

CURRICULUM VITAE
Irene Martínez Gamba

Current Position: Professor in Mathematics, W.A. Tex Moncreif Jr. Chair in Computational Engineering and Sciences III. Leader for the Oden Institute (ICES) Applied Mathematics Group.

Address: University of Texas at Austin

**The Oden Institute for Computational Engineering and Sciences (ICES) and
Department of Mathematics.**

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Citizenship: USA and Argentina

DEGREES

- Licenciatura en Matematicas, Universidad de Buenos Aires, Argentina, 1981.
- Ms in Mathematics, The University of Chicago, Illinois, 1985.
- Ph.D in Mathematics, The University of Chicago, Illinois, 1989.

Thesis Advisor: Jim Douglas Jr. – **Postdoctoral Advisor:** Cathleen Morawetz.

POSITIONS HELD:

- **ICES Applied Math Group**, Group leader, 2007 to present.
- **W.A. Tex Moncreif, Jr. Chair in Applied and Computational Mathematics (Computational Engineering and Sciences III)**, since 2014.
- **John T. Stuart III Centennial Professorship in Mathematics**, from 2013 to 2014.
- **Joe B. and Louise Cook Professorship in Mathematics**, from 2007 to 2013.
- **Professor**, University of Texas at Austin, from August 1997 to present.
- **Associate Professor**, Courant Institute of Mathematical Sciences, New York University, September 1996 to July 1997.
- **Assistant Professor**, Courant Institute of Mathematical Sciences, New York University, September 1994 to August 1996.
- **N.S.F Postdoctoral Research Fellow** at Courant Institute of Mathematical Sciences, New York University, 1992 -1994 (DMS 9206244)
- **Assistant Professor**, The College of New Jersey, 1991-1992.
- **Postdoctoral Research Associate**, Purdue University, January to July 1991.
- **Visiting Assistant Professor**, Purdue University, August to December 1990.

DISTINCTIONS:

- **Honors and Awards**

- **122nd Statistical Mechanics Conference - 2019 Honorees Bulbul Chakraborty, Irene M. Gamba, and Andrea Liu**, Rutgers University, New Jersey, December 15 to 18, 2019.
- **2014 SIAM-AWM Sonia Kovalevski Lecture Award**, Chicago, July 2014.
- **Inaugural class of Fellows of the AMS 2013.**
- **W.A. Tex Moncreif, Jr. Chair in Computational Engineering and Sciences III**, September 2014.
- **Japan Society for the Promotion of Science (JSPS) fellowship** at Kyoto University, Japan, March 2013.
- **John T. Stuart III Centennial Professorship in Mathematics**, from 2013 to 2014.
- **ICES Distinguished Research Award for 2012.**
- **SIAM Fellow class 2012.**
- **Frank E. Gerth III Faculty Fellow**, from 2010 to 2014.
- **Moncrief Grand Challenge Award**, 2008-2009.
- **Joe B. and Louise Cook Professorship in Mathematics**, 2007 to 2013.
- **XV David Alcaraz Spinola Lecture Award**, Universidad Autonoma de Mexico, Ciudad de Mexico, October 2005.
- **NSF Mathematical Science Postdoctoral Research Fellow, 1992-1994.**

- **Distinguish lectures and addresses**

- **SIAM Conference on Mathematical Aspects of Materials Science (MS24), Invited Plenary Lecture**, Pittsburgh, May 2024.
- **Kirk Distinguish Lecture, Isaac Institute for Mathematical Sciences**, Cambridge, UK, May 25, 2022.
- **Mathematics Congress of Americas (MCA), Invited Speaker**, Buenos Aires, July 2021.
- **SIAM APDE Invited plenary address**, La Quinta, CA, December 2019.
- **AMS-SIAM invited address**, Annual Joint Mathematics Meetings, Atlanta, Jan 2017.
- **SIAM Central States Section invited address**, Little Rock, Arkansas, September 2016.
- **Boeing Distinguished Colloquia**, University of Washington at Seattle, April 2015.
- **2014 SIAM-AWM Sonia Kovalevski Lecture Award**, Chicago, July 2014.
- **AMS Invited Plenary address**, Central Regional meeting, Athens, Ohio, March 26, 2004.
- **Matheon distinguish lecture, *Multiscale Problems in Quantum Mechanics and Averaging Techniques*** WIAS Berlin, September (2005).
- **Introductory keynote of the Amy Noether lecture** at the ICM-98, Berlin, August 1998.

PUBLICATIONS EDITORIAL MEMBER:

[Journal of Computational Physics](#), Editorial Advisory Board (from 2024),

[Communications in Nonlinear Science and Numerical Simulation](#) (CNSNS), Editorial Advisory Board (from 2021),

[Journal of Mathematical Physics, AIP](#), Editorial Advisory Board (from 2021),

[SIAM Journal in Applied Mathematics](#) (SIAP), Editorial Board Member, (from 2018),

[Communications in Mathematical Sciences](#), Associate Editor (from 2017),
'*Networks & Heterogeneous Media*', since 2014

Mathematics and Mechanics of Complex Systems, Advisory Board member (from 2012)

Journal of Mathematical Fluid Dynamics, Editorial Board Member (from 2012),

PAST PUBLICATIONS EDITORIAL MEMBER:

[Bulletin of the American Mathematical Society](#), Editorial Board member, (from 2015-2024),
[SIAM Journal in Numerical Analysis](#), (SINUM), Editorial Board Member, (2022-23), resigned.

Journal of Kinetic and Related Models, Editorial Board member, (2008-2018)

[ESAIM: Mathematical Modeling and Numerical Analysis](#), Editorial Board member, (2013-2020)

[SIAM Multi-scale Modeling and Simulations](#), Editorial Board Member, (2014-2017),

Springer Graduate (GTM) and Undergraduate Texts in Mathematics (UTM) Series, Advisory Board member, (from 2012-2018)

[Journal of Statistical Physics](#), Editorial Board member (2007 to 2012).

Mathematical Physics Electronic Journal, Editorial Board member, (2000-2009)

ELECTED POSITIONS

- *AMS (American Mathematical Society)*
 - AMS Member at Large, Elected member, February 2002-2005.
 - AMS Science Policy Committee member, February 2002-2005.
 - AMS Member of the Central Section Program Committee (2001-2002).

