Doron Levy
Curriculum Vitae

Affiliation

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Education

1997   Ph.D., Applied Mathematics, Tel Aviv University, Israel
        "Topics in Approximate Methods for Non-Linear Partial Differential Equations"
        Advisor: Prof. Eitan Tadmor
1994   M.Sc. (summa cum laude), Applied Mathematics, Tel Aviv University, Israel
        "From Semi-Discrete to Fully-Discrete: The Stability of Runge-Kutta Schemes
         by the Energy Method". Advisor: Prof. Eitan Tadmor
1991   B.Sc. (cum laude), Mathematics and Physics, Tel Aviv University, Israel

Academic Experience

2011 – present	Professor, Department of Mathematics, University of Maryland
2014 – 2019	Pauli Fellow, Wolfgang Pauli Institute, University of Vienna, Austria
2007 – 2011	Associate Professor, Department of Mathematics & Center for Scientific Computation and Mathematical Modeling, University of Maryland
2000 – 2007	Assistant Professor, Department of Mathematics, Stanford University
9/05, 6/06	Visiting Professor, Ecole Normale Superieure, Paris
1998 – 2000	Visiting Assistant Professor, Department of Mathematics, UC Berkeley
1998 – 2000	Post-Doctoral Fellow, Department of Mathematics, Berkeley National Lab
1997 – 1998	Post-Doctoral Fellow, Department de Mathematiques et d'Informatique Ecole Normale Superieure, Paris
1997 – 1998	Post-Doctoral Fellow, Laboratoire d'Analyse Numerique, Universite Pierre et Marie Curie, Paris 6
Fall 1996	Visiting Scholar, Department of Mathematics, UCLA

Administrative Experience

2020 – present	Chair, Department of Mathematics, University of Maryland
2022 – present	Director, Brin Mathematics Research Center, University of Maryland
2020 – 2021	Director, Center for Scientific Computation and Mathematical Modeling, University of Maryland
2019 – 2020	Acting Chair, Department of Mathematics, University of Maryland
2018 – present	Co-Director, National Cancer Institute – University of Maryland Partnership for Integrative Cancer Research
2013 – 2014	University Senate Executive Committee
2012 – 16, 18–19	Associate Chair, Undergraduate Studies, Dept. of Mathematics, Maryland

Other Experience

2018 – 2019	Member, Board of Governors, Chair-Elect (2019) Institute for Mathematics and its Applications (IMA)
2018 – 2022	Member, Board of Directors, Society for Mathematical Biology (SMB)
2016 – 2017	Member, Advisory Board, FedCentric Technologies

Research Interests

- ○ Biology and Medical Applications
- ○ Cancer Dynamics, Immunology, Cell Motility
- ○ Applied Nonlinear PDEs
- ○ Numerical Analysis

Awards

2023	Fellow, American Mathematical Society
2017-18	Fellow, Big Ten Academic Leadership Program
2014	Fellow, John Simon Guggenheim Memorial Foundation
2013	Distinguished Scholar Teacher, University of Maryland
2009	Departmental Award for Excellence and Innovation in Undergraduate Teaching, Center for Teaching Excellence, University of Maryland
2008	Keynote Speaker, The American Mathematical Society briefing in Capitol Hill, US Congress
2002	National Science Foundation Career Award
1998	Haim Nessyahu Prize for Best Ph.D. Thesis in Mathematics in Israel, Israeli Union of Mathematics.
1996	Nemirovsky Doctoral Fellowship in Mathematics and Computer Science
1996	Ami Harten Award for Excellence in Applied Math Graduate Studies, School of Mathematical Sciences, Tel Aviv University (TAU)
1990, 94	Excellence in Teaching Award, School of Mathematical Sciences, TAU
1992	M.Sc. Excellence Award, School of Mathematical Sciences, TAU
1992–93	Dean's list (M.Sc.), Faculty of Exact Sciences, Tel Aviv University
1988–90	Dean's list (B.Sc.), Faculty of Exact Sciences, Tel Aviv University

Grants

7/22 – 6/23	**UMD-NCI Partnership** Co-PI with Xin Wang (NCI/NIH) "Methodologies for serological profiling in a multi-omics cope within liver cancer of Liver Cancer"
9/21 – 8/26	**Simons Foundation** "Mathematical Modeling of Cancer Dynamics and Therapy"
7/21 – 6/23	**UMD-NCI Partnership** Co-PI with Xin Wang (NCI/NIH) "Serological Responses to Human Virome as a Platform for Early Detection of Liver Cancer"
7/20 – 6/23	**UMD-NCI Partnership** Co-PI with Peter Choyke & Noriko Sato (Molecular Imaging Program / NCI)

“Increasing the Efficacy of Dendritic Cell Vaccines in Melanoma and Lymphoma”

7/19 – 6/22 **UMD-NCI Partnership**
Co-PI with Xin Wang & Julian Candia (NCI/NIH), Eric Slud (UMD)
“Multi-Level Liver Cancer Studies Integrating Intra- and Inter-Tumor
Heterogeneity and Systems Biology“

9/17 – 8/21 **NSF**, DMS-1713109
“Quantifying the Propagation of Resistance to Chemotherapy in Cancer”

2/17 – 1/20 **Jayne Koskinas Ted Giovanis Foundation**
Co-PI with Laura Heiser, Aaron Meyer, Qing Nie, and Shelly Peyton
“Understanding the Role of Cell Plasticity in Mediating Drug Resistance”

9/16 – 8/21 **Simons Foundation**
“Mathematical Modeling of Cancer Dynamics”

9/14 – 8/16 **UMD-NCI Partnership**
Co-PI with Jung-Min Lee, NCI/NIH
“Modeling Pathways to Therapeutic Targeting of high-Grade
Serous Ovarian Cancer and Drug Resistance”

2013 – 14 **Army Research Office**, Conference
“Modern Perspectives in Applied Mathematics: Theory and Numerics
of PDEs”

2014 – 16 **NSF**, Conference
“Modern Perspectives in Applied Mathematics: Theory and Numerics
of PDEs”

2014 – 15 **Mathematical Association of America**
“Tensor-SUMMA: NBA Math Hoops in Prince Georges County”

2013 – 14 **University System of Maryland**
“Major Curriculum Reform in Math 246 – ODEs”

2012 – 18 **INRIA International Associated Team**
Co-PI with Thomas Lepoutre, INRIA Rhone-Alpes
“Modeling leukemia”

8/12 – 7/14 **UMD-NCI Partnership**
Co-PI with Michael Gottesman, NCI/NIH
“Resistance to chemotherapy enhanced by spatial propagation of
environmental signals”

8/10 – 7/15 **NSF**, Division of Undergraduate Education
Co-PI with Thompson, Ad-Marbach, Nelson, and Fagan (Biology, UMD)
“MathBench biology modules: Expansions of implementation and
assessment”

6/10 – 5/11 **UMB-UMCP**, Seed Grant
PI with Jakub Simon
(Center for Vaccine Development, University of Maryland, Baltimore)
“Translational systems biology applied to identifying immunologic
correlates of protection in Shigella infection”

4/10 – 3/13 **NSF** DMS-1015217, Conference
“Frontiers in Mathematical Biology: NSF-NIH PIs Meeting 2010”

9/08 – 8/14 **NSF/NIGMS**, DMS-0758374
PI with Devaki Bhaya (Carnegie Institution)
“Social dynamics, signaling, and surface motility in Cyanobacteria”

1/08 – 12/13 **NIH**, R01CA130817-01

	Co-PI With Peter Lee (Hematology, Stanford)
	"Interplay between cancer and immune cells on targeted therapy"
2006 – 09	**NIH**, CA104205-01A2
	With Lei Xing (PI, Radiation Oncology, Stanford)
	"Intensity Modulated Radiation Therapy (IMRT) dose optimization"
2006 – 11	**DOD** BC051650
	With Peter Lee (PI, Hematology) and Susan Holmes (Stat, Stanford)
	"Immunobiology, systems biology, and immunotherapy of breast cancer"
2002 – 07	**NSF Career Award** DMS-0133511
	"Partial differential equation-based image processing with applications to radiation oncology"

Professional Activities

1. **Editorial Board:**

   i. Bulletin of Mathematical Biology (BMB), 2010-present.

   ii. SIAM Journal on Numerical Analysis (SINUM), 2007-2012.

   iii. Discrete and Continuous Dynamics Systems Series B (DCDS-B), 2005-present

   iv. Differential Equations and Dynamical Systems (DEDS), 2006-present

   v. Advances in Numerical Analysis, 2008-2018.

   vi. Mathematics Applied in Science and Technology (MAST)

   vii. Le Matematiche, 2010-present

   viii. Acta Applicandae Mathematicae, 2010-present

   ix. Frontiers in Systems Biology, 2010-present

   x. Cancer Research, 2016-present

   xi. Applied Mathematics Modelling, 2017-present

   xii. PLoS One, 2018-present

   xiii. Chapman & Hall / CRC Mathematical Biology Series, 2020-present

   xiv. ImmunoInformatics (co-Editor in Chief), 2020-present

2. **Other Activities:**

   i. Guest editor of a special issue of *A*lgorithms on "Algorithms for Applied Mathematics"

   ii. PLoS Computational Biology, Guest editor.

   iii. Nature Reader Panel (2010-2011)

3. **Referee:**

   - US Agencies and Foundations: State Department, Department of Energy, National Institutes of Health, National Science Foundation, Simons Foundation

   - International Agencies: National Sciences and Engineering Research Council of Canada, South African National Research Foundation, Israeli Science Foundation, Agence Nationale de la Recherche (France), King Fahd University of Petroleum & Minerals, Portugese Foundation for Science and Technology, Research Grants Council of Hong Kong,

Swiss National Science Foundation, Human Frontiers Science Program (HFSP), French National Cancer Institute (INCa), Institut National de la Santé et de la Recherche Médicale (INSERM), Dutch Research Council (NWO), Lundbeck Foundation, Netherlands Organisation for Scientific Research (NWO/ZonMw), European Science Foundation (ESF).

- Journals: Archive for Rational Mechanics, Journal of Theoretical Biology, SIAM Journal on Numerical Analysis, SIAM Journal on Scientific Computing, SIAM Journal on Applied Dynamical Systems, Journal of Computational Physics, Information Sciences, IMA Journal on Numerical Analysis, Journal of Scientific Computing, Applied Mathematics and Computation, Computers and Fluids, Physics of Fluids, International Journal for Numerical Methods in Engineering, International Journal of Computational Methods, Journal of Computational Methods in Science and Engineering, Journal of Computational and Applied Mathematics, Numerical Methods for Partial Differential Equations, Arab Journal of Mathematical Sciences, Progress in Computational Fluid Dynamics, Applied Numerical Mathematics, Mathematics and Computers in Simulation, Mathematical Biosciences, Communications in Mathematical Sciences, Journal of Statistical Theory and Practice, Journal of Statistical Physics, Inverse Problems and Imaging, Nonlinearity, Communications in Computational Physics, Bulletin of Mathematical Biology, Mathematical Modeling and Numerical Analysis, Continuum Mechanics and Thermodynamics, Journal of Nonlinear Science, Physica A, Physica D, Journal of Advanced Research, Communications in Nonlinear Science and Numerical Simulation, PLoS ONE, American Mathematical Monthly, Acta Biotheoretica, Theoretical Population Biology, Mathematical Medicine and Biology, Cancer Research, Cancer Medicine, Oncotarget, Radiotherapy and Oncology, Neoplasia, Nature Scientific Reports, Mathematical Modelling of Natural Phenomena, Communications Biology.

- Mathematical Reviews

4. **University Service:**

   (a) University of Maryland – University Service
       - Vice Chair, University Athletic Council (2023-present)
       - Co-Chair, Athletics Academic & Compliance Committee of the Athletic Council (2023-present)
       - Member, Search Committee: Head Men Golf Coach (2022)
       - Co-Chair, Governance Transformation & the Future of Intercollegiate Athletics Committee (2021-present)
       - Chair, Search Committee: CMNS Assistant Dean for Finance & Personnel (2021)
       - Member, Faculty Advisory Board, Accessibility and Disability Services, (2019-present)
       - Member, University Athletic Council (2017-20, 21-present)
       - Member, Search Committee: Head Women Volleyball Coach (2018)
       - Member, Academic Committee, Maryland Athletics (2017-20, 21-present)
       - Member, Kirwan Undergraduate Education Award Committee (2016-17)
       - Member, Leadership Council of Terrapin Teachers (2014-present)
       - Member, Maryland BioPhysics Program (2012-present)
       - Chair, Numerical Analysis field committee, Department of Mathematics (2011-13)
       - Member, University APT Appeals Committee (2014-15)

- Member, University Senate Executive Committee (2013-14)
- Member, University Senate Grievance Committee (2012-13)
- Member, University Senate (2011-14)
- Member, Burgers Program for Fluid Dynamics, University of Maryland
- Member, Applied Mathematics and Scientific Computation Program (AMSC), University of Maryland. Member of the AMSC graduate committee (2007-2012, 2018-present)
- Member, Faculty Board for Mathematics/Analytic Reasoning for the General Education Program (2010-present)
- Member, Search committee: Associate Director, Terrapin Teachers (2014)

(b) University of Maryland – Department Service

- Member, Postdoc Hiring Committee, Department of Mathematics (2012-2015)
- Chair, Postdoc Hiring Committee, Department of Mathematics (2015-2018)
- Member, Brin Chair Hiring Committee, Department of Mathematics (2017-present)
- Member, Awards Committee, CSCAMM (2007-2012)
- Member, personnel committee, CSCAMM (2007-2012)
- Chair, APT Committee, CSCAMM (2016-2017)
- Member, Policy Committee, Department of Mathematics (2007-08, 10-11, 18-19)
- Co-organizer, Numerical Analysis Seminar (2008-09)
- Founder and co-organizer, Cancer Dynamics Research Interaction Team (2008-present)
- Search committee: Director of Administrative Services, CSCAMM (2009)
- Search committee: Assistant Director, Department of Mathematics (2016).

(c) University of Maryland – Dissertation Committees: Andrew Pomerance (Physics, 2009), Mohamed Ould-Moustapha (AMSC, 2009), Prashant Athavale (AMSC, 2009), Kimberly Glass (Physics, 2010), Terrence Moore (Math, 2010), Ritaja Sur (Math, 2010), Cristian Tomasetti (AMSC, 2010, advisor), Michelle Houck (AMSC, 2011), Anastasia Voulgaraki (Stat, 2011), Yufu Zhang (EE, 2011), Katayoon Sadin (Chemical Physics, 2011), Ananth Sridharan (Aero Eng, 2011), Guoyuan Liu (AMSC, 2011), Charles Martin (AMSC, 2011), Yun Zhou (AMSC, 2011), Debojyoti Ghosh (AMSC, 2012), Anne Jorstad (AMSC, 2012), Amanda Galante (AMSC, 2012, advisor), Shelby Wilson (AMSC, 2012, advisor), Wen Zhou (Stat, 2013), Bing Shi (ECE, 2013), Ananth Sridharan (Aerospace Eng, 2014), Dong Chen (AMSC, 2014), Joseph Paulson (AMSC, 2014), Biswadip Dey (Computer & Electrical Eng, 2015), Andrew Brandon (AMSC, 2015), Senthil Muthiah (CBCB, 2015), Joshua Parker (Physics, 2015), Jim Greene (Math, 2015, advisor), Geoff Clapp (AMSC, 2016, advisor), Nourridine Siewe (Math, 2016, Howard University), Tereza Bartolva (2016, Charles University, Prague), Andrew Foss-Grant (Biology, 2017), Dana-Adriana Botesteanu (AMSC, 2017, advisor), Matt Becker (AMSC, 2018, advisor), Desu Chen (Biophysics, 2018), Mike Pekala (AMSC, 2018, co-advisor), Asia Wyatt (AMSC, 2019, advisor), Kyemyung Park (BioPhysics, 2020, advisor), Haoyuan Jin (ME, 2020), Jesse Milzman (Math, 2021, advisor), Sean Gruber (Education, 2022), Sid Sharma (BioPhysics, 2022, advisor), Ariana DeCastro (BioEngineering, 2023), Aaron Sorrin (BioEngineering, 2023), Zeynep Kecar (Statistics, 2023, advisor), Anna Sotnikova (AMSC, 2023), Xuze Zhang (Statistics, 2024).

(d) Stanford University – University Service

- Member, Mathematical and Computational Science (MCS) Program (2000-07)
- Member, Bio-X program, Stanford University
- Member, Institute for Computational and Mathematical Engineering (ICME), School of Engineering (2005-2007)
- Core Faculty Member, Program of Scientific Computing and Computational Mathematics (SCCM), School of Engineering (2000-04)
- Member, SCCM graduate admission committee (2002)
- Member, Committee for Review of Undergraduate Majors (C-RUM) (2006-2007)

(e) <u>Stanford University – Department Service</u>

- Co-organizer, "Women in Math" seminar and related activities, Department of Mathematics
- Organizer, Stanford's Applied Math Seminar (2001-05)
- Member, Graduate Admission Committee (2002, 03); Space Committee (2003); Library Committee (2004); Curriculum Committee (2002, 04), Department of Mathematics

(f) <u>Stanford University – Dissertation Committees:</u> Seung Ha (Math, 2001, reader), Melissa Aczon (SCCM, 2001, reader), Kirsten Boyd (Math, 2002, reader), Paul Tupper (SCCM, 2002, reader), Alex Meadows (Math, 2002), Michael Lee (Radiation Oncology, 2002, chair), Andrei Pugachev (Applied Physics, 2002, chair), Ery Arias-Castro (Statistics, 2003, chair), Dimitrios Cheliotis (Math, 2004), David Li (Math, 2004, reader), Volker Elling (SCCM, 2004, reader), Steve Bryson (SCCM, 2004, advisor), Yanping Pan (Math, 2005, reader), Tamer Zaki (Mechanical Engineering, 2005, chair), Balaji Srinivasan (Aero & Astro, 2005, chair), Yichi Gu (Math, 2005), Inam Rahman (SCCM, 2006), Alex Sotirov (Math, 2006), Suhas Nayak (Math, 2006), Georg May (Aero & Astro, 2006, chair), Sou-Cheng Choi (ICME, 2006, reader), Karthik Palaniappan (Aero & Astro, 2006, chair), Michael Colonno (Aero & Astro, 2007, chair), Arathi Gopinath (Aero & Astro, 2007, chair), Yaniv Konchitchki (Business School, 2007, chair), Peter Kim (Math, 2007, advisor), Tiago Requeijo (Math, 2007, advisor), Dana Paquin (Math, 2007, advisor).

5. **Professional Societies:** American Mathematical Society (AMS), Society for Industrial and Applied Mathematics (SIAM), Society for Mathematical Biology (SMB), American Association for the Advancement of Science (AAAS), European Society for Mathematical and Theoretical Biology (ESMTB).

6. **Professional Service:** Chair of the review committee of Indiana University's Math Department (2024). Member of the review committee of Roskilde University's Department of Science and Environment (2023). Member of the AMS Liaison Committee with the AAAS (Feb 2014 - Jan 2016). Member of the AMS Menger Prize Committee (2007-10).

7. **Government:** Panelist for various programs at the NSF (2004-present). Ad Hoc Member of Study Sections at the NIH (2008-present). Consultant for the Advanced Research Program (ARP) of the National Institute on Alcohol Abuse and Alcoholism (NIAAA), 2001.

8. **State of Maryland:** Member of the Maryland Mathematics Alignment Project (MMAP) task force, 2020-persent.

Education

1. **Advising.**

   (a) <u>Postdocs</u>:

      1. Frederic Gibou (Professor, UC Santa Barbara)
      2. Yuan-Nan Young (Professor, New Jersey Tech)
      3. Carlos Cardenas (Siemens, Princeton, New Jersey)
      4. Razvan Fetecau (Professor, Simon Fraser University)
      5. Courtney Davis (Associate Professor, Pepperdine University)
      6. Heyrim Cho (Assistant Professor, University of California Riverside)

   (b) <u>PhD Students</u>:

      1. Steve Bryson (PhD, SCCM, Stanford, 2004).
         Thesis: *"High-Order Schemes for Balance Laws and Hamilton-Jacobi Equations"*
         Placement: Kepler Project, NASA AMES
      2. Peter Kim (PhD, Math, Stanford, 2007).
         Thesis: *"Mathematical Models of the Activation and Regulation of the Immune System"*
         Placement: Postdoc, Paris 6 France and University of Utah
         Current Position: Professor, University of Sydney
      3. Dana Paquin (PhD, Math, Stanford, 2007).
         Thesis: *"Multiscale Methods for Image Registration"*
         Placement: Assistant Professor, Kenyon College
         Current Position: Professor, CalPoly
      4. Tiago Requeijo (PhD, Math, Stanford, 2007).
         Thesis: *"Modeling Group Dynamics of Phototaxis"*
         Placement: Options Clearing Corporation, Chicago
      5. Cristian Tomasetti (PhD, AMSC, Maryland, 2010).
         Thesis: *"Mathematical Modeling of Drug Resistance and Cancer Stem Cell Dynamics"*
         Placement: Postdoc, Harvard; Associate Professor of Medicine and Biostatistics, Johns Hopkins University
         Current Position: Professor and Director, Integrated Cancer Genomics, City of Hope
      6. Amanda Galante (PhD, AMSC, Maryland, 2012).
         Thesis: *"Mathematical Models and Simulations of Phototaxis and Cancer Immune Interactions"*
         Award: Ruth Davis Fellow, Maryland (2011)
         Placement: Applied Physics Lab, Johns Hopkins University
      7. Shelby Wilson (PhD, AMSC, Maryland, 2012).
         Thesis: *"Mathematical Models of Immune Regulation and Cancer Vaccines"*
         Placement: Postdoc, INRIA Grenoble-Rhone Alpes France; Assistant Professor, Morehouse College
      8. Jim Greene (PhD, Math, Maryland, 2015).
         Thesis: *"Mathematical Models of Tumor Heterogeneity and Drug Resistance"*
         Placement: Martin Postdoc, Rutgers University
         Current Position: Assistant Professor, Clarkson University

9. Geoffrey Clapp (PhD, AMSC, Maryland, 2016)
Thesis: *"Applying Mathematical Models to Study the Role of the Immune System in Chronic Myelogenous Leukemia"*
Placement: Applied Physics Lab, Johns Hopkins University

10. Dana-Adriana Botesteanu (PhD, AMSC, Maryland, 2017)
Award: Ann G. Wylie Dissertation Fellowship, Maryland (2017)
Thesis: *"Mathematical Models for Ovarian Cancer"*
Placement: Boehringer-Ingelheim, Vienna

11. Matt Becker (PhD, AMSC, Maryland, 2018)
Thesis: *"Modeling the Transfer of Drug Resistance in Solid Tumors"*
Placement: Applied Physics Lab, Johns Hopkins University

12. Mike Pekala (PhD, AMSC, co-advisor with W. Czaja, Maryland, 2018)
Thesis: *"Harmonic Analysis and Deep Learning"*
Placement: Campbell & Company, Baltimore, MD

13. Asia Wyatt (PhD, AMSC, Maryland, 2019)
Thesis: *"Mathematical Models of Acute and Chronic Immunology"*
Placement: Applied Physics Lab, Johns Hopkins University

14. Cara Peters (PhD, AMSC, Maryland, 2019)
Thesis: *"Modeling Imatinib-Treated Chronic Myelogenous Leukemia and the Immune System"*
Placement: Applied Physics Lab, Johns Hopkins University

15. Kyemyung Park (PhD, BioPhysics, co-advisor with J. Tsang, NIAID, 2020)
Thesis: *"Scalable Modeling Approaches in Systems Immunology"*
Placement: Fellow, Department of Pharmacology, College of Medicine, Yonsei University, Korea

16. Jesse Milzman (COMBINE Fellow, PhD, Math, Maryland, 2021)
Thesis: *"Dynamics, Networks, and Information: Methods for Nonlinear Interactions in Biological Systems"*
Placement: Army Research Lab

17. Siddharth Sharma (PhD, BioPhysics, Maryland, 2022)
Award: Hockmeyer Fellowship, Maryland (2017)
Thesis: *"Inference and Control in Networks Far From Equilibrium"*
Placement: Postdoc, Computational Neuroscience, Medical School, Washington University in St. Louis

18. Zeynap Kacar (PhD, Statistics, Maryland, co-advisor with E. Slud, 2023)
Thesis: *"Dissecting Tumor Clonality in Liver Cancer: a Phylogeny Analysis Using Computational and Statistical Tools"*
Placement: Lecturer, American University.

19. Zuping Wang (PhD, AMSC, Maryland)

20. Tyler Simmons (PhD, Biophysics, Maryland)

21. Pei Zhang (PhD, Stat-BB, Maryland)

22. Luis Suarez (PhD, Math, Maryland)

23. Hyunah Lim (PhD, Math, Maryland)

(c) <u>Masters Students</u>:

1. Amanda Galante (MSc, AMSC, Maryland, 2010)

2. Shelby Wilson (MSc, AMSC, Maryland, 2010)

3. Jim Greene (MSc, Math, Maryland, 2010)

4. Hana Ueda (MSc, AMSC, Maryland, 2012)

5. Mike Pekala (MSc, AMSC, Maryland, 2013)

6. Asia Wyatt (MSc, AMSC, Maryland, 2016)

7. Matt Becker (Msc, AMSC, Maryland, 2017)

(d) Undergraduate Students:

1. Alexander Kendall (Stanford, Honors thesis, '04)

2. Adam Kapelner (Stanford, '05)

3. Aashish Gadani (Maryland, '11-'12)

2. **Courses taught.**

(a) Graduate Courses

- University of Maryland: Numerical Analysis II (AMSC 667), Scientific Computing II (AMSC 661), Advanced Analytic Methods with Applications (MATH 648M).
- Stanford University: Mathematical biology (Math 224, New course), Computational signal processing and wavelets (Math 266, New course), Computational methods for fronts, waves and interfaces (Math 222 A+B, New courses), Real analysis (Math 205A), Partial differential equations (Math 220B), Dynamical systems (Reading course), Mathematical problems in image processing (Reading course), Numerical methods for conservation laws (Reading course).

(b) Undergraduate Courses:

- University of Maryland: Transform Methods for Scientists and Engineers (Math 464), Calculus for life sciences (Math 130), Advanced Calculus with Applications (Math 412), Introduction to Numerical Analysis (AMSC 466), Computational Methods (AMSC 460), Introduction to Probability Theory (STAT 410).
- Stanford University: Nonlinear dynamics and chaos (Math 135, New course), Numerical Analysis (Math 118, New course), Matrix theory and its applications (Math 103), Complex analysis (Math 106), artial differential equations (Math 131), The mathematics of fractals (Math 90Q, New Sophomore Seminar), Linear algebra and calculus of several variable (Math 51), Hilbert spaces (Reading course).
- UC Berkeley: Introduction to Numerical Analysis (Math 128).

3. **Course development.**

(a) Undergraduate education. Developed a new calculus course for life sciences majors (Math 130) at the University of Maryland. Developed new undergraduate course (Nonlinear dynamics and chaos, numerical analysis). Math 135, Nonlinear dynamics and chaos, is now a required course in the bio-informatics track of the Mathematics and Computational Sciences (MCS) major at Stanford University. Math 118, numerical analysis is an elective course for the engineering track of the Mathematics and Computational Sciences (MCS) major at Stanford University.

(b) Sophomore seminars. Developed a new sophomore seminar course on the Mathematics of Fractals (2003).

(c) <u>Graduate education</u>. Developed new graduate courses (Math biology, wavelets, computational methods for fronts waves and interfaces A+B).

(d) <u>Continuing studies</u>. Developed a new continuing studies education course on the Mathematics of Fractals (2004).

4. **Lecture notes.** Lecture notes in Numerical Analysis.

5. **Outreach activities.**

(a) SIAM Representative in the Coalition for National Science Funding Exhibit (CNSF), Capitol Hill, May 2014

(b) Lectured on Mathematics and Magic to middle school and high school teachers as part of the Maryland Mathematics Institute (2013)

(c) Cofounded and Led a Research Interaction Team on Cancer Dynamics (2008-present)

(d) Lectured on geometry to kindergarten students (2008)

(e) Lectured on applied mathematics to junior-high students as part of the summer activities organized by the Center for Talented Youth (CTY) at the Johns Hopkins University (2001).

(f) Lectured to high school students as part of the Stanford University Mathematics Camp (2002, 03, 06).

(g) Developed and taught a continuing studies education course on the mathematics of fractals (2004).

Conferences: Organizer

1. "Computational Methods for Kinetic and Hyperbolic Problems" (with Pareschi), ICIAM, Sydney, 2003.

2. "Stiff Sources and Numerical Methods for Conservation Laws" (with Perthame), AIM, Palo Alto, 2005.

3. "Numerical Methods for Geophysical Flows" (with Kurganov), SIAM, New Orleans, 2005.

4. "Numerical Methods for Optimal Control in High Dimensions" (with Oberman and Mitchell), AIM, Palo Alto, 2005.

5. "Numerical Methods for Degenerate Elliptic Equations and Applications" (with Souganidis, Oberman and Mitchell), PIMS, Banff, 2006.

6. "Frontiers in Mathematical Biology: NSF-NIH PIs Meeting" (organizer), University of Maryland, 2010.

7. "Frontiers in Mathematical Biology: Young Investigators Conference" (with Pierre-Emanuel Jabin), University of Maryland, 2012.

8. "SIAM APDE" (member of organizing committee), Orlando, 2013.

9. "Translating cancer data and models to clinical practice" (with Bhanot and Chou), IPAM, UCLA, 2014.

10. "Modern Perspectives in Applied Mathematics: Theory and Numerics of PDEs" (with Alina Chertock, Rob DeVore, Alexander Kurganov, Liu), Bethesda, MD, 2014.

11. "Mathematical Approached to Breast Cancer Initiation and Dormancy" (member of organizing committee), NIH, 2014.

12. "Models in Cancer Therapy" (organizer with Walter Berger and Norbert Mauser), Vienna, Austria, 2015.

13. "Models in Cancer Therapy" (organizer with Walter Berger, Marie Doumic Jauffret, and Norbert Mauser), Vienna, Austria, 2016.

14. "Frontiers in Mathematical Oncology" (organizer with Pierre-Emanuel Jabin and Orit Lavi), University of Maryland, 2017.

15. "Mathematical Models in Biology and Medicine" (organizer with Walter Berger, Marie Doumic Jauffret, Anna Obenauf, and Christian Schmeiser), Vienna, Austria, 2017.

16. "UMD-NCI Annual Symposium" (organizer with Wolfgang Losert, Dan Larson, and Gregoire Altan-Bonnet), NCI/NIH, 2018.

17. "Mathematical Models in Cancer" (organizer with Michael Bergmann, Marie Doumic Jauffret, and Norbert Mauser), Vienna, Austria, 2018.

18. "SIAM Life Sciences" (member of organizing committee), Minneapolis, 2018.

19. "Pauli Symposium on How Many Mathematics ?!" (organizer with Claude Bardos, Shi Jin, and Norbert Mauser), Vienna, Austria, 2018.

20. "Invited SIAM minisymposium on Mathematical Models in Cancer" (organizer), JMM, Baltimore, 2019.

21. "Mathematical models in Cancer" (organizer with Michael Bergmann, Marie Doumic Jauffret, and Norbert Mauser), Vienna, Austria, 2019.

22. "Summer School on Mathematical Biology" (member of scientific committee), Samos Island, Greece, 2019.

23. "First International Symposium on Mathematical and Computational Oncology (ISMCO 2019)" (steering committee), Lake Tahoe, NV, 2019.

24. "q-bio 2020" (member of organizing committee), University of Maryland, Summer 2020.

25. "2021 Annual Meeting of the Society of Mathematical Biology" (member of organizing committee), Online, 2021.

26. "Third International Symposium on Mathematical and Computational Oncology (ISMCO 2021)" (steering committee), Online, 2021.

27. "Mathematical Models in Medicine" (organizer with Benoit Perthame and Norbert Mauser), Vienna, Austria, 2023.

Conferences, Colloquium and Seminar Lectures

1. "Mathematical Perspectives on Immunobiology", Blagoevgrad, Bulgaria, *September 2023.* (keynote)

2. "Mathematical Models in Medicine", Vienna, Austria, *August 2023.*

3. Department of Mathematics, University of Florida, *April 2023.* (invited)

4. "Mathematical methods for the study of Self-organization in the Biological Sciences", Erwin Schrödinger Institute, Vienna, *November 2022.* (invited)

5. Department of Mathematics, Illinois Institute of Technology, *October 2022.* (invited)

6. "Joint SMB-ECMTB Conference", Heidelberg, Germany, *September 2022.* (invited mini-symposium)

7. "2021 Wound Healing Conference", Howard University, *December 2021.* (invited)

8. "Emergent Properties of Cancer Systems", NCI-NSF Workshop, *May 2021.* (invited)

9. Department of Mathematics, Cornell University, *April 2021.* (invited)

10. Department of Mathematics, UC Berkeley, *March 2021.* (invited)

11. Department of Mathematics, Yale University, *February 2021.* (invited)

12. "Second International Symposium on Mathematical and Computational Oncology (ISMCO 2020)", San Diego, *October 2020.* (Plenary)

13. Department of Mathematics, Stanford University, *April 2020.* (invited)

14. Department of Mathematics, Clarkson University, *February 2020.* (invited)

15. "Wing Lectures", University of Rochester, *November 2019.* (keynote)

16. University of Vienna, *October 2019.* (invited)

17. "Scientific Computing Meets Machine Learning and Life Sciences", Texas Tech University, *October 2019.* (invited)

18. "Immuno-Oncology Summit", Cambridge Innovation Institute, Boston, *August 2019.* (invited)

19. "Models in Cancer Therapy", Vienna, Austria, *August 2019.* (organizer)

20. "1st Latin American School in Applied Mathematics", Quito, Ecuador, *June 2019.* (invited)

21. "The Mathematical Sciences in Obesity Research", Indiana University Public Health Training, Baltimore, *June 2019.* (invited)

22. "Statistical Physics Approaches to Systems Biology", Havana, Cuba, *February 2019.* (invited)

23. "Mathematical Models in Cancer", Invited SIAM minisymposium, JMM, Baltimore, *January 2019.* (organizer)

24. "Advances in Applied Mathematics", Tel Aviv University, *December 2018*. (invited)

25. "Mathematical Challenges in the Analysis of Continuum Models for Cancer Growth, Evolution and Therapy", CMO-BIRS, Oaxaca, Mexico, *November 2018*. (invited)

26. "Multiscale Computations for Kinetic and Related Problems", North Carolina State University, *November 2018*. (invited)

27. Department of Mathematics, University of Richmond, *November 2018*. (invited)

28. "Differential Equations Arising from Organising Principles in Biology", Oberwolfach, Germany, *September 2018*. (invited)

29. "Interpretable Deep Learning for Cancer Research", National Cancer Institute, Bethesda, *September 2018*. (invited)

30. "Pauli Symposium on How Many Mathematics ?!", Vienna, *September 2018*. (organizer)

31. "Rational Combination Cancer Immunotherapy", Cambridge Healthtech Institutes, Boston, *August 2018*. (invited)

32. "11th European Conference on Mathematical and Theoretical Biology", Lisbon, Portugal, *July 2018*. (invited mini-symposium)

33. "Models in Cancer Therapy", Vienna, Austria, *July 2018*. (organizer)

34. "Mathematical Perspectives in Cancer Biology and Therapeutics", CIRM, Luminy, France, *July 2018*. (invited)

35. Dartmouth University, *June 2018*. (invited)

36. "NSF-CBMS Mathematical Biology Regional Conference", Howard University, *May 2018*. (invited panelist)

37. Big 10 Academic Leadership Program, University of Nebraska, Lincoln, *April 2018*. (invited)

38. Big 10 Academic Leadership Program, University of Michigan, *February 2018*. (invited)

39. "Dynamic Structures: From Atomic to Cellular Length Scales", UMD-Lund Workshop, *December 2017*.

40. "Can Physics and Mathematics Impact the Development of Tumor Immunotherapy?", Society for Immunotherapy of Cancer (SITC), 2017 Hot Topics Symposium, Gaylord National Harbor, *November 2017*. (invited)

41. Institute of Natural Sciences, Shanghai Jiao Tong University, *November 2017*. (invited)

42. Big 10 Academic Leadership Program, University of Iowa, *October 2017*. (invited)

43. Department of Mathematics, University of North Carolina at Chapel Hill, *September 2017*. (invited)

44. "Pedestrian Dynamics: Modeling, Validation, and Calibration", ICERM, Brown University, *August 2017*. (invited)

45. "Mathematical Models in Biology and Medicine", Vienna, *July 2017*. (organizer)

46. "Watch US Stakeholders Meeting", University of Nebraska, Lincoln, *June 2017*. (invited)

47. "Biology and Medicine through Mathematics", VCU, *May 2017*. (plenary)

48. "Workshop on Interdisciplinary Mathematics", Penn State University, *May 2017*. (plenary)

49. "Current Trends in Mathematical and Computational Biology", Joint Mathematics Meeting, Atlanta, *January 2017*. (invited)

50. "Integrative Cancer Research UMD-NCI Partnership", Maryland, *September 2017*. (inaugural invited talk)

51. "Models in Cancer Therapy", Vienna, Austria, *July 2016*. (organizer)

52. Department of Mathematics, Duke University, *April 2016*. (invited)

53. Gathering for Gardner 12 (G4G12), Atlanta, *March 2016*. (invited)

54. "Applied Mathematics in Germinating Oncology Solutions", National Cancer Institute, *March 2016*. (invited)

55. Department of Mathematics, Jiao Tong University, Shanghai, China, *March 2016*. (invited)

56. Department of Mathematics, Rutgers University, *March 2016*. (invited)

57. "Cancer: Math-Bio Workshop", Howard University, *December 2015*. (invited)

58. "Collective Dynamics in Biological and Social Systems", Duke, *November 2015*. (invited)

59. "Workshop and Summer School on Kinetic Theory and Gas Dynamics", Shanghai, China, *August 2015*. (invited)

60. "Models in Cancer Therapy", Vienna, Austria, *July 2015*. (organizer)

61. "Micro and Macro Systems in Life Sciences", Bedlewo, Poland, *June 2015*. (invited)

62. "Joint Integrative Cancer Biology Program (ICBP) and Physical Sciences-Oncology Centers (PS-OCs) Mathematical Modeling Meeting", Tampa, *February 2015*. (keynote)

63. "Mathematical Approaches to Breast Cancer Initiation and Dormancy", National Institutes of Health, *January 2015* (organizer)

64. "5th international conference on Scientific Computing and Partial Differential Equations (SCPDE14)", Hong Kong, *December 2015* (invited mini-symposium)

65. "Cancer and the Immune System", Mathematical Biosciences Institute, Ohio, *November 2014*. (invited)

66. "Workshop on Systems Biology", Peking University, China, *September 2014*. (invited)

67. "Mathematical Models in Biology and Epidemiology", SIAM Conference on Life Sciences, Charlotte NC, *August 2014*. (invited mini-symposium)

68. "International Workshop on Numerical Methods and Emerging Computational Challenges in Mathematical Biology", Dundee, UK, *May 2014.* (plenary)

69. "CNSF: Coalition for National Science Funding", Capitol Hill, *May 2014.* (SIAM Representative)

70. "Modern Perspectives in Applied Mathematics: Theory and Numerics of PDEs", Bethesda, *April 2014.* (organizer)

71. AMS Sectional Meeting: special session on Mathematical Biology, UMBC, *March 2014.*

72. Gathering for Gardner 11 (G4G11), Atlanta, *March 2014.* (invited)

73. IPAM Workshop: "Translating cancer data and models to clinical practice", UCLA, *February 2014.* (organizer)

74. SIAM Analysis of PDEs, Orlando, *December 2013.* (scientific committee & invited mini-symposium)

75. Department of Mathematics, Stanford University, *November 2013.* (invited)

76. Department of Mathematics, Georgetown University, *November 2013.* (invited)

77. "PDEs and Dynamical Systems in Biology", Bar Ilan University, Israel, *October 2013.* (plenary)

78. "Cell Dynamics in Cancer", Institut Henri Poincare, Paris, *June 2013.* (invited)

79. "CRM Montreal Scientific Computing Days Conference", Montreal, Canada, *May 2013.* (invited short course)

80. Department of Mathematics, Loyola University, Chicago, *March 2013.* (invited)

81. "Sydney International Workshop on Math Models of Tumor-Immune System Dynamics", Sydney, Australia, *January 2013.* (plenary speaker)

82. Department of Mathematics, Morgan State University, *October 2012.* (invited)

83. "Cancer Immunology", Society of Mathematical Biology Annual Meeting, Tennessee, *July 2012.* (invited mini-symposium)

84. "Mathematical Models and Computations in Cell and Developmental Biology", the ninth AIMS Conference on Dynamical Systems, Differential Equations, and Applications, Orlando, *July 2012,* (invited special session)

85. Department of Mathematics, UC Irvine, *May 2012.* (invited)

86. Undergraduate Mathematics Conference in Washington, George Washington University, *April 2012.* (keynote)

87. Gathering for Gardner 10 (G4G10), Atlanta, *March 2012.* (invited)

88. "Emergent Behavior in Multi-Particle Systems with Non-Local Interactions", PIMS, Banff *January 2012.* (invited)

89. Department of Mathematics, University of Delaware, *November 2011.* (invited)

90. SIAM Conference on the Analysis of Partial Differential Equations, *November 2011.* (invited mini-symposium)

91. "Leverhulme International Network: Numerical and Analytical Solution of Stochastic Delay Differential Equations", University of Chester, UK, *September 2011.* (invited)

92. "Recent Development in Mathematical and Computational Modeling of Multicellular Structures", ICIAM, Vancouver, *July 2011.* (invited mini-symposium)

93. "International Conference in Honor of Saul Abarbanel's 80th Birthday", Tel Aviv University, Israel, *June 2011.* (invited)

94. "Flow Structure Interactions", Special Session in the AMS Western Section Meeting, Las Vegas, *April 2011.* (invited)

95. "SIAM Great Lakes Conference on Modeling and Numerical PDEs in Mathematical Biology and Applications", Oakland University, Michigan, *April 2011.* (invited)

96. Department of Mathematics, Towson University, Maryland, *April 2011.* (invited)

97. Department of Mathematics, Murray State University, Tennessee, *April 2011.* (invited)

98. Department of Mathematics, Brown University, *March 2011.* (invited)

99. Department of Mathematics, Tulane University, *February 2011.* (invited)

100. Department of Mathematics, George Washington University, *January 2011.* (invited)

101. Department of Mathematics, University of Tennessee, Knoxville, *November 2010.* (invited)

102. "Mathematical Models in Biology and Medicine", Special Session in the AMS Southeastern Section Meeting, Richmond, *November 2010.* (invited)

103. Department of Mathematics, Georgia Tech, *October 2010.* (invited)

104. Department of Mathematics, University of Vienna, Austria, *October 2010.* (invited)

105. "1st International Workshop on Differential and Integral Equations with Applications in Biology and Medicine", Samos, Greece, *September 2010.* (invited)

106. "Mathematical Modeling of the Immune Response, Cancer Growth and Treatments", MathFest-2010, Pittsburgh, *August 2010.* (invited)

107. "Southern Biomedical Engineering Conference", Maryland, *April 2010.* (chair of the "disease modeling" session)

108. "Frontiers in Mathematical Biology: NSF-NIH PIs Meeting", Maryland, *April 2010.* (organizer)

109. "1st International Workshop on Mathematical Methods in Systems Biology", Tel Aviv University, *January 2010.* (invited)

110. "Mathematical Developments Arising from Biology", Mathematical Biosciences Institute, Ohio State University, *November 2009.* (invited)

111. Department of mathematics, University of Chicago, *October 2009.* (invited)

112. Applied Dynamics, University of Maryland, *September 2009.* (invited)

113. "18 Scottish Computational Math Symposium", Edinburgh, Scotland, *September 2009.* (invited)

114. "Multiscale Analysis of Self-Organization in Biology", PIMS, Banff, *July 2009.* (invited)

115. First joint meeting of the Society for Mathematical Biology and the Chinese Society for Mathematical Biology, Hangzhou, China, *June 2009.* (invited mini-symposium)

116. "Math-Biology workshop: on building an interdisciplinary career", University of Utah, *May 2009.* (keynote speaker)

117. Department of mathematics, University of Maryland, Baltimore County, *April 2009.* (invited)

118. Immunology group, Center for Vaccine Development (CVD), University of Maryland, School of Medicine, *April 2009.* (invited)

119. Joe Keller's 85th Birthday Conference, Stanford University, *October 2008.* (plenary speaker)

120. Department of mathematical sciences, New Jersey Institute of Technology, *October 2008.* (invited)

121. The American Mathematical Society briefing in Capitol Hill, US Congress, *September 2008.* (keynote speaker)

122. "Quantitative Biology", Howard Hughes Medical Institute, *July 2008.*

123. Twelfth international conference on hyperbolic problems (HYP 2008), University of Maryland, *June 2008.*

124. "Eighth Gathering for Gardner (G4G8)", Atlanta, *March 2008.* (invited)

125. Department of mathematics, Cornell University, *March 2008.* (invited)

126. IEEE Signal Processing Washington Chapter *November 2007.* (invited)

127. Department of mathematics, University of Arizona, Tucson, *November 2007.* (invited)

128. Department of mathematics, University of Maryland *November 2007.* (invited)

129. FRG meeting on kinetic theory and conservation laws, Stanford University, *July 2007.* (invited)

130. Department of mathematics, University of Maryland, *April 2007.* (invited)

131. Clifford Lectures, Tulane University, *March 2007.* (invited)

132. Department of mathematics, University of Utah, *February 2007.* (invited)

133. Department of mathematics, University of Toronto, *February 2007.* (invited)

134. Department of mathematics, Michigan State University, *January 2007.* (invited)

135. Department of mathematics, University of British Columbia, Vancouver, Canada, *January 2007.* (invited)

136. Department of mathematics, Simon Fraser University, Vancouver, Canada, *January 2007.* (invited)

137. "Numerical Methods for Degenerate Elliptic Equations and Applications" (with Souganidis, Oberman and Mitchell), PIMS, Banff, *December 2006.* (organizer)

138. Department of mathematics, University of Utah, *November 2006.* (invited)

139. Department of applied mathematics, Columbia University, *September 2006.* (invited)

140. Eleventh international conference on hyperbolic problems (HYP 2006), Lyon, France, *July 2006.* (invited speaker)

141. "Mathematical Biology", Oberwolfach, Germany, *May 2006.* (invited)

142. "Biology and control theory: current challenges", Toulouse, France, *April 2006.* (invited speaker)

143. Department of mathematics, Arizona State University, Phoenix, *April 2006.* (invited)

144. "Gathering for Gardner (G4G7)", Atlanta, *March 2006.* (invited)

145. Department of mathematics, Duke University, *February 2006.* (invited)

146. Department of mathematics, Rutgers University, *February 2006.* (invited)

147. Fifth Hawaii International Conference on Statistics, Mathematics, and related fields, Hawaii, *January 2006*

148. American Institute of Mathematics (AIM) workshop on the modeling of cancer progression and immunotherapy, Palo Alto, *December 2005*

149. Center for scientific computing and mathematical modeling (CSCAMM), University of Maryland, *December 2005.* (invited)

150. Department de mathematiques et applications, ENS Paris, France, *November 2005.* (invited)

151. Department of mathematics, UC Berkeley, *November 2005.* (invited)

152. Department of mathematics, University of Michigan, Ann Arbor, *October 2005.* (invited)

153. Department of mathematics, University of Chicago, *October 2005.* (invited)

154. Department of mechanical engineering, UC San Diego, *October 2005.* (invited)

155. Department of mathematics (computational biology), UC Berkeley, *October 2005.* (invited)

156. Seventh Hellenic European conference on computer mathematics and its applications (HER-CMA 2005), Athens, Greece, *September 2005.* (invited)

157. American Institute of Mathematics (AIM) workshop on multidimensional Hamilton-Jacobi equations, Palo Alto, *September 2005.* (organizer)

158. Society for Industrial and Applied Mathematics (SIAM) annual meeting, New Orleans, *July 2005.* (mini-symposium organizer)

159. Society for Industrial and Applied Mathematics (SIAM) conference on mathematical & computational geosciences, Avignon, France, *May 2005*

160. American Institute of Mathematics (AIM) workshop on conservation laws with stiff source terms, Palo Alto, *April 2005.* (organizer)

161. Tenth international conference on hyperbolic problems (HYP 2004), Osaka, Japan, *September 2004*

162. Numerical methods for viscosity solutions and applications, Rome, Italy, *September 2004.* (invited plenary talk)

163. Summer workshop on kinetic theory and conservation laws, Stanford University, *July 2004.*

164. Sixth international conference on spectral and high-order methods (ICOSAHOM 04), Brown University, *June 2004.* (invited mini-symposium)

165. Department of mathematics, University of Chicago, *May 2004.* (invited)

166. Analytical and computational challenges of incompressible flows at high Reynolds number, Center for scientific computing and mathematical modeling (CSCAMM), University of Maryland, *May 2004.* (invited)

167. Department of mathematics, North Carolina State University, *April 2004.* (invited)

168. Department of mathematics, Tulane University, *January 2004.* (invited)

169. "Geometrically based motions", Institute for pure and applied mathematics (IPAM), Lake Arrowhead, CA, *December 2003.* (invited)

170. Institute of applied mathematics, University of British Columbia, Vancouver, Canada, *September 2003.* (invited)

171. Department of computer science, University of British Columbia, Vancouver, Canada, *September 2003.* (invited)

172. Fifth European conference on numerical mathematics (ENUMATH 2003), Prague, *August 2003.*

173. Fifth international conference on industrial and applied mathematics (ICIAM 2003), Sydney, Australia, *July 2003.* (mini-symposium organizer)

174. Department of mathematics, UC Davis, *June 2003.* (invited)

175. Department of mathematics, Stanford University, *May 2003*

176. Department of mathematics, UC Irvine, *May 2003.* (invited)

177. Department of mathematics, UCLA, *May 2003.* (invited)

178. Scientific computing and computational mathematics (SCCM) colloquium, Stanford University, *February 2003.* (invited)

179. "Equation de Saint Venant", Journées Savoisiennes de Mathématiques Appliquées, Bourget-du-Lac, France, *May 2002.* (invited plenary talk)

180. Ninth international conference on hyperbolic problems (HYP 2002), CalTech, *March 2002*

181. Fourth European conference on numerical mathematics (ENUMATH 2001), Ischia, Italy, *July 2001*

182. Conservation laws workshop, Stanford University, *July 2001*

183. Society for Industrial and Applied Mathematics (SIAM) annual meeting, San Diego, *July 2001.* (invited mini-symposium)

184. "Geometrically based motions" workshop, Institute for pure and applied mathematics (IPAM), Lake arrowhead, CA, *June 2001.* (invited)

185. TMR final conference on hyperbolic systems of conservation laws, Paris, France, *September 2000*

186. Nonlinear analysis 2000, Courant Institute, New York University, *May 2000.* (invited)

187. Department of mathematics, UC Berkeley *March 2000.* (invited)

188. Bay area scientific computing day, Lawrence Berkeley Lab, *February 2000.* (invited)

189. Department of mathematics, University of Texas, Austin, *February 2000.* (invited)

190. Department of mathematics, University of Arizona, Tucson, *February 2000.* (invited)

191. Department of mathematics, Purdue University, *February 2000.* (invited)

192. Department of mathematics, UC Santa Barbara, *February 2000.* (invited)

193. Department of mathematics, University of Minnesota, Minneapolis, *January 2000.* (invited)

194. Department of mathematics, UC Davis, *January 2000.* (invited)

195. Department of mathematics, University of Illinois, Urbana-Champaign, *January 2000.* (invited)

196. Department of mathematics, University of Michigan, Ann Arbor, *December 1999.* (invited)

197. Department of mathematics, University of Wisconsin, Madison, *November 1999.* (invited)

198. Fourth international conference on industrial and applied mathematics (ICIAM 99), Edinburgh, *July 1999.* (invited mini-symposium)

199. Lawrence Berkeley national laboratory, UC Berkeley, *October 1998*

200. Lawrence Berkeley national laboratory, UC Berkeley, *September 1998*

201. Summer school on "Theoretical and numerical aspects of hyperbolic systems", FORTH, Heraklion, Crete, Greece, *July 1998*

202. Fourth international conference on spectral and high-order methods (ICOSAHOM 98), Herzliya, Israel, *June 1998*

203. Institute for applied mathematics, University of Bonn, Germany, *June 1998.* (invited)

204. TMR second Euroconference on hyperbolic systems of conservation laws, Trieste, Italy, *May 1998*

205. INRIA school on hyperbolic systems, France, *March 1998.* (invited)

206. College de polytechnique, Paris, France, *February 1998.* (invited)

207. Laboratoire d'analyse numerique, Universite Pierre et Marie Curie (Paris 6), Paris, France, *February 1998.* (invited)

208. Department de mathematiques et d'informatique, ENS Paris, France, *January 1998.* (invited)

209. Fifth incontro nazionale sulle equazioni iperbolich, L'Aquila, Italy, *November 1997*

210. School of mathematical sciences, Tel Aviv University, Israel, *June 1997*

211. Courant institute of mathematical sciences, New York University, *December 1996.* (invited)

212. Lawrence Berkeley national laboratory, UC Berkeley, *December 1996.* (invited)

213. Department of mathematics, UCLA, *December 1996.* (invited)

214. Department of applied mathematics, CalTech, *November 1996.* (invited)

Other Conferences (Presented by collaborators, selected)

1. Eighth International Conference on Complex Systems, Boston, MA *June 2011*

2. European Conference on Mathematical and Theoretical Biology, Edinburgh, UK, *June 2008*

3. "Mathematical Perspective on Cancer Immunology", University of Utah, *May 2008*

4. SIAM Meeting on Control Theory, San Francisco, *July 2007*

5. SIAM Conference on Dynamical Systems, Park City, Utah, *June 2007*

6. ASTRO 2006, American Society for Therapeutic Radiology and Oncology, 48th Annual Meeting, Philadelphia, *November 2006*

7. AAPM 2006, American Association of Physicists in Medicine, 48th Annual Meeting, Orlando, *July 2006*

8. MTNS 2006, 17th International Symposium on Mathematical Theory of Networks and Systems, Kyoto, *July 2006*

9. Joint SMB-SIAM Meeting on the Life Sciences, Raleigh, *July 2006*

10. SIAM Annual Meeting, Boston, *July 2006*

11. SIAM Conference on Imaging Science, Minneapolis, *May 2006*

12. AAPM 2005, American Association of Physicists in Medicine, 47th Annual Meeting, Seattle, *July 2005*

13. International Conference on Differential Equations and Applications in Mathematical Biology, Nanaimo, British Columbia, Canada, *July 2004*

14. ASTRO 2003, American Society for Therapeutic Radiology and Oncology, 45th Annual Meeting, Salt Lake City, *October 2003*

15. AAPM 2003, American Association of Physicists in Medicine, 45th Annual Meeting, San Diego, *August 2003*

16. CARS 2003, Computer Assisted Radiology and Surgery, 17th International Congress, London, UK, *June 2003*

17. ASTRO 2002, American Society for Therapeutic Radiology and Oncology, 44th Annual Meeting, New Orleans, *October 2002*

Doron Levy
List of Publications

1. D. LEVY AND E. TADMOR, *Non-Oscillatory Central Schemes for the Incompressible 2D Euler Equations*, Mathematical Research Letters, **4** (1997), pp.321–340.

2. D. LEVY AND P. ROSENAU, *On a Class of a Thermal Blow-up Patterns*, Physics Letters A, **236** (1997), pp.483–493.

3. D. LEVY AND E. TADMOR, *From Semi-Discrete to Fully-Discrete: The Stability of Runge-Kutta Schemes by the Energy Method*, SIAM Review, **40**, no. 1 (1998), pp.40–73.

4. A. KURGANOV, D. LEVY AND P. ROSENAU, *On Burgers-type Equations with Non-Monotonic Dissipative Fluxes*, Communications on Pure and Applied Mathematics, **51**, no. 5 (1998), pp.443–473.

5. D. LEVY, *A Third-order 2D Central Scheme for Hyperbolic Conservation Laws*, INRIA School on Hyperbolic Systems, Vol. I, (1998), pp.489–504.

6. G.-S. JIANG, D. LEVY, C.-T. LIN, S. OSHER AND E. TADMOR, *High-Resolution Non-Oscillatory Central Schemes with Non-Staggered Grids for Hyperbolic Conservation Laws*, SIAM Journal on Numerical Analysis, **35**, no. 6 (1998), pp.2147–2168.

7. G. FIBICH AND D. LEVY, *Self-Focusing in the Complex Ginzburg-Landau Limit of the Critical Nonlinear Schrödinger Equation*, Physics Letters A, **249** (1998), pp.286–294.

8. P. ROSENAU AND D. LEVY, *Compactons in a Class of Nonlinearly Quintic Equations*, Physics Letters A, **252** (1999), pp.297–306.

9. T. KATSAOUNIS AND D. LEVY, *A Modified Structured Central Scheme for 2D Hyperbolic Conservation Laws*, Applied Mathematics Letters, **12**, no. 6 (1999), pp.89–96.

10. D. LEVY, G. PUPPO AND G. RUSSO, *Central WENO Schemes for Hyperbolic Systems of Conservation Laws*, Mathematical Modelling and Numerical Analysis, **33**, no. 3 (1999), pp.547–571.

11. Y. BRENIER AND D. LEVY, *Dissipative Behavior of Some Fully Non-Linear KdV-Type Equations*, Physica D., **137** (2000), pp.277–294.

12. D. LEVY, G. PUPPO AND G. RUSSO, *A Third Order Central WENO Scheme for 2D Conservation Laws*, Applied Numerical Mathematics, **33** (2000), pp.407–414.

13. D. LEVY, G. PUPPO AND G. RUSSO, *On the Behavior of the Total Variation in CWENO Methods for Conservation Laws*, Applied Numerical Mathematics, **33** (2000), pp.415–421.

14. A. CHORIN, R. KUPFERMAN AND D. LEVY, *Optimal Prediction for Hamiltonian Partial Differential Equations*, Journal of Computational Physics, **162** (2000), pp.267–297.

15. D. LEVY, G. PUPPO AND G. RUSSO, *Compact Central WENO Schemes for Multidimensional Conservation Laws*, SIAM Journal on Scientific Computing, **22** no. 2, (2000), pp.656–672.

16. A. Kurganov and D. Levy, *A Third-Order Semi-Discrete Central Scheme for Conservation Laws and Convection-Diffusion Equations*, SIAM Journal on Scientific Computing, **22** no. 4, (2000), pp.1461–1488.

17. A. Chertock and D. Levy, *Particle Methods for Dispersive Equations*, Journal of Computational Physics, **171** no. 2, (2001), pp.708–730.

18. A. Kurganov and D. Levy, *Central-Upwind Schemes for the Saint-Venant System With a Source Term*, Mathematical Modelling and Numerical Analysis, **36** no. 3, (2002), pp.397–425.

19. D. Levy, G. Puppo and G. Russo, *Central WENO Schemes for Multi-Dimensional Hyperbolic Systems of Conservation Laws*, SIAM Journal on Scientific Computing, **24** no. 2, (2002), pp.480–506.

20. A. Chertock and D. Levy, *A Particle Method for the KdV Equation*, Journal of Scientific Computing, **17** no 1–4, (2002), pp.491–499.

21. S. Bryson and D. Levy, *High-Order Semi-Discrete Central-Upwind Schemes for Multi-dimensional Hamilton-Jacobi Equations*, Journal of Computational Physics, **189** (2003), pp.63–87.

22. S. Bryson and D. Levy, *High-Order Central WENO Schemes for Multi-dimensional Hamilton-Jacobi Equations*, SIAM Journal Numerical Analysis, **41** (2003), pp.1339–1369.

23. S. Bryson and D. Levy, *Central Schemes for Multi-dimensional Hamilton-Jacobi Equations*, SIAM Journal on Scientific Computing, **25** (2003), pp.767–791.

24. D. Levy, C.-W. Shu, and J. Yan, *Local Discontinuous Galerkin Methods for Nonlinear Dispersive Equations*, Journal of Computational Physics, **196** (2004), pp.751–772.

25. A. Chertock and D. Levy, *On Wavelet-Based Numerical Homogenization*, Multiscale Modeling and Simulation, **3** (2004), pp.65–88.

26. S. Bryson and D. Levy, *On the Total Variation of High-Order Semi-Discrete Central Schemes for Conservation Laws*, Journal of Scientific Computing, **27** (2006), pp.163–175.

27. S. Bryson and D. Levy, *Mapped WENO and Weighted Power ENO Reconstructions in Semi-Discrete Central Schemes for Hamilton-Jacobi Equations*, Applied Numerical Mathematics, **56** (2006), pp.1211–1224.

28. Y.-N. Young and D. Levy, *Registration-Based Morphing of Active Contours for Segmentation of CT Scans*, Mathematical Biosciences and Engineering, **2** (2005), pp.79–96.

29. S. Bryson, A. Kurganov, D. Levy, and G. Petrova, *Semi-Discrete Central-Upwind Schemes with Reduced Dissipation for Hamilton-Jacobi Equations*, IMA Journal of Numerical Analysis, **25** (2005), pp.87–112.

30. S. Bryson, A. Kosovichev, and D. Levy, *High-Order Shock Capturing Methods for Modelling Dynamics of the Solar Atmosphere*, Physica D., **201** (2005), pp.1–26.

31. Z. Shou, Y. Yang, C. Cotrutz, D. Levy, and L. Xing, *Quantitation of the A Priori Dosimetric Capabilities of Spatial Points in Inverse Planning and its Significant Implication in Defining IMRT Solution Space*, Physics in Medicine and Biology, **50** (2005), pp.1469–1482.

32. F. Gibou, D. Levy, C. Cardenas, P. Liu, and A. Boyer, *PDE-based Segmentation for Radiation Therapy Treatment Planning*, Mathematical Biosciences and Engineering, **2** (2005), pp.209–226.

33. R. Fetecau and D. Levy, *Approximate Model Equations for Water Waves*, Communications in Mathematical Sciences, **3** (2005), pp.159–170.

34. D. Levy, *A Stable Semi-Discrete Central Scheme for the Two-Dimensional Incompressible Euler Equations*, IMA Journal of Numerical Analysis, **25** (2005), pp.507–522.

35. S. Bryson and D. Levy, *Balanced Central Schemes for the Shallow Water Equations on Unstructured Grids*, SIAM Journal on Scientific Computing, **27** (2005), pp.532–552.

36. R. DeConde, P. Kim, D. Levy, and P. Lee, *Post Transplantation Dynamics of the Immune Response to Chronic Myelogenous Leukemia*, Journal of Theoretical Biology, **236** (2005), pp.39–59.

37. D. Paquin, D. Levy, E. Schreibmann, and L. Xing, *Multiscale Image Registration*, Mathematical Biosciences and Engineering, **3** (2006), pp.389–418.

38. D. Levy, S. Nayak, C.-W. Shu, and Y.-T. Zhang, *Central WENO Schemes for Hamilton-Jacobi Equations on Triangular Meshes*, SIAM Journal on Scientific Computing, **28** (2006), pp.2229–2247.

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