# CURRICULUM VITAE

## ADELA NICOLETA COMANICI-FRENT

Comparative Epidemiology and Informatics
Div. of Animal Production and Public Health
Veterinary School University of Glasgow
355 Jarrett Bldg. 464 Bearsden Rd
Glasgow G61 1QH United Kingdom

**Cell: +44 (0)753 5703552**
**Work**: +44 (0)141 3304501
a.comanici@vet.gla.ac.uk
adela.comanici@gmail.com

**Citizenship**: Canadian and Romanian

## EDUCATION

**NSERC Postdoctoral Fellow**, *Mathematics, University of Houston*, Houston (2004-2006)

**Ph.D., Mathematics**, *University of Ottawa*, Ottawa (Canada) (2000-2004)

*Ph.D. Supervisor*: Victor G. LeBlanc

*Ph.D. Thesis*: Spiral Waves on Spherical Domains: A Dynamical Systems Approach

**M.Sc. in Mathematics**, *Université Pierre et Marie Curie*, Paris (France) and
*Babes-Bolyai University*, Cluj-Napoca (Romania) (1997-1998)

*M.Sc. Supervisor*: Petru Mironescu (Université Paris-Sud, Orsay (France))

*M.Sc. Thesis*: The Hardy Space $H^1$

**B.Sc., Mathematics**, *Babes-Bolyai University*, Cluj-Napoca (1997-1998)

**Computer Science**, *Babes-Bolyai University*, Cluj-Napoca (1998-2000)

## PROFESSIONAL EXPERIENCE

**Postdoc Research Assistant**, *Comparative Medicine, Univ. of Glasgow*, Glasgow (06/08-)

**Visiting Assistant Professor**, *Mathematics, Virginia Tech*, Blacksburg (01/2007-05/2008)

**Visiting G. C. Evans Instructor**, *Mathematics, Rice University*, Houston (07/2006-12/2006)

**Postdoctoral Fellow**, *Mathematics, University of Houston*, Houston (2004-2006)

**Invited Long-Term Visiting Researcher** (Pattern Formation in Large Domains)
*Isaac Newton Institute for Mathematical Sciences*, Cambridge (UK) (08/2005-11/2005)

**Graduate Research & Teaching Assistant**, *Mathematics, Univ. of Ottawa* (2000-2004)

**Teacher**, *School of Post and Telecommunications*, Cluj-Napoca (1998-2000)

**Teaching Assistant**, *Mathematics, Babes-Bolyai University* (1997-1999)

## OTHER VISITING POSITIONS

**Short-Term Visitor** *Institute of Mathematics and its Applications*,
Minneapolis — to attend "Mathematical Neuroscience" New Direction Course (06/16-27/2008)

**Short-Term Visitor** (Angiogenesis, NeoVascularization and Morphogenesis)
*Institute of Pure and Applied Mathematics*, Los Angeles (05/2006)

**Short-Term Visitor**, *Los Alamos National Lab (T-7)*, Los Alamos (03/13-14/2006)

**Short-Term Visitor**, *Institute of Mathematics and its Applications*,
Minneapolis (11/5-11/2005)

**Short-Term Visitor** (Bifurcation Theory and Spatio-Temporal Pattern Formation in PDE;
Patterns in Physics) *Fields Institute*, Toronto (Canada) (11/2003, 12/2003)

## GRANTS, AWARDS AND SCHOLARSHIPS

**NSERC Postdoctoral Fellowship** (2004-2006) (research grant)

**Travel award** — Nonlinear Waves Workshop 2008, Rome (07/2008)

**Post-doc Travel Award** — SIAM CSE07, Costa Mesa (02/2007)

**Post-doc Travel Award** — SIAM NW06, Seattle (09/2006)

**Travel Support (AWM Workshop)** — SIAM Annual Meeting, Boston (07/2006)

**NSERC Scholarship PGS-B** (2002-2004)

**Canadian National Excellence Scholarship** (2002-2004)

**International Admission Scholarship**, University of Ottawa (2000-2002)

**Director Excellence's Award**, University of Ottawa (2001)

**SOCRATES Scholarship**, J. Maximillians Univ., Würzburg (Germany) (04/2000-07/2000)

**TEMPUS Scholarship**, Université Pierre et Marie Curie (04/1998-06/1998)

**Honor Scholarship**, Babes-Bolyai University (1994-1998)

## PUBLICATIONS AND PREPRINTS

1. **Forced Symmetry Breaking from $SO(3)$ to $SO(2)$ for Rotating Waves on the Sphere**
Nonlinearity **19** (2006) 999–1019
2. **Transition from Rotating Waves to Modulated Rotating Waves on the Sphere**
SIADS **5** (4) (2006) 759–782
3. **Patterns on Growing Square Domains via Mode Interactions** (with **M. Golubitsky**)
Dynamical Systems: International Journal **23** (2) (2008) 167–206