- *SIAM (Society for Industrial and Applied Mathematics)*
 - SIAG Analysis in PDE – Elected Program officer January 2009 -December 2010.
 - SIAM SIAG Analysis in PDE – Elected Chair January 2007 to December 2009.

SPECIAL INTERESTS: Mathematical and statistical physics, applied non-linear analysis, numerical analysis and computational methods related to Partial and Integro Differential equations in the modeling of statistical flows. Applications to plasmas and kinetic collisional theory of conservative and dissipative Boltzmann type in the modeling of non-equilibrium statistical flows ranging from electromagnetic plasmas, weak turbulence models, classical gas dynamics, mixtures and rapid granular flows to transient and charged hot-carrier phenomena for kinetics of semiconductor and solar cell device modeling and simulation, as well emerging complex phenomena in multi linear social interacting systems such as kinetic models of particle swarms modeled by Chapman-Kolmogorov and Boltzmann type transport equation. General mesoscopic and macroscopic approximations in fluid and particle dynamics. Development of deterministic numerical methods for kinetic flows. Conservative Spectral approximations, Discontinuous Galerkin methods for non-linear collisional flows in kinetic dynamics.

PROFESSIONAL SERVICES:

- **SL Math/MSRI (Simons Laufer/Mathematical Sciences Research Institute), Scientific Advisory Committee member, 2020 to 2024.**
- **SIAM Fellows Canvassing committee, March 22 to March 23.**
- **SIAM PDE 22 Conference, Scientific committee member, March 2021 to March 22**
- **NSF Panelist, October 19-20, March 2021.**
- **SIAG/CSE 2021 Early Career Prize committee member, September 2020.**
- **AMS 2021 Birkhoff Prize Committee Member and Chair, August to September 2020,**
- **SIAM Fellows program, Committee member 2019-2021;**
- **NSF panelist, February 25-27, 2019**
- **External Review Committee Member, John Hopkins University, Department of Mathematics, October 2018.**
- **Scientific Assessment – Department of Mathematical Sciences at Chalmers University of Technology, Sweden, May-June 2014 and 2016.**
- **American Mathematical Society Fellows Program, committee member 2015-2018,**
- **External Review Committee Member, Colorado School of Mines, Department of Mathematics and Statistics, April 2017.**
- **American Mathematical Society Gibbs Prize committee member 2016-2018,**
- **SIAM-AWM Sonia Kovalevki Lecture Award committee member, 2016-2017.**
- **US National Committee for Mathematics, Committee member and Chair, 2010 to 2018.**
- **SAMSI (Statistical and Applied Mathematical Sciences Institute), National Advisory Council member, 2010 to 2014. Reappointed from 2014 to 2018.**
- **SIAM APDE Prize Committee member 2015-2016,**
- **Centre d'Excellence Africain en Sciences Mathematiques (CEA-SMA), Benin, Board Member, 2012 to present.**
- **NSF site visit team member (Chair) to the Mathematical Sciences Research Institute (MSRI), Berkeley, April 2013.**
- **AMS - Leroy P. Steele prize committee member (2010-2014-Chair for Seminal Contributions to Research and for Mathematical Exposition awards, 2013-14).**
- **ICES Advisory Board, The University of Texas at Austin, 2011 to present.**
- **Gene Golub SIAM Summer School (G2S3) committee, 2009 to 2016.**
- **CoLab UT Austin/Portugal International collaborative program on emerging technologies, Director since 2012, Vice Director from 2007 to 2012.**
- **External Review Committee Member, The University of Pittsburgh, Department of Mathematics, April 2011.**
- **NSF, Division of Mathematical Science, Committee of Visitors panelist, April 2010.**
- **IPAM (Institute for Pure and Applied Mathematics) at UCLA, Scientific Board member, 2004-2009.**
- **Spanish Evaluation Process of the Strategic of the Ministry of Science and Innovation's Singular Scientific/Technical Facilities (ICTSs in their Spanish initials), Madrid, Spain, January 15-17, 2009.**
- **Spanish Evaluation Process of the Strategic Plans from CSIC centers, Evaluating Committee Member, Madrid, Spain January 12-15, 2009.**
- **ICES Applied Math Group, Group Leader, 2007 to present.**
- **AIM (American Institute of Mathematics), HR Board Member 2006-2008.**

- **UT coordinator to the EU Erasmus Mundus consortium on MathMods** – Mathematical Modeling in Engineering: Theory, Numerics, Applications, December 2007-present.
- **External Review Committee Member, The University of New Mexico**, Department of Mathematics and Statistics,, April 2008.
- **External Review Committee Member, Arizona State University**, Mathematics Department, April 2001.
- **NSF special panel at DMS: Mathematics in Nanotechnology** (October 2000) .
- **NSF Panelist** for several programs, including CHE SOLAR initiative, DMS Career award in Applied mathematics and Scientific Computing, STEMS awards, Applied PDE, Classical Analysis and Dynamical systems (from 1998 to 2012).

THE UNIVERSITY OF TEXAS AT AUSTIN SERVICE

- **Oden Institute and ICES Advisory Board**, The University of Texas at Austin, 2011 to present.
- **Oden ICES GSS Committee member**, (1999-present).
- **Oden Institute ICES Moncrief Chairs Search committee**, (2011 to 2019).
- **Mathematics Department Chairs Committee member**, 2008 to 2016.
- **Mathematics Department Promotion and Tenure Committee Member**, 2015-2016.
- **Mathematics Department Promotion Hiring Committee Member**, 2012-2014.
- **UT-Austin**, Search Committee member for Dean of College of Natural Sciences, (Fall 2011).
- **Elected member to the UT Austin Faculty Council**, 2009-2011
- Appointed member to the **Faculty Council Committee on Rules and Government**, 2009-2011.
- **Promotion and Tenure Committee Member, School of Natural Sciences**, 2005, Committee Chair 2006.
- **Organized Research Unit (ORU) Review Recommendations Committee**, School of Natural Sciences, 2001-2002.
- **ORU Review, Center of Non-linear Dynamics**, UT Austin, Committee Chair, Spring 2001.
- **ICES CAM program expansion Committee member**, Fall 2001.
- **ICES Admissions and Fellowships GS**, (1997--98, 2000-present), Committee Chair (2001-2002).
- **Mathematics Department GSS Committee member**, (1998--2002).
- **UT-Austin**, Search Committee member for Vice President for Research (VPR), (Fall 1999).

NEW YORK UNIVERSITY SERVICE

- **CIMS at NYU**, Visiting Members Committee (1995-1997).
- **NYU undergraduate College Curriculum member** (1996-1997).

POSTDOCS: Jose Antonio Carrillo, Dirk Gillespie, Vladislav Panferov, Jing Shi, Jennifer Proft, Maria Gualdani, Yingda Cheng, Sebastien Motsch, Ravi Srinivasan, Jeff Haack, Yuan He, Moon-Jin Kang, Cheng Yu, Minh-Binh Tran, Liu Liu, Michael Abdelmalik, Andres Galindez-Olarte

STUDENTS:

PHD STUDENTS:

Current Students: Frimpong Baidoo (CSEM) Oden (co-advised with Thomas Hughes), Antonio Farah (Math), Rodrigo Gonzalez Hernandez (CSEM) Oden Institute, William Porteous (Math).

Former Students:

- From 07-2020 to 11-2023 - **Kun Huang**, “*A Numerical and Analytical Study of Kinetic Models for Particle-Wave Interaction in Plasmas*” **PhD Theses 2023, Oden Institute**. Current employment: Postdoc, U of Texas, Austin, TX. Recipient of the **2024 Outstanding Thesis Dissertation award at the CSEM program at Oden Institute**.
- From 08-2016 to 05-2022 - **Erica de la Canal**, “*Coerciveness, well-posedness, and Banach norms propagation of solutions to the system of Boltzmann equations for a monatomic gas mixture*” **PhD Theses 2022, Mathematics**.
- From 08-2015 to 05-2021 - **Anna Szczekutowicz**, “*The Landau limit of the Boltzmann equation and fast particle motion in a tokamak*” **PhD Theses 2021, Mathematics**.
- From 08-2015 to 05-2020 - **Clark A. Pennie** “*Conservative Spectral Methods for Fokker-Planck-Landau Type Equations: Simulations, Long-time Behavior and Error Estimates*” **PhD Theses 2020, Mathematics**.
- From 08-2013 to 05-2017 - **Sona Akopian** “*Global L^p solutions of the Boltzmann equation with an angle-potential concentrated collision kernel and convergence to a Landau solution*” **PhD Theses 2017, Mathematics**, Postdoc at Brown University.
- **From 08-2012 to 07-2016 - Maja Taskovic** “Mittag-Leffler moments and weighted L^∞ estimates for solutions to the Boltzmann equation for hard potentials without cutoff” **PhD Theses 2016, Mathematics**. Postdoc at The University of Pennsylvania, Mathematics Department.
- From 08-2010 to 07-2016 - **Jose A. Morales Escalante** “Discontinuous Galerkin methods for Boltzmann - Poisson models of electron transport in semiconductors” **PhD Theses 2016, ICES**. Current employment: Postdoc, TU Wien Institut for Analysis & Scientific Computing, Technische Universität Wien.
- From 08-2010 to 07-2016 - **Michael Harmon** “Numerical algorithms based on Galerkin methods for the modeling of reactive interfaces in photoelectrochemical solar cells” **PhD Theses 2016, ICES**. Current employment: Data Scientists and Applied Mathematician at PMorgan Chase & Co., New York.
- **From 08-2010 to 07-2014 - Chenglong Zhang**, “On study of deterministic conservative solvers for the nonlinear Boltzmann and Landau transport equations” **PhD Theses 2014, ICES**. Current employment: Computational Software Engineer at Schlumberger, Houston Texas
- **From 08-2004 to 07-2008 - Sri Harsha Tharkabhushanam** “A conservative deterministic spectral method for rarefied gas flows” **PhD Theses 2008, ICES**. Current employment: Sr. Consultant Data Science, BJSS – London.

- *From 08-2003 to 07-2009 - Ricardo J. Alonso* “The Boltzmann equation : sharp Povzner inequalities applied to regularity theory and Kaniel & Shinbrot techniques applied to inelastic existence” **PhD Theses 2009, Mathematics**. NSF Postoc at Rice University.
- *From 08-2001 to 07-2006 - Ross Heath* “*Numerical Analysis of the Discontinuous Galerkin Method Applied to Plasma Physics*, **PhD Theses 2006, ICES**. Software Solutions Architect at SAS, Dallas greater area, Texas.

MASTERS STUDENTS: Jill Zaretski (CAM, MS’00), Jody Schneider (Math, MS’02), Mauricio Santillana (CAM, MS’04), Paul Larsen (Math, MS’05), Novie Darmawan (CAM, MS’05), Ray Yarbrough (Math, MS’05) Paula Thron, (Math, MS’08).

UNDERGRADUATE STUDENTS: Benjamin Okaty, VIGRE Trainee (Math’02), Philip Eckhoff (Math/CAM’03), Virginia Roberts VIGRE Trainee (Math’02), Melissa Brady (Math’08).

Dissertation Committee's member from 2019 to 2024

Mathematics Program: 24,
 CSEM program: 187 (CAM/CSM),
 Physics Department: 14,
 Chemical Engineering Department: 2

FUNDING:

- **NSF Individual Research Grant, DMS 2408263** ‘Kinetic Transport of Interactive Complex Particle Dynamics in Mean Fields’ - Total award amount \$350,000 -1/9/2024 – 31/8/2027.
- **NSF Individual Research Grant, DMS 2009736** ‘Collisional Kinetic Transport: Analysis and Numerical Methods’ - Total award amount \$345,000 - 1/9/2020 – 31/8/2024.
- **NSF Individual Research Grant, DMS 1715515** ‘Non-local Kinetic Collisional Transport: Analysis and Numerical Methods’ - Total award amount \$309,999 - 1/9/2017 – 31/8/2020.
- **DOE Grant DE-SC0016283** - ‘Simulation Center for Runaway Electron Avoidance and Mitigation.’ \$1,220,000.00. 7/15/2016 -7/14/2024. (Total Grant budget: \$17.792M)
- **NSF Individual Research Grant, DMS-1413064** ‘The Kinetics of Interacting Particle Systems: Theory and Numerical Methods’ - Total award amount \$240,000 - 01/09/2014 – 31/8/2017.
- **Pan-American Conference on Differential Equations and non-linear Dynamics, DMS 1446125** February 2015 to August 2015. (\$30,000).
- **COLAB Director of the scientific computing in applied mathematics and non-linear analysis program of UT Austin-Portugal International collaborative program on emerging technologies, Co-Lab**, Total award amount \$800,000 - July 2012- 2017.
- **NSF Individual Research Grant, DMS- (CoPI. Jeff R. Haack, postdoc)**, Accurate high performance computing for nonlinear collisional kinetic theory, August 2012-2015 - (\$180,000).
- **ICES Distinguished Research Award** for 2012, 2012-2016 (\$100,000).
- **NSF-RNMS grant DMS-1107465 - Research Network:** "Kinetic description of emerging challenges in multiscale problems of natural sciences". January 1012 – December 2017. (\$1,000,000 UT Austin Hub allocation – Total grant funding \$5,000,000)

- **NSF Individual Research Grant, DMS-1109625** 'Kinetic transport and dynamics in complex interacting systems: analysis and simulations' July 2011-June2014. (\$210,000)
- **NSF CHE-0934450 "SOLAR: High-Efficiency Solar Generation of Hydrogen Fuel from Novel "Tuned" Electrocatalytic Nanostructures"** PI: Allen Bard, CoPIs: Irene M. Gamba and Charles Mullins, September 2009—August 2012. (\$1,402,645)
- **Moncrief Grand Challenge Award**, 2008-2009. (\$75,000).
- **NSF Individual Research Grant, DMS- 0807712** 'Statistical transport of complex particle systems' July 2008—May2011. (\$150,000)
- **NSF-FRG Focus Research Group Grant 2008-2011:** Collaborative Research on Kinetic Description of Multiscale Phenomena: Modeling, Theory and Computation Total: \$650,000.00, portion at UT Austin: \$131,300
- **DMS 0838692 A Sage/SciPy Developer Workshop:** Special Functions and Computational Number Theory Meet Scientific Computing (\$9,000) –ICES matching (\$7,000).
- **Clay Mathematics Institute, "IV International Symposium on Non-Linear Equations and Free Boundary Problems"**, Argentina, March 2009. (\$12,500 USD)
- **COLAB Co-director of the scientific computing in applied mathematics and non-linear analysis program of UT Austin-Portugal** International collaborative program on emerging technologies, Co-Lab, July 2007- 2012 (\$1,240,151)
- **NSF RTG (PI), DMS'Applied and Numerical analysis'**, Sept 2007 – July 2012 . (\$2,098,599.00)
- **NSF Individual Research Grant, DMS- 0507038** `Non-equilibrium problems in collisional kinetic and quantum theory', June 2005—May2008. (\$ 214,590)
- **Princeton University (PI Weinan E)** Computational Methods for Quantum and Semi-Classical Transport, Sept 04 to Aug 05 (\$36,270).
- **NSF Individual Research Grant, DMS-0204568**, `Non-equilibrium Transport Theory in Nano and Mesoscale Modeling' June 2002--May 2005. (\$ 323,456.00) .
- **NSF SCREMS (CoPI) `Computational Mathematics research at UTM'**, July 2003-July 2004, (\$ 111,553).
- **DARPA Grant (In collaboration with ECE) `Multi-Scale Behavioral Modeling and Analysis Promoting a Fundamental Understanding of Agent-based System Design and Operation'** Co-PI \$1,197,228- June 2001-May 2004.
- **N.S.F. Individual Research Grant, DMS-9971779**, `Mathematical Issues in the Modeling and Simulation of Self-consistent Charge Particle Transport', June 1999--May 2002. (\$91,000).
- **TARP 003658-0459-1999**, PI on `Multi-Scale Charged Particle Transport and Applications to Sub Micron Semiconductor Models', Jan 2000--Dec 2001. (about \$65,000).
- **NSF International Programs, NSF 96-14 DMS Applied Mathematics**, CO-PI, USA-France, `Modeling, Analysis and Simulation of Hybrid Quantum Models with Applications to Semiconductor Devices', May 1999--May 2002. (about \$40,000)
- **NSF Individual Research Grant, DMS-9623037**, June 96--May 99.
- **N.Y.U. Research Challenge Fund**, June 96-June 97.
- **NSF International Programs-International Opportunities for Scientists and Engineers**, CO-PI, USA-Germany. `Quantum Fluid Dynamical Approaches to Solid State Transport Modelling'. May 96--May 99.
- **Fulbright International Research/lecture Award**. June--August 1997.

SOCIETY MEMBERSHIPS:

American Mathematical Society (AMS),
 Society for Industrial and Applied Mathematics (SIAM)
 American Statistical Association (ASA)

PUBLICATIONS REVIEWER: Archive Rational Mechanics and Analysis, Communications in PDE, Solid State Electronics, Communications in Mathematical Physics, Journal of Statistical Physics, Journal of Mathematical Physics, Journal of Computational Physics, Journal of Computational Electronics, Journal of Differential Equations, SIAM for Applied Math, Journal of Mathematical Analysis and its Applications, Proceeding of the Royal Society of Edinburgh, Communications in Pure and Applied Mathematics.

INVITED POSITIONS:

- Kirk Distinguish fellow, Isaak Newton Institute for Mathematics, Cambridge University, UK, May 2022.
- Hausdorff Institute for Mathematics, Bonn, June, 2019.
- Bergman Visiting Professorship, Stanford University, Spring 2019.
- University of Mar del Plata, Argentina, July 2017.
- University of Mar del Plata, Argentina, July 2016.
- IMPA, Rio De Janeiro, Brazil, July 2015.
- Columbia University, NY, Spring 2015.
- Isaac Newton Institute, Cambridge University, UK, May 2013.
- The University of Chicago, May 2013.
- Japanese Research Science Fellowship held at Kyoto University, March 15 to April 7, 2013
- Instituto Argentino de Matematica (IAM), Buenos Aires, and Universidad Nacional de Mar del Plata, Argentina, June-July 2012.
- ICERM at Brown University, Semester Program on "Kinetic Theory and Computations", Program Organizer (Sept 2011 – Dec2011),
- Universidad de Mar del Plata, Argentina, Visiting Professor, two weeks, June, 2011.
- Newton Institute (Cambridge University, England) Fall 2010 program in “Partial Differential Equations in Kinetic Theories” Invited participant.
- Visiting Professor, University of P.Sabatier, Toulouse, France, June 2010.
- IPAM (Institute for Pure and Applied Mathematics), March to May 2009.
- IAS (Institute for Advanced Studies), Princeton, member, January - February 2009.
- Academia Sinica, Taiwan, April 2008.
- University of Kyoto, Aerospace Engineering Department, two weeks, March 2008.
- Ecole Normale Supérieure, Paris, one month, June 2007.
- Visiting Professor, University of P.Sabatier, Toulouse, France, May 2007.
- Visiting Professor, Universidad de Mar del Plata, Argentina, one month, March 2007.
- Visiting Professor, Laboratoire J. A. Dieudonné, Université de Nice, France, one month, June 2003.
- Senior core participant at the Institute for Pure and Applied Mathematics (IPAM) at UCLA. Program: *Mathematics in Nanoscale Science and Engineering*, 8 weeks, Fall 2002.
- Senior long term participant and organizer of the IMA Spring 2000, *Reactive Flow and Transport Phenomena*. IMA, University of Minnesota.
- Visiting Professor, University of P.Sabatier, Toulouse, France, June 1997.
- C.N.R.S. Visitor at Paris VI, Paris, France, May and June 1995.
- I.M.A., Minneapolis, Minnesota, May 1 to 31, 1991.
- Visiting Associate Professor, Universidad de Buenos Aires, August 1991, 1992, 1993 and 1994.
- Visiting Member Università di Pavia, January – April 1990.

CONFERENCE AND SESSION ORGANIZER:

- *SL Math/MSRI (Simons Laufer/Mathematical Sciences Research Institute), 2024 Summer School organizer and 5 hour-lecturer - 06/17/2024 to 06/26/2024.*
- *SIAM PDE 22 Conference, Scientific committee member, March 2021 to March 22.*
- *Conference The Boltzmann equation; In the trial of Torsten Carleman, Mittag Leffler Institute, Sweden, May 17-22,2022.*
- *Analytical and Computational Problems for Mixtures and Plasma Dynamics, Hausdorff Institute for Mathematics, Bonn, June 17-21, 2019,*
- *Flash Workshop on Kinetics, ICES, UT Austin, February 13-14, 2019.*
- *AWM Research Symposium Workshop on “Analysis and Numerical Methods for Kinetic Transport and Related Models”, Rice University, April 5-7, 2019.*
- *Advances in Applied Mathematical Analysis and Numerical Methods: Ten years of CoLab-Portugal-UT Austin Mathematics, November 5 to 9, 2018.*
- *Recent Advances on Particle Systems in Kinetic Theory, ICES – Ki-Net conference, Austin, May 8 to 12, 2017.*
- *Topics in Analysis and Numerical Methods for Collisional Kinetic Equations, SIAM- Minisymposia Annual Joint Mathematics Meeting, Atlanta, January 2017.*
- *Advances in Kinetic and Fluid Dynamics Transport - Analysis and Approximations, ICES – Ki-Net conference, February 22 to 26, 2016.*
- *Numerical and Multiscale issues for Partial and Integral Differential Equations, ICES – Ki-Net conference, October 14 to 17, 2015.*
- *The Cauchy problem in Kinetic Theory: Recent progress in Collisionless Models, Imperial College London, UK, September 7 to 11, 2015.*
- *International Conference on Current Trends in Analysis and Partial Differential Equations, IMPA, R. de Janeiro, Brazil, August 17 to 21, 2015.*
- *Thematic Program on Current Trends in Analysis and Partial Differential Equations, IMPA, R. de Janeiro, Brazil, July 1 to 31, 2015.*
- *Co-Organizer for the PANACM 2015 -3.7 MS Minisymposia on “Computational Methods for Kinetic Collisional Transport”, April 27-29, 2015.*
- *Co-organizer for the X Americas Conference on Differential Equations and Nonlinear Analysis, Buenos Aires, February 9 to 19, 2015.*
- *Conference on Kinetic Equations, CIRM, Marseille, November 10 to 14, 2014.*
- *Advances in Non-Linear PDEs, Lisboa, May28 to 30, 2014.*
- *Kinetics, non-standard diffusions and stochastics: emerging challenges in the sciences, May 5 - May 16, 2014, UT Austin.*
- *Statistical Dynamics of Complex Systems, Arrabida, Portugal, July 2013.*
- *ICERM Workshop on 'Issues in Solving the Boltzmann Equation for Aerospace Applications', Brown University, June 3-7, 2013.*
- *Ki-Net Conference: 'Kinetic theory for the emergence of complex behavior in social and economic systems'. Center for Social Dynamics and Complexity at Arizona State University, Feb 22 - 24, 2013.*
- *Ki-net Winter School: An introduction to kinetic models in the emergence of complex behavior in social and economic systems, The University of Texas at Austin, Feb 18 - 21, 2013.*
- *Ki-Net workshop: Kinetic Description of Social Dynamics: From Consensus to Flocking, CSCAMM, University of Maryland, College Park (November 5-9, 2012).*
- *ICERM Kinetic Theory: Analysis and Computation Workshop “Novel Applications of Kinetic Theory and Computations (October 17-21, 2011).*
- *Kinetic Models of classical and quantum Particle systems, In memory of Naoufel Ben Abdallah, Toulouse, (Scientific committee member) March 2011.*

- Joint SIAM/RSME-SCM-SEMA Meeting "Emerging Topics in Dynamical Systems and Partial Differential Equations" DSPDEs'10. May 31st, – June 4th, 2010, Barcelona, Spain.
- Joint SIAM/RSME-SCM-SEMA, minisymposium organizer "Kinetic Theory and Related Topics I", May 31st to June 4th, 2010, Barcelona, Spain.
- Third-Generation Solar Technologies Multidisciplinary Workshop: *Synergistic Chemistry-Materials-Mathematical Sciences Approaches to Addressing Solar Energy Problems, Fall 2010 MRS meeting, San Francisco, CA.*
- SIAG APDE 2009 meeting, Organizing committee co-Chair, Miami, December 2009.
- Joint ICES/CNA-FRG Workshop: “Analytical and numerical issues on quantum, kinetic and statistical evolution” ICES, UT Austin, October 2009.
- BIRS 09w5050 Theory and Applications of Classical and Quantum Kinetic Theory, Organizing/Scientific committee co Chair, Banff, Canada, June 21 to 26, 2009.
- Colab UT Austin- Portugal program- Kinetics and Statistical Methods for Complex Particle Systems: Workshop Organizing/Scientific (Chair), July 20-14, 2009.
- Colab UT-Austin Portugal Summer School in Mathematics, University of Lisbon, July 13-17, 2009. Organizing/Scientific committee co Chair.
- IPAM Sp09 Long Program “Quantum and Kinetic Transport: Analysis, Computations, and New Applications” Organizing/Scientific committee co Chair, UCLA, March to June 2009.
- IPAM Sp09 Long Program, Workshop II: The Boltzmann Equation: DiPerna-Lions Plus 20 Years, Organizing/Scientific committee Chair, UCLA, April 15-18, 2009.
- IPAM Sp09 Long Program, Workshop IV: Asymptotic Methods for Dissipative Particle Systems, Organizing/Scientific committee member, UCLA, May 22-26, 2009.
- IV International symposium in non-linear PDEs and Free Boundary Problems, Organizer and Scientific committee member, Mar del Plata, Argentina, March 16 – 20, 2009.
- Oberwolfach, Mini-Workshop “Numerics for Kinetic Equations”, Organizing/Scientific committee co Chair. Oberwolfach, Germany, November 16-22, 2008,
- Conference on Non-linear Phenomena in Mathematical Physics, Organizing/Scientific committee Chair, Fields Institute, Toronto, Canada, September 18-20, 2008.
- SIAG APDE meeting, Mesa, Arizona, December 2007.
- Session on Complex Particle Systems: Quantum Kinetic and Semiclassical Transport Models , SIAM Conference on Analysis of Partial Differential Equations (PD07) December 07
- Minisymposium: Analysis and numerical issues in kinetic equations (IC/MP/025/S/1094), ICIAM 07 Zurich, Switzerland, July 2007
- Minisymposium: Quantum and Kinetic Transport Phenomena - Part II of II SIAG in Applied PDE, SIAM Annual Meeting, Boston, July 2006.
- MSRI -- Women in Mathematics: the legacy of Ladyzhenskaya and Oleinik, May 18-20, 2006,
- ICES International Workshop, Issues on computational transport in meso and nano scales, Austin, TX, March 2005.
- SIAM Conference on Analysis of Partial Differential Equations (PD04) session organizer, *Boltzmann Equations in Transport Theory*, Houston, TX, December 2004.
- SIAM Conference on Mathematical Aspects of Materials Science (MS04) session organizer, *Mathematical Modeling and Simulation of Granular Flows*, Los Angeles, CA, June 2004.
- AMS-RSME session organizer, *Mathematical aspects of semiconductor modeling and nano-technology*, Sevilla, Spain, June, 2003.
- AMS-UMI Session Organizer, *Mathematical Problems in Transport Theory*, Pisa, Italy, 2002.
- SIAM Annual meeting, Session organizer, *Mathematical issues in kinetic theory*, San Juan, Puerto Rico. July 2000,
- IMA tutorial workshop, *Simulations of transition regimes*, May 2000.
- AMS 948, Session Organizer, *Mathematical Problems in Transport Phenomena*, Austin, TX, October 1999.

INVITED CONFERENCE AND WORKSHOP SPEAKER

- Conference ‘Solving the Boltzmann Equation for Neutrino Transport in Relativistic Astrophysics’, Invited Speaker, ICERM, July 8 to 12, 2024
- *SIAM-MS24, On Integral Systems for Electron Kinetic Transport Mean Field Theory Problems Applied to Plasmas in Solid States and Soft Condensed Matter*, Invited Plenary Lecture, Pittsburgh, May 2024;
- ‘Math is Key’ Purdue University Annual Lecture series, April 2024.
- Conference: Kinetic and hydrodynamic PDEs, in honor of François Golse’s 60th birthday, invited speaker, 16 - 19 Jan 2024,
- Nonlinear Diffusion and nonlocal Interaction Models - Entropies, Complexity, and Multi-Scale Structures, invited speaker, in-person lecture, Granada-BIRS 23w6003, June 29-July 3, 2023.
- Fourth International Workshop on Moment Methods in Kinetic Theory-(MMKT2023), online lecture, Karlsruhe, April, 2023
- University of Buenos Aires, in-person lecture, December, 2022.
- “When Kinetics meets Fluid Dynamics Conference”, in-person lecture, ETH, Zurich, July 20-24, 2022
- Particle Systems and Partial Differential Equations (PSPDE X) conference, invited speaker, online lecture, Lisbon, June 2022.
- Kirk invited lecture at Isaac Newton Mathematical Institute on “Collisional Transport for Kinetic Mean Field Theories: Analytical and Numerical Approximation topics”, Frontiers in numerical analysis of kinetic equations workshop, in-person lecture, Cambridge, UK, May 2022.
- ICERM, "Numerics, Modeling, and Experiments in Wave Phenomena" Brown University, invited speaker, online lecture, September 20-24, 2021.
- Particle Systems and Partial Differential Equations (PSPDE) VIII conference, invited speaker, online lecture, Braga, Portugal, July 19 to 23, 2021.
- MCA invited semi-plenary address., invited semi-plenary address, online lecture, Buenos Aires, Argentina, July 2021.
- CIRM Marseille Plasma dynamics, invited speaker, online lecture, June 16, 2021.
- “The Legacy of Carlo Cercignani: from Kinetic Theory to Turbulence Modeling”, invited speaker, online lecture, May 27, 2021.
- RWTH Aachen University - EU Regional School 3-hour lectures, online lectures, March 25, 2021.
- WCCM-ECCOMAS congress 2020, MS 399 Numerical Aspects of Transport, Boltzmann And Kinetic Equations, Invited speaker, online lecture, held in January 2021.
- One World PDE Seminar, Hosted by U. of Bath, UK and U. of Roma-La Sapienza, September 8, 2020. Online lecture at <https://people.bath.ac.uk/mw2319/owpde/>
- Summer school 2020 in PDEs, Harbin Institute of Technology, Weihai, China, online lecture, July 18, 2020.
- TWIMS (Texas Women in Mathematical Sciences) Conference, Texas A&M, College Station, in-person Lecture, February 1, 2020.
- Particle Systems and Partial Differential Equations (PSPDE VII), Invited speaker, in-person lecture, Lisbon, December 2019.
- Flash Workshop on Kinetic Collisional Theory, Ecole Polytechnique, in-person lecture, November 2019.
- Rome, November, 2019.
- SIAM Southeastern Atlantic Section, Invited plenary address, Knoxville; October, 2019.
- *Workshop on Effective equations frontiers in classical and quantum systems*, Hausdorff Institute for Mathematics, Bonn, June 24-28, 2019.
- *Workshop on Analytical and Computational Problems for Mixtures and Plasma Dynamics*, Hausdorff Institute for Mathematics, Bonn, June 17-21, 2019.
- *Workshop "Kinetics & BEM on the Saar"*, University of Saarlands, June 3-7, 2019.
- *Flash Workshop on Multicomponent and reactive mixtures: kinetic equations, multiscale asymptotics, and numerical methods*, Ecole Polytechnique, Palaiseau, France, June 13, 2019.

- *Workshop on “Mathematics in Optical Imaging”, IMA, U. Minnesota, April29-May3, 2019.*
- 38th Southeast-Atlantic Regional Conference on Differential Equations (38th SEARCDE 2018), invited plenary speaker, University of North Georgia, October 7-8, 2018.
- XLIII Summer School On Mathematical Physics: *Boltzmann gas mixtures grazing limit to the Landau equation-numerical approximation and simulations* (six lectures) Ravello, Italy - September 10 - 22, 2018.
- Sanya, China International Workshop on Kinetic Theory and Related Topics, June 24-30, 2018.
- NYU Shanghai, "Approximately 60": An international conference on nonlinear PDEs at NYU Shanghai - June 19-22, 2018.
- *Conference Kinetic and Related Models in the Natural Sciences*, Wisconsin, Madison, April 26-May 2, 2018.
- IMA-“*Liquid Crystals, Metamaterials, Transformation Optics, Photonic Crystals, and Solar Cells*”, IMA, University of Minnesota, Feb 26 to March 2nd.
- Simons Conference on Transport Phenomena In Mathematical Biology, Polish Mathematics Academy, Warsaw, January 22 to 26th, 2018.
- AMS Special Session on *Multi-scale Modeling with PDEs in Computational Science and Engineering: Algorithms, Simulations, Analysis, and Applications*, keynote speaker section II, JMM 2018, January 10-13, 2018.
- MFO meeting *Classical and Quantum Mechanical Models of Many-Particle Systems*, Oberwolfach, Germany, Dec 4-8, 2017.
- Texas Math Physics conference, UT Austin, November 3, 2017.
- *Hypoocoercivity and Sensitivity Analysis in Kinetic Equations and Uncertainty Quantification*, Ki-Net Conference, The University of Wisconsin at Madison, October 2-5, 2017.
- *Harmonic Analysis, Fractal Geometry and Applications*, The University of Buenos Aires, August 4-5, 2017.
- *Workshop on PDEs: Modeling, Analysis and Numerical Simulation*, PDE-MANS, Universidad de Granada, Spain, June 22 to 25, 2017.
- *7thWorkshop on Kinetic Theory and Applications*, Karlstad, June 19-21, 2017.
- *LLAVEFEST: a Broad Perspective on Finite and Infinite Dimensional Dynamical Systems (FIDDS-17)*, CRM Universidad de Barcelona, Spain, June 12 to 16, 2017.
- *Conference in Calculus of Variations and PDE*, UC Berkeley, May29 –June 2, 2017.
- *Advanced School/Workshop on Nonlocal Partial Differential Equations and Applications to Geometry, Physics and Probability*, May 22-June2 (ICTP- Trieste).
- *Conference in PDE/Probability Interactions: Kinetic Equations, Long time and Propagation of Chaos*, CIRM, Marseille-Luminy, April 18-22, 2017.
- Conference on Current Developments in Mathematical Fluid Dynamics: Regularity, Instabilities, and Turbulence, ICERM Brown University, January 24 to 27, 2017.
- *Conference Frontiers in Applied and Computational Mathematics, dedicated to Chi-Wang Shu on his 60th Birthday*, ICERM Brown University, January 4 to 6, 2017.
- Ki-Net Conference on New Trends in Quantum and Classical Kinetic Equations and Related PDEs, UW Madison, Oct 6 - 8, 2016.
- *Workshop in Stochastic Analysis*, IMECC, University of Campinas, Brazil, June 28-30 of 2016.
- *Kinetic Theory and Fluid Dynamics: From micro to macroscopic modeling*, Rakuyu Kaikan, Kyoto, Japan, May 26-28, 2016.
- *Ninth European Conference on Elliptic and Parabolic Problems*, Gaeta, Italy, May 23 to 27, 2016

- *Boundary Value Problems and Multiscale Coupling Methods for Kinetic Equations*, April 21 to 24, 2016, U. Wisconsin-Madison.
- *Stanford University, Analysis and Computation in Kinetic Theory*, November 3 to 6, 2015.
- *Scalable Methods for Kinetic Equations*, Oak Ridge National Laboratory, Knoxville, TN, October 19 to 23, 2015.
- *The Cauchy problem in Kinetic Theory: Recent progress in Collisionless Models*, Imperial College London, UK, September 7 to 11, 2015.
- 3-hour course at the *Thematic Program on Current Trends in Analysis and Partial Differential Equations*, IMPA, R. de Janeiro, Brazil, July 13 to 17, 2015.
- 6th Workshop Theory and Numerics of Kinetic Equations, University of Saarlandes, Germany, June 1-3, 2015.
- *Workshop - Mathematical problems in kinetic theory*, Rennes, France, May 26-29, 2015.
- *Collective dynamics and model verification: Connecting kinetic modeling to data*, ASU, April, 2015.
- *Semi-plenary speaker at the First Pan American Congress in Computational Mechanics (PANACM 2015)*, Buenos Aires, Argentina, April 27-29, 2015.
- PANACM 2015 – (3.7 MS) Minisymposia speaker on “*Computational Methods for Kinetic Collisional Transport*”, April 27-29, 2015.
- 4-hour course at the *X Americas Conference on Differential Equations and Nonlinear Analysis*, Buenos Aires, February 9 to 19, 2015.
- *Workshop on Kinetic Theory*, University of Victoria, CA, November 13-15, 2015.
- *HYP 2014*, IMPA Rio de Janeiro, Brazil, July 2014, invited speaker.
- *AWM-SIAM Sonia Kovalevsky Lecture award*, plenary lecture at SIAM 2014 Annual Conference, Chicago, July 2014.
- *Workshop on Analysis of PDEs: Theory, Methods and Applications*, Cyprus, Invited Speaker, June 29 - July 3rd, 2014.
- *International Workshop in Computational Electronics (IWCE 2014)*, invited speaker, Paris, June 3-6, 2014,
- *Isaac Newton Institute*, invited seminar, June 2014.
- *Collective Behavior: Macroscopic versus Kinetic Descriptions*, invited Speaker, London Imperial College, May 18-22, 2014.
- 6th Workshop on Kinetic Theory and Applications, Invited Speaker, Karlstad University, Sweden, May 12-14, 2014
- *Modern Perspectives in Applied Mathematics: Theory and Numerics of PDEs*, University of Maryland, April 28 -May 2, 2014, invited Speaker.
- MFO meeting *Classical and Quantum Mechanical Models of Many-Particle Systems*, Oberwolfach, Germany, Dec 1-7, 2013.
- *Energy Conservation and Waste Heat Recovery Workshop III, Materials for a Sustainable Energy Future long Program*, IPAM, Nov 18 -22, 2013.
- *Solar cells, Workshop I, Materials for a Sustainable Energy Future long Program*, IPAM, Sept 23 - 27, 2013.
- *Statistical Dynamics of Complex Systems*, Arrabida, Portugal, July 2013.
- *PRIMA2013 Special Session on Kinetic Equations at The Second Pacific Rim Mathematical Association Congress*, invited speaker, Shanghai Jiao Tong University, June 24-28, 2013.
- *ICERM Workshop on 'Issues in Solving the Boltzmann Equation for Aerospace Applications'* invited speaker, Brown University, June 3-7, 2013.
- *Conference at the Spring 2013 Clifford Lectures*, Tulane University.

- Ki-net Conference, 'Quantum Systems: A Mathematical Journey from Few to Many Particles, CSCAMM', University of Maryland at College Park, May 13 to 16, 2013.
- Advances in Computational Mechanics Conference, invited speaker at the invited session on 'Higher-Order and DG Methods for Flow and Transport' San Diego, February 2013.
- Ki-Net workshop: Kinetic Description of Social Dynamics: From Consensus to Flocking *CSCAMM, University of Maryland, College Park (November 5-9, 2012)*.
- Kinetic Theory and Related Fields: Theoretical and Numerical Approaches , Kyoto University, September 24 to 28, 2012.
- *IMA Special Workshop Mathematics and the Materials Genome Initiative, September 12-15, 2012.*
- Frontiers in Mathematics and Applications, UIMP, Santander, Spain, *August 13-18, 2012.*
- Winter course, 8-hour lectures, Universidad de Mar del Plata, Mar del Plata, Argentina, Julio 10-13, 2012.
- Jornadas IAM, Buenos Aires, June 28-29, 2012.
- International Workshop on Fluid and Kinetic Models, National Institute for Mathematical Sciences, Daejeon, Korea, *June 11-15, 2012.*
- Progress in Nonlinear Partial Differential Equations, Zhejiang University, Hangzhou, China, *June 4-8, 2012.*
- Statistical Physics of granular and molecular systems: Non-equilibrium properties, Technion, Haifa, Israel, *May 13-18, 2012.*
- Mathematical and Computer Science Approaches to High Energy Density Physics, Workshop III, Computational Methods in High Energy Density Plasmas, IPAM, *May 7-11, 2012.*
- Colloquium on Advances in Computational Science, Engineering and Mathematics, ICES, UT Austin, *January 19-21, 2012.*
- ICERM workshop on Boltzmann Models in Kinetic Theory (*November 7-11, 2011*)
- VipIMAGE2011, invited speaker, Algarve, Portugal, October 2011.
- ICERM workshop on Vlasov Models in Kinetic Theory (*September 19-23, 2011*)
- ICIAM 2011, session on Discontinuous Galerkin Methods for Partial Differential Equations (*MS174*), *July 2011.*
- ICIAM 2011, session on Advanced Numerical Methods for Kinetic Simulations and Their Applications, (*MS269*), *July 2011.*
- ICIAM 2011, session on Mathematical Sciences in Solar Energy Research (*MS348*), *July 2011.*
- Jornades d'interacció entre sistemes dinàmics i equacions en derivades parcials (JISD2011) *Barcelona, June 27-July 01, 2011, invited speaker.*
- Kinetic Description of Multiscale Phenomena (FRG conference), Madison, Wisconsin, May 2011.
- Boltzmann equation: mathematics, modeling and simulations: In memory of Carlo Cercignani , *IHP, Paris, February 9-11, 2011.*
- Models and Computational Methods for Rarefied Flows, RTO-AVT-VKI Lecture Series, von Karman Institute for Fluid Dynamics, Belgium, January 24-28, 2011.
- Workshop on Random Media Homogenization and Beyond, IPAM January 2011.
- Oberwolfach Institute, Germany , *Classical and Quantum Mechanical Models of Many-Particle Systems, Dec 2010.*
- International Conference on Nonlinear Partial Differential Equations: Mathematical Theory, Computation, and Applications, National University of Singapore, Nov 29 -Dec 3, 2010.
- Workshop on Geometric Probability and Optimal Transportation, Fields Institute, Nov 1-5, 2010.
- Rarefied Gas Dynamics 27th conference, Monterrey, California July 11th to 16th 2010.

- Contemporary Issues and New Directions in Quantitative Finance, July 9th – 11th 2010 at Wadham College, Oxford.
- Nonlinear PDE workshop, Cotonou, Benin, July 5th to 8th 2010.
- Modeling complex dynamics in biological systems, Université Paul Sabatier – Toulouse, June 7 - 9, 2010.
- Joint SIAM/RSME-SCM-SEMA, "Kinetic Theory and Related Topics I", May 31st, – June 4th, 2010, Barcelona, Spain.
- FRG workshop ‘*Kinetic Description of Multiscale Phenomena*’, May 10th to 14th 2010.
- 2010 DOE Applied Mathematics meeting, Berkeley, CA, May 3-5, 2010, Poster presentation.
- SIAM APDE minisymposia invited speaker, Miami Florida, December 2009.
- MRS workshop in Third Generation of Solar Energy, Fall 09 MRS meetings, November 2009.
- Conferencia de las Americas de Ecuaciones Diferenciales-Veracruz-Mexico, October 2009.
- AMS at Baylor, Waco, October 2009,
- Reunion Anual de la Union Matematica Argentina - Universidad Nacional de Mar del Plata (UNMdP) - Mar del Plata - 21 al 26 de septiembre de 2009 - *Course notes: Analytical issues from the Boