

August 14, 2015

Curriculum Vita
of
BERNARD DECONINCK
Professor

DEPARTMENT OF APPLIED MATHEMATICS
UNIVERSITY of WASHINGTON
CAMPUS BOX 353925
SEATTLE, WA 98195

Office: (206) 543-6069
Cell: (206) 617-5170
Fax: (206) 685-1440
WWW: <http://depts.washington.edu/bdecon/bernard/>

PERSONAL DATA

Present Address:

Residence: 4420 Eastern Ave N
Seattle, WA 98103
Office: Department of Applied Mathematics
University of Washington
Seattle, WA 98195-2420
E-mail: BERNARD@AMATH.WASHINGTON.EDU

Citizenship: Belgium

Visa Status: Permanent Resident

Languages: Dutch, English, French and some German

AREAS OF INTEREST

General: Applied Mathematics, Mathematical Physics, Water Waves,
Partial Differential Equations, Dynamical Systems
Emphasis: Nonlinear Waves, Soliton Theory, Fluid Mechanics,
Hamiltonian Systems, Stability, Bose-Einstein Condensates,
Riemann Surfaces, Symbolical and Numerical Computation,
Lie Algebras, Semi-Discrete Systems, Asymptotics,
Theta Functions.

CURRENT ACTIVITY Professor of Applied Mathematics, University of Washington
Chair, Applied Mathematics, University of Washington

1 Education

- Ph.D. in Applied Mathematics, University of Colorado, Boulder, 5/1998
Thesis on “The initial value problem for quasiperiodic solutions of the KP equation”
- M.S. in Applied Mathematics, University of Colorado, Boulder, 12/1995
- Diploma in Electrical Engineering (Physics Option), University of Ghent, Ghent, 6/1993
Thesis on Nonlinear Plasma Waves

2 Employment History

2.1 Present Position

- Chair, Department of Applied Mathematics, University of Washington, Seattle, Washington, from March 2015.
- Professor, Department of Applied Mathematics, University of Washington, Seattle, Washington, from September 2015.
- Adjunct Professor of Mathematics, Department of Mathematics, University of Washington, Seattle, Washington, from September 2012.

2.2 Previous Employment

- Boeing Professor of Applied Mathematics, Department of Applied Mathematics, University of Washington, Seattle, Washington, September 2012 - September 2015.
- Professor, Department of Applied Mathematics, University of Washington, Seattle, Washington, from September 2011 to September 2012.
- Associate Professor, Department of Applied Mathematics, University of Washington, Seattle, Washington, from September 2006 to September 2011.
- Assistant Professor, Department of Applied Mathematics, University of Washington, Seattle, Washington, from September 2003 to September 2006.
- Assistant Professor, Department of Mathematics, Colorado State University, Fort Collins, Colorado, from August 2001 to August 2003.
- Research Associate, NSF Postdoctoral Fellow, Department of Applied Mathematics, University of Washington, Seattle, Washington, from July 2000 to August 2001
- Research Associate, VIGRE Postdoctoral Fellow, Department of Applied Mathematics, University of Washington, Seattle, Washington, from September 1999 to June 2000
- Visiting Scientist, Department of Applied Mathematics, University of Colorado at Boulder, Boulder, Colorado, from June 1999 until August 1999
- Postdoctoral Fellow, Mathematical Sciences Research Institute (MSRI), Berkeley, California, from August 1998 until June 1999.
- Instructor, Department in Applied Mathematics, University of Colorado at Boulder, Boulder, Colorado, from January 1997 until May 1997.
- Research Assistant, Department in Applied Mathematics, University of Colorado at Boulder, Boulder, Colorado, from August 1996 until December 1996; from May 1997 until August 1998.
- Summer Instructor, Program in Applied Mathematics, University of Colorado at Boulder, Boulder, Colorado, June-July, 1996.

- Research Assistant, Program in Applied Mathematics, University of Colorado at Boulder, Boulder, Colorado, from June 1995 until August 1995; from January 1996 until May 1996.
- Teaching Assistant, Program in Applied Mathematics, University of Colorado at Boulder, Boulder, Colorado, from August 1994 until May, 1995; from August 1995 until December 1995.
- Teaching Assistant, Department of Physics, University of Alberta, Edmonton, Alberta, Canada, from August 1993 until December 1993.

3 Professional Societies

Membership:

- Member of AMS (American Mathematical Society)
- Member of SIAM (Society for Industrial and Applied Mathematics)
- Member of SIAG-NLW (SIAM activity group on Nonlinear Waves and Coherent Structures), SIAG-DS (SIAM activity group on Dynamical Systems), SIAG-AG (SIAM activity group on Algebraic Geometry), SIAG-OP-SF (SIAM activity group on Orthogonal Polynomials and Special Functions).

Service:

- SIAG-NLW (SIAM activity group on Nonlinear Waves and Coherent Structures): Program Director 1/2011-12/2012

4 Professional Activities and Services

Conference and Workshop Organizer:

29. Session co-organizer, AMS-MAA Joint Mathematics Meeting, Session on “Water waves” (16 talks), *Seattle, WA*, January 6-9, 2016.
28. Member, Organizing Committee, ICERM Semester Program on “Singularities and Waves in Incompressible Fluids”, ICERM, Providence, RI, January 30-May 5, 2017.
27. Member, Scientific Program Committee, Ninth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, *University of Georgia, Athens, GA*, March 25-28, 2015.
26. Session co-organizer, SIAM-SIAG conference on Nonlinear Waves and Coherent Structures, Session on “Boundary-value problems for linear and nonlinear integrable problems” (12 talks), *Cambridge, UK*, August 11–14, 2014.
25. Session co-organizer, Tenth AIMS Conference on Dynamical Systems, Differential Equations and Applications, Session on “Boundary-value problems for linear and nonlinear integrable problems (8 talks)”, *Madrid, Spain*, July 7–11, 2014.
24. Session co-organizer, Eighth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, Session on “Water waves” (16 talks), *University of Georgia, Athens, GA*, March 25-28, 2013.
23. Chair, Scientific Program Committee, Eighth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, *University of Georgia, Athens, GA*, March 25-28, 2013.
22. Principal Organizer, PIMS-NSF Workshop on Stability of Nonlinear Waves (3 mini-courses), *University of Washington, Seattle*, June 11-12, 2012.

21. Co-chair and Organizer, 5th SIAM-SIAG conference on Nonlinear Waves and Coherent Structures, *Seattle, WA*, June 13–16, 2012.
20. Session co-organizer, SIAM-SIAG conference on Analysis of Partial Differential Equations, Session on “Analysis and numerics for the Euler water wave equations” (10 talks), *San Diego, CA*, November 14–17, 2010.
19. Session co-organizer, 1st SIAM-SIAG conference on Applied Algebraic Geometry, Session on “Riemann Theta Functions” (9 talks), *Raleigh, NC*, October 6–9, 2011.
18. Minisymposium organizer, Seventh International Congress on Industrial and Applied Mathematics, ICIAM 2011, (Minisymposia on “Modern Developments in Integrable Systems” (8 speakers)), *Vancouver, Canada*, July 18-22, 2011.
17. Co-organizer, International Conference on Mathematical and Numerical Aspects of Wave Propagation (WAVES2011; 250 participants), *Vancouver, British Columbia*, July 25-29, 2011.
16. Co-organizer, BIRS workshop on “Localized Multi-Dimensional Patterns in Dissipative Systems: Theory, Modeling, and Experiments” (42 participants), *em Banff International Research Station, Banff, Alberta*, July 24-29, 2011.
15. Member of the Scientific Program Committee, 7th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, *University of Georgia, Athens, GA*, March 2011.
14. Session co-organizer, 4th SIAM-SIAG conference on Nonlinear Waves and Coherent Structures, Session on “Mathematical Models of Water Waves” (16 talks), *Philadelphia, PA*, August 16–19, 2010.
13. Session co-organizer, 2009 Fall Eastern Section Meeting, Session on “Nonlinear Water Waves” (18 talks), *Penn State University, University Park, PA*, October 24-25, 2009.
12. Workshop co-organizer, 6th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, (Workshop on Numerical Methods for Nonlinear Wave Equations (three two-hour tutorials)) *University of Georgia, Athens, GA*, March 23-26, 2009.
11. Member of the Scientific Program Committee, 6th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, *University of Georgia, Athens, GA*, March 23-26, 2009.
10. Session co-organizer, 2008 Fall Western Section Meeting, Session on “Nonlinear waves and coherent structures” (12 talks), *Vancouver, Canada*, October 4-5, 2008.
9. Session co-organizer, 3rd SIAM-SIAG conference on Nonlinear Waves and Coherent Structures, Session on “Stability and Patterns in Water Waves” (16 talks), *Università di Roma “La Sapienza”, Rome, Italy*, July 21-24, 2008.
8. Member of the Scientific Program Committee, 5th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, *University of Georgia, Athens, GA*, April 16-19, 2007.
7. Principal Organizer, PIMS-VIGRE Workshop on Stability of Nonlinear Waves (4 mini-courses; 100+ participants), *University of Washington, Seattle*, September 6-8, 2006.
6. Organizing Committee, 2nd SIAM-SIAG conference on Nonlinear Waves and Coherent Structures (7 plenary talks, 46 mini-symposia (4 talks each), 44 contributed talks, 17 posters, 300+ participants), *University of Washington, Seattle*, September 9-12, 2006.
5. Session organizer, 4th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, (Session on “Symbolical and Numerical Computation for Differential Equations” (7 speakers)), *University of Georgia, Athens, GA*, April 11-14, 2005.

4. Co-principal organizer, Workshop on Free Surface Water Waves, (35 talks, poster session, 52 participants), *Fields Institute for the Mathematical Sciences, Toronto, CA*, June 14-18, 2004. Also session chair for the session on Kinetic Transport Models.
3. Session organizer, Joint Central and Western Section AMS Meeting, (Session on “Nonlinear Waves” (20 speakers)), *University of Colorado, Boulder*, October 2-4, 2003.
2. Minisymposium organizer, Fifth International Congress on Industrial and Applied Mathematics, ICIAM 2003, (Minisymposia on “Surface waves in water of arbitrary depth” (4 speakers) and “Symbolic computation in the theory of integrable systems” (4 speakers)), *Sydney, Australia*, July 7-11, 2003.
1. Principal organizer, Los Alamos Days at Colorado 1998: Complex Systems and Nonlinear Phenomena (41 talks, 15 posters), *University of Colorado, Boulder*, April 30-May 2, 1998.

Editorial service:

6. Associate editor, Digital Library of Mathematical Functions, 5/5/2014–
5. Member, Editorial Board, Applied Mathematics Letters, 1/2012–
4. Member, Editorial Board, Classics in Applied Mathematics (SIAM book series), 1/1/2011–
3. Member, Editorial Board, Advances in Mathematical Physics, 6/2008–2009
2. Member, Advisory Board, Journal of Physics A, 3/2006–8/2012
1. Member, Editorial Board, International Journal of Applied Mathematical Analysis and Applications, 8/2005–2009

External Referee for habilitation cases at other institutions

External reviewer for tenure cases at other institutions

Referee for the following organizations:

- Agence Nationale de la Recherche (France): reviewer for grant proposals
- Austrian Science Fund: reviewer for grant proposals
- Banff International Research Station (BIRS): referee for workshop proposal
- Digital Library of Mathematical Functions: referee for several chapters
- Mathematical Reviews
- National Science Foundation: reviewer for grant proposals
- Natural Sciences and Engineering Research Council of Canada (NSERC): reviewer for grant proposals

Referee for the following publishers:

- Cambridge University Press
- CRC Press
- Springer Graduate Texts in Mathematics

Referee for the following journals:

- Applied Mathematical Modeling
- Applied Mathematics and Computation
- Applied Mathematics Letters

- Central European Journal of Physics
- Complexity Journal
- Computational Methods and Function Theory
- Computer Physics Communications
- Discrete and Continuous Dynamical Systems B
- Dynamics of Continuous, Discrete and Impulsive Systems
- European Journal of Applied Mathematics
- International Journal of Physical Sciences
- European Physics Letters
- International Journal of Computer Mathematics
- International Journal of Engineering Science
- International Journal of Nonlinear Sciences and Numerical Simulation
- International Symposium on Symbolic and Algebraic Computation
- Japan Journal of Industrial and Applied Mathematics
- Journal of Applied Mathematics
- Journal of Computational Physics
- Journal of Fluid Mechanics
- Journal of Inverse Problems
- Journal of the London Mathematical Society
- Journal of Mathematical Analysis and Applications
- Journal of Mathematical Physics
- Journal of Physics A
- Journal of Physics B
- Journal of Nonlinear Science
- Mathematics and Computers in Simulation
- Mathematics of Computation
- Nonlinearity
- Pacific Journal of Mathematics
- Physica A
- Physica D
- Physica Scripta
- Physical Review E
- Proceedings of the AMS

- Proceedings of the Royal Society (London)
- Physics Letters A
- Quarterly of Applied Mathematics
- SIAM Journal on Applied Dynamical Systems
- SIAM Journal of Applied Mathematics
- SIAM Journal of Mathematical Analysis
- SIAM Journal on Numerical Analysis
- SIAM Review
- Studies in Applied Mathematics
- Wave Motion

Departmental service

10. Chair, March 2015-
9. Member, Curriculum Committee, Winter 2013-.
8. Member, PCE and EDGE funds Oversight Committee, Autumn 2012-March 2015.
7. Coordinator for the Special Topics in Applied Mathematics Journal Club, Department of Applied Mathematics, University of Washington, Fall 2011-Spring 2013.
6. Coordinator for the Mathematical Methods Journal Club, Department of Applied Mathematics, University of Washington, Fall 2010-.
5. Member, Computational Finance program Oversight Committee, Autumn 2010-Autumn 2012.
4. Graduate Program Coordinator, Department of Applied Mathematics, University of Washington, Summer 2007-Summer 2014.
3. Coordinator for the Departmental Seminar, Department of Applied Mathematics, University of Washington, Spring 2007.
2. Coordinator for the Departmental Seminar, Department of Applied Mathematics, University of Washington, Winter 2007.
1. Coordinator for the Nonlinear Waves Journal Club, Department of Applied Mathematics, University of Washington, Fall 2003-Spring 2009.

Committee member

7. University Disciplinary Committee, University of Washington. Winter 2009-Autumn 2009.
6. Search Committee, Department of Applied Mathematics, University of Washington. Fall 2007-Spring 2008.
5. Chair Search Committee, Department of Applied Mathematics, University of Washington, Winter 2007.
4. Search Committee, Department of Applied Mathematics, University of Washington. Fall 2006-Spring 2007.
3. Computing Committee, Department of Applied Mathematics, University of Washington. Fall 2003-Summer 2007.

2. Chair, Calculus Book Committee, Department of Mathematics, Colorado State University. Fall 2002-Spring 2003.
1. Undergraduate Committee, Department of Mathematics, Colorado State University. Fall 2001-Summer 2003.

Undergraduate advisor to the following students at Colorado State University:

- Brandon Lee Horii (Fall 2002 – Spring 2003)
- Cara Carbone (Fall 2002 – Spring 2003)
- Sarah Brosseau (Fall 2001 – Summer 2003)
- Philippe Head (Fall 2002 – Spring 2003)
- Dennis Kuznetsov (Fall 2001 – Spring 2003)
- Margret Larsson (Fall 2002 – Spring 2003)
- Shohnna Mae McAlpin (Spring 2002 – Summer 2002)
- Nikky Lee Schave (Spring 2002 – Spring 2003)
- Emily Turner (Fall 2001 – Spring 2003)

Outreach

1. Coordinator of the “Mathematical Sciences Challenge of the Week”: every week a new problem is posed to the university community at large. Students can win a prize for a correct answer. The prize is provided by a local sponsor. This project is coordinated under VIGRE by the three mathematical sciences departments. The Challenge of the Week website receives an average of 80 hits per day (Academic year 2005-2006 and 2006-2007).

5 Teaching Experience

- at the University of Washington, Seattle: (with adjusted instructor evaluations/5.0)
 - AMATH 575: Dynamical systems (Spring Quarter 2015; 4.8)
 - AMATH 573: Nonlinear waves and solitons (Autumn Quarter 2014; 5.1)
 - AMATH 569: Partial differential equations (Spring Quarter 2014; 5.0)
 - AMATH 353: Fourier analysis and PDEs (Spring Quarter 2014; 4.6)
 - AMATH 568: Advanced methods for ODEs (Winter Quarter 2014; 4.9)
 - AMATH 575: Dynamical systems (Spring Quarter 2013; 4.9)
 - AMATH 573: Nonlinear waves and solitons (Autumn Quarter 2012; 5.0)
 - AMATH 403: Methods for partial differential equations (Spring Quarter 2012; 4.8)
 - AMATH 503: Methods for partial differential equations (Spring Quarter 2012; 4.9)
 - AMATH 575: Dynamical systems (Spring Quarter 2011; 4.6)
 - AMATH 573: Nonlinear waves and solitons (Autumn Quarter 2010; 4.9)
 - AMATH 575: Dynamical systems (Spring Quarter 2009; 5.1)
 - AMATH 573: Nonlinear waves and solitons (Autumn Quarter 2008; 4.6)
 - AMATH 569: Partial differential equations (Spring Quarter 2008; 4.7)
 - AMATH 402: Dynamical Systems and Chaos (Winter Quarter 2008; 4.9)
 - AMATH 567: Complex variables (Autumn Quarter 2007; 4.9)
 - AMATH 575: Dynamical systems (Spring Quarter 2007; 5.0)
 - AMATH 569: Partial differential equations (Spring Quarter 2007; 4.7)
 - AMATH 573: Nonlinear waves and solitons (Autumn Quarter 2006; 4.8)

- AMATH 569: Partial differential equations (Spring Quarter 2006; 5.0)
- AMATH 402: Methods of Applied Mathematics 2 (Winter Quarter 2006; 5.1)
- AMATH 575: Dynamical systems (Spring Quarter 2005; 4.9)
- AMATH 569: Partial differential equations (Spring Quarter 2005; 4.8)
- AMATH 573: Nonlinear waves and solitons (Autumn Quarter 2004; 4.7)
- AMATH 569: Partial differential equations (Spring Quarter 2004; 4.4)
- AMATH 351: Differential equations (Spring Quarter 2004; 4.4)
- AMATH 351: Differential equations (Autumn Quarter 2003; 5.1)

- at Colorado State University, Fort Collins:

- MATH 340: Introduction to ordinary differential equations (Course Coordinator, Spring 2003)
- MATH 519: Complex Variables I (Fall 2002)
- MATH 340: Introduction to ordinary differential equations (Course Coordinator, Fall 2002)
- MATH 340: Introduction to ordinary differential equations (Fall 2002)
- MATH 693: Nonlinear waves: an introduction to solitons (Spring 2002)
- MATH 340: Introduction to ordinary differential equations (Fall 2001, two sections)

- at the University of Washington, Seattle:

- AMATH 351: Differential equations (Spring Quarter 2000; 4.6)
- AMATH 351: Differential equations (Winter Quarter 2000; 4.9)

- at the University of Colorado at Boulder:

- APPM 1350: Calculus 1 for engineers (Spring 1997)
- APPM 2360: Differential equations and linear algebra (Summer 1996)

- as a teaching assistant at the University of Colorado at Boulder:

- APPM 2360: Differential equations and linear algebra (Fall 1996)
- APPM 2360: Differential equations and linear algebra (Spring 1995)
- APPM 1350: Calculus I (Fall 1994)

- as a lab instructor at the University of Alberta:

- Phys 100: Physics I: mechanics (Fall 1993)

6 Students

6.1 Graduate Students

13. Meghana Velagar, Department of Applied Mathematics, University of Washington; *Ph. D.*; Winter 2015 -

12. Jeremy Upsal, Department of Applied Mathematics, University of Washington; *Ph. D.*; Autumn 2014 -
11. Benjamin Segal, Department of Applied Mathematics, University of Washington; *Ph. D.*; Autumn 2012 -
10. Natalie Sheils, Department of Applied Mathematics, University of Washington; *Ph. D.*; Autumn 2010 - Summer 2015. Thesis: Interface problems using the Fokas method
9. Chris Swierczewski, Department of Applied Mathematics, University of Washington; *Ph. D.*; Summer 2010 -
8. Olga Trichtchenko, Department of Applied Mathematics, University of Washington; *Ph. D.*; Winter 2010 - Autumn 2014. Thesis: On the instability of water waves with surface tension
7. Vishal Vasan, Department of Applied Mathematics, University of Washington; *Ph. D.*; Winter 2009 - Spring 2012. Thesis: Some boundary-value problems for water waves
6. Thomas Trogdon, Department of Applied Mathematics, University of Washington; *Ph. D.*; Winter 2009 - Summer 2013. Thesis: Riemann-Hilbert problems, their numerical solution and the computation of nonlinear special functions
5. David Lovit, Department of Applied Mathematics, University of Washington; *Ph. D.*; Spring 2007 - Winter 2009
4. Chris Curtis, Department of Applied Mathematics, University of Washington; *Ph. D.*; Autumn 2006 - Spring 2009. Thesis: Exact and approximate methods for the computation of the spectral stability of traveling-wave solutions
3. Katie Oliveras, Department of Applied Mathematics, University of Washington; *Ph. D.*; Winter 2005 - Summer 2009. Thesis: Stability of periodic surface gravity water waves
2. Michael A. Nivala, Department of Applied Mathematics, University of Washington; *Ph. D.*; Autumn 2004 - Autumn 2009. Thesis: Nonlinear stability in integrable Hamiltonian systems
1. Matthew S. Patterson, Department of Applied Mathematics, University of Washington; *Ph. D.*; Autumn 2003 - Summer 2007. Thesis: Computing the Abel map and the Riemann constant vector

6.2 Undergraduate Students

12. Dylan L. Wilson, ACMS and Mathematics, University of Washington; *Undergraduate Research Experience*: The instability of stationary solutions of the focusing NLS equation; Winter 2009-Spring 2009.
11. Brent Sandona, Computer Science and Engineering, University of Washington; *Undergraduate Research Experience*: Computing spectra of linear operators; Autumn 2007-Spring 2010.
10. Anennya Veeraraghavan, Computer Science and Engineering/ACMS, University of Washington; *Undergraduate Research Experience*: Computing spectra of linear operators; Spring 2007-Spring 2010.
9. Danae Delacruz, ACMS, University of Washington; *Undergraduate Research Experience*: Computing spectra of linear operators; Spring 2007-Autumn 2008.
8. Mark Johnson, ACMS, University of Washington; *Undergraduate Research Experience*: Computing spectra of linear operators; Spring 2007-Summer 2007.
7. Nate Bottman, ACMS, Mathematics and Physics, University of Washington; *Undergraduate Research Experience*: Spectra of one-dimensional linearized NLS operators; Winter 2006-Spring 2010. Continued to graduate school at MIT. Also the recipient of an NSF Graduate Fellowship, and numerous other awards.
6. Diana Widjaja, ACMS and Technical Communication, University of Washington; *Undergraduate Research Experience*: A manual for SpectrUW; Fall 2005-Spring 2006; Spring 2007

5. Firat Kiyak, Computer Science and Engineering, University of Washington; *Undergraduate Research Experience*: Computing spectra of linear operators; Fall 2004-Spring 2007. Continued to graduate school in Computer Science, University of Illinois
4. Gauri Sudame, Department of Mathematics, University of Washington; *Independent Reading*: Nonlinear Waves; Winter 2004.
3. Michael Nivala, Department of Mathematics, University of Washington; *Undergraduate Research experience*: Symbolic computation of conserved quantities using scaling properties; Fall 2003 - Summer 2004. Continued to graduate school in Applied Mathematics, University of Washington
2. Matthew S. Patterson, Department of Applied Mathematics, University of Washington; *Undergraduate Research experience*: Symbolic computation for Riemann surfaces and Riemann theta functions; Winter 2000 - Spring 2001. Continued to graduate school in Applied Mathematics, University of Washington
1. Brandon W. Warner, Department of Applied Mathematics, University of Washington; *Undergraduate Research experience*: Stability of solutions of the vector NLS equation with periodic potential; Winter 2001 - Spring 2001.

6.3 Member of Masters Committee

1. Bill Yuanxun, Department of Mathematics, Simon Fraser University; Summer 2012 (advisor: David Muraki)
1. Jutta Bikowski, Department of Mathematics, Colorado State University; Fall 2002 – Summer 2003 (advisor: Jennifer Mueller)

6.4 Member of Ph.D Committee

21. Yian Ma, Department of Applied Mathematics, University of Washington; Spring 2015– (advisor: Hong Qian)
20. Marc Jaffrey, Department of Geological Sciences, University of Washington; Autumn 2012 - (advisor: Bernard Hallet)
19. Christopher Swierczewski, Department of Applied Mathematics, University of Washington; Winter 2014 - (Chair)
18. Natalie Sheils, Department of Applied Mathematics, University of Washington; Autumn 2013 - (Chair)
17. Olga Trichtchenko, Department of Applied Mathematics, University of Washington; Autumn 2012 - Autumn 2014 (Chair)
16. Yu Hu, Department of Applied Mathematics, University of Washington; Spring 2012 - Spring 2014 (advisor: Eric Shea-Brown)
15. Natasha Cayco-Gajic, Department of Applied Mathematics, University of Washington; Spring 2012 - (advisor: Eric Shea-Brown)
14. Thomas Trogdon, Department of Applied Mathematics, University of Washington; Spring 2011 - Spring 2013 (Chair)
13. Vishal Vasan, Department of Applied Mathematics, University of Washington; Winter 2011 - Spring 2012 (Chair)
12. Guillaume Lajoie, Department of Applied Mathematics, University of Washington; Summer 2010 - Autumn 2013(advisor: Eric Shea-Brown)
11. Matthew Williams, Department of Applied Mathematics, University of Washington; Spring 2009 - Spring 2012(advisor: Nathan Kutz)

10. Joshua Jacobs, Department of Applied Mathematics, University of Washington; Spring 2008 - Spring 2012 (advisor: Marie-Pascale Lelong)
9. David Ketcheson, Department of Applied Mathematics, University of Washington; Autumn 2006 -Spring 2009 (advisor: Randy J. Leveque)
8. Michael A. Nivala, Department of Applied Mathematics, University of Washington; Autumn 2006 - Autumn 2009 (Chair)
7. Christopher W. Curtis, Department of Applied Mathematics, University of Washington; Autumn 2005 -Spring 2009 (Chair)
6. Christine L. Lind, Department of Applied Mathematics, University of Washington; Summer 2005 - (advisor: Hong Qian)
5. Katie Oliveras, Department of Applied Mathematics, University of Washington; Summer 2005 - (Chair)
4. Jason C. Slemons, Department of Applied Mathematics, University of Washington; Winter 2005 - Autumn 2008 (advisor: Loyce M. Adams)
3. Brandon G. Bale, Department of Applied Mathematics, University of Washington; Winter 2005 - Spring 2008 (Co-chair)
2. Matthew S. Patterson, Department of Applied Mathematics, University of Washington; Autumn 2004 - Summer 2007 (Chair)
1. Michael Kramer, Department of Physics, Colorado State University; Spring 2002 - Summer 2003 (advisor: Carl Patton)

6.5 Graduate School Representative

11. Alborz Gofrani, Department of Civil Engineering, University of Washington (Spring 2015-, advisor: Pedro Arduino)
10. Katherine Velas, Department of Aeronautics and Astronautics, University of Washington (Summer 2013, advisor: Richard Milroy)
9. Yuanlong Chen, Department of Mathematics, University of Washington (Spring 2013 - , advisor: Hart Smith)
8. Yann Merrand, Geological Sciences, University of Washington (Autumn 2012 - Winter 2013, advisor: Bernard Hallet)
7. Simon Spicer, Department of Mathematics, University of Washington (Autumn 2011 - , advisor: William Stein)
6. Justin Tittelfitz, Department of Mathematics, University of Washington (Winter 2010 - Summer 2013, advisor: Gunther Uhlmann)
7. Wei Chen, Physics Department, University of Washington (Winter 2009 - Spring 2011, advisor: Anton Andreev)
6. Sean Holman, Department of Mathematics, University of Washington (Winter 2008 -Summer 2009, advisor: Gunther Uhlmann)
5. Mark L. Carson, Department of Oceanography, University of Washington (Winter 2008 -Summer 2010, advisor: Don E. Harrison)
4. Eric C. Deyo, Physics Department, University of Washington (Summer 2007 - Spring 2009 , advisor: Boris Spivak)

3. Dhanakorn Iamratanakul, Department of Aeronautics and Astronautics Engineering, University of Washington (Autumn 2005 – Spring 2007 , advisor: Santosh Devasia)
2. Andrea M. Munro, Department of Chemistry, University of Washington (Spring 2005 – Summer 2008 , advisor: David Ginger)
1. Marloes Maathuis, Statistics Department, University of Washington (Winter 2004 – Spring 2006 , advisor: Jon Wellner)

7 Publications

Synopsis: 57 papers in refereed research journals, 5 papers submitted for publication, 2 papers accepted for publication, 4 refereed proceedings, 2 chapters in a book, 1 article in a book, 2 contributions to an encyclopedia, and 2 theses.

7.1 In Refereed Journals

7.1.1 Submitted/accepted

7. B. Deconinck, N. Sheils and D. A. Smith, *The linear KdV equation with an interface*, Submitted for publication, 2015
6. N. Sheils and B. Deconinck, *Initial-to-Interface maps for the Heat Equation on Composite Domains*, Submitted for publication, 2015
5. B. Deconinck and O. Trichtchenko, *High-frequency instabilities of small-amplitude solutions of Hamiltonian PDEs*, Submitted for publication, 2015
4. V. Vasan, K. Oliveras, D. Henderson and B. Deconinck, *A method for recovering water-wave profiles from pressure measurements*, Submitted for publication, 2015
3. C. Swierczewski and B. Deconinck, *Computing the Riemann Constant Vector*, Submitted for publication, 2015
2. C. Swierczewski and B. Deconinck, *Computing Riemann Theta functions in Sage with applications*, Mathematics and Computers in Simulation 2014, <http://dx.doi.org/10.1016/j.matcom.2013.04.018>
1. B. Deconinck and T. Kapitula, *On the orbital (in)stability of spatially periodic stationary solutions of generalized Korteweg-de Vries equations*, accepted for publication, 2015.

7.1.2 In print

57. N. E. Sheils and B. Deconinck, *Interface problems for dispersive equations*, Stud. Appl. Math. 134, 253-275, 2015.
56. B. Deconinck and K. Oliveras, *The instabilities of periodic traveling water waves with respect to transverse perturbations*, Nonlinear Wave Equations: Analytic and Computational Techniques, 131-143, 2015.
55. N. E. Sheils and B. Deconinck, *Heat conduction on the ring. Interface problems with periodic boundary conditions*, Applied Mathematics Letters 37, 107–111, 2014
54. B. Deconinck and O. Trichtchenko, *Stability of Gravity Waves in the Presence of Surface Tension*, European Journal of Mechanics - B/Fluids 46, 97–108, 2014.
53. B. Deconinck, B. Pelloni, N. E. Sheils, *Non-steady state heat conduction in composite walls*, Proceedings of the Royal Society A 470, 2165, 2014.
52. D. E. Pelinovsky, E. A. Ruvinskaya, O. A. Kurkina, and B. Deconinck, *Short-wave transverse instabilities of line solitons of the 2-D hyperbolic nonlinear Schrodinger equation*, Theoretical and Mathematical Physics 179, 452-461, 2014.

51. T. Trogdon and B. Deconinck, *A numerical dressing method for the nonlinear superposition of solutions of the KdV equation*, Nonlinearity 27, 67–86 , 2014.
50. T. Trogdon and B. Deconinck, *Dispersive and soliton perturbations of finite-genus solutions of the KdV equation: computational results*, Physics Letters A 378, 617-633, 2013.
49. B. Deconinck, T. Trogdon, and V. Vasan, *Solving linear partial differential equations*, SIAM Review 56, 159-186, 2014.
48. B. Deconinck, N. E. Sheils, N. V. Nguyen, and R. Tian, *On the spectral stability of solitary wave solutions of the vector NLS equation*, Journal of Physics A 46, 415202, 2013.
47. T. Trogdon and B. Deconinck, *A Riemann-Hilbert problem for the finite-genus solutions of the KdV equation and its numerical solution*, Physica D251, 1–18, 2013.
46. T. Trogdon and B. Deconinck, *Numerical computation of the finite-genus solutions of the Korteweg-de Vries equation via Riemann-Hilbert problems*, Applied Mathematics Letters 26, 5–9, 2013.
45. V. Vasan and B. Deconinck, *The inverse water wave problem of bathymetry detection*, Journal of Fluid Mechanics 714, 562–590, 2013
44. V. Vasan and B. Deconinck, *The Bernoulli boundary condition for traveling water waves*, Applied Mathematics Letters 26, 515-519, 2013
43. B. Deconinck, K. Oliveras, V. Vasan, *Relating the bottom pressure and the surface elevation in the water wave problem*, Journal of Nonlinear Mathematical Physics 19, 1240014, 2012.
42. N. V. Nguyen, R. Tian, B. Deconinck and Natalie Sheils, *Global existence for a coupled system of Schrödinger equations with power-type nonlinearities*, J. Math. Phys. 54, 011503, 2013
41. V. Vasan and B. Deconinck, *Well-posedness of boundary-value problems for the linear Benjamin-Bona-Mahony equation*, DCDS-A33, 3171-3188, 2013
40. S.-P. Gorza, B. Deconinck, T. Trogdon, P. Emplit, and Marc Haelterman, *Neck instability of bright solitary waves in hyperbolic Kerr media*, Optics Letters 37, 4657–4659, 2012
39. K. Oliveras, V. Vasan, B. Deconinck and D. Henderson, *Recovering the water-wave profile from pressure measurements*, SIAM Journal of Applied Mathematics 72, 897–918, 2012.
38. T. Trogdon, S. Olver and B. Deconinck, *Numerical inverse scattering for the Korteweg-de Vries and modified Korteweg-de Vries equations*, Physica D241, 1003–1025, 2012.
37. B. Deconinck and T. Trogdon. *The solution of linear constant-coefficient evolution PDEs with periodic boundary conditions*, Applicable Analysis 91, 2012.
36. B. Deconinck and K. Oliveras. *The instability of periodic surface gravity waves*, Journal of Fluid Mechanics 675, 141–167, 2011.
35. N. Bottman, B. Deconinck, and M. Nivala. *Elliptic solutions of the defocusing NLS equation are stable*, Journal of Physics A 44, 285201, 2011.
34. S.-P. Gorza, B. Deconinck, Ph. Emplit, T. Trogdon, and M. Haelterman, *Experimental demonstration of the oscillatory snake instability of the bright soliton of the (2+1)D hyperbolic Nonlinear Schrödinger Equation*, Physical Review Letters 106, 094101, 2011.
33. B. Deconinck and M. Nivala. *The stability analysis of the periodic traveling wave solutions of the mKdV equation*, Stud. Applied Mathematics 126, 17–48, 2010.
32. B. Deconinck and T. Kapitula. *The orbital stability of the cnoidal waves of the Korteweg-de Vries equation*, Phys. Lett. A 374, 4018–4022, 2010.

31. M. Chen, C. Curtis, B. Deconinck, C. W. Lee, and N. Nguyen. *Spectral stability of stationary solutions of a Boussinesq system describing long waves in dispersive media*, Siam Journal on Applied Dynamical Systems 9, 999-1018, 2010.
30. M. Nivala and B. Deconinck, *Periodic finite-genus solutions of the KdV equation are orbitally stable*, Physica D 239, 1147–1158, 2010.
29. B. Deconinck and D. O. Lovit, *Data analysis and reduction using stationary solutions of the NLS equation*, Applicable Analysis 89, 611–626, 2010.
28. C. W. Curtis and B. Deconinck, *On the convergence of Hill’s method*, Mathematics of Computation 79, 169–187, 2010.
27. N. Bottman and B. Deconinck, *KdV cnoidal waves are spectrally stable*, DCDS-A 25, 1163–1180, 2009.
26. B. Deconinck and M. Nivala, *Symbolic integration and summation using homotopy methods*, Mathematics and Computers in Simulation 80, 825–836, 2007.
25. B. Deconinck and M. S. Patterson, *Computing the Abel map*, Physica D 237, 3214-3232, 2008.
24. B. Deconinck, Y. Kimura and H. Segur, *The pole dynamics of rational solutions of the viscous Burgers equation*, Journal of Physics A 40, 5459–5467, 2007.
23. W. Hereman, B. Deconinck and L. D. Poole, *Continuous and discrete homotopy operators: a theoretical approach made concrete*, Mathematics and Computers in Simulation 74, 352-360, 2007.
22. B. Deconinck, F. Kiyak, J. D. Carter and J. N. Kutz, *SpectrUW: a laboratory for the numerical exploration of spectra of linear operators*, Mathematics and Computers in Simulation 74, 370-378, 2007.
21. B. Deconinck and J. N. Kutz, *Computing spectra of linear operators using Hill’s method*, Journal of Computational Physics 219, 296-321, 2006.
20. B. Deconinck, D. E. Pelinovsky and J. D. Carter, *Transverse instabilities of deep-water solitary waves*, Proceedings of the Royal Society A 462, 2039–2061, 2006.
19. J. D. Carter and B. Deconinck, *Instabilities of one-dimensional trivial-phase solutions of the two-dimensional cubic nonlinear Schrödinger equation*, Physica D 214, 42-54, 2006.
18. R. J. Thelwell, J. D. Carter and B. Deconinck, *Instabilities of one-dimensional stationary solutions of the cubic nonlinear Schrödinger equation*, J. Phys. A 39, 73-84 (2006).
17. R. M. Bradley, B. Deconinck, and J. N. Kutz, *Exact nonstationary solutions of the mean-field equations of motion for two-component Bose-Einstein condensates in periodic potentials*, J. Phys. A 38, 1901-1916 (2005).
16. B. Deconinck, P. G. Kevrekidis, H. E. Nistazakis, and D. J. Frantzeskakis, *Linearly coupled Bose-Einstein Condensates: from Rabi oscillations and quasi-periodic solutions to sloshing domain walls and spiral waves*, Phys. Rev. A 70, 063605 (2004).
15. B. Deconinck, M. Heil, A. Bobenko, M. van Hoeij and M. Schmies, *Computing Riemann theta functions*, Math. of Computation 73, 1417–1442 (2004).
14. B. Deconinck and J. N. Kutz, *Singular instability of exact solutions of the nonlocal Gross-Pitaevskii equation*, Phys. Lett. A 319, 97-103 (2003).
13. B. Deconinck, J. N. Kutz, M. S. Patterson, and B. W. Warner, *Dynamics of periodic multi-component Bose-Einstein condensates*, J. Phys. A 36, 531-547 (2003).
12. B. Deconinck, B. Frigyik and J. N. Kutz, *“Dynamics and stability of Bose-Einstein condensates: the nonlinear Schrödinger equation with periodic potential”* J. nonlinear Sci. 12, 169–205 (2002).

11. J. C. Bronski, L. D. Carr, R. Carretero-González, B. Deconinck, J. N. Kutz and K. Promislow, “*Stability of Attractive Bose-Einstein Condensates in a Periodic Potential*” Phys. Rev. E. 64, 056615 (2001).
10. B. Deconinck, B. Frigyik and J. N. Kutz, “*Stability of exact solutions of the defocusing nonlinear Schrodinger equation with periodic potential in two dimensions*” Physics Letters A283, 177-184 (2001).
9. B. Deconinck and M. van Hoeij “*Computing Riemann matrices from Riemann surfaces*” Physica D152-153, 28-46 (2001).
8. J. C. Bronski, L. D. Carr, B. Deconinck, J. N. Kutz and K. Promislow, “*Stability of Repulsive Bose-Einstein Condensates in a Periodic Potential*” Phys. Rev. E. 63, 036612.1-11 (2001).
7. J. C. Bronski, L. D. Carr, B. Deconinck and J. N. Kutz “*Bose-Einstein condensates in standing waves: the cubic nonlinear Schrodinger equation with a periodic potential*” Phys. Rev. Lett. 86, p 1402-1405 (2001).
6. B. Deconinck and H. Segur “*Pole dynamics for elliptic solutions of the Korteweg-de Vries Equation*” Mathematical Physics, Analysis and Geometry 3, p 49-74 (2000).
5. B. Deconinck “*Canonical variables for multiphase solutions of the KP equation*” Studies in Applied Math. 104, p 229-292 (2000).
4. B. Deconinck and H. Segur, “*The KP equation with quasiperiodic initial data*” Physica D123, special issue: Proceedings of the CNLS Conference Solitons and Nonlinear Waves in Physical Systems, p 123-152 (1998).
3. B. Deconinck “*A constructive test for integrability of semi-discrete systems*” Physics Letters A 223, p 45-54 (1996).
2. B. Deconinck, P. Meuris and F. Verheest “*Oblique nonlinear Alfvén waves in strongly magnetized beam plasmas Part 2. Soliton solutions and integrability*” Journal of Plasma Physics, vol. 50, part 3, p 457-476 (1993).
1. B. Deconinck, P. Meuris and F. Verheest “*Oblique nonlinear Alfvén waves in strongly magnetized beam plasmas Part 1. Nonlinear vector evolution equation*” Journal of Plasma Physics, vol. 50, part 3, p 445-455 (1993).

7.2 Refereed Proceedings

4. B. Deconinck, D. Henderson, Katie Oliveras, and Vishal Vasan, *Recovering the water-wave surface from pressure measurements*, 10th International Conference on Mathematical and Numerical Aspects of Waves, WAVES 2011 (2011), Vancouver, Canada.
3. S.-P. Gorza, P. Emplit, M. Haelterman, T. Trogdon, and B. Deconinck, *Transverse instability of bright solitons in hyperbolic dispersive media*, Nonlinear Photonics (2010), Karlsruhe, Germany.
2. B. Deconinck and J. N. Kutz, *Pulse train dynamics in actively modelocked lasers*, Nonlinear guided waves and their applications, NLTuD24 (2002), Stresa, Italy.
1. J. Bronski, L. Carr, B. Deconinck and J. N. Kutz, *Bose-Einstein condensates trapped in standing light waves*, Nonlinear guided waves and their applications, MC17, 88-90 (2001), Clearwater, Florida.

7.3 Contributions to books

4. B. Deconinck and M. Patterson, “*Computing with Riemann Surfaces: the algorithms of the Maple package “algcures”*”, in Lecture Notes in Mathematics, Volume 2013, Alexander Bobenko and Christian Klein, editors, Springer, 2011
3. B. Deconinck, “*Riemann Theta Functions*”, Chapter in the *Digital Library of Mathematical Functions*, National Institute for Standards and Technology, F. W. J. Olver, D. W. Lozier, R. F. Boisvert, C. W. Clark, editors, Cambridge University Press, 2010.

2. W. Hereman, M. Colagrosso, R. Sayers, A. Ringler, B. Deconinck, M. Nivala and M. Hickman, *Continuous and Discrete Homotopy Operators with Applications in Integrability Testing*, in Differential Equations with Symbolic Computation, Dongming Wang and Zhiming Zheng, editors, Birkhäuser, 2005.
1. B. Deconinck, “*The Kadomtsev-Petviashvili Equation*”, “*Periodic Spectral Theory*”, “*Poisson Brackets*”, Sections for the *Encyclopedia of Nonlinear Sciences*, A. Scott, editor. Routledge Publishers, 2005.

7.4 Theses

2. B. Deconinck, “*The initial-value problem for quasiperiodic solutions of the Kadomtsev-Petviashvili equation*”, Ph. D. thesis, University of Colorado, Boulder, Colorado, May 1998, 263 pages, 7 figures, 4 tables (1998)
1. B. Deconinck and P. Meuris, “*Schuine voortplanting van niet-lineaire Alfvéngolven in een plasma met verschillende componenten (Oblique propagation of nonlinear Alfvén waves in multi-component plasmas)*”, Diploma thesis, University of Ghent, Ghent, Belgium, June 1993, 132 pages, 26 figures, 5 tables, in Dutch (1993)

8 Software

8. B. Deconinck and M. Patterson, *Riemann Constant Vector*, Maple program, released Spring 2007.
This is a black box program to compute the Riemann constant vector of a Riemann surface represented by a plane algebraic curve.
7. B. Deconinck, F. Kiyak, and J. D. Carter, *SpectrUW 2.0*, Freeware for the computation of spectra of linear operators. Released Spring 2007.
6. B. Deconinck and M. Patterson, *Abelmap*, Maple program, included in Maple 11, released Spring 2007.
This is a black box programs for computating the Abel map from a compact connected Riemann surface to its Jacobian.
5. B. Deconinck and M. Nivala, *INT*, *SUM*, Maple program, released Fall 2005, available from <http://www.amath.washington.edu/~bernard/papers.html>
These are Maple programs for the calculations of integrals and sums of expressions that are not total derivatives or differences.
4. B. Deconinck, F. Kiyak, J. D. Carter and J. Nathan Kutz, *SpectrUW1.0*, Java program, released Fall 2005, available from <http://www.amath.washington.edu/hill/>
This is a program for the computation of spectra of linear operators. A Java frontend, calling on Maple or Mathematica.
3. B. Deconinck and M. Nivala, *conser*, Maple program, released Winter 2005, available from <http://www.amath.washington.edu/~bernard/papers.html>
These are programs for the computation of conserved quantities of evolution partial differential equations in one dimension.
2. B. Deconinck and M. van Hoeij, *RiemannTheta*, Maple program, included in Maple 8, released Spring 2002.
Also available from <http://www.math.fsu.edu/~hoeij/RiemannTheta/>.
These are black box programs for effective computations with Riemann theta functions and their derivatives.
1. B. Deconinck and M. van Hoeij, *monodromy*, *homology*, *periodmatrix*, Maple programs, included in Maple 6, released Spring 2000.
Also available from <http://www.math.fsu.edu/~hoeij/periodmatrix/>.
These are black box programs for effective computations with Riemann surfaces.

9 Presentations

9.1 Presentations at Conferences and Workshops

50. Talk: “High-frequency instabilities of small amplitude water waves”, AMS-MAA Joint Meeting, Seattle, WA, January 6–9, 2016.
49. Talk: “Computing with Riemann surfaces and algebraic curves: the Riemann constant vector”, Computational Complex Analysis for Free Surface Flows and Other Applications, University College London, London, UK, March 20–22, 2015.
48. Talk: “The time-dependent Schrödinger equation with piecewise constant potential”, BIRS Workshop on Modern Applications of Complex Variables: Modeling, Theory and Computation, Banff International Research Station, Banff, Alberta, January 11–July 16, 2015.
47. Talk: “High-Frequency Instabilities of Small-Amplitude Solutions of Hamiltonian PDEs”, SIAM-SIAG conference on Nonlinear Waves and Coherent Structures, *Cambridge, UK*, August 11–14, 2014.
46. Talk: “The pressure problem”, Newton Institute Workshop on the Theory of Water Waves: Numerical Methods for Water Waves, Newton Institute, Cambridge, UK, July 14–18, 2014.
45. Talk: “Explicit solutions of interface problems II”, Tenth AIMS Conference on Dynamical Systems, Differential Equations and Applications, *Madrid, Spain*, July 7–11, 2014.
44. Talk: “High-frequency instabilities of small-amplitude solutions of Hamiltonian PDEs”, Workshop on Hamiltonian PDEs: Analysis, Computations and Applications, Fields Institute, University of Toronto, Toronto, Canada, January 10–12, 2014.
43. Talk: “The inverse water wave problem”, BIRS Workshop on water waves: computational approaches for complex problems, Banff International Research Station, Banff, Alberta, June 30–July 5, 2013.
42. Plenary Talk: “Interface problems using the method of Fokas”, AIM Workshop on Nonhomogeneous Boundary Value Problems, *AIM, Palo Alto, CA*, May 13–17, 2013.
41. Talk: “The water wave pressure problem”, Eighth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, *University of Georgia, Athens, GA*, March 25–28, 2013.
40. Talk: “The water wave pressure problem”, 5th SIAM-SIAG conference on Nonlinear Waves and Coherent Structures, *Seattle, WA*, June 13–16, 2012.
39. Plenary Talk: “The water wave pressure problem”, Mathematical aspects of water waves, *King’s College, London, UK*, March 15–17, 2012.
38. Talk: “Riemann theta functions: an applied introduction”, 1st SIAM-SIAG conference on Applied Algebraic Geometry, *Raleigh, NC*, October 6–9, 2011.
37. Talk: “The periodic problem for the NLS equation”, ICIAM conference: International conference on industrial and applied mathematics, *Vancouver, Canada*, July 18–22, 2011.
36. Talk: “The Stability of Finite-genus Solutions of Integrable Equations”, 4th SIAM-SIAG conference on Nonlinear Waves and Coherent Structures, *Philadelphia, PA*, August 16–19, 2010.
35. Talk: “The (in)stability of Stationary Periodic Solutions of Integrable Equations”, SIAM Annual Meeting, *Denver, CO*, July 6–11, 2009.
34. Talk: “Numerical methods for examining the stability of solutions of nonlinear wave equations”, Workshop on “Numerical methods for nonlinear wave equations”, 6th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, *University of Georgia, Athens, GA*, March 23–26, 2009.

33. Talk: “KdV cnoidal waves are stable”, 6th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, *University of Georgia, Athens, GA*, March 23-26, 2009.
32. Talk: “KdV cnoidal waves are linearly stable”, 3rd SIAM-SIAG conference on Nonlinear Waves and Coherent Structures, *Rome*, July 21-24, 2008.
31. Talk: “KdV cnoidal waves are linearly stable”, International Conference: Nonlinear Waves – Theory and Applications, *Beijing*, June 9-12, 2008
30. Talk: “The stability of one-dimensional water waves”, International Conference: Nonlinear Waves – Theory and Applications, *Beijing*, June 9-12, 2008
29. Talk: “The pole dynamics of rational solutions of the viscous Burgers equation”, Joint Mathematics Meeting, *San Diego, CA*, January 6-9, 2008
28. Talk: “KdV cnoidal waves are linearly stable”, SIAM Conference: Analysis of Partial Differential Equations, *Mesa, AZ*, December 10-12, 2007
27. Talk: “Determining spectra of linear operators”, IMACS Conference: Nonlinear evolution equations and wave phenomena: computation and theory, *Athens, GA*, April 16-19, 2007
26. Talk: “Numerical methods 2: Hill’s method”, PIMS-VIGRE Workshop on the Stability and Instability of Nonlinear Waves, *Seattle, WA*, September 6-8, 2006
25. Talk: “Waves in shallow water: Riemann surfaces and all that”, IMACS Conference: Nonlinear evolution equations and wave phenomena: computation and theory, *Athens, GA*, April 11-14, 2005
24. Plenary Talk: “Calculus on Riemann surfaces starting from algebraic curves”, MathEON Miniworkshop on Mathematical topics in surface modeling, *TU-Berlin, Germany*, December 15-16, 2004
23. Talk: “Stability of Bose-Einstein condensates in an optical lattice potential with nonlocal perturbations”, First SIAM Conference on Nonlinear Waves and Coherent Structures, *Orlando, FL*, October 2-4, 2004
22. Poster: “Short wavelength instabilities of solitary wave solutions to the two-dimensional cubic nonlinear Schrödinger equation”, Workshop on free surface water waves, *Fields Institute, Toronto, Canada*, June 14-18, 2004.
21. Talk: “Computing Riemann theta functions”, AMS-MAA-SIAM National meeting, *Phoenix, AZ*, January 7-11, 2004.
20. Talk: “Computing the Abel transform”, Workshop on Patterns in Physics, *Toronto, Canada*, November 14-18, 2003.
19. Talk: “Dynamics of periodic multicomponent Bose-Einstein condensates”, Joint Central and Western Section AMS Meeting, *Boulder, CO*, October 2-4, 2003.
18. Talk: “Computing (quasi) periodic solutions of integrable equations I”, ICIAM conference: International conference on industrial and applied mathematics, *Sydney, Australia*, July 12-17, 2003
17. Talk: “Nonlocality and the Nonlinear Schrödinger equation with periodic potential”, IMACS Conference: Nonlinear evolution equations and wave phenomena: computation and theory, *Athens, GA*, April 7-10, 2003
16. Talk: “Nonlocal perturbations and the stability of stationary solutions of the nonlinear Schrödinger equation”, AMS Sectional Meeting, *Northeastern University, Boston, MA*, October 5-6, 2002
15. Talk: “Computing (quasi) periodic waves in shallow water”, Mathematical Theory of Networks and Systems, *Notre Dame University, South Bend, IN*, August 8-16, 2002
14. Talk: “Bose-Einstein condensates in standing light waves”, Soliton equations: applications and theory, *University of Colorado, Colorado Springs, CO*, August 12, 2001

13. Talk: “Quasi-periodic solutions of integrable partial differential equations with Maple”, IMACS Conference: Nonlinear evolution equations and wave phenomena: computation and theory, *Athens, GA*, April 9-12, 2001
12. Talk: “Stability of attractive and repulsive Bose-Einstein Condensates trapped in a standing light wave”, IMACS Conference: Nonlinear evolution equations and wave phenomena: computation and theory, *Athens, GA*, April 9-12, 2001
11. Talk: “Stability of Bose-Einstein condensates trapped in a standing light wave potential”, APS Meeting, *Washington State Convention Center, Seattle, WA*, March 12-17, 2001
10. Talk: “Computing with Riemann surfaces: a toolbox”, AMS Sectional Meeting, *University of Notre Dame, South Bend, IN*, April 7-9, 2000
9. Talk: “Computing Riemann Matrices”, Integrating Integrability into Mathematics and Science *Tuscon, AZ*, October 29-31, 1999
8. Talk: “Canonical variables for multiphase solutions of the KP equation”, IMACS Conference: Nonlinear evolution equations and wave theory *Athens, GA*, April 12-15, 1999
7. Talk: “Pole dynamics for elliptic solutions of the KdV equation”, AMS Sectional Meeting. Session on “Integrable equations” *Urbana, IL*, March 18-20, 1999
6. Talk: “The KP equation with multiphase initial data”, International Meeting on Integrable Systems, solutions and Transformations, *Guardamar, Spain*, June 15-19, 1998
5. Talk: “Finite-dimensional Hamiltonian systems for multiphase solutions of the KP equation”, Fourth International Conference on Mathematical and Numerical Aspects of Wave Propagation (WP98), *Colorado School of Mines, Mines, CO*, June 1-5, 1998
4. Talk: “Finite-dimensional Hamiltonian systems for multiphase solutions of the KP equation”, Los Alamos Days at Colorado 1998: Complex Systems and Nonlinear Phenomena, *University of Colorado, Boulder*, April 30-May 2, 1998
3. Poster: “The initial value problem for the KP equation for finite-genus solutions”, 17th Annual International Conference: Nonlinear Waves and Solitons in Physical Systems, Center for Nonlinear Studies, Los Alamos National Laboratory; *Los Alamos, New Mexico*, May 12-16, 1997
2. Poster: “The Estabrook-Wahlquist method for lattice systems”, Seventh Midwest Geometry Conference, Department of Mathematics, University of Kansas; *Lawrence, Kansas*, April 11-13, 1997
1. Talk: “The semi-discrete Estabrook-Wahlquist method”, Colorado Days at Los Alamos 1996, Center for Nonlinear Studies, Los Alamos National Laboratory; *Los Alamos, New Mexico*, March 29-30, 1996

9.2 Seminars and Colloquia

65. Talk: “The numerical computation of the inverse scattering method”, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, February 11, 2015.
64. Talk: “High-frequency instabilities of Hamiltonian PDEs”, Department of Mathematics, National Cheng Kung University, Taipei, Taiwan, February 4, 2015
63. Talk: “The Fokas method for solving interface problems”, Department of Mathematics, National Cheng Kung University, Taipei, Taiwan, February 4, 2015
62. Talk: “The inverse water wave problem”, Department of Financial and Computational Mathematics, Providence University, Taichung, Taiwan, February 3, 2015
61. Talk: “The water wave pressure problem”, Department of Financial and Computational Mathematics, Providence University, Taichung, Taiwan, February 3, 2015

60. Talk: “Riemann surfaces and water waves”, Department of Mathematics, Seattle University, Seattle, WA, February 13, 2014
59. Talk: “Water Waves”, ACMS Seminar, University of Washington, January 30, 2014
58. Talk: “The inverse water wave problem”, Colloquium, Department of Mathematics, University of Kansas, Lawrence, KS, November 31, 2013
57. Talk: “Recovering the water-wave profile from pressure measurements”, Department of Mathematics & Statistics, Utah State University, Logan, UT, January 24, 2013
56. Talk: “Recovering the water-wave profile from pressure measurements”, Applied Physics Laboratory, Seattle, WA, November 1, 2012
55. Talk: “Recovering the water-wave profile from pressure measurements”, NOAA Center for Tsunami Research, Seattle, WA, February 13, 2012
54. Talk: “A new method for solving partial differential equations”, Boeing Research and Technology: Applied Mathematics Group, January 12, 2012
53. Talk: “Water Waves”, ACMS Seminar, University of Washington, April 21, 2011
53. Talk: “The Stability of Periodic Solutions of Integrable PDEs”, Colloquium, Department of Mathematics, Florida State University, January 14, 2011
52. Talk: “The stability of solutions of integrable equations”, Applied Mathematics Seminar, Department of Mathematics, University of California at Berkeley, November 3, 2010
51. Talk: “The instabilities of surface water waves”, Applied Mathematics Seminar, Department of Applied Mathematics, Brown University, October 13, 2010
50. Talk: “The instabilities of surface water waves”, Nonlinear Waves Seminar, Department of Applied Mathematics, University of Colorado, May 5, 2010
49. Talk: “The stability of the finite-genus solutions of the KdV equation”, Applied Mathematics Seminar, Department of Mathematics, Colorado State University, May 4, 2010
48. Talk: “The instabilities of surface water waves”, Mathematics Colloquium, Department of Mathematics, Colorado State University, May 3, 2010
47. Talk: “The stability analysis of surface water waves”, Applied and Computational Analysis Seminar, Department of Applied Mathematics and Theoretical Physics, Cambridge University, UK, February 18, 2010
46. Talk: “The instabilities of surface water waves”, Applied Mathematics Seminar, Department of Mathematics, Loughborough University, UK, January 27, 2010
45. Talk: “The stability of finite-genus solutions of the KdV equation”, Departmental Colloquium, Department of Mathematics, SUNY Buffalo, November 19, 2009
44. Talk: “The stability of finite-genus solutions of the KdV equation”, PDE/Applied Math Seminar, Drexel University, November 16, 2009
43. Talk: “Stability of periodic surface water waves”, Pritchard Lab Seminar, Penn State University, November 9, 2009
42. Talk: “Stability of stationary periodic solutions of nonlinear wave equations”, Applied Mathematics Seminar, University of Michigan, October 10, 2008
41. Talk: “Stability of stationary periodic solutions of nonlinear wave equations”, Institute of Applied Mathematics Seminar, University of British Columbia, October 6, 2008

40. Talk: “Riemann surfaces and nonlinear waves”, Departmental Colloquium, Department of Mathematics, Purdue University, March 25, 2008
39. Talk: “KdV cnoidal waves are linearly stable”, Departmental Colloquium, Department of Mathematics, University of Illinois at Chicago, March 21, 2008
38. Talk: “Riemann surfaces and integrable systems”, Department of Mathematics Algebra and Algebraic Geometry Seminar, University of Washington, Seattle, WA; February 6, 2007
37. Talk: “Computing Spectra of linear operators”, Department of Mathematics, The Pennsylvania State University, State College, PA; January 27, 2006
36. Talk: “Computing Spectra of linear operators”, Department of Mathematics and Statistics, University of New Mexico, Albuquerque, NM; November 10, 2005
35. Talk: “Calculus on Riemann surfaces”, Department of Mathematics and Statistics, University of New Mexico, Albuquerque, NM; November 9, 2005
34. Talk: “Computing Spectra of linear operators”, Department of Mathematics, University of Arizona, Tuscon, AZ; November 8, 2005
33. Talk: “Computing Spectra of Linear Operators”, Applied Mathematics Seminar, Department of Applied Mathematics, University of Washington, WA; October 18, 2005
32. Talk: “Riemann surfaces and waves in shallow water”, Department of Mathematics, University of Notre Dame, South Bend, IN; March 13, 2005
31. Talk: “Computing spectra of linear operators”, Department of Applied Mathematics, University of Colorado, Boulder, CO; March 11, 2005
30. Talk: “Computing spectra of linear operators”, Department of Mathematics, Simon Fraser University, Vancouver, BC; February 18, 2005
29. Talk: “Computing (Quasi) Periodic Waves in shallow water”, Applied Physics Seminar, Applied Physics Laboratory, University of Washington, Seattle, WA; May 6, 2004
28. Talk: “Waves in shallow water and Riemann surfaces”, Applied Mathematics Seminar, University of Massachusetts, Amherst, MA; February 17, 2004
27. Talk: “Nonlocal perturbations and Bose-Einstein Condensates in periodic potentials”, W. G. Pritchard Lab Seminar Series, Mathematics Department, Penn State University, State College, PA; March 24, 2003
26. Talk: “Bose-Einstein Condensates in periodic potentials”, Colloquium, Physics Department, Colorado State University, Fort Collins, CO; February 10, 2003
25. Talk: “Nonlocal perturbations and Bose-Einstein Condensates in periodic potentials”, Colloquium, Department of Mathematics, Colorado School of Mines, Mines, CO; January 31, 2003
24. Talk: “Nonlocal perturbations and Bose-Einstein Condensates in periodic potentials”, Colloquium, Department of Mathematics, University of Colorado, Colorado Springs, CO; December 12, 2002
23. Talk: “Computing quasi-periodic solutions of integrable differential equations”, Stochastic and Nonlinear Analysis Seminar, Department of Mathematics, University of Illinois, Urbana-Champaign, IL; December 10, 2002
22. Talk: “Computing quasi-periodic solutions of integrable differential equations”, Applied Mathematics Seminar, Department of Mathematics, Loughborough University, Loughborough, United Kingdom; November 26, 2002
21. Talk: “Computing Riemann Theta Functions”, Applied Mathematics Seminar, Department of Applied Mathematics, University of Washington, WA; November 12, 2002

20. Talk: “Computing Riemann Theta Functions”, Applied Mathematics Seminar, Department of Mathematics, Colorado State University, CO; May 2, 2002
19. Talk: “Riemann surfaces, theta functions and water waves”, Applied Mathematics Colloquium, Department of Applied Mathematics, University of Colorado, Boulder, CO; January 25, 2002
18. Talk: “Bose-Einstein condensates in periodic potentials”, Applied Mathematics Seminar, Department of Applied Mathematics, University of Colorado, Boulder, CO; September 27, 2001
17. Talk: “Bose-Einstein condensates in periodic potentials”, Applied Mathematics Seminar, Department of Mathematics, Colorado State University, Fort Collins, CO; September 25, 2001
16. Talk: “Pole dynamics for solutions of the KdV and Burgers equations”, Applied Mathematics Colloquium, Department of Applied Mathematics, University of Washington, Seattle, WA; April 24, 2001
15. Talk: “The computation of quasiperiodic solutions of integrable partial differential equations”, Applied Mathematics Colloquium, Department of Mathematics and Computer Science, Simon Fraser University, Vancouver, Canada; March 2, 2001
14. Talk: “Pole dynamics for Elliptic solutions of the Korteweg-de Vries equation”, Mathematics Seminar, Department of Mathematics, University of Kyoto, Kyoto, Japan; November 10, 2000
13. Talk: “Computing with Riemann surfaces: a toolbox”, Mathematics Seminar, Department of Mathematics, University of Kyoto, Kyoto, Japan; November 10, 2000
12. Talk: “Computing with Riemann surfaces: a toolbox”, Mathematics Seminar, Department of Mathematics, University of Nagoya, Nagoya, Japan; November 9, 2000
11. Talk: “Repulsive Bose-Einstein condensates in a periodic potential”, Physics Seminar, Department of Physics, University of Tokyo, Tokyo, Japan; November 2, 2000
10. Talk: “Riemann surfaces and nonlinear partial differential equations”, Department of Mathematics, Colorado State University, Fort Collins, CO; February 18, 2000
9. Talk: “Riemann surfaces and plane algebraic curves: a toolbox”, Complex analysis seminar, Department of Mathematics, University of Washington, Seattle, WA; December 7, 1999
8. Talk: “Solitons: Who, What, Where and Why?”, ACMS Seminar, University of Washington, Seattle, WA; November 19, 1999
7. Talk: “Computing Riemann matrices”, Applied Mathematics Colloquium, University of Washington, Seattle, WA; October 19, 1999
6. Talk: “The KP equation with multiphase initial data”, Symbolic Computation seminar, Florida State University, Tallahassee, FL; April 6, 1999
5. Talk: “The KP equation with quasiperiodic initial data”, MSRI Lecture Series, Mathematical Sciences Research Institute, Berkeley, CA; March 31, 1999
4. Talk: “The KP equation with quasiperiodic initial data”, Applied Mathematics Seminar, Department of Applied Mathematics, University of Washington, WA; February 19, 1999
3. Talk: “The KP equation and quasiperiodic water waves”, MSRI Postdoc Seminar, Mathematical Sciences Research Institute, Berkeley, CA; September 16, 1998
2. Talk: “The KP equation with multiphase initial data”, Applied Mathematics Seminar, Department of Mathematics, Colorado State University, CO; March 5, 1998
1. Talk: “A constructive test for integrability of lattice systems”, Department of Applied Mathematics seminar, University of Colorado, Boulder, CO; November 21, 1996

9.3 Short courses

1. The Unified Transform Method of Fokas (4 lectures), Institute of Mathematics, Academia Sinica, Taipei, Taiwan, February 9–11, 2015.

9.4 Participation in Summer Schools, Workshops and Seminars

16. BIRS Workshop on Modern applications of complex variables: modeling, theory and computation, Banff International Research Station, Banff, Alberta, January 11–16, 2015
15. Newton Institute Workshop on the Theory of Water Waves, Newton Institute, Cambridge, UK, July 14–August 8, 2014
14. BIRS Workshop on water waves: computational approaches for complex problems, Banff International Research Station, Banff, Alberta, June 30–July 5, 2013
13. AIM workshop on Nonhomogeneous boundary-value problems for nonlinear waves, AIM, Palo Alto, CA, May 13–17, 2013
12. BIRS workshop on Localized Multi-Dimensional Patterns in Dissipative Systems: Theory, Modeling, and Experiments, Banff International Research Station, Banff, Alberta, July 24–29, 2011
11. Workshop on Multidimensional Localized Structures, Universita di Roma "La Sapienza", Rome, Italy, July 18–19, 2008
10. Introductory Workshop on Dynamical Systems with Emphasis on Extended Systems, MSRI Workshop, University of California, Berkeley, CA, January 22–26, 2007
9. Workshop on Algorithms in Algebraic Geometry, IMA Workshop, University of Minnesota, MN, September 18–22, 2006
8. Tutorial on Algebraic Geometric Methods in Engineering, IMA Workshop, University of Minnesota, MN, September 15–16, 2006
7. Novikov Seminar, University of Maryland, MD, October 1–9, 1999
6. Novikov Seminar, University of Maryland, MD, March 8–15, 1999
5. Special Program on "Random matrices and their applications", Mathematical Sciences Research Institute, Berkeley, CA, Fall 1998
4. Novikov Seminar, University of Maryland, MD, October 30–November 5, 1998
3. Special Program on "Symbolic computation in mathematics", Mathematical Sciences Research Institute, Berkeley, CA, Fall 1998
2. Special Program on "Foundations of computational mathematics", Mathematical Sciences Research Institute, Berkeley, CA, Fall 1998
1. School on "Nonlinear functional analysis and applications to PDE's", International Center for Theoretical Physics, Trieste, Italy, April 15–May 3, 1996

10 Grants and External Support

6. NSF-DMS-1522677. Collaborative Research: Riemann-Hilbert Problems and Riemann Surfaces: Computations and Applications. July 15, 2015. Amount: \$ 199,707.
5. NSF-DMS-1211184. Workshop: The Stability of Coherent Structures and Patterns. June 1, 2012. Amount: \$ 23,000.

4. NSF-DMS-1008001. New Boundary-Value Problem Techniques for Nonlinear Wave Problems. July 1, 2010. Amount: \$ 207,474.
3. NSF-DMS-0729650. Mathematical Methods for Nonlinear Wave Equations: REU Supplement. May 31, 2007-July 31, 2009. Amount: \$ 21,665.
2. NSF-DMS-0604546. Mathematical Methods for Nonlinear Wave Equations. August 1, 2006-July 31, 2009. Amount: \$ 157,702.
1. NSF-DMS-0139093. Focused Research Group: Fully nonlinear, three-dimensional, surface water waves in arbitrary depth. August 15, 2002-July 31, 2005. Amount: \$ 48,710.

11 Scholarships and Awards

16. Nominated for Distinguished Teaching Award, University of Washington, December 2014,
15. Boeing Endowed Professorship, Department of Applied Mathematics, University of Washington, September 16, 2012
14. Boeing Award for Excellence in Teaching, Department of Applied Mathematics, University of Washington, 2007
13. Faculty Service Award, awarded by the Applied Mathematics Students, 2006.
12. Junior Faculty Development Award, College of Arts and Sciences, University of Washington, 2005
11. Junior Faculty Development Award, College of Arts and Sciences, University of Washington, 2004
10. NSF Postdoctoral Fellowship, Mathematical Sciences, National Science Foundation, 2000
9. VIGRE Postdoctoral Fellowship, Department of Applied Mathematics, University of Washington, Seattle, WA, 1999
8. MSRI Postdoctoral Fellowship, Mathematical Sciences Research Institute, Berkeley, CA, 1998
7. University Fellowship, University of Colorado, Boulder, CO, 1998
6. Teaching Award, Program in Applied Mathematics, University of Colorado, Boulder, CO, 1996
5. Dean's Small Grant, University of Colorado, Boulder, CO, 1996
4. University Fellowship, University of Colorado, Boulder, CO, 1995
3. University Ph.D. Scholarship, University of Alberta, Edmonton, AB, Canada, 1993
2. Government of Canada Award, Government of Canada, 1993
1. Bollengier Award, University of Ghent, Belgium, 1993