Curriculum Vitae for Cory D. Hauck

CURRENT EMPLOYMENT

Position: Research Staff
Institution: Oak Ridge National Laboratory (ORNL)
Group: Computational and Applied Mathematics
Address: 1 Bethel Valley Road, Bldg. 5700, Oak Ridge, TN 37831-6367
Phone: (865) 574-0730
Fax: (865) 241-9915
Email: coryhauck@gmail.com
URL: http://www.csm.ornl.gov/~hfd

EDUCATION

- Ph.D., Applied Mathematics, University of Maryland, 2006
  Thesis: *Entropy-based moment closures in semiconductor models*
  Advisor: C. David Levermore

- M.S., Electrical Engineering, University of Maryland, 2004

- B.S., Physics and Mathematics, University of South Carolina, 1997

RESEARCH INTERESTS

- Numerical Analysis, Computational Physics, and Scientific Computing
- Numerical Methods for Kinetic Equations and Hyperbolic Partial Differential Equations
- Multiscale Modeling and Simulation
- Mathematical Tools for Scientific Data

EMPLOYMENT HISTORY

08/09-	Research Staff, Computational and Applied Mathematics Group, ORNL
10/16-	Joint Faculty Associate Professor, Department of Mathematics, University of Tennessee
05/11-09/16	Joint Faculty Assistant Professor, Department of Mathematics, University of Tennessee
08/10-05/11	Adjunct Assistant Professor, Department of Mathematics, University of Tennessee
06/06-08/09	Postdoctoral Research Associate, Computational Physics Group, Los Alamos National Laboratory
09/99-06/06	Graduate Research/Teaching Assistant, Department of Mathematics, University of Maryland
10/97-08/99	Engineering Physicist, Doty Scientific Inc., Columbia, SC
05/96-09/97	Undergraduate Research Assistant, Department of Physics, University of South Carolina

AWARDS AND HONORS

2015	Early Career Award, US Department of Energy
2009-2011	Householder Fellowship, Oak Ridge National Laboratory
2005	NSF *Vertical Integration of Research and Education* (VIGRE) research grant
1997	*The Outstanding Achievement and Student Triumph* (TOAST) Award for Outstanding Graduating Senior, College of Science and Mathematics, University of South Carolina
1993-1997	National Merit Scholarship
1993-1997	Alumni Scholarship, University of South Carolina

RESEARCH SUPPORT

2017-2021   Agency: DOE SciDAC Program
Project: *High-fidelity Boundary Plasma Simulation*
Lead PI: C.S. Chang (Princeton Plasma Physics Laboratory)

2016-2020   Agency: DOE Office of Science
Project: *Hybrid Methods for Complex Particle Systems*
PI: Cory Hauck (ORNL)

2015-2018   Agency: DOE Applied Math Program
Project: *Sparse Recovery for Scientific Data*
PI's: Cory Hauck (ORNL) and Stanley Osher (UCLA)

2015-2016   Agency: DOE Applied Math Program
Project: *Modeling the Performance of Extreme Scale Systems*
PI: Cory Hauck (ORNL)

2013-2016   Agency: DOE Applied Math Program
Project: *A Mathematical Environment for Quantifying Uncertainty: Integrated and Optimized at the Extreme Scale (EQUINOX)*
Lead PI: Clayton Webster (ORNL)

2014-2017   Agency: DOE Applied Math Program
Project: *Moment Methods for Kinetic Equations*
PI: Cory Hauck (ORNL)

2014-2015   Agency: ORNL Laboratory Directed Research and Development
Project: *Fast Evaluation of Collision Operators for Modeling Non-Equilibrium Transport*
PI: Eirik Endeve (ORNL)

2012-2014   Agency: ORNL Laboratory Directed Research and Development
Project: *Toward Scalable Algorithms for Kinetic Equations: A New Hybrid Approach to Capturing Multiscale Phenomena*
PI: Cory Hauck (ORNL)

2012-2013   Agency: ORNL Laboratory Directed Research and Development
Project: *Attacking the Supernova Problem: Nonlinear Moment Models for Simulating Neutrino Radiation*
PI: Cory Hauck (ORNL)

2012-2015   Agency: NSF, Division of Mathematical Sciences
Grant: *Optimization-based Moment Models for Multiscale Kinetic Equations*
PI: Cory Hauck (University of Tennessee)

2012-2018   Agency: NSF Research Network in Mathematical Sciences (RNMS)
Grant:*Kinetic Description of Emerging Challenges in Multiscale Problems of Natural Sciences*
PI's: Irene Gamba (University of Texas), Shi Jin (University of Wisconsin, Eitan Tadmor (University of Maryland)

2010-2012   Agency: DOE Applied Math Program
Project: *Advanced Dynamically Adaptive Algorithms for Stochastic Simulations on Extreme Scales*,
PI's: Richard K. Archibald (ORNL) and Dongbin Xiu (Purdue University)

2009-2011   Agency: DOE Applied Math Program
Grant: *Householder Fellowship*

2009-2013   Agency: DOE Applied Math Program
Project: *Advanced Optimization Techniques for Entropy-based Moment Closures*
PI's: Cory Hauck (ORNL) and André Tits (University of Maryland)

2006-2009   Agency: DOE Applied Math Program
Project: *Mimetic Methods for Partial Differential Equations*
PI: Misha Shashkov (Los Alamos National Laboratory)

MANUSCRIPTS IN REVIEW

6. Z. Chen and C. D. Hauck, *Multiscale convergence properties for spectral approximations of a model kinetic equation*, submitted, (2017)

5. M. M. Crockatt, A. J. Christlieb, C. K. Garrett, and C. D. Hauck, *Hybrid methods for radiation transport using diagonally implicit Runge-Kutta and space-time discontinuous Galerkin time integration*, submitted, (2017)

4. J. R. Haack, C. D. Hauck, and M. S. Murillo, *Interfacial mixing in high energy-density matter with a multi-physics kinetic model*, submitted, (2017)

3. C. K. Garrett and C. D. Hauck, *A fast solver for implicit integration of the Vlasov-Poisson system in the Eulerian framework*, submitted, (2017)

2. G. Dimarco, C. D. Hauck, and R. R. Loubère, *A class of low dissipative schemes for solving kinetic equations*, submitted, (2017)

1. M. P. Laiu and C. D. Hauck, *Positivity limiters for filtered spectral approximations of linear kinetic transport equations*, submitted, (2016)

JOURNAL PUBLICATIONS

30. W. Zhu, B. Wang, R. Barnard, C. D. Hauck, F. Jenko, and S. Osher, *Scientific data interpolation with low dimensional manifold model*, Journal of Computational Physics, (2017)

29. J. R. Haack, C. D. Hauck, and M. S. Murillo, *A conservative, entropic multispecies BGK model*, Journal of Statistical Physics, 168 (2017), pp. 826–856

28. M. M. Crockatt, A. J. Christlieb, C. K. Garrett, and C. D. Hauck, *An arbitrary-order, fully implicit, hybrid kinetic solver for linear radiative transport using integral deferred correction*, Journal of Computational Physics, (2017)

27. I. M. Gamba, J. R. Haack, C. D. Hauck, and J. Hu, *A fast spectral method for the Boltzmann collision operator with general collision kernels*, SIAM Journal on Scientific Computing, 39 (2017), pp. B658–B674

26. M. P. Laiu, C. D. Hauck, R. G. McClarren, D. P. O'Leary, and A. L. Tits, *Positive filtered P_N moment closures for linear kinetic equations*, SIAM Journal on Numerical Analysis, 54 (2016), pp. 3214–3238

25. C. K. Garrett and C. D. Hauck, *On the eigenstructure of spherical harmonic equations for radiative transport*, Computers & Mathematics with Applications, 72 (2016), pp. 264–270

24. V. M. Laboure, R. G. McClarren, and C. D. Hauck, *Implicit filtered P_N for high-energy density thermal radiation transport using discontinuous Galerkin finite elements*, Journal of Computational Physics, (2016)

23. M. Frank, C. Hauck, and K. Küpper, *Convergence of filtered spherical harmonic equations for radiation transport*, Communications in Mathematical Sciences, (2016)

22. C. K. Garrett, C. Hauck, and J. Hill, *Optimization and large scale computation of an entropy-based moment closure*, Journal of Computational Physics, 302 (2015), pp. 573–590

21. E. Endeve, C. D. Hauck, Y. Xing, and A. Mezzacappa, *Bound-preserving discontinuous Galerkin methods for conservative phase space advection in curvilinear coordinates*, Journal of Computational Physics, 287 (2015), pp. 151–183

20. L. Chacón, D. del Castillo-Negrete, and C. D. Hauck, *An asymptotic-preserving semi-Lagrangian algorithm for the time-dependent anisotropic heat transport equation*, Journal of Computational Physics, 272 (2014), pp. 719–746

19. G. W. Alldredge, C. D. Hauck, D. P. O'Leary, and A. L. Tits, *Adaptive change of basis in entropy-based moment closures for linear kinetic equations*, Journal of Computational Physics, 258 (2014), pp. 489–508

18. C. Hauck, Y. Sun, and I. Timofeyev, *On cellular automata models of traffic flow with look-ahead potential*, Stochastics and Dynamics, 14 (2014), p. 1350022

17. E. OLBRANT, C. D. HAUCK, AND M. FRANK, *Perturbed, entropy-based closure for radiative transfer*, Kinetic and Related Models, 6 (2013), pp. 557–587

16. C. D. HAUCK AND R. G. MCCLARREN, *A collision-based hybrid method for time-dependent, linear, kinetic transport equations*, Multiscale Modeling & Simulation, 11 (2013), pp. 1197–1227

15. C. K. GARRETT AND C. D. HAUCK, *A comparison of moment closures for linear kinetic transport equations: The line source benchmark*, Transport Theory and Statistical Physics, 42 (2013), pp. 203–235

14. V. VIKAS, C. HAUCK, Z. WANG, AND R. O. FOX, *Radiation transport modeling using extended quadrature method of moments*, Journal of Computational Physics, 246 (2013), pp. 221–241

13. H. SCHAEFFER, R. CAFLISCH, C. D. HAUCK, AND S. OSHER, *Sparse dynamics for partial differential equations*, Proceedings of the National Academy of Sciences, 110 (2013), pp. 6634–6639

12. E. OLBRANT, C. D. HAUCK, AND M. FRANK, *A realizability-preserving discontinuous Galerkin method for the M_1 model of radiative transfer*, Journal of Computational Physics, 231 (2012), pp. 5612–5639

11. G. W. ALLDREDGE, C. D. HAUCK, AND A. L. TITS, *High-order entropy-based closures for linear transport in slab geometry II: A computational study of the optimization problem*, SIAM Journal on Scientific Computing, 34 (2012), pp. B361–B391

10. C. D. HAUCK, *High-order entropy-based closures for linear transport in slab geometry*, Commun. Math. Sci, 9 (2011), pp. 187–205

9. R. G. MCCLARREN AND C. D. HAUCK, *Robust and accurate filtered spherical harmonics expansions for radiative transfer*, Journal of Computational Physics, 229 (2010), pp. 5597–5614

8. R. G. MCCLARREN AND C. D. HAUCK, *Simulating radiative transfer with filtered spherical harmonics*, Physics Letters A, 374 (2010), pp. 2290–2296

7. C. D. HAUCK AND R. B. LOWRIE, *Temporal regularization of the P_N equations*, Multiscale Modeling & Simulation, 7 (2009), pp. 1497–1524

6. C. HAUCK AND R. MCCLARREN, *Positive P_N closures*, SIAM Journal on Scientific Computing, 32 (2010), pp. 2603–2626

5. J. R. HAACK AND C. D. HAUCK, *Oscillatory behavior of asymptotic-preserving splitting methods for a linear model of diffusive relaxation*, Kinetic and Related Models, 1 (2008), pp. 573–590

4. C. D. HAUCK, C. D. LEVERMORE, AND A. L. TITS, *Convex duality and entropy-based moment closures: Characterizing degenerate densities*, SIAM Journal on Control and Optimization, 47 (2008), pp. 1977–2015

3. S. AHMED, R. BUCKINGHAM, P. GREMAUD, C. HAUCK, C. KUSTER, M. PRODANOVIC, T. ROYAL, AND V. SILANTYEV, *Volume determination for bulk materials in bunkers*, International Journal for Numerical Methods in Engineering, 61 (2004), pp. 2239–2249

2. F. D. DOTY, G. ENTZMINGER, C. D. HAUCK, AND J. P. STAAB, *Practical aspects of birdcage coils*, Journal of Magnetic Resonance, 138 (1999), pp. 144–154

1. F. D. DOTY, G. ENTZMINGER, AND C. D. HAUCK, *Error-tolerant rf litz coils for NMR/MRI*, Journal of Magnetic Resonance, 140 (1999), pp. 17–31

OTHER PEER-REVIEWED PUBLICATIONS

6. V. M. LABOURE, R. G. MCCLARREN, AND C. D. HAUCK, *Implicit filtered P_N method in cylindrical coordinates for thermal radiation transport*, in Proceeding of the Joint International Conference on Mathematics and Computation (M&C), Supercomputing in Nuclear Applications (SNA) and the Monte Carlo (MC) Method, N. Pogorelov, E. Audit, and G. Zank, eds., American Nuclear Society, April 2015

5. E. ENDEVE, C. HAUCK, Y. XING, AND T. MEZZACAPPA, *Towards robust discontinuous Galerkin methods for general relativistic neutrino radiation transport*, in Astronomical Society of the Pacific Conference Series, N. Pogorelov, E. Audit, and G. Zank, eds., Astronomical Society of the Pacific, June 2014, pp. 59–64

4. C. D. HAUCK, R. G. MCCLARREN, AND R. B. LOWRIE, *Methods for diffusive relaxation in the P_N equation*, vol. 1, Dipartimento di Matematica della Seconda Universitá di Napoli, 2009, pp. 100–243

3. R. G. MCCLARREN AND C. D. HAUCK, *Positive P_N closures with local optimization*, in Transactions of the 2009 American Nuclear Society Winter Meeting and Nuclear Technology Expo, American Nuclear Society, November 2009

2. R. G. MCCLARREN, C. D. HAUCK, AND R. B. LOWRIE, *Filtered spherical harmonic methods for transport equations*, in Proceedings of the International Conference on Mathematics, Computational Methods, and Reactor Physics, American Nuclear Society, May 2009

1. C. HAUCK, D. LEVERMORE, AND A. TITS, *Convex duality and entropy-based moment closures: Characterizing degenerate densities*, in Proceedings of the 47th IEEE Conference on Decision and Control, IEEE, December 2008

INVITED TALKS AND PRESENTATIONS

05/2017 *Hybrid, Multi-Level, and Asymptotic Preserving Methods for Kinetic Equations*
2017 Workshop on Computational Challenges in Plasma Physics, Air Force Office of Scientific Research

04/2017 *A Scattering-based Hybrid Method for Linear Transport*
Computational and Applied Math Seminar, University of Tennessee

04/2017 *Implicit Solution of the Vlasov-Poisson System*
Center for Computational Engineering Science-Mathematics Division (MathCCES)
RWTH, Aachen, Germany

03/2017 *Implicit Solution of the Vlasov-Poisson System*
SIAM Conference on Computational Science and Engineering, Atlanta, GA

10/2016 *Implicit Solution of the Vlasov-Poisson System*
Computational and Applied Math Seminar, University of Tennessee

09/2016 *Discontinuous Galerkin Methods for Transport Equations and the Diffusion Limit*
Department of Computational Mathematics, Science and Engineering, Michigan State University

04/2016 *Filtered Spherical Harmonic Methods for Radiation Transport*
Center for Computational & Applied Mathematics, Purdue University

04/2016 *Filtered Spherical Harmonic Methods for Radiation Transport*
Center for Computational Sciences and Mathematical Modeling, University of Maryland

04/2016 *Implicit Solution of the Vlasov-Poisson System*
Workshop on Boundary-value Problems and Multi-scale Coupling Methods for Kinetic Equations
University of Wisconsin

09/2015 *A Scattering-based Hybrid Method for Linear Transport*
Numerical Analysis Seminar North Carolina State University

09/2015 *Filtered Spherical Harmonic Methods for Radiation Transport*
Applied Mathematics and Analysis Seminar, Duke University

07/2015 *Positive, Filtered Spherical Harmonics*
Center for Computational Engineering Science-Mathematics Division (MathCCES)
RWTH, Aachen, Germany

07/2015 *Numerical Topics in Collisional Kinetic Equations: Moment Models, Asymptotic Preserving Methods, and Hybrid Approaches*
EU Regional Summer School in Computational Engineering Science
Aachen Institute for Advanced Study in Computational Engineering Sciences

05/2015 *Filtered Spectral Methods for Transport Problems*
Workshop on Higher Order Numerical Methods for Evolutionary PDEs: Applied Mathematics Meets Astrophysical Applications
Banff International Research Station

03/2015 *Two-Level Sampling Strategies for Hyperbolic Systems with Relaxation*
Ki-Net Workshop on Uncertainty Quantification in Kinetic and Hyperbolic Problems
University of Wisconsin

12/2014 *A Scattering-based Hybrid Method for Linear Transport*
Workshop on Computational Methods in High Energy Density Plasmas
Institute for Pure and Applied Mathematics (IPAM)

08/2014 *Recent Progress on the Implementation of Entropy-based Moment Closures*
Workshop on Moment Methods in Kinetic Theory II, Fields Institute, University of Toronto

07/2014 *Filtered Spectral Methods for Transport Problems*
SIAM Annual Meeting

04/2014 *Recent Progress on the Implementation of Entropy-based Moment Closures*
Applied and Computational Mathematics Seminar, University of Tennessee

03/2014 *Discontinuous Galerkin Methods for Transport Equations and the Diffusion Limit*
Workshop on Asymptotic-Preserving Methods for Kinetic Equations, North Carolina State University

03/2014 *Discontinuous Galerkin Methods for Transport Equations and the Diffusion Limit*
Mathematics & Statistics Colloquium, Old Dominion University

02/2014 *Recent Progress on the Implementation of Entropy-based Moment Closures*
Applied and Computational Mathematics Seminar, Tulane University

02/2014 *Computational Aspects of Kinetic Theory*
Mathematics Colloquium, Tulane University

12/2013 *A Brief Introduction to Asymptotic Preserving Methods*
Workshop on Kinetic Processes in Extreme States of Matter, Los Alamos, NM

09/2013 *Discontinuous Galerkin Methods for Transport Equations and the Diffusion Limit*
Conference on *Numerical Approximations of Hyperbolic Systems With Source Terms and Applications*
RWTH Aachen, Germany

09/2013 *Recent Progress on the Implementation of Entropy-based Moment Closures*
Séminaire de Mathématiques Appliquées, Institut de Mathmatiques de Bordeaux

01/2013 *A Collision-based Hybrid Method for Linear Transport*
Institute for Pure and Applied Mathematics (IPAM)

02/2012 *Entropy-based Closures for Linear Transport*
Department of Mathematics, Simon Fraser University

04/2012 *High-order, Entropy-based Models for Linear Transport in Slab Geometries*
Center for Computational Engineering Science-Mathematics Division (MathCCES)
RWTH, Aachen, Germany

03/2012 *High-order, Entropy-based Models for Linear Transport in Slab Geometries*
Workshop on *Hot Dense Plasmas*
Institute for Pure and Applied Mathematics (IPAM)

12/2011 *High-order, Entropy-based Models for Linear Transport in Slab Geometries*
Second Reunion Conference on *Quantum and Kinetic Transport*,
Institute for Pure and Applied Mathematics (IPAM)

11/2011 *A Collision-based Hybrid Method for Linear Transport*
Workshop on *Boltzmann Models in Kinetic Theory*
Institute for Computational and Experimental Research in Mathematics (ICERM)

10/2011 *Optimization-based Closures for Radiative Transport*
Computational Fluid Dynamics Seminar, Iowa State University

10/2011 *High-order, Entropy-based Models for Linear Transport in Slab Geometries*
Workshop on *Novel Applications of Kinetic Theory and Computations*
Institute for Computational and Experimental Research in Mathematics (ICERM)

10/2011 *Optimization-based Methods for Discretization of Partial Differential Equations*
Center for Scientific Computation and Mathematical Modeling
University of Maryland, College Park.

05/2011 *A collision-based hybrid method for Linear Transport*

Annual Meeting, NSF Focused Research Group on Kinetic Theory

01/2011 *A Collision-based Hybrid Method for Linear Transport*
Institute for Computational and Engineering Sciences (ICES), University of Texas at Austin

11/2010 *A Collision-based Hybrid Method for Linear Transport*
Center for Computational Engineering Science-Mathematics Division (MathCCES)
RWTH, Aachen, Germany

10/2010 *Optimization-based Moment Closures in Kinetic Theory and Transport*
Applied Mathematics and Mathematical Physics Seminar, Imperial College, London

05/2010 *Advanced Optimization Techniques for Entropy-based Moment Closures*
2010 DOE Applied Mathematics Program Meeting, Berkeley, CA

03/2010 *Optimization-based Closures for Radiation Transport*
Numerical Analysis Seminar, North Carolina State University

03/2010 *Optimization-based Moment Closures in Kinetic Theory and Transport*
Mathematics and Statistics Colloquium, Old Dominion University

02/2010 *A numerical regularization technique for multi-scale, linear transport models*
Computational and Applied Math Seminar, University of Tennessee

11/2009 *Optimization-based Closures for Radiation Transport*
Applied Mathematics / PDE Seminar, University of Wisconsin

11/2009 *Optimization-based Closures for Radiation Transport*
Applied Mathematics Seminar, Michigan State University

04/2009 *Realizability in Entropy-based Moment Closures for Gas Dynamics*
Workshop on "The Boltzmann Equation: DiPerna-Lions Plus 20 Years"
Institute for Pure and Applied Mathematics, UCLA

02/2009 *Model Reduction and Asymptotic Preserving Numerical Methods for Kinetic Transport Equations*
Computer Science and Mathematics Division Seminar, Oak Ridge National Laboratory.

02/2009 *Some Computational Aspects of Kinetic Transport Equations*
Mathematics Colloquium, University of South Carolina

11/2008 *A Numerical Regularization Technique for Multi-Scale, Linear Transport Models*
Applied Mathematics Seminar, Texas A&M University

09/2008 *A Numerical Regularization Technique for Multi-Scale, Linear Transport Models*
Applied Mathematics Seminar, North Carolina State University

02/2008 *Temporal Regularization of the P_N Equations*
Applied Mathematics Seminar, University of Wisconsin

08/2005 *Perturbations to Entropy Minimization Hydrodynamic Closures*
Mathematics Department Seminar, University of Texas at Austin

08/2005 *A Numerical Splitting Method for a Hydrodynamic Model of Electron Transport*
Center for Nonlinear Studies, Los Alamos National Laboratory

TEACHING AND ADVISING

- Courses taught at University of Maryland
    - MATH 110, *Elementary Mathematical Models*
    - MATH 111, *Introduction to Probability*
    - MATH 115, *Elements of Pre-Calculus*
    - MATH 211, *Elements of Geometry* (now MATH 213)
    - MATH 241, *Calculus III*
    - MATH 246, *Differential Equations for Scientists and Engineers*
- Short Courses

- *Introduction to Conservation Laws*
  Los Alamos Summer School, 2008
- *Numerical Topics in Collisional Kinetic Equations: Moment Models, Asymptotic Preserving Methods, and Hybrid Approaches*
  EU Regional School, RWTH Aachen, 2015

- Ph.D. Advisees

  - Graham W. (Alldredge) Kaland, University of Maryland 2012,
    Thesis Title: *Optimization Techniques for Entropy-based Moment Models of Linear Transport*
    Current Position: Researcher, Freie Universität Berlin
    (co-advisor with André L. Tits)
  - M. Paul Laiu, University of Maryland, 2016
    Thesis Title: *Positive Filtered P_N Method for Linear Transport Equations and the Associated Optimization Algorithm*
    Current Position: Postdoctoral Associate, Oak Ridge National Laboratory
    (co-advisor with André L. Tits)
  - Vincent Heningburg, University of Tennessee, current
    Thesis Topic: *Filtering for Discrete Ordinate Equations*

- Postdoctoral Supervisees

  - C. Kristopher Garrett, 2013 - 2015
    Current Position: Staff Member, Los Alamos National Laboratory
  - Qiwei Sheng, 2015 - 2016
    Current Position: Tenure Track Assistant Professor, California State University Bakersfield
  - Richard C. Barnard, 2015 - present (joint with Richard K. Archibald)
  - Zheng (Leslie) Chen, 2016 - present
  - M. Paul Liau, 2017 - present

- Ph.D. Thesis Committees

  - Daniel Murphy, University of Tennessee, current
  - Michael Crockatt, Michigan State University, current
  - Kerstin Küpper, RWTH Aachen University, 2017
  - Teddy Pichard, University of Bordeaux, 2016
  - Thomas Weber, University of Houston, 2016
  - Ming Zhong, University of Maryland, 2016
  - Edgar Olbrant, RWTH Aachen University, 2012

- Graduate Student Interns

  - James Scott, University of Tennessee, Summer 2016 and Spring 2017
    Project: *Hyperbolic Relaxation Laws in the Stochastic Setting*
  - Michael Puthawala, UCLA, Summer 2016 and Summer 2017
    Project: *Inverse Problems for Plasma X-ray Imaging*
  - Michael Crockatt, Summer 2014, Summer 2015, Summer 2016, Summer 2017
    Project: *High-Order Time Integration Methods for Hybrid Methods of Radiation Transport*
  - Zheng Sun, Brown University, Summer 2017
    Project: *Low-Memory, Asymptotic Preserving DG Methods for Radiation Transport*
  - Ming-Tse (Paul) Laiu, University of Maryland, Spring 2014 and Calendar Year 2015
    Project: *Moment Methods for Linear Kinetic Equations*
  - Ming Zhong, University of Maryland, Summer 2015
    Project: *ODE Models of Data Flow in High Performance Computers*
  - Kerstin Küpper, RWTH Aachen University, Spring 2015
    Project: *Two Level Sampling Strategies for Uncertainty Quantification in Hyperbolic Relaxation Systems*

- Thomas Weighill, University of Tennessee, Spring 2015
  Project: *Hyperbolic Moment Closure for Gas Dynamics*
- James Cheung, Florida State University, Summer 2014
  Project: *Two Level Sampling Strategies for Uncertainty Quantification in Hyperbolic Relaxation Systems*
- Bingyu Zhao, Brown University, Summer 2014
  Project: *Maximum Principle Preserving Methods with Implicit Time Integration*
- Vincent Laboure, Texas A&M University, Summer 2008 and Summer 2009
  Project: *Implicit Implementation of Filtered P_N Equations*
- C. Kristopher Garrett, Summer 2010 and Summer 2011
  Project: *Scalable Optimization-based Moment Closures for Kinetic Equations*
- Meiyun He, University of Maryland, Summer 2008 and Summer 2009
  Project: *The M_3 Model of Radiative Transport*
- Jeffrey R. Haack, University of Wisconsin, Summer 2008 and Summer 2009
  Project: *Asymptotic Preserving Methods for Transport and Fluid Equations*

- Undergraduate Interns

  - Abigail Hueske, Texas A&M University, Summer 2010
    Project: *Efficient Discretization for Multi-Scale Transport Equations*
  - Muhammad Saad Shamim, Rice University, Summer 2012
    Project: *A Discontinuous Galerkin Method for the M_1 Model of Radiative Transfer*

SERVICE

- Journal Editor: *Multiscale Modeling and Simulation* (2015 - present)

- Journal Referee: *ACM Transactions on Mathematical Software*, *Analysis and Mathematical Physics*, *Applied Mathematics and Computation*, *Communications in Mathematical Sciences*, *Continuum Mechanics and Thermodynamics*, *International Journal of Numerical Analysis and Modeling*, *Journal of Computational Physics*, *The Journal of Computational and Theoretical Transport*, *Journal of Quantitative Spectroscopy and Radiative Transfer*, *Journal of Scientific Computing*, *Mathematical Modeling and Numerical Analysis*, *SIAM Journal on Applied Mathematics*, *SIAM Journal on Numerical Analysis*, *SIAM Journal on Scientific Computing*, *SIAM Journal on Uncertainty Quantification*, *SIAM Review*, *Transport Theory and Statistical Physics Zeitschrift fr angewandte Mathematik und Physik*

- Conference Organization:

  - 2015 Committee Chair, Conference on *Scalable Methods for Kinetic Equations*, Oak Ridge National Laboratory
  - 2015 Co-organizer, Mini-symposia on *Computational Methods for Kinetic Equations and Related Models* and *Hybrid and multilevel approaches to kinetic simulations*, SIAM Conference on Computational Science & Engineering
  - 2013 Committee Chair, SIAM Southeastern-Atlantic Section (SEAS) Annual Meeting
  - 2013 Co-organizer, Mini-symposium on *Computational Methods for Kinetic Equations and Related Models*, SIAM Conference on Computational Science & Engineering
  - 2012 Member of the Technical Committee, Workshop on *Algorithm and Model Verification and Validation For Kinetic Plasma Simulation Codes*, Michigan State University
  - 2011 Co-organizer, Mini-symposium on *Advanced Numerical Methods for Kinetic Simulations and Their Applications*, 7th International Congress on Industrial and Applied Mathematics
  - 2010 Co-organizer, Mini-symposium on *Numerical Methods for Kinetic Equations and Related Models*, SIAM Annual Meeting
  - 2009 Organizer, Mini-symposium on *Moment Closures for Kinetic and Hyperbolic Equations*, SIAM Annual Meeting
  - 2008 Organizer, Postdoc Seminar Series, Center for Nonlinear Studies, Los Alamos National Laboratory

- Panels / Committees:

2014-2017	Committee Chair, *Householder Seminar Series*, Oak Ridge National Laboratory/University of Tennessee
2013,2014,2017	Awards Committee, Computer Science and Mathematics Division, Oak Ridge National Laboratory
2017	Alternate Member, Postdoctoral Program Advisory Committee, Oak Ridge National Laboratory
2013-2015	Householder Fellowship Committee, Oak Ridge National Laboratory
2015	Participant, DOE Workshop on *Integrated Simulations for Magnetic Fusion Energy Sciences*, Panel on Multiphysics and Multiscale Coupling
2011	Participant, DOE Workshop for *Mathematics for the Analysis, Simulation, and Optimization of Complex Systems*