4. **Synchrony-Breaking Period-Doubling Bifurcations for Three-Cell Homogeneous Coupled Maps** International Journal of Bifurcation and Chaos (2008)

5. **Bifurcation Analysis for the Attractor of Chafee-Infante Equation with Parameter-Dependent Boundary Conditions** (with **J. Burns**) (To be submitted)

6. **Interaction of Line Defects in the Period-Doubling of 2D Spiral Waves** (In preparation)

7. **Mode Interaction** $(1,1)$ **and** $(2,0)$ (In preparation)

8. **Synchrony-Breaking "Hopf" Bifurcation for Three-Cell Homogeneous Coupled Maps** (In preparation)

## CONFERENCES, WORKSHOPS AND TALKS

`Patterns on Growing Square Domains via Mode Interactions`
*Soc. for Math. Biology Annual Meeting, Toronto, CA* (invited talk) (08/2008)

*Nonlinear Waves Workshop 2008, Rome, Italy* (07/2008)

`Patterns on Growing Square Domains via Mode Interactions`
*European Soc. for Math. and Theoretical Biology Annual Meeting, Edinburgh, UK* (07/2008)

`Patterns on Growing Square Domains via Mode Interactions` (invited talk)
`Nilpotent Period-Doubling Bifurcations for Three-Cell Homogeneous Coupled Maps`
*AIMS' Seventh International Conference on Dyn. Systems, Diff. Equations and Applications, University of Texas at Arlington, TX* (05/2008)

`Pattern Formation on Growing Domains: A Case Study via Mode Interactions`
*Joint Mathematics Meeting, San Diego, CA* (01/2008) (invited talk)

`Coupled Cell Networks via " Multiarrow" Formalism` (lecture)
*Virginia Bioinformatics Institute, Blacksburg, VA* (9/2007)

`Patterns on Growing Square Domains via Mode Interactions`
*SIAM on Applied Dynamical Systems, Snowbird, UT* (05-06/2007)

`Pattern Formation in Reaction-Diffusion Systems` (invited seminar talk)
*Virginia Tech, ICAM, Blacksburg, VA* (04/2007)

`Pattern Formation in Reaction-Diffusion Systems` (invited colloquium talk)
*Virginia Tech, Department of Mathematics, Blacksburg, VA* (03/2007)

`Patterns on Growing Square Domains via Mode Interactions` (invited talk)
*SIAM Computational Sc. and Engineering, Costa Mesa, CA* (02/2007)

`Pattern Formation on Growing Square Domains` (invited seminar talk)
*Rice University, Geometry-Analysis Seminar, Houston, TX* (10/2006)

`Patterns on Growing Square Domains via Mode Interactions`
*SIAM Conference on Nonlinear Waves and Coherent Structures, Seattle, WA* (09/2006)

Patterns on Growing Square Domains via Mode Interactions
*SIAM Annual Meeting (AWM Workshop), Boston, MA* (07/2006)

Patterns on Growing Square Domains (invited talk)
*Center of Nonlinear Dynamics, University of Texas at Austin, San Antonio, TX* (04/2006)

Patterns on Growing Square Domains via Mode Interactions (invited talk)
*Laboratory of Biological Modelling, NIH, Bethesda, MD* (04/2006)

Patterns on Fixed and Growing Domains (invited colloquium talk)
*University of Victoria, Dept. of Mathematics and Statistics, Victoria, BC (Canada)* (03/2006)

Patterns on Growing Domains and ODEs with Symmetry (invited colloquium talk)
*Univ. of Alberta, Mathematical and Computational Sciences, Edmonton, AB (Canada)*(03/2006)

Patterns on Square Growing Domains via Mode Interactions (invited seminar talk)
*Los Alamos National Laboratory (T-7), Los Alamos, NM* (03/2006)

Patterns on Growing Square Domains via Mode Interactions
*Joint Mathematics Meetings 2006, San Antonio, TX* (01/2006)

Patterns on Growing Square Domains via Mode Interactions (invited seminar talk)
*University of Minnesota, Mathematics (Dynamical Systems Seminar), Twin Cities, MN* (11/2005)

Patterns on Growing Square Domains via Mode Interactions (invited talk)
*Patterns on Growing Domains*
*Isaac Newton Institute for Mathematical Sciences, Cambridge, UK* (11/2005)

Hopf Bifurcation from Relative Equilibria in Spherical Geometries (poster)
*Theoretical Aspects of Pattern Formation, Institute of Advanced Studies*
*University of Surrey, Guildford, UK* (09/2005)

Forced Symmetry Breaking for an SO(3) Group Orbit of a Rotating Wave on the Sphere
*SIAM Annual Meeting, New Orleans, LA* (07/2005)

Forced Symmetry Breaking for an SO(3) Group Orbit of a Rotating Wave on the Sphere
*CMS Summer Meeting, Waterloo, ON (Canada)* (06/2005)

Hopf Bifurcation from Rotating Waves on the Sphere
*SIAM Conference on Applications of Dynamical Systems, Snowbird, UT* (05/2005)

Coupled 60, *University of Houston, Houston, TX* (02/2005)

Transitions from Rotating Waves to Modulated Rotating Waves on the Sphere
*Young Mathematicians' Conference (The Fields Institute)* (invited talk)
McMaster University, Hamilton, ON (Canada) (01/2005)

Transitions from Rotating Waves to Modulated Rotating Waves on the Sphere
*CMS Winter Meeting, McGill University, Montreal, QUE (Canada)* (12/2004)

Spiral Waves on the Sphere: A Dynamical Systems Approach (invited seminar talk)
*University of Houston, Mathematics (Dynamical Systems Seminar), Houston, TX* (09/2004)

## SERVICE

Contributed session chair, SIAM NW06, Seattle (09/9-12/2006)

Colloquium co-organizer, Mathematics, Rice University (07/2006-12/2006)

Reviewer for Mathematical Reviews (2006-Present)

Referee for J. of Mathematical Biology (2006-Present); Applied Numerical Math. (2007); J. of Nonlinear Science (2007)

## PROFESSIONAL MEMBERSHIPS

Society of Industrial and Applied Mathematics (2004-present)

SIAM Group on Dynamical Systems (2004-present)

Society for Mathematical Biology (2006-present)

Association for Women in Mathematics (2004-present)

## TEACHING EXPERIENCE

**Visiting Assistant Professor**, Mathematics, Virginia Tech (01/2007-07/2008)

- `Multivariable Calculus` (Fall 2007)
- `Multivariable Calculus` (Spring 2007)

**Visiting G.C. Evans Instructor**, Mathematics, Rice University (07/2006-12/2006)

- `Ordinary Differential Equations` (Fall 2006)

**Visiting Assistant Professor**, Mathematics, University of Houston (2004-2006)

- `Ordinary Differential Equations` (Spring 2006)
- `Linear Algebra` (Fall 2004, Spring 2005)

**Graduate Teaching Assistant**, Mathematics & Statistics, Univ. of Ottawa (2000-2004)

Conducted weekly recitation classes; graded quizzes, exams and homework assignments; proctored exams for:

- `Introduction to Linear Algebra` (Winter 2003, Summer 2004)
- `Differential Equations` & `Numerical Methods` (Summer 2002, Winter and Fall 2004)
- `Mathematical Methods` II (Fall 2002)
- `Calculus III for Engineers` (Fall 2000, Fall 2001, Winter 2002)
- `Calculus and Matrix Algebra` (Winter 2001)
- `Analyse Mathematique I (in French)` (Winter 2002)

**Teacher**, School of Post and Telecommunications (1998-2000)

Taught Mathematics to middle and high school students (grades 5-12);
Attended pedagogical courses for teaching of Mathematics (10/1995-01/1996);
Achieved practice in teaching of Mathematics at G. Cosbuc National College, Cluj-Napoca (02/1996-06/1996)

**Teaching Assistant**, Babes-Bolyai University (1997-1999)

Conducted weekly solving sessions in `Mathematical Analysis` and `Multivariable Calculus`