Curriculum Vitae
Fengyan Li

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Education

- Ph.D. in Applied Mathematics, Brown University, May 2004
  Advisor: Professor Chi-Wang Shu

- M.Sc. in Computational Mathematics, Peking University, July 2000
  Advisor: Professor Long-An Ying

- B.Sc. in Computational Mathematics, Peking University, July 1997

Professional Experiences

- Professor, Department of Mathematical Sciences, Rensselaer Polytechnic Institute, Troy, NY, January 2018 - present

- Associate Professor, Department of Mathematical Sciences, Rensselaer Polytechnic Institute, Troy, NY, January 2012 - December 2017

- Assistant Professor, Department of Mathematical Sciences, Rensselaer Polytechnic Institute, Troy, NY, August 2006 - December 2011

- Postdoctoral Fellow, Department of Mathematics, University of South Carolina, Columbia, SC, August 2004 - August 2006   Mentor: Professor Susanne C. Brenner

Editorial Board

- Associate editor, SIAM Journal on Numerical Analysis, 2019 - present

- Associate editor, CSIAM Transaction on Applied Mathematics, 2019 - present

- Associate editor, Applied Mathematics and Mechanics (English Edition), 2014 - present

- Associate editor, SIAM Journal on Scientific Computing, 2014 - 2019

- Guest editor, IEEE Journal on Multiscale and Multiphysics Computational Techniques, 2019

- Guest editor, Journal of Scientific Computing, 2016 - 2017

- Guest editor, International Journal of Applied Nonlinear Science, 2013

Honors and Awards

- SuperTeachers, School of Science, Rensselaer Polytechnic Institute, Fall 2018, Spring 2019

- RAMP-Up Career Campaign Award, Rensselaer Polytechnic Institute, 2010

- National Science Foundation CAREER Award, 2009

- Alfred P. Sloan Research Fellow, 2008

- Stella Dafermos Award, Brown University, 2004

- Ostrach Fellowship, Brown University, 2003 - 2004

Research Interests

Design, analysis, implementation and applications of accurate, robust and efficient numerical methods for PDEs

- Finite element methods, discontinuous Galerkin methods, WENO methods, central schemes

- Structure-preserving high order methods: *divergence-free, well-balanced, energy stable/conservative, positivity preserving, asymptotic preserving*

- Numerical methods for ideal MHD equations, Hamilton-Jacobi equations, Maxwell's equations in linear or nonlinear media, shallow water models, kinetic transport models in rarefied gas dynamics and plasma physics (discrete-velocity models, BGK model, radiative transfer equation, (relativistic) Vlasov-Maxwell equations), wave equations, eigenvalue problems

Selected Academic Visits

- Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, RI, USA, January - April 2020 (partially virtual)

- Institute for Mathematics and its Applications (IMA), Minneapolis, MN, USA, September - December 2010

- Department of Mathematics, Nanjing University, China, May 2009, June 2010

- School of Mathematical Sciences, Peking University, China, July 2007, March - April 2013, October - November 2019

- Institute for Pure and Applied Mathematics (IPAM), Los Angeles, CA, USA, May 2005

Publications (http://www.rpi.edu/~lif/publication.html)

<u>Refereed Journal Publications</u>

48. Z. Peng and F. Li, *Asymptotic preserving IMEX-DG-S schemes for linear kinetic transport equations based on Schur complement*, SIAM Journal on Scientific Computing, v43 (2021), pp.A1194-A1220

47. Z. Peng, Y. Cheng, J.-M. Qiu, F. Li, *Stability-enhanced AP IMEX1-LDG method: energy-based stability and rigorous AP property*, SIAM Journal on Numerical Analysis, v59 (2021), pp.925-954

46. Z. Peng, Y. Cheng, J.-M. Qiu, F. Li, *Stability-enhanced AP IMEX-LDG schemes for linear kinetic transport equations under a diffusive scaling*, Journal of Computational Physics, v415 (2020), pp.109485

45. Z. Peng, V.A. Bokil, Y. Cheng, F. Li, *Asymptotic and positivity preserving methods for Kerr-Debye model with Lorentz dispersion in one dimension*, Journal of Computational Physics, v402 (2020), pp.109101

44. D. Appelo, V.A. Bokil, Y. Cheng, F. Li, *Energy stable SBP-FDTD methods for Maxwell-Duffing models in nonlinear photonics*, IEEE Journal on Multiscale and Multiphysics Computational Techniques, v4 (2019), pp.329-336

43. Y. Jiang, P. Sakkaplangkul, V.A. Bokil, Y. Cheng, F. Li, *Dispersion analysis of finite difference and discontinuous Galerkin schemes for Maxwell's equations in linear Lorentz media*, Journal of Computational Physics, v394 (2019), pp.100-135

42. A. Chen, F. Li, Y. Cheng, *An ultra-weak discontinuous Galerkin method for Schrodinger equation in one dimension*, Journal of Scientific Computing, v78 (2019), pp.772-815

41. P. Fu, Y. Cheng, F. Li, Y Xu, *Discontinuous Galerkin methods with optimal L2 accuracy for one dimensional linear PDEs with high order spatial derivatives*, Journal of Scientific Computing, v78 (2019), pp.816-863

40. V. A. Bokil, Y. Cheng, Y. Jiang, F. Li, P. Sakkaplangkul, *High spatial order energy stable FDTD methods for Maxwell's equations in nonlinear optical media in one dimension*, Journal of Scientific Computing, v77 (2018), pp.330-371

39. P. Fu, F. Li, Y. Xu, *Globally divergence-free discontinuous Galerkin methods for ideal Magnetohydrodynamic equations*, Journal of Scientific Computing, v77 (2018), pp.1621-1659

38. V. A. Bokil, Y. Cheng, Y. Jiang, F. Li, *Energy stable discontinuous Galerkin methods for Maxwell's equations in nonlinear optical media*, Journal of Computational Physics, v350 (2017), pp.420-452

37. H. Yang and F. Li, *Discontinuous Galerkin methods for relativistic Vlasov-Maxwell system*, Journal of Scientific Computing, v73 (2017), pp.1216-1248

36. M. Li, P. Guyenne, F. Li, L. Xu, *A positivity-preserving well-balanced central discontinuous Galerkin method for the nonlinear shallow water equations*, Journal of Scientific Computing, v71 (2017), pp.994-1034

35. Y. Cheng, C.-S. Chou, F. Li, Y. Xing, *L2 stable discontinuous Galerkin methods for one-dimensional two-way wave equations, Mathematics of Computation*, Mathematics of Computation, v86 (2017), pp.121-155

34. M. Li, F. Li, Z. Li, L. Xu, *Maximum-principle-satisfying and positivity-preserving high order central DG methods for hyperbolic conservation laws*, SIAM Journal on Scientific Computing, v38 (2016), pp.A3720-A3740

33. Z. Tao, F. Li, J. Qiu, *High-order central Hermite WENO schemes: dimension-by-dimension moment-based reconstructions*, Journal of Computational Physics, v318 (2016), pp.222-251

32. F. Long, F. Li, X. Intes, S. P. Kotha, *Radiative transfer equation modeling by streamline diffusion modified continuous Galerkin method*, Journal of Biomedical Optics, v21(2016), 036003

31. H. Yang and F. Li, *Stability analysis and error estimates of an exactly divergence-free method for the magnetic induction equations*, ESAIM: Mathematical Modelling and Numerical Analysis, v50 (2016), pp.965-993

30. Z. Tao, F. Li, J. Qiu, *High-order central Hermite WENO schemes for hyperbolic conservation laws*, Journal of Computational Physics, v281 (2015), pp.148-176

29. T. Xiong, J. Jang, F. Li, J.-M. Qiu, *High order asymptotic preserving nodal discontinuous Galerkin IMEX schemes for the BGK equation*, Journal of Computational Physics, v284 (2015), pp.70-94

28. J. Jang, F. Li, J.-M. Qiu, T. Xiong, *High order asymptotic preserving DG-IMEX schemes for discrete-velocity kinetic equations in a diffusive scaling*, Journal of Computational Physics, v281 (2015), pp.199-224

27. M.A. Reyna and F. Li, *Operator bounds and time step conditions for DG and central DG methods*, Journal of Scientific Computing, v62 (2015), pp.532-554

26. J. Gopalakrishnan, F. Li, N.-C. Nguyen, J. Peraire, *Spectral approximations by the HDG method*, Mathematics of Computation, v84 (2015), pp.1037-1059

25. H. Yang and F. Li, *Error estimates of Runge-Kutta discontinuous Galerkin methods for the Vlasov-Maxwell system*, ESAIM: Mathematical Modelling and Numerical Analysis, v49 (2015), pp.69-99

24. J. Jang, F. Li, J.-M. Qiu, T. Xiong, *Analysis of asymptotic preserving DG-IMEX schemes for linear kinetic transport equations in a diffusive scaling*, SIAM Journal on Numerical Analysis, v52 (2014), pp. 1497-2206

23. M. Li, P. Guyenne, F. Li, L. Xu, *High order well-balanced CDG-FE methods for shallow water waves by a Green-Naghdi model*, Journal of Computational Physics, v257 (2014), pp.169-192

22. Y. Cheng, I. Gamba, F. Li, P. Morrison, *Discontinuous Galerkin methods for Vlasov-Maxwell equations*, SIAM Journal on Numerical Analysis, v52-2 (2014), pp.1017-1049

21. H. Yang, F. Li, J. Qiu, *Dispersion and dissipation errors of two fully discrete discontinuous Galerkin methods*, Journal of Scientific Computing, v55 (2013), pp.552-574

20. Y. Cheng, F. Li, J. Qiu, L. Xu, *Positivity-preserving DG and central DG methods for ideal MHD equations*, Journal of Computational Physics, v238 (2013), pp.255 - 280

19. S. Yakovlev, L. Xu, F. Li, *Locally divergence-free central discontinuous Galerkin methods for ideal MHD equations*, Journal of Computational Sciences, v4 (2013), pp.80-91

18. F. Li and L. Xu, *Arbitrary order exactly divergence-free central discontinuous Galerkin methods for ideal MHD equations*, Journal of Computational Physics, v231 (2012), pp.2655-2675

17. F. Li, *On the negative-order norm accuracy of a local-structure-preserving LDG method*, Journal of Scientific Computing, v51 (2012), pp.213-223

16. F. Li, L. Xu, S. Yakovlev, *Central discontinuous Galerkin methods for ideal MHD with the exactly divergence-free magnetic field*, Journal of Computational Physics, v230 (2011), pp.4828-4847

15. W. Guo, F. Li, J. Qiu, *Local-structure-preserving discontinuous Galerkin methods with Lax-Wendroff type time discretizations for Hamilton-Jacobi equations*, Journal of Scientific Computing, v47 (2011), pp.239-257

14. Y.-T. Zhang, S. Chen, F. Li, H.-K. Zhao, C.-W. Shu, *Uniformly accurate discontinuous Galerkin fast sweeping methods for Eikonal equations*, SIAM Journal on Scientific Computing, v33 (2011), pp.1873-1896

13. B. Cockburn, J. Gopalakrishnan, F. Li, N.-C. Nguyen, J. Peraire, *Hybridization and postprocessing techniques for mixed eigenfunctions*, SIAM Journal on Numerical Analysis, v48 (2010), pp.857-881

12. F. Li and S. Yakovlev, *A central discontinuous Galerkin method for Hamilton-Jacobi equations*, Journal of Scientific Computing, v45 (2010), pp.404-428

11. S. C. Brenner, F. Li, L.-Y. Sung, *Nonconforming Maxwell eigensolvers*, Journal of Scientific Computing, v40 (2009), pp.51-85

10. S. C. Brenner, F. Li, L.-Y. Sung, *A nonconforming penalty method for a two-dimensional curl-curl problem*, Mathematical Models and Methods in Applied Mathematics, v19 (2009), pp.651-668

9. F. Li, C.-W. Shu, Y.-T. Zhang, H.-K. Zhao, *A second order DGM based fast sweeping method for Eikonal equations*, Journal of Computational Physics, v227 (2008), pp. 8191-8208

8. S. C. Brenner, J. Cui, F. Li, L.-Y. Sung, *A nonconforming finite element method for a two dimensional curl-curl and grad-div problem*, Numerische Mathematik, v109 (2008), pp.509-533

7. S. C. Brenner, F. Li, L.-Y. Sung, *A locally divergence-free interior penalty method for two-dimensional curl-curl problems*, SIAM Journal on Numerical Analysis, v46 (2008), pp.1190-1211

6. S. C. Brenner, F. Li, L.-Y. Sung, *A locally divergence-free nonconforming finite element method for the reduced time-harmonic Maxwell equations*, Mathematics of Computation, v76 (2007), pp.573-595

5. F. Li and C.-W. Shu, *A local-structure-preserving local discontinuous Galerkin method for the Laplace equation*, Methods and Applications of Analysis, v13 (2006), pp. 215-233

4. F. Li and C.-W. Shu, *Reinterpretation and simplified implementation of a discontinuous Galerkin method for Hamilton-Jacobi equations*, Applied Mathematics Letters, v18 (2005), pp.1204-1209

3. F. Li and C.-W. Shu, *Locally divergence-free discontinuous Galerkin methods for MHD equations*, Journal of Scientific Computing, v22-23 (2005), pp.413-442

2. B. Cockburn, F. Li, C.-W. Shu, *Locally divergence-free discontinuous Galerkin methods for the Maxwell equations*, Journal of Computational Physics, v194 (2004), pp.588-610

1. L.-A. Ying and F. Li, *Exterior problem of the Darwin model and its numerical computation*, Mathematical Modelling and Numerical Analysis, v37 (2003), pp.515-532

Refereed Book Chapters

- Y. Chen, Z. Chen, Y. Cheng, A. Gillman and F. Li, *Study of discrete scattering operators for some linear kinetic models*, The IMA Volumes in Mathematics and its Applications, Vol. 160 (2016), Susanne Brenner (Ed): Topics in Numerical Partial Differential Equations and Scientific Computing, pp.99-136, Springer.

Conference and Workshop Proceedings

- V. A. Bokil, Y. Cheng, Y. Jiang and F. Li, *Discontinuous Galerkin discretizations for Maxwell's equations in nonlinear kerr media with linear Lorentz dispersion*, the proceedings of the 13th International Conference on Mathematical and Numerical Aspects of Wave Propagation (WAVES 2017), University of Minnesota, Minneapolis, MN, May 15-19, 2017

- S. C. Brenner, F. Li and L.-Y. Sung, *A locally divergence-free nonconforming finite element method for the reduced time-harmonic Maxwell equations*, the proceedings of the joint Workshop by AWM and MSRI: Women in Mathematics: The Legacy of Ladyzhenskaya and Oleinik, MSRI, Berkeley, CA, May 18-20, 2006, pp.187-191

- B. Cockburn, F. Li and C.-W. Shu, *Discontinuous Galerkin methods for equations with divergence-free solutions: preliminary results*, Computational Fluid and Solid Mechanics 2003, K.J. Bathe, Editor (Elsevier Science) Proceedings of the Second MIT Conference on Computational Fluid and Solid Mechanics, June 17-20, 2003, volume 2, pp.1900-1902

Research Report

- F. Li, *A priori error estimates of a local-structure-preserving LDG method*, May 2011

Grants (PI: Principal Investigator)

- PI, *High Order Methods for Kinetic Transport Models*, NSF grant DMS-1913072, $275,000, August 16, 2019 - August 15, 2022

- PI, *OP: Collaborative Research: Compatible Discretizations for Maxwell Models in Nonlinear Optics*, NSF grant DMS-1719942/1720023/1720116, with PIs V. A. Bokil and Y. Cheng, $350,000, August 1, 2017 - July 31, 2020 (*with RPI as the lead institution*)

- Co-PI, AWM Workshops and Noether Lecture 2015, NSF grant DMS-1440016, with PI R. Charney and Co-PI B.E. Shipley, $36,745, July 1, 2014 - June 30, 2015 (AWM stands for the Association for Women in Mathematics)

- Co-PI, RTG: Research Training in Applied Mathematics, NSF grant DMS-1344962, with PI M. Holmes and Co-PIs G. Kovacic, P. Kramer, D. Schwendeman, $1,999,975, June 1, 2014 - May 31, 2019

- PI, High Order Methods for Some Kinetic Models, NSF grant DMS-1318409, $273,594.00, September 15, 2013 - August 31, 2017

- Co-PI, GAANN: Graduate Assistance in Areas of National Need, Department of Education, with PI M. Holmes and Co-PIs M. Cheney, I. Herron, G. Kovacic, D. Schwendeman, and V. Roytburd, August 15, 2012 - August 14, 2015

- RAMP-Up Career Campaign Award, Rensselaer Polytechnic Institute, $7,000, November 5, 2010 - February 1, 2012

- Sub-award: as a long term visitor for the annual program on Simulating Our Complex World: Modeling, Computation and Analysis, Institute for Mathematics and its Applications (IMA), Minneapolis, MN, $9,373, September 1 - December 20, 2010

- Co-PI, GAANN: Graduate Assistance in Areas of National Need, Department of Education grant P200A090009, with PI M. Holmes and Co-PIs M. Cheney, I. Herron, G. Kovacic, D. Schwendeman, and V. Roytburd, $656.410, August 15, 2009 - August 14, 2012

- PI, CAREER: Development and Applications of Discontinuous Galerkin Methods, NSF CAREER award DMS-0847241, $582,112, July 15, 2009 - June 30, 2015

- Alfred P. Sloan Research Fellow 2008, $50,000, September 16, 2008 - September 15, 2010

- Co-PI, EMSW21-RTG: Integrated Research Training in the Mathematical Sciences, NSF grant DMS-0636358, with PI M. Holmes and Co-PIs G. Kovacic, P. Kramer, Y. Lvov, $1,272,000, 5 years from August 15, 2007

- Co-PI, CSUMS: Computational Science Training in the Mathematical Sciences at Rensselaer, NSF grant DMS-0639321, with PI M. Holmes and Co-PIs I. Herron, G. Kovacic, P. Kramer, $1,251,000, 5 years from January 1, 2007

- PI, On Local-Structure-Preserving Discontinuous Galerkin Methods, NSF grant DMS-0652481, $101,382, June 1, 2006 - May 31, 2009

  - Supplementary: US-China Collaboration in Mathematical Research, $40,000, September 1, 2008 - August 31, 2010

- Funded Research Collaboration Programs

  - Research in Pair, Mathematisches Forschungsinstitut Oberwolfach (MFO), Oberwolfach, Germany, with V.A. Bokil and Y. Cheng, August 8-19, 2016
  - Collaboration@ICERM, Providence, RI, with V.A. Bokil and Y. Cheng, June 6-10, 2016
  - Research in Pair, Mathematisches Forschungsinstitut Oberwolfach (MFO), Oberwolfach, Germany, with J. Jang and J.-M. Qiu, June 23 - July 7, 2012

Supervision and Mentoring (Rensselaer Polytechnic Institute)

- Co-mentor of junior faculty, Fall 2014 - Summer 2020

- Postdocs

  - Dr. David Wells, Fall 2015 - Summer 2018
    First job: Postdoc, University of North Carolina at Chapel Hill
  - Dr. Liwei Xu, Fall 2009 - Spring 2012
    First job: Assistant Professor (1000 Plan Youth Award) at Chongqing University, China

- Ph.D. students

  - Zhichao Peng, Ph.D. 2020
    Thesis: *Structure-Preserving Discontinuous Galerkin Methods for Multi-Scale Kinetic Transport Equations and Nonlinear Optics Models*
    First job: Postdoc at Michigan State University
  - Matthew Reyna, Ph.D. 2014
    Thesis: *On the Stability and Accuracy of High-order Runge-Kutta Discontinuous Galerkin Methods*
    First job: Postdoc at Brown University
  - He Yang, Ph.D. 2014
    Thesis: *Analysis and Applications of Discontinuous Galerkin Methods for Hyperbolic Equations*
    First job: Postdoc at Stanford University
  - Sergey Yakovlev, Ph.D. 2011
    Thesis: *Central Discontinuous Galerkin Methods for Hamilton-Jacobi Equations and Ideal Magnetohydrodynamics Equations*
    First job: Postdoc at University of Utah

- Visiting students

  - Maohui Lyu (Doctoral, Chongqing University), August 2018 - August 2019   First job: Postdoc at Chinese Academy of Sciences, Beijing, China

- Pei Fu (Doctoral, University of Science and Technology of China, China), February 1 - July 31 2015, February 2017 - June 2017 First job: Postdoc at University of Science and Technology of China
  - Zhanjing Tao (Doctoral, Xiamen University, China), January 16 - July 15, 2014
    First job: Postdoc at Michigan State University
  - Maojun Li (Doctoral, Chongqing University, China), August 2011 - August 2012
    First job: Postdoc at Beijing Computational Science Research Center, China
  - Yue Cheng (Master, Nanjing University, China), Spring 2011
    First job: Baidu, Inc.

- Master project: Dong Guo (2009 - 2010) *"Randomized Low-Rank Approximation of Large Matrix"*

- Undergraduates

  - (Co-)Advisor of Class 2017 math majors, Fall 2020 - present
  - (Co-)Advisor of Class 2017 math majors, Fall 2013 - Spring 2017
  - Undergraduate research projects:
    * Spring 2020: Jingmin Sun, *"On Sticky Brownian Motion and Numerical Solution"*
    * Summer 2018: Zachary J. Frangella *"Numerical Methods for Parabolic Equations with Non-Smooth Initial Data"*
    * Summer 2015, Summer, Fall 2016: Xiaoan Shen *"Mathematical Characterization of Bound Preserving Implicit Schemes"*
    * Summer 2013 (with M. Holmes and I. Herron): Nicholai M. Avramov, Jade E. Master *"Kahan Methods"*
    * Summer 2012 (with V. Pierce at U. of Texas-Pan American (UTPA)): Estrella Medina (UTPA), Esteban Melendez (UTPA), Jared Salvadore *"Multi-Frontal Solvers"*
    * Summer 2011, Spring 2012 (with I. Herron): Daniel Goldstein, Aaron Smith *"Magnetorotational Instability and Magnetocoriolis Waves: a Global Analysis"*
    * Spring 2011 (with G. Kovacic):
      Vera Axelrod *"Digital Image Watermarking with the Singular Value Decomposition"*
      John Laurentiev *"Invisibility Cloaking"*
      Barry Fortuna, Jason Greene *"Modeling of Systemic Risk in Banking Ecosystems"*
    * Spring 2010: Samantha Cotter, Yu (Boris) Ning, Kayla Melanson
      "Gender-Biased Predation"
    * Summer 2009 (with M. Holmes): Aaron Allen, Lixun Liu, Tianhe Zhang
      "Efficiently Solving Polynomial Systems by Homotopy Continuation"
    * Spring 2009 (with M. Holmes):
      Aaron Allen *"Using Homotopy Methods to Find Roots of a Polynomial System of Equations"*
      Eric A. Weissenstein *"Stability Analysis of a Predator-Prey Model Incorporating Gender"*

- Academic advisor of: (*no research project or thesis*)

  - Doctoral:

Richard McQueen	Fall 2019 - present
Nick Salvatore	Fall 2018 - present
Yonggui Yan	Fall 2018 - Spring 2019
Jun Tan	Fall 2017 - Spring 2019
Zhongkai Mi	Fall 2017 - Spring 2018
Yonatan Ashenafi	Fall 2016 - Spring 2018
Jacob M. Pasanen	Fall 2014 - Spring 2016
Jennifer Karkosks	Fall 2013 - Spring 2015

  - Master:

Anirban Chandra	2020 -
Zhen Li	2016 - 2017
Mohit Tyagi	2015 - 2016
Jayanth Jagalur Mohan	2008 - 2010

Professional Activities and Service

<u>Member of professional committees of</u>

- SIAM Committee on Section Activities, January 1, 2018 - present

- AWM Advance - Research Network Committee, September 1, 2017 - December 31, 2020

- AWM-SIAM Subcommittee, August 1, 2015 - July 31, 2017

<u>Workshops, Conferences, and Mini-Symposia (Co-)Organized</u>

- The ICERM Topical Workshop, *Advances and Challenges in Hyperbolic Conservation Laws: Theory, Numerics, and Applications*, Providence RI, May 17-21, 2021

- Mini-Symposium *Recent Development in Analysis and Computation of Hyperbolic and Kinetic problems*, at the SIAM Conference on Analysis of Partial Differential Equations (PD19), La Quinta, CA, December 11-14, 2019

- Mini-Symposium on *Novel Computational Methods for Electromagnetic Problems in Complex Nonlinear Materials*, at the 9th International Congress on Industrial and Applied Mathematics (ICIAM), Valencia, Spain, July 15-19, 2019

- The ICERM 2018 Topical Workshop: *Computational Aspects of Time Dependent Electromagnetic Wave Problems in Complex Materials*, Providence RI, June 25-29, 2018

- Mini-Symposium on *High Order Numerical Methods for Hyperbolic PDEs and Applications*, at the 2017 AMS Fall Eastern Sectional Meeting, Buffalo, NY, September 16-17, 2017

- Mini-Symposium on *Recent Advances in Numerical Analysis and Scientific Computing*, at the AWM-SIAM Workshop during the 2017 SIAM Annual Meeting, Pittsburgh, PA, July 10-14, 2017

- *Frontiers in Applied and Computational Mathematics*, ICERM, Providence, RI, January 4-6, 2017

- Mini-Symposium on *Women in Applied Mathematics: Recent Advances in Modeling, Numerical Algorithms, and Applications*, at the 8th International Congress on Industrial and Applied Mathematics (ICIAM), Beijing, China, August 10-14, 2015

- At the SIAM Conference on Computational Science and Engineering (CSE15), Salt Lake City, UT, March 14-18, 2015
    - Mini-Symposium on *Efficient High-Order Numerical Methods for Nonlinear PDEs*
    - AWM-SIAM 2015 Workshop on *Research Talks by Recent Ph.D.s: Mathematical Modeling and High-Performance Computing for Multiscale and Multiphysics Problems*

- *IMA Special Workshop WhAM! A Research Collaboration Workshop for Women in Applied Mathematics: Numerical Partial Differential Equations and Scientific Computing*, Institute for Mathematics and its Applications (IMA), Minneapolis, MN, August 11-15, 2014

- *2014 SIAM Annual Meeting*, Chicago, IL, July 11-14, 2014

- *The 4th New York Conference on Applied Mathematics*, Cornell University, November 9, 2013

- Mini-Symposium on *Recent Developments in Numerical Methods for PDEs*, at the 2013 SIAM Annual Meeting, San Diego, CA, July 8-12, 2013

- Special session on *Numerical Methods for PDEs*, at the AWM Research Symposium 2013, Santa Clara University, March 16-17, 2013

- *The 3rd New York Conference on Applied Mathematics*, Rensselaer Polytechnic Institute, Troy, NY, October 13, 2012

- *The 2nd New York Conference on Applied Mathematics*, University at Buffalo, April 30, 2011

- Mini-Symposium on *Advances in Computational Mathematics: Design, Analysis, Optimization and Visualization*, at the 2010 SIAM Annual Meeting, Pittsburgh, PA, July 12-16, 2010

- *Applied Math Days*, Rensselaer Polytechnic Institute, Troy, NY, March 19-20, 2010, March 30-31, 2012, April 10-11, 2015, April 1-2, 2016, April 7-8, 2017, April 6-7, 2018, April 5-6, 2019

- Mini-Symposium on *Discontinuous Galerkin Methods for Hyperbolic Equations*, at International Conference on Spectral and High Order Methods (ICOSAHOM09), Trondheim, Norway, June 22-26, 2009

- *The Fall 2008 Finite Element Circus*, Rensselaer Polytechnic Institute, Troy, NY, October 24-25, 2008

- Mini-Symposium on *Advances in Numerical Methods for PDEs and their Applications*, at the 2008 SIAM Annual Meeting, San Diego, CA, July 7-11, 2008

- Mini-Symposium on *Computational Methods for Electromagnetism*, at the Joint Meeting of Southeastern Section MAA & SIAM Southeast Atlantic Section, Auburn, AL, March 30 - April 1, 2006

- Mini-Symposium on *Discontinuous Galerkin Methods*, at the Spring 2005 SIAM Southeast Atlantic Section, Charleston, SC, March 25-26, 2005

Service /outreach in Activities on Diversity and Career Advancement

(AWM stands for the Association for Women in Mathematics. *Some items below are listed twice in this CV.*)

- Served as a panelist at a Career Session, Mini-Symposium on Women in Applied Mathematics: Recent Advances in Modeling and Applications, at the 9th International Congress on Industrial and Applied Mathematics (ICIAM), Valencia, Spain, July 15-19, 2019

- Member of the Steering Committee of WINASc, a research network for Women in Numerical Analysis and Scientific Computing, June 2018 - present

    - Serving as the network website editor, Fall 2016 - present
    - Co-organizer of network events embedded into conferences, including an ICERM Topical Workshop in June 2018, ICOSAHOM in July 2018

- Member of the AWM Advance - Research Network Committee, September 1, 2017 - December 31, 2020

- Co-organized a mini-symposium at the AWM-SIAM Workshop during the SIAM Annual Meeting, Pittsburgh, PA, July 10-14, 2017

- Served as the moderator of the panel session at Frontiers in Applied and Computational Mathematics, ICERM, Providence, RI, January 4-6, 2017

- Served on the Poster Selection Committee for the AWM-SIAM 2016 Workshop at the SIAM Annual Meeting, Boston, July 11-15, 2016

- Serving as the faculty mentor for the AWM Student Chapter at Rensselaer Polytechnic Institute, Spring 2016 - present

- Co-organized a mini-symposium and served as a career panelist at the 8th International Congress on Industrial and Applied Mathematics (ICIAM), Beijing, China, August 10-14, 2015. *Both technical and career-panel sessions were proposed, with all speakers being women applied mathematicians.*

- Served on AWM SIAM Subcommittee, August 1, 2015 - July 31, 2017

- AWM-SIAM 2015 Workshop at SIAM Conference on Computational Science and Engineering (CSE15), Salt Lake City, UT, March 14-18, 2015

    - Served on the organizing committee of this workshop, served as a poster judge
    - Co-organized the technical sessions, with speakers being recent women PhDs

- Co-organized an IMA Special Workshop, and served as the mentor for a research team: WhAM! A Research Collaboration Workshop for Women in Numerical Analysis and Scientific Computing, IMA, Minneapolis, MN, August 11-15, 2014 (*The initiated collaboration ran till summer 2015.*)

- Presented and served as a panelist on AWM Career Panel, at 2014 SIAM Annual Meeting, Chicago, IL, July 11-14, 2014

- Co-organized a discussion session on career development for women at the AWM Research Symposium 2013, Santa Clara University, March 16-17, 2013

- Served as a panelist in Professional Development Round Table Discussion on *Hiring and Interviews*, Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, RI, September 27, 2011
- Organized a mini-symposium at the 2010 SIAM Annual Meeting, Pittsburgh, PA, July 12-16, 2010. *All speakers were women applied mathematicians, including senior and junior professors as well as postdocs.*
- Participated in lunch discussion with women graduate students in mathematics at University of Minnesota, November 4, 2008, November 17, 2010
- Served as a panelist in the seminar on *Planning Your Career* by SIAM Student Chapter at University of South Carolina, April 25, 2006
- At Rensselaer Polytechnic Institute
  - Hosted and supervised female graduate students from Nanjing University in Spring 2011 and from University of Science and Technology of China in Springs 2015 and 2017
  - Co-supervised two minority (Spanish) students from University of Texas-Pan American for summer research projects in Summer 2012
  - Supervised 4 female undergraduates for research in Spring 2010, 2011, Summer 2012
  - Co-organized the RTG Job Application Seminar, October 7, 2009

Reviewer for

- Research proposals
  - Review panels: National Science Foundation 2008, 2009, 2011, 2016-2021
  - Single proposal: Department of Energy, National Science Foundation, Research Grant Council of Hong Kong
- Research journals (since 2004):

Acta Mechanica Sinica	*Advances in Computational Mathematics*
Applied Mathematical Modelling	*Applied Mathematics Letters*
Applied Numerical Analysis	*Applied Numerical Mathematics*
BIT Numerical Mathematics	*Communication in Computational Physics*
Computational and Applied Mathematics	*Computer Methods in Applied Mechanics and Engineering*
Computers and Mathematics with Applications	
Computers and Fluids	*Communications in Mathematical Sciences*
Discrete and Continuous Dynamical Systems Series B	*Engineering with Computer*
International Journal of Computer Mathematics	*International Journal for Numerical Methods in Engineering*
Journal of Applied Mathematics and Computing	*International Journal for Numerical Methods in Fluids*
Journal of Computational Physics	*Journal of Computational and Applied Mathematics*
Journal of Engineering Mathematics	
Journal of Nonlinear Science	*Journal of Scientific Computing*
Mathematics of Computation	*ESAIM: Mathematical Modelling and Numerical Analysis*
Numerische Mathematik	*Numerical Mathematics: Theory, Methods, and Applications*
Scientific Programming	*Numerical Methods for Partial Differential Equation*
SIAM Journal on Numerical Analysis	*SIAM Journal of Scientific Computing*
	A Quarterly on Numerical Analysis and Theory of Computation

Department and University Service (Rensselaer Polytechnic Institute)

- Faculty Senate Promotion & Tenure Committee, Fall 2020 - present
- Member of the Graduate Committee, Fall 2015 - present
- Member of Award Committee, Spring 2016, Spring 2017
- Performance Plan Committee, Fall 2014
- Mentor of First Year Intervention Program (FIP), Spring 2014 - Summer 2014
- Member of the Preliminary Exam Committee, Summer 2013 - Fall 2014
- Member of the New Staff Committee, Spring 2013 - Summer 2014
- Member of the Vision Committee, Summer - Fall 2012
- Member of the Math Head Search Committee, Fall 2007 - Spring 2008, Fall 2009 - Spring 2010, Fall 2012
- Math Colloquium Chair, Fall 2006 - Summer 2011

- Committee member of the exams for 29 graduate students, March 2007 - present
- Member of the doctoral committee of (since August 2007, by default in Mathematics): Arthur Newell, Kurt Dominesey (Mechanical Engineering), Thuong Nguyen (University of Utah), Brett Buckner, Chang Liu, Zhichao Peng, John Jacangelo, Jonathan Holmes, Jason Li (Aerospace Engineering), Christopher Morrison (Aerospace Engineering), Zhen Li (Mechanical Engineering), Jiaming Chen, Feixiao Long (Biomedical Engineering), Mark Woods, Fan Zhang (Mechanical Engineering), Matthew Reyna, Xiaobo Yang (Nanjing University), Wei Guo (Nanjing University), Chao Liang (Nuclear Engineering), Lijie Bai, He Yang, Emaan Abdul-Majid, Chu Wang (Mechanical Engineering), Andrew Warner, Linghong Hu, Jayanth Jagalur Mohan (Mechanical Engineering), David Sondak (Aerospace Engineering), Sanjeev Rao (Chemical & Biological Engineering), Sergey Yakovlev, Analee Miranda, Melih Ozlem, Pablo U. Suárez, Ronald J. Chila (Mechanical Engineering), Oswaldo Sanchez, Ning Zhang, Xueru Ding, Christina H. Lee, Polina Zheglova

Teaching Experiences

- Rensselaer Polytechnic Institute, Fall 2006 - present
  - Graduate level: Computational Linear Algebra, Numerical Methods for ODEs, Finite Element Analysis, Topics in Discontinuous Galerkin Methods, Seminars in Finite Element Methods, Applied Functional Analysis
  - Undergraduate level: Introduction to Numerical Methods for Differential Equations, Art and Science of Mathematics I, II, Numerical Computing, Mathematical Analysis I
  - Independent study: Numerical Methods for PDEs, Finite Element Methods, Discontinuous Galerkin Methods, PDE Constrained Optimal Control, Computation in Multi-Scale Problems, AP Methods for Kinetic Equations
- University of South Carolina, August 2004 - May 2006
  - Undergraduate courses: Calculus I, Elementary Differential Equations

Academic Presentations

Invited Talks

- Mini-Symposium on High Order Structure Preserving Numerical Methods and Applications, at the International Conference on Spectral and High Order Methods, hosted by Vienna University of Technology, Austria, July 12-16, 2021 (virtual)
- Workshop on Recent Development in Numerical Kinetic Theory, organized by J. Hu (Purdue), Q. Li (U Madison), J.-M. Qiu (U Delaware), June 21-25, 2020 (virtual)
- Scientific Computation Session, at the Annual Meeting of the Canadian Society of Applied and Industrial Mathematics, hosted by University of Waterloo, June 21-24, 2021 (virtual)
- Workshop on Numerical Methods for Kinetic Equations, International Centre Meetings Mathématiques (CIRM), Marseille Luminy, France, June 14-18, 2021 (virtual)
- Workshop on Scientific Computing and Applications, University of Nevada, Las Vegas, March 6, 2021 (virtual)
- Workshop on Hyperbolic Balance Laws: Modeling, Analysis, and Numerics, Mathematisches Forschungsinstitut Oberwolfach (MFO), Germany, 28 February - 6 March 2021 (virtual)
- Scientific Computing Seminar, Brown University, February 14, 2020
- Mini-Symposium on Recent Developments in Numerical Analysis of PDEs and Their Applications, at the SIAM Conference on Analysis of Partial Differential Equations (PD19), La Quinta, CA, December 11-14, 2019
- School of Mathematical Sciences, University of Electronic Science and Technology of China, Chengdu, China, November 8, 2019
- CAM Seminar, Peking University, Beijing, China, November 6, 2019
- Beijing CFD Seminar, Institute of Applied Physics and Computational Mathematics, Beijing, China, October 25, 2019
- ICMSEC and LSEC Seminar, Chinese Academy of Sciences, Beijing, China, October 18, 2019
- Mini-Symposium on Women in Applied Mathematics: Recent Advances in Modeling and Applications, at the 9th International Congress on Industrial and Applied Mathematics (ICIAM), Valencia, Spain, July 15-19, 2019
- Mini-Symposium on Numerical Methods for Kinetic and Mean-Field Equations, at the 9th International Congress on Industrial and Applied Mathematics (ICIAM), Valencia, Spain, July 15-19, 2019

- Workshop on Women in Numerical Methods for PDEs and their Applications, Banff International Research Station (BIRS), Banff, AB, Canada, May 13-17, 2019

- (Distinguished speaker) Red Raider Symposium on Current Trends in Numerical Analysis and Scientific Computing, Texas Tech University, October 27, 2018

- Mini-Symposium on Advances in Numerical Approximation of Partial Differential Equations, at the AMS Eastern Sectional Meeting, Newark, DE, September 29-30, 2018

- Numerical Analysis Seminar, University of Delaware, September 28, 2018

- (**Plenary speaker**) The International Conference on Spectral and High Order Methods (ICOSAHOM), Imperial College London, London, United Kingdom, July 9-13, 2018

- The International Consortium of Chinese Mathematicians (ICCM), Sun Yat Sen University, Guangzhou, China, December 26-30, 2017

- Workshop on Computational Methods for Kinetic Equations and Related Models, Université Paul Sabatier, Toulouse, France, November 6-10, 2017

- Mini-Symposium on High Order Numerical Methods for Hyperbolic PDEs and Applications, at the 2017 AMS Fall Eastern Sectional Meeting, Buffalo, NY, September 16-17, 2017

- The Third International Workshop on Development and Application of High-Order Numerical Methods, University of Science and Technology of China, Hefei, Anhui, China, December 17-19, 2016

- (**Conference invited speaker**) XVI International Conference on Hyperbolic Problems: Theory, Numerics, Applications, Aachen, Germany, August 1-5, 2016

- Applied Mathematics Seminar, SUNY University at Buffalo, April 28, 2016

- Applied Math Seminar, Duke University, February 1, 2016

- Women in Applied Maths and Soft Matter Physics Conference, Mainz, Germany, October 26-28, 2015

- (**Plenary speaker**) Annual Meeting of Computational Mathematics in China, Guangzhou, China, September 19-22, 2015

- International Conference on Numerical Mathematics and Scientific Computing, Nanjing, China, August 16-19, 2015

- Mini-Symposium on Electromagnetism and Its Engineering Applications, at the 8th International Congress on Industrial and Applied Mathematics (ICIAM), Beijing, China, August 10-14, 2015

- Mini-Symposium on Discontinuous Galerkin methods: Recent Development and Applications, at the 8th International Congress on Industrial and Applied Mathematics (ICIAM), Beijing, China, August 10-14, 2015

- Workshop on Higher Order Numerical Methods for Evolutionary PDEs: Applied Mathematics Meets Astrophysical Applications, Banff International Research Station (BIRS), Banff, AB, Canada, May 10-15, 2015

- Workshop on Asymptotic Preserving and Multiscale Methods for Kinetic and Hyperbolic Problems, University of Wisconsin - Madison, May 4-9, 2015

- Mini-Symposium on Recent Advances in Finite Element Analysis and Applications, at the 2015 Spring Western Sectional AMS Meeting, University of Nevada, Las Vegas, NV, April 18-19, 2015

- Department of Mathematics, Harbin Institute of Technology, Harbin, China, December 22, 2014

- School of Mathematical Sciences, Xiamen University, Xiamen, China, December 17, 2014

- Mini-Symposium on High Order WENO and DG Methods for Hyperbolic Conservation Laws and Hamilton-Jacobi Equations, at the International Conference on Spectral and High Order Methods (ICOSAHOM), Salt Lake City, UT, June 23-27, 2014

- Mini-Symposium on Discontinuous Galerkin Finite Element Methods for Partial Differential Equations, at the 2014 Spring Southeastern Sectional AMS Meeting, University of Tennessee, Knoxville, TN, March 21-23, 2014

- Numerical Analysis and PDE Seminar, University of Delaware, March 6, 2014

- Workshop on Issues in Solving the Boltzmann Equation for Aerospace Applications, ICERM, Providence, RI, June 3-7, 2013

- Institute of Applied Physics and Computational Mathematics, Beijing, China, April 22&23, 2013 (two lectures)

- Institute of Computational Mathematics and Scientific/Engineering Computing of Chinese Academy of Sciences, Beijing, China, April 10, 2013

- Beijing Computational Science Research Center, Beijing, China, April 9, 2013

- Center for Computational Science & Engineering, Peking University, Beijing, China, April 3, 2013

- Mini-Symposium on Computational Methods for Kinetic Equations and Related Models, at the SIAM Conference on Computational Science and Engineering, Boston, MA, February 25-March 1, 2013

- Mini-Symposium on Recent Advances in High Order Finite Element Methods, at the SIAM Conference on Computational Science and Engineering, Boston, MA, February 25-March 1, 2013

- Mini-Symposium on Discontinuous Galerkin Methods, at the 11th International Workshop on Finite Elements for Microwave Engineering (FEM2012), Estes Park, CO, June 4-6, 2012

- Mini-Symposium on DG and WENO Methods, at International Conference on Applied Mathematics 2012, Modeling, Analysis & Computation, City University of Hong Kong, Hong Kong, China, May 28-June 1, 2012

- Math/ICES Center of Numerical Analysis Seminar, University of Texas at Austin, May 20, 2012

- Workshop on Theory and Applications of Discontinuous Galerkin Methods, Mathematisches Forschungsinstitut Oberwolfach, Germany, February 19-25, 2012

- Department of Mathematical Sciences, Delaware State University, December 5, 2011

- Second Monterey Workshop on Computational Issues in Nonlinear Control, Monterey, CA, November 7-8, 2011

- ICERM Seminars, at Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, RI, October 25, 2011

- Mini-Symposium on Scientific Computation and Numerical Methods, "40 Years and Counting: AWM's Celebration of Women in Mathematics", at Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, RI, September 17-18, 2011

- Mini-Symposium on Discontinuous Galerkin Methods, at the 7th International Congress on Industrial and Applied Mathematics (ICIAM 2011), Vancouver, Canada, July 18-22, 2011

- Workshop on Computational Problems in Materials Science, Wuhan University, China, July 4-6, 2011

- Math/ICES Center of Numerical Analysis Seminar, University of Texas at Austin, May 2, 2011

- Scientific Computing Seminar, Brown University, Providence, RI, March 18, 2011

- Workshop on Advancing Numerical Methods for Viscosity Solutions and Applications, Banff International Research Station (BIRS), Banff, AB, Canada, February 14-18, 2011

- IMA Annual Program Year Workshop - Numerical Solutions of Partial Differential Equations: Novel Discretization Techniques, Minneapolis, MN, November 1-5, 2010

- Mini-Symposium on Advanced Computational Methods for Convection Dominated Flow Problems, at the 2010 SIAM Annual Meeting, Pittsburgh, PA, July 12-16, 2010

- Applied and Interdisciplinary Mathematics Seminar, University of Michigan, April 9, 2010

- Scientific Computing and Numerics Seminar, Cornell University, March 29, 2010

- Applied and Computational Math Seminar, University of North Carolina at Charlotte, March 19, 2010

- ICES Seminars- Numerical Analysis Series, University of Texas at Austin, February 16, 2010

- New York Conference on Applied Mathematics, Rochester Institute of Technology, Rochester, NY, October 17, 2009

- Mini-Symposium on Advances in Discontinuous Galerkin Methods for Partial Differential Equations, at the 10th US National Congress on Computational Mechanics (USNCCM10), Columbus, Ohio, July 16-19, 2009

- Mini-Symposium on Discontinuous Galerkin Methods for Hyperbolic Equations, at International Conference on Spectral and High Order Methods (ICOSAHOM09), Trondheim, Norway, June 22-26, 2009

- Numerical PDEs Seminar, Nanjing University, China, May 22, 2009

- Math Colloquium, Virginia Polytechnic Institute and State University, April 10, 2009

- Applied Math Seminar, California State University Northridge, March 25, 2009

- Numerical Analysis and Scientific Computing Seminar, Courant Institute of Mathematical Sciences, New York University, December 5, 2008

- Workshop on Nonstandard Finite Element Methods, Mathematisches Forschungsinstitut, Oberwolfach, Germany, August 10-16, 2008

- Applied Mathematics Seminar, University of California, Irvine, April 28, 2008

- Mini-Symposium on Finite Element Methods and Applications, at the 2008 Spring Central AMS Meeting, Indiana University, Bloomington, IN, April 5-6, 2008

- Applied Mathematics Seminar, Michigan State University, February 15, 2008

- Workshop on Discontinuous Galerkin Methods for Partial Differential Equations, Banff International Research Station (BIRS), Banff, AB, Canada, November 25-30, 2007

- Applied Mathematics Seminar, Syracuse University, October 24, 2007

- Math Colloquium, University of Maryland, Baltimore County, October 5, 2007

- Mini-Symposium on Higher Order and HP Methods with Applications to Elliptic and Maxwell Problems, at the 9th US National Congress on Computational Mechanics (USNCCM9), San Francisco, CA, July 23-26, 2007

- Scientific & Engineering Computing Seminar, Peking University, China, July 5, 2007

- Computational Mathematics Seminar, Institute of Computational Mathematics, Chinese Academy of Sciences, China, July 4, 2007

- Nonlinear Mechanics Laboratory Seminar, Institute of Mechanics, Chinese Academy of Sciences, China, July 2, 2007

- Mini-Symposium on High Order Discontinuous Galerkin Methods and Applications, at International Conference on Spectral and High Order Methods (ICOSAHOM07), Institute of Computational Mathematics, Chinese Academy of Sciences, Beijing, China, June 18-22, 2007

- Workshop on Discontinuous Galerkin Method and Its Application, Beijing International Center for Computational Physics, Beijing, China, June 13-17, 2007

- Numerical Analysis Seminar, Texas A&M University, March 7, 2007

- Applied Math Seminar, Colorado State University, March 1, 2007

- Center for Computation and Technology, Louisiana State University, February 19, 2007

- Workshop on Numerical Methods for Degenerate Elliptic Equations and Applications, Banff International Research Station (BIRS), Banff, AB, Canada, December 9-14, 2006

- Mini-symposium on Fast Sweeping Methods for Hamilton-Jacobi Equations: Updates, Algorithms and Applications, at SIAM Conference on Analysis of Partial Differential Equations, Boston, MA, July 10-12, 2006

- Math Colloquium, Rensselaer Polytechnic Institute, February 2006

- Math Colloquium, University of Louisville, February 2006

- Math Colloquium, University of Alabama in Huntsville, February 2006

- Math Colloquium, University of Minnesota, February 2006

- Math Colloquium, University of Tennessee, February 2006

- Math Colloquium, Clemson University, January 2006

- AMS-SIAM Special Session on Analysis and Implementation of Finite Element Methods, at Joint Mathematics Meeting, San Antonio, TX, January 12-15, 2006

- Mini-Symposium on Discontinuous Galerkin Methods, at the 8th US National Congress on Computational Mechanics (USNCCM8), Austin, TX, July 24-28, 2005

- Mini-Symposium on Discontinuous Galerkin Methods for PDEs, at the Third MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, June 14-17, 2005

- Scientific Computing Seminar, Brown University, March 2005

- SIAM Mini-Symposium on Discontinuous Galerkin Methods: Theory and Applications, at the AMS Joint Mathematics Meetings, Atlanta, GA, January 5-8, 2005

- Mini-Symposium on High-order Methods in Electromagnetics and Plasma Physics, at the International Conference on Spectral and High Order Methods (ICOSAHOM04), Providence, RI, June 21-25, 2004

- Mini-Symposium on Discontinuous Galerkin Methods for Computational Mechanics, at the 7th US National Congress on Computational Mechanics (USNCCM7), Albuquerque, NM, July 27-31, 2003

- Mini-Symposium on Discontinuous Galerkin Methods for Fluid and Solid Mechanics, at the Second MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, June 17-20, 2003

Summer School / Tutorial Lectures

- *Discontinuous Galerkin Methods: Linear Advection Equation and Kinetic Transport Model*, Workshop and Summer School on Kinetic Theory and Related Applications, July 7, 2021 (virtual)

- *Asymptotic Preserving Methods*, Lectures Series on High-Order Numerical Methods, July 30, 2020 (virtual)

- *Topics in Discontinuous Galerkin Methods*, School of Mathematical Sciences, Peking University, Beijing, China, October 7 - November 22, 2019

- *Discontinuous Galerkin Methods in MHD simulations*, during the summer school on Computational Magneto-hydrodynamics and Its Applications in Magnetic Fusion, organized by the State Key Laboratory of Scientific and Engineering Computing (LSEC), Chinese Academy of Sciences, Beijing, China, July 23-28, 2018

- *Numerical Methods for Kinetic Equations - Part I: Finite Difference Methods*, Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, RI, September 9, 2011

- (3-hour) *Discontinuous Galerkin Methods*, Workshop on Advancing numerical methods for viscosity solutions and applications, Banff International Research Station (BIRS), Banff, AB, Canada, February 14-18, 2011

<u>Contributed Talks</u>

- The Fall 2013 Finite Element Circus, University of Delaware, Newark, DE, October 17-18, 2013

- MSEC (Multi-scale Science and Engineering Center) Seminar, Rensselaer Polytechnic Institute, Troy, NY, November 9, 2009

- The Fall 2008 Finite Element Circus, Rensselaer Polytechnic Institute, Troy, NY, October 24-25, 2008

- The Spring 2007 Finite Element Circus, University of Maryland, College Park, MD, April 20-21, 2007

- SIAM Student Chapter Seminar, Department of Mathematics, University of South Carolina, January 2006

- The Fall 2005 Finite Element Circus, Rutgers University, Piscataway, NJ, October 21-22, 2005

- AWM Workshop for Women Graduate Students and Recent PhDs, held in conjunction with the SIAM Annual Meeting, New Orleans, LA, July 11-12, 2005

- The Spring 2005 Finite Element Circus, University of Delaware, Newark, DE, April 29-30, 2005

- The Fall 2004 Finite Element Circus, Syracuse University, Syracuse, NY, October 15-16, 2004

- Scientific Computation Seminar, University of South Carolina, September 2004

- Southeastern Atlantic Mathematical Sciences Workshop (SEAMS), Charleston, SC, September 17-19, 2004

<u>Posters</u>

- AWM and MSRI workshop: The Legacy of Ladyzhenskaya and Oleinik, MSRI, Berkeley, CA, May 18-20, 2006

- Southeastern Atlantic Mathematical Sciences Workshop (Cha-Cha Days), Chapel Hill, NC, September 23-25, 2005

- AWM Workshop: Focus on Research & Career Experiences, at SIAM Annual Meeting and SIAM Conference on the Life Sciences, Portland, OR, July 12-16, 2004

- ADAPT'03: Conference on Adaptive Methods for Partial Differential Equations and Large-Scale Computation, on the Occasion of Dean Joseph E. Flaherty's 60th birthday, Rensselaer Polytechnic Institute, Troy, NY, October 11-12, 2003

Conference and Workshop Participation

- The ICERM Topical Workshop: Advances and Challenges in Hyperbolic Conservation Laws: Theory, Numerics, and Applications, Providence RI, May 17-21, 2021 (virtual)

- ICERM Semester Program, Providence, RI

  - Mathematics of Reduced Order Models, February 17 - 21, 2020
  - Algorithms for Dimension and Complexity Reduction March 23 - 27, 2020 (virtual)
  - Computational Statistics and Data-Driven Models April 20 - 24, 2020 (virtual)

- Workshop on Celebrating 75 Years of Mathematics of Computation, ICERM, Providence RI, November 1-3, 2018

- The ICERM 2018 Topical Workshop: Computational Aspects of Time Dependent Electromagnetic Wave Problems in Complex Materials, Providence RI, June 25-29, 2018

- Recent Advances and Challenges in Discontinuous Galerkin Methods and Related Approaches, IMA, Minneapolis, MN, June 29 - July 1, 2017

- Frontiers in Applied and Computational Mathematics, ICERM, Providence, RI, January 4-6, 2017

- The Fall 2016 Finite Element Circus, Worcester Polytechnic Institute, Worcester, MA, October 14-15, 2016

- The Fall 2015 Finite Element Circus, University of Massachusetts, Dartmouth, North Dartmouth, MA, October 16-17, 2015

- The Spring 2012 Finite Element Circus, Rutgers University, New Brunswick, NJ, April 13-14, 2012

- ICERM Semester Program, Providence, RI

    - Vlasov Models in Kinetic Theory, September 19-23, 2011

    - Novel Applications of Kinetic Theory and Computations, October 17-21, 2011

    - Boltzmann Models in Kinetic Theory, November 7-11, 2011

- IMA Annual Program Year Workshop, Minneapolis, MN

    - Computing with Uncertainty: Mathematical Modeling, Numerical Approximation and Large Scale Optimization of Complex Systems, October 18-22, 2010

    - Numerical Solutions of Partial Differential Equations: Fast Solution Techniques, November 29-December 3, 2010

- The Spring 2010 Finite Element Circus, Brown University, Providence, RI, April 30-May 1, 2010

- International Conference on Advances in Scientific Computing, Brown University, December 6-8, 2009

- Meeting on Mathematics and Its Application (MMIA) by NSF, Beijing, China, May 26, 2009

- The Spring 2009 Finite Element Circus, University of Delaware, Newark, DE, April 24-25, 2009

- The CSUMS Graduate School Seminar, Rensselaer Polytechnic Institute, September 24, 2008

- Workshop on Recent Developments in Numerical Methods for Nonlinear Hyperbolic Partial Differential Equations and their Applications, Banff International Research Station (BIRS), Banff, AB, Canada, August 31-September 5, 2008

- The 8th Annual Rensselaer Colloquium on Teaching and Learning, Rensselaer Polytechnic Institute, May 12-13, 2008

- The Fall 2007 Finite Element Circus, Cornell University, October 19-20, 2007

- Multi-scale Science and Engineering Workshop, Rensselaer Polytechnic Institute, October 31, 2006

- Workshop: Advances and Challenges in the Solution of Stochastic Partial Differential Equations, Brown University, October 20-22, 2006

- Nanotechnology 2006, Rensselaer Polytechnic Institute, September 25-26, 2006

- Program on Grand Challenge Problems in Computational Astrophysics, the Institute for Pure and Applied Mathematics (IPAM) at UCLA, May 3-24, 2005

- International Conference on the Research Trend for PDE Modeling and Computation, on the Occasion of David Gottlieb's 60th birthday, Brown University, November 7-8, 2004

- Workshop on Multi-Dimensional Euler Equations and Conservation Laws, University of Pittsburgh, November 6-9, 2003

- Workshop of Advances and Challenges in Time-Integration of PDE's, Brown University, August 18-20, 2003

- International Conference on Scientific Computing, Partial Differential Equations and Image Processing, on the Occasion of Stanley Osher's 60th birthday, UCLA, April 5-7, 2002

Memberships of Professional Societies

- Society for Industrial and Applied Mathematics (SIAM) 2003 - present

- Association for Women in Mathematics (AWM) 2004 - 2006, 2007 - present

- American Mathematical Society (AMS) 2003-2006