of Mathematics Colloquium, Potsdam, New York, February 1, 2010.

14. *Toys and Carnival Rides: Interesting Nonlinear Dynamics*, University of Oklahoma, Math Day, Norman, Oklahoma, January 19, 2010.

15. *Multistability and Oscillations in Feedback Loops*, University of Oklahoma, Student Applied Math Seminar, Norman, Oklahoma, October 30, 2009.

16. Infectious Diseases in Humans: HIV-1 as a Case Study, University of Oklahoma, Graduate Student Seminar, Norman, Oklahoma, February 23, 2009.

17. HIV-1 Infectious Diseases: a Case Study, University of Oklahoma, Student Applied Math Seminar, Norman, Oklahoma, October 8, 2008.

18. *Some Interesting Dynamics in Small Networks*, Valdosta State University, Department of Mathematics Colloquium, Valdosta, Georgia, February 25, 2008.

19. *Interesting Dynamics in Small Networks*, Purdue University, Department of Mathematics Applied Seminar, West Lafayette, Indiana, January 25, 2008.

20. *Dynamics on Small Networks*, Clemson University, Department of Mathematics Colloquium, Clemson, South Carolina, January 22, 2008.

21. *Homogeneous Three-Cell Networks*, CMAUP Applied Math Center, University of Porto Dynamical System Seminar, Porto, Portugal, June 2006.

22. *Hopf bifurcation in a CSTR with a PI Controller*, University of Porto, Department of Mathematics Seminar, Porto, Portugal, 2001.

INVITED SPEAKER

International

1. Special Session: Understanding dynamics of real networks using mathematics, XXXII Dynamics Days Europe, Gothenburg, Sweden, September, 2012.

2. Dynamics in Feedback Loops: Oscillations and Bifurcations, 2010 Annual Meeting of The Society of Mathematical Biology, Rio de Janeiro, Brazil, July 2010.

3. Special Session: Mathematical Methods in Biology, AMS – SBM First Joint Meeting, Rio de Janeiro, Brazil, June 2008.

4. Special Session: Dynamics of Biochemical Reaction Networks, International Conference on Mathematical Biology and Annual Meeting of The Society for Mathematical Biology, Vancouver, Canada, July 2009.

5. Coupled Cell Systems, Connecting Women in Mathematics Across Canada II, Banff Centre, Canada, July 2005.

National

6. Symposium: New Perspectives on Regulation, Interaction, and Noise Found in Physiological Systems. Experimental Biology 2014 Annual Meeting, San Diego, CA, April 26-30, 2014.

7. Special Session: Mathematical Issues in Ecological and Epidemiological Modeling. SE Section of the AMS meeting, Louisville, KY, October 2013.

8. Special Session: Long-term Dynamical Properties of biochemical Reaction Systems, The SIAM conference on Life Sciences, San Diego, CA, August 2012.

9. Special Session: Recent Advances in Mathematical Biology, Ecology, and Epidemiology, Joint Mathematics Meetings, Boston, MA, January 2012.

10. Special Session: Optimal Control in Applied Mathematical Modeling, Joint Mathematics Meetings, Boston, MA, January 2012.

11. Special Session: Structured Models in Ecology, Evolution, and Epidemiology: Periodicity, Extinction, and Chaos, Joint Mathematics Meetings, New Orleans, Louisiana, January, 2011.

12. Multistability and Oscillations in Feedback Loops, The Second International Conference on Mathematical Modeling and Analysis of Populations in Biological Systems, Huntsville, Alabama, October 2009.

13. Coupling within-host and between-host dynamics, Conference on Differential Equations and Applications to Ecology and Epidemiology, Purdue University, West Lafayette, Indiana, December 2008.

14. Special Session: Differential, Integral Equations, And Their Applications, 7th AIMS International Conference, University of Texas at Arlington, Texas, May 2008.

15. Special Session: Evolution Dynamics in Ecology and Epidemiology, 7th AIMS International Conference, University of Texas at Arlington, Texas, May 2008.

16. Special Session: Networks, AMS Central Section Meeting, DePaul University, Chicago, Illinois, October 2007.

INVITED PARTICIPANT

International

1. Climate-driven dynamics of seasonal influenza in sub-tropical regions, *International Conference on Mathematical Methods and Models in Biosciences*, *Bulgarian Academy of Sciences*, Sofia, Bulgaria, June 2012.

2. Workshop on Theory and Applications of Coupled Cell Networks, *Isaac Newton Institute*, United Kingdom, September 2005.

3. Homogeneous Three-Cell Networks, *Pan-American Advanced Studies Institute 2005 VI* (School and Conference), Santiago, Chile, January 2005.

National

4. Workshop on Progress and Problems in Dynamics, Houston, Texas, May 2012.

5. NIMBioS Investigative Workshop: Mathematical Modeling of Metabolism and Body Weight Regulation, National Institute for Mathematical and Biological Synthesis, Knoxville, Tennessee, July 2011.

6. MBI Workshop: Ocean Ecologies and Their Physical Habitats in a Changing Climate, Mathematical Bioscience Institute, Columbus, Ohio, June 2011.

7. NIMBioS Investigative Workshop: Synchrony in Biology Systems Across Scales, National Institute for Mathematical and Biological Synthesis, Knoxville, Tennessee, April 2011.

8. MBI Current Topic Workshop: Mathematical Developments Arising from Biology, Mathematical Bioscience Institute, Columbus, Ohio, November 2009.

9. Coupling Structure of Systems of ODEs and Their Bifurcations, *MSRI Introductory Workshop on Dynamical Systems with Emphasis on Extended Systems*, MSRI, Berkley, California, January 2007.

10. Coupled 60 Workshop, Houston, Texas, Feb 2005.

PARTICIPANT

International

1. *Contributed talk on the Special Session*: Dynamical Systems, *First PRIMA Congress*, Sydney, Australia, July 2009.

2. *Contributed talk*: Three-Identical Coupled Systems of ODEs, *The 6th AIMS Conference on Dynamical Systems, Diff. Equations, and Applications*, Poitiers, France, June 2006.

National

3. *Contributed talk:* A Mathematical Perspective on the Terrestrial Carbon Cycle, Working Group First Meeting on Nonautonomous Systems and Terrestrial C-Cycle; National Institute for Mathematical and Biological Synthesis, Knoxville, Tennessee, May 2013.

4. *Contributed talk on the Special Session*: Ecology 3, *Annual Meeting and Conference of The Society for Mathematical Biology*, Knoxville, Tennessee, July 2012.

5. NimBioS Tutorial: Optimal Control and Optimization for Biologists, National Institute for Mathematical and Biological Synthesis, Knoxville, Tennessee, December 2009.

6. *Contributed talk:* Bifurcations from Quotient Coupled Cell Systems, *SIAM Conference on Applications of Dynamical System*, Snowbird, Utah, May 2009.

7. AMS Joint Mathematics Meetings, San Diego, California, January 2008.

8. SIAM Conference on Applications of Dynamical System, Snowbird, Utah, May 2007.

9. Applications of Analysis to Mathematical Biology, Duke University, Raleigh, North Carolina, May 2007.

Continued…

10. Workshop on the Mathematics of Global Public Health, Arizona State University, Tempe, Arizona, March 2007.
11. *Contributed poster*: Three-Identical Coupled Systems of ODEs, *Joint SIAM Conference on the Life Sciences*, Raleigh, North Carolina, August 2006.
12. *Contributed talk*: Networks of Three-Identical Coupled Systems, *AMS Joint Mathematics Meetings*, San Antonio, Texas, January 2006.
13. *Contributed poster*: Networks of Three-Identical Systems, *Workshop on Applications of Methods of Stochastic Systems and Statistical Physics in Biology*, University of Notre Dame, Indiana, October 2005.
14. *Contributed Poster*: Homogeneous Three-Cell Networks, *SIAM Conference on Applications of Dynamical Systems*, Snowbird, Utah, May 2005.
15. *Contributed talk*: Homogeneous Three-Cell Networks and Codimension-one Hopf Bifurcation, *3rd Texas Dynamical Systems Workshop*, San Antonio, Texas, March 2005.
16. *Contributed poster*: Synchrony-Breaking Bifurcations in Homogeneous Three-Cell Networks*, SIAM Annual Meeting and SIAM Conference on Life Science*, Portland, Oregon, July 2004.
17. 6th Joint Meeting of the AMS and SMM, Houston, Texas, 2004.
18. 2nd Texas Dynamical Systems Workshop, Houston, Texas, March 2004.
19. SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, May 2003.
20. 1st Texas Dynamical Systems Workshop, Austin, Texas, March 2003.
21. *Contributed talk*: Singularities and a Chemical Reactor, *Scientific Meeting at Instituto Superior de Engenharia do Porto*, Porto, Portugal, 2001.
22. School and International Conference on Dynamical System, Porto, Portugal, June 2000.
23. School on Singularities and Applications, Porto, Portugal, 2000.

. TRAVEL AWARDS

1. NIMBioS Short Visit Financial Support ($500), May 2013.
2. University of Toledo Faculty Development Funds ($500), June 2013.
3. AWM-NSF The Mathematical Travel Grant, June 2012 ($1500).
4. Society for Mathematical Biology (SMB) Travel Award ($500), Society for Mathematical Biology Annual Meeting and Conference, July 25-28, 2012, Knoxville, Tennessee
5. University of Toledo Faculty Development Funds ($500). Conference: BioMath 2012, June 17-23, 2012, Sofia, Bulgaria
6. Workshop on Progress and Problems in Dynamics Funds ($1000), May 14 -17, 2012, Houston, Texas
7. University of Toledo Provost Travel Support ($700). Conference: Joint Mathematics Meetings, Jan 4-7, 2012, Boston, Massachusetts.
8. National Institute for Mathematical and Biological Synthesis (NimBioS), Workshop: Mathematical Modeling of Metabolism and Body Weight Regulation, July 12-15, 2011, Tennessee.
9. Mathematical Biosciences Institute (MBI), Workshop: Ocean Ecologies and Their Physical Habitats in a Changing Climate Mathematical Bioscience Institute, Jun 20-July 1, 2011, Columbus, Ohio.
10. National Institute for Mathematical and Biological Synthesis (NimBioS), Workshop: Synchrony in Biology Systems Across Scales, April 11-13, 2011, Knoxville,Tennessee.

11. Society for Mathematical Biology (SMB) Travel Award, SMB 2010 Annual Meeting of the Society for Mathematical Biology, July 26–29, 2010, Rio de Janeiro, Brazil.

12. Mathematical Biosciences Institute (MBI), Short-term Visit, Jun 10–24, 2010, Ohio, USA.

13. The AIMS Conference Travel Fund, The 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications, May 25–29, 2010, Dresden, Germany.

14. SIAM / RSME-SCM-SEMA Conference Travel Fund, The Joint SIAM / RSME-SCM-SEMA Meeting Emerging Topics in Dynamical Systems and Partial Differential Equations DSPDEs10, May 31–Jun 5, 2010, Barcelona, Spain.

15. National Institute for Mathematical and Biological Synthesis (NimBioS), Tutorial: Optimal Control and Optimization for Biologists, Dec 15–17, 2009, Tennessee.

16. MBI, Current Topic Workshop on Mathematical Developments Arising from Biology, Nov 8–10, 2009, Ohio.

17. SMB Travel Award, International Conference on Mathematical Biology and Annual Meeting of The Society for Mathematical Biology, July 27–30, 2009, Vancouver, Canada.

18. NimBioS, Short-term Visit, July 13–24, 2009, Tennessee.

19. Travel funding for First PRIMA Congress, July 6–10, 2009, Sydney, Australia.

20. AWM-NSF The Mathematical Travel Grant, March 2009.

21. Institute for Mathematics and its Applications (IMA), New Directions Short Course: Mathematical Neuroscience, Jun 16–28, 2008, Minnesota.

22. The AIMS Conference Travel Fund, The 7th AIMS Conference on Dynamical Systems, Diff. Equations, and Applications, May 18-21, 2008, Texas.

23. MSRI, Introductory Workshop on Dynamical Systems with Emphasis on Extended Systems, Jan 22–26, 2007, California.

24. The AIMS Conference Travel Fund, The 6th AIMS Conference on Dynamical Systems, Diff. Equations, and Applications, Jun 25–28, 2006, Poitiers, France.

25. Isaac Newton Institute, Workshop on Theory and Applications of Coupled Cell Networks, Sept 26–30, 2005, United Kingdom.

26. AWM-NSF The Mathematical Travel Grant, March 2006.

27. AWM-NSF The Mathematical Student Travel Grant, Connecting Women in Mathematics Across Canada II, Jul 21–23, 2005, Banff Centre, Canada.

ADDITIONAL TRAINING / PROFESSIONAL DEVELOPMENT

Applied Analysis/Dynamical Systems Seminar, University of Toledo, Department of Mathematics, Toledo, Ohio, September, 2011 to Present

Analysis and Convexity Seminar, University of Oklahoma, Department of Mathematics, Norman, Oklahoma, September, 2008 to May, 2011

Tutorial: Optimal Control and Optimization for Biologists, NimBioS, Knoxville, Tennessee, USA, December 15 to 17, 2009

Neuroscience Seminar, University of Oklahoma, Department of Biology / Zoology, Norman, Oklahoma, August 25, 2008 to May 15, 2009

New Directions Short Course: Mathematical Neuroscience, Institute for Mathematics and its Applications, Minnesota, June 16 to 28, 2008

Introductory Workshop on Dynamical Systems with Emphasis on Extended Systems, MSRI, Berkley, California, USA, January 22 to 26, 2007

Seminars on Topics in Mathematical Biology, Purdue University, Department of Mathematics, West Lafayette, Indiana, Fall 2005 to Spring 2007

TEACHING EXPERIENCE

Graduate courses

1. Reading course on Bifurcation Theory and Applications, **University of Toledo**, Spring 2013 (one math master student).
2. Mathematical Modeling in Environmental and Biological Sciences, **University of Toledo**, MATH5980, Fall 2012 (one section).
3. Reading course on Bifurcation Theory, **University of Toledo**, Fall 2012 (three PhD students).
4. Seminar in Mathematical and Environmental Sciences, **University of Toledo**, MATH5/7980, Spring 2011 (one section).
5. Ordinary Differential Equations, MATH6/8500, **University of Toledo**, Fall 2011 (one section).
6. Advance Mathematics for Engineers and Physicists I, MA527, Purdue University, Summer 2008 (one sections).
7. Advance Mathematics for Engineers and Physicists II, MA528, Purdue University, Spring 2008 (two sections).

Undergraduate course

1. Elementary multivariable calculus, MATH2850, **University of Toledo,** Fall 2014 (one section).
2. Calculus II, University of Toledo, MATH1860, **University of Toledo**, Spring 2013 (one large section).
3. Mathematical Modeling in Environmental and Biological Sciences, **University of Toledo**, MATH4900, Fall 2012 (one section).
4. Calculus I, MATH1850, **University of Toledo**, Fall 2012 (one large section).
5. Elementary Differential Equations, MATH3860, **University of Toledo**, Fall 2011, Spring 2013, Fall 2014 (one section each semester).
6. Applied Statistics, MATH4753, University of Oklahoma, Fall 2010 (two sections).
7. Physical Mathematics I, MATH3413, University of Oklahoma, Fall 2009, Spring 2009, and Spring 2011 (two sections / one section / one section).
8. Introduction to Differential Equations, MATH3113, University of Oklahoma, Fall 2008 and Spring 2009 (one section / two sections).
9. Linear Algebra and Differential Equations, MA262, Purdue University, Spring 2007 and Fall 2007 (two sections each semester).
10. Differential Equations and Partial Differential Equations for Engineering and the Sciences, MA303, Purdue University, Fall 2006 (two sections).
11. Linear Algebra, MA265, Purdue University, Spring 2006 and Fall 2005 (two sections each semester)
12. Linear Algebra, MATH2431, University of Houston, Fall 2003 and Fall 2004 (Recitation and Computer Labs).
13. Honours Calculus II, MATH1432H, University of Houston, Spring 2003 (Recitation).
14. Honours Calculus I, MATH1431H, University of Houston, Fall 2002 (Recitation).
15. Differential Equations with MATLAB, MATH3331, University of Houston, Spring 2002 (Recitation and Computer Labs).

16. Calculus III, Escola Tecnologica de Vale de Cambra, Portugal, Jan 1999 to Dec 2001, (two sections each semester).
17. Calculus I, II, and III, ISEP, Portugal, Jan 1998 to Feb 2001 (three sections each semester).

<u>Middle and High School, Portugal School System</u>

1. Chemistry and Mathematics, Oct 1991 to Dec 1992.
2. Mathematics, Oct 1990 to Jun 1991.

MENTORING EXPERIENCE

1. **At University of Toledo, Aug. – Dec. 2012. An undergraduate Math Student, an undergraduate Physics Student, and a graduate Math student.** These three students formed a group that worked on a project, which is included in the Mathematical Modeling in Environmental and Biological Sciences course. They studied the dynamics of a mathematical model using dynamical systems tools and numerical simulations (with Matlab).

2. **At University of Oklahoma, May-Jul 2011. PhD Math Student**. Introduce the student to Matlab Software and guide her on performing numerical simulation integrating observed climate data and a mathematical model describing dynamics of seasonal Influenza.

3. **At ADITEC, 1995 to 1997, Chemical Engineering Students.** Mentored two undergraduate and three graduate students completing mandated internship at ADITEC in the scope of Erasmus European Project. Instructed on original approaches to research and experimental work, as well as interpretation and presentation of results.

PROFESSIONAL ASSOCIATIONS

Full Membership of the Graduate Faculty, University of Toledo, December 2012

Lake Erie Center Board Member, 2012 to Present

American Mathematical Society (AMS), 2005 to Present

Association for Women in Mathematics (AWM), 2005 to Present

Society for Industrial and Applied Mathematics (SIAM), 2002 to Present

Society for Mathematical Biology (SMB), 2008 to Present

Maria Leite