

# CURRICULUM VITAE

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**Personal** Born: June 22, 1972  
Married, three children, US permanent resident

## Education

2000 – 2003 Postdoc University of Missouri at Columbia, Department of Mathematics  
1996 – 2000 MS, PhD The University of Memphis, Memphis, Tennessee  
Thesis: *Global well-posedness for a class of nonlinear dispersive equations*,  
Thesis Advisor: Dr. Jerome A. Goldstein  
1995 - 1996 MS Louisiana State University, Baton Rouge, Louisiana  
(transferred to University of Memphis in May 2006)  
1990 – 1995 BS University of Iasi, Romania (Diploma with Honors)  
Thesis: *Inertial manifolds for a class of partial differential equations*

## Professional Experience

2010 – present Associate Professor of Mathematics, University of Colorado at Colorado Springs  
2003 – 2010 Assistant Professor of Mathematics, University of Colorado at Colorado Springs  
2000 – 2003 Postdoctoral Fellow, Department of Mathematics, University of Missouri - Columbia,  
1996 – 2000 Research and Teaching Assistant, Department of Mathematics, University of Memphis  
1995 – 1996 Graduate Teaching Assistant, Department of Mathematics, Louisiana State University

## Publications

1. Radu C. Cascaval: “A Boussinesq model for pressure and flow velocity waves in arterial segments”, to appear in *Mathematics and Computers in Simulations*, 2010, 11 pages
2. Radu C. Cascaval, C. Travis Hunter: “Linear and nonlinear Schrödinger equations on simple networks”, in *Libertas Math.*, Vol 30 (2010), pp 85-98
3. Jerry L. Bona, Radu C. Cascaval: “Nonlinear dispersive waves on trees”, in *Canadian Applied Mathematics Quarterly*, Vol 16 (2008), No 1, pp 113–121
4. Radu C. Cascaval, Kethera A. Fogler, Gene D. Abrams, Robert L. Durham: “Evaluating the benefits of online archives for in-class students in Math courses”, in *J. of Asynchronous Learning Networks*, Vol 12 (2008), No 3, pp 113–121
5. Radu C. Cascaval, Fritz Gesztesy: “J-self-adjointness for a class of Dirac-type operators”, in *J. Math. Anal. Appl.* 294 (2004), pp 113–121
6. Radu C. Cascaval: “Local and global well-posedness for a class of nonlinear dispersive equation”, in *Advances in Differential Equations*, 9 (2004), no. 1/2, pp 85–132

7. Radu C. Cascaval, Fritz Gesztesy, Helge Holden, Yuri Latushkin: "Spectral analysis of Darboux transformations for the focusing NLS hierarchy", in *Journal d'Analyse Mathématique*, 93 (2004), pp 139-198
8. Radu C. Cascaval: "Variable coefficient Korteweg-de Vries equations and wave propagation in elastic tubes", in *Lecture Notes in Pure and Applied Math.*, 234, Marcel Dekker, 2003, pp 57–69
9. Radu C. Cascaval, Eugene C. Eckstein, Cicero L. Frota, Jerome A. Goldstein: "Fractional telegraph equations", *J. Math. Anal. Appl.* 275 (2002), pp 145-159
10. Radu C. Cascaval: "Global solutions for a class of dispersive equations", in "Differential Equations and Control Theory", S. Aizicovici, N. Pavel (ed.), *Lecture Notes in Pure and Applied Math.* 225, Marcel Dekker, 2001, pp 77–107
11. Radu C. Cascaval, Jerome A. Goldstein: "A semigroup approach to dispersive waves", in "Evolution Equations and Their Applications in Physical and Life Sciences", G. Lumer and L. Weis (ed.), *Lecture Notes in Pure and Appl. Math.* 215, Marcel Dekker, 2000, pp 225–234
12. Radu C. Cascaval: "Global Well-Posedness for a Class of Dispersive Equations", Ph.D. Thesis, University of Memphis, 2000
13. Radu C. Cascaval, Ioan I. Vrabie: "Periodic solutions for a class of nonlinear evolution equations", *Rev. Matematica Univ. Compl. Madrid* 7 (1994), no. 2, pp 325–338
14. Liviu I. Nicolaescu, Radu C. Cascaval: "Weaker characterization of the limit of a function at infinity", *Anal. St. Univ. "Al. I. Cuza" Iasi* XXXVI (1990), no. 4, pp 319–328

#### Other Publications and Scholarly Reports

1. "External Counterpulsation and Compartmental Models for Blood Flow", Colorado Institute of Technology Grant Report, December 2005, (with R. Carlson)
2. "Solitons Make Waves", UCCS Annual Research Report, Fiscal Year 2005, pp 16–23 (with S. Chakravarty)
3. "A Mathematical Model for the Human Arterial System", Proceedings of the First Biotechnology and Bioinformatics Symposium, September 2004 (with R. Carlson)
4. "Inertial Manifolds for a Class of Partial Differential Equations", Diploma Thesis, "Al. I. Cuza" University, Iasi, Romania, 1995 (in Romanian)

#### Awards

- CRCW Award 2009-2010: "Autoregulatory Control Mechanisms in the Cardiovascular System", Graduate School, UCCS
- CRCW Award 2007-2008: "Analysis of Kinematic Effects during Sustained Exercise on the Human Cardiovascular System", Graduate School, UCCS
- Presidents Teaching and Learning Collaborative 2006-2007, University of Colorado System, Co-PI
- SAAC Grant Award 2006-2007, Co-PI
- 2006 Service and Technology Development Award, EAS College, UCCS
- NSF Grant Award 2005-2006 (Co-PI), International Conference on Nonlinear Waves, Integrable Systems and Their Applications, June 4-8, 2005, UCCS and Boulder
- CRCW Award 2005-2006: "Mathematical Modeling of Blood Flow in the Human Arterial System", Graduate School, UCCS
- Colorado Institute of Technology Contract (Co-PI) "External Counterpulsation and Compartment Model for Blood Flow" January - December 2005
- AMS Travel Award, ICM 2002, Beijing, China, August 2002
- AMS Summer Research Grant, Mt. Holyoke College, June 2001
- NSF Travel Award, Mathematical Challenges of the 21st Century, UCLA, August 2000
- AMS Travel Award, NAS Colloquium on Nonlinear PDEs, Irvine, CA, January 1999

- Van Vleet Memorial Doctoral Research Fellowship, The Graduate School, University of Memphis (two consecutive years 1997–1999)
- Diploma with Honors, “Al. I. Cuza” University, Iasi, Romania, June 1995

### Research Presentations

- Mathematical Seminar Al. Myller Centennial Conference, June 2010
- Mountain Lion Research Days, UCCS, April 2010 (poster presentation)
- Dynamical Systems/Complex Networks seminar, CU – Boulder Applied Math Department, April 2010 (upcoming)
- Special Session on Numerical Solutions of Singular or Perturbed Partial Differential Equation Problems with Applications, AMS Sectional Meeting, Baylor, TX, October 16-18, 2009
- Special Session on Numerical Methods in Cardiovascular Problems, IMACS World Congress, Athens, GA, Aug 3-5, 2009
- REU Invited Lecture, Brigham Young University, Provo, UT, Jul 2009
- 1<sup>st</sup> Annual Mountain Lion Research Day, UCCS, Apr 3, 2009 (Poster)
- Mathematics Colloquium Series, UCCS, Apr 2009
- Numerical Analysis and Scientific Computing Seminar, Emory University, Mar 27, 2009
- Special Session on Nonlinear Waves, 6<sup>th</sup> IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, Athens, GA, Mar 23-26, 2009
- Mathematics Colloquium Series, UCCS, Feb 2008
- International Workshop on “Biomedical Modeling and Cardiovascular-Respiratory Control: Theory and Practice”, Graz, Austria, Aug 2007
- Mathematics Colloquium Series, UCCS, Apr 2007
- President’s Teaching and Learning Collaborative, University of Colorado at Denver, Dec 2006
- Dynamical Systems Weekend, University of Missouri at Columbia, May 2006
- Applied Analysis Seminar, University of Memphis, May 2006
- Computational Math Seminar, University of Colorado at Boulder, Apr 2005
- SIAM meeting on “Nonlinear Waves”, University of Central Florida, Orlando, Oct 2004
- Mathematics Colloquium Series, UCCS, Oct 2004
- First Biotechnology and Bioinformatics Symposium, BIOT 04, UCCS, Sep 2004
- Special Session Talks at the Fifth AIMS International Conference on Dynamical Systems and Differential Equations, California State Polytechnic University, Pomona, Jun 2004
- Applied Math Seminar, Colorado State University, Fort Collins, May 4, 2004
- Special Session on Current Topics in Optical Communications, AMS Sectional Meeting, UNC Chapel Hill, Oct 2003
- Mathematics Colloquium Series, UCCS, Oct 2003
- Special Session during the 3rd IMACS International Conference: “Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory”, Athens, GA, Apr 2003
- Contributed Talk at the Joint Mathematics Meetings, Baltimore, MD, Jan 2003
- Special Session Talk at the 22nd Annual Southeastern-Atlantic Regional Conference on Differential Equations, University of Tennessee, Knoxville, TN, Oct 2002
- International Congress of Mathematicians, ICM 2002, Beijing, China, Aug 2002
- International Conference, “Cardiovascular System: from Mathematical Modeling to Clinical Applications”, MOX, Milano, Italy, Mar 2002
- Biomathematics Seminar, Vanderbilt University, Mar 2002
- Applied Mathematics Seminar, Tulane University, Mar 2002
- Special Session Talk at the Joint Mathematics Meetings, San Diego, CA, Jan 2002
- Invited Lecture, “Soliton Equations. Applications and Theory”, University of Colorado at Colorado Springs, Aug 2001

- Invited Lecture in the Special Session on Evolution Equations and Semigroups, AMS Sectional Meeting, Columbia, SC, Mar 2001
- Dynamical Systems Seminar, Department of Mathematics, Georgia Tech, Atlanta, Mar 2001;
- International Conference, “Contemporary Challenges in Applied Fluid Mechanics”, Capo Miseno, Italy, Jun 2001
- TULKA Conference, “Semigroups and Evolution Equations”, Heinrich-Fabri-Institute, Blaubeuren, Germany, Jun 2001 (poster presentation)
- Joint Mathematics Meetings, Washington, DC, Jan 2000
- 19th Annual Southeastern-Atlantic Regional Conference on Differential Equations, SEARCDE 99, University of Richmond, Oct 1999
- AMS Central Section Meeting, University of Texas at Austin, Oct 1999
- International Conference on Nonlinear Partial Differential Equations and Applications, Northwestern University, Evanston, IL, Mar 1999
- Third Midwest-Southeastern Regional Conference in Differential Equations, Vanderbilt University, Nashville, TN, Nov 1997
- Colloquium Talk, Department of Mathematics, Tulane University, New Orleans, LA, Oct 1997

### **Other Conferences and Workshops**

- 6<sup>th</sup> SIAM Front Range Student Research Conference, Denver, CO , March 6, 2010
- President's Teaching Scholars Program Sponsored Spring Conference on Teaching and Learning, UC Denver, March 5, 2010
- International Conference on Chaos and Nonlinear Dynamics, “Dynamic Days 2010”, Northwestern Institute on Complex Systems, Evanston, IL, Jan 2010
- Workshop on Mathematical Biology and Numerical Analysis, Athens, GA, August 1-2, 2009
- SIAM Annual Meeting, Denver, CO, July 2009
- 5<sup>th</sup> SIAM Front Range Student Research Conference, Denver, CO , March 2009
- Pikes Peak Research Undergraduate Mathematics Student Conference, UCCS, February
- SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, May 2007
- International Conference on Nonlinear Waves, Integrable Systems and Their Applications, UCCS and CU Boulder, June 2005 (co-organizer)
- Front Range Applied Mathematics Student Research Conference, 2005 - 2007 (co-organizer)
- AMS Sectional Meeting, University of Colorado - Boulder, October 2003
- ”Emerging Applications of the Nonlinear Schrodinger Equations”, IPAM, UCLA, Feb 2003
- AMS Summer Research Conference on “The Legacy of Inverse Scattering Transform in Nonlinear Wave Propagation”, Mt. Holyoke College, MA, June 2001
- Workshop on Mathematical Biology, Joint Mathematics Meetings, New Orleans, LA, 2001
- International Conference on Nonlinear Dispersive Equations and Harmonic Analysis, Stanford University, February 2000
- National Academy of Sciences Colloquium on Nonlinear PDEs, Irvine, CA, January 1999
- Third America Conference on Differential Equations and Nonlinear Analysis, Georgia Institute of Technology, Atlanta, GA, September 1998
- Joint Mathematics Meetings, Baltimore, MD, January 1998
- Mini-semester on Nonlinear Analysis, Stefan Banach International Mathematical Center, Warsaw, Poland, November 1994

## Teaching Experience

University of Colorado at Colorado Springs:

(All courses starting with Spring 2006 have been archived and are available on the web: <http://www.uccs.edu/math/video>.  
Math 235 had also a MathOnline section during each semester I taught it, with the largest online enrollment – 25 students)

- Math 467/567 – Scientific Computation (Spring 2010), 14 students
- Math 448/548 - Mathematical Modeling (Spring 2004 – 2007, 2010)  
(Capstone course for all Math Majors, 30-40 students)
- Math 447/547 - Methods in Applied Mathematics (Fall 2003), 12 students
- Math 443/543 – Ordinary Differential Equations (Spring 2009), 10 students
- Math 442/542 – Optimization (Summer 2008), 15 students
- Math 413/513 - Linear Algebra I (Fall 2006, Fall 2007), 20 students
- Math 340 - Introduction to Differential Equations (Fall 2004), 50 students
- Math 313 – Intro to Linear Algebra (Fall 2008, 2009), 40 students
- Math 265 – Intro to Computational Math (Spring 2009, 2010), 14 students
- Math 235 - Calculus III (Fall 2004, Fall 2005, Fall 2006, Spring 2007), 30-60 students
- Math 136 – Calculus II (Spring 2008) 40 students
- Math 135 - Calculus I (Fall 2003, Spring 2004), 50 students

University of Missouri at Columbia:

- Differential Equations (Math 4100) - 25 students
- Calculus III (Math 2300) - 50 students
- Calculus II (Math 1700) - 50 students
- Finite Mathematics (Math 1300) - 50 students
- Precalculus (Math 1160) – Course coordinator, 150 students)

University of Memphis:

- Differential Equations – 30 students
- Calculus III – 50 students
- Calculus II – 80 students

## Professional Organizations

AMS – American Mathematical Society

MAA – Mathematical Association of America

SIAM – Society for Industrial and Applied Mathematics

SMB – Society for Mathematical Biology

## Service

- UCCS Campus Service
  - Member of ITAC (Information Technology Advisory Committee) @ UCCS, 2008-2009
  - Co-founder and Co-organizer of the Front Range Applied Mathematics Student Research Conference, CU Denver, March 2005, 2006, 2007, 2009
  - Co-organizer of the NSF-sponsored Soliton Conference, UCCS/Boulder, June 4-8, 2005; developed the complete online video proceedings of the conference (<http://www.uccs.edu/math/vidarchive.html>)
  - Member of the organizing committee and program committee for the First Biotechnology and Bioinformatics Symposium, held September 24, 2004 at Penrose House

- EAS College Service
  - PhD Thesis Committee: Mark Takatz, Electrical and Computer Engineering, 2008
  - Master’s Thesis Committee: Jon Furlong, Mechanical Engineering, 2006
  - EAS College Web Coordinator (Aug 1, 2004 - Aug 15, 2005) – redesigned the EAS College Website and implemented a new maintenance scheme.
  - Engineering Challenge Day, February 2004
  
- Math Department Service
  - Initiator and Coordinator of Video Archiving of Math Lectures on the Web (<http://www.uccs.edu/math/video/>), June 2005 – Aug 2007
  - Math Club Faculty Advisor (Aug 2003 - 2006)
  - SIAM Student Chapter Faculty Advisor and MAA Faculty Liaison
  - Mathematical and Interdisciplinary Contest in Modeling (COMAP) UCCS Teams Advisor, 2004 - 2007
  - Designer and Webmaster of the Math Department Website (Aug 2003 - 2007)
  - Tech, Web and Library Committee (Aug 2003 - 2007)
  - Undergraduate Committee Member (Aug 2005 – 2007)
  - Math Colloquium Committee Chair, Aug 2008 – present
  - Graduate Committee Member, Aug 2008 - present
  - Math Club Committee Chair (Aug 2003 - 2006)
  
- Math Community Service
  - Reviewer for the textbook “Mathematical Modeling”, 3<sup>rd</sup> Edition, by Mark Meerschaert
  - Refereed for
    - Differential and Integral Equations (1 paper)
    - Journal of Evolution Equations (1 paper)
    - Proceedings of the American Mathematical Society (1 paper)
    - Applicable Analysis (3 papers)
    - Journal of Mathematical Analysis and Applications (1 paper)
    - Journal of Physics A (2 papers)
    - International Journal of Biomathematics (1 paper)
    - Journal of Asynchronous Learning Networks (1 paper)
    - Mathematical Methods in the Applied Sciences (1 paper)
    - Proceedings of the Royal Society A (1 paper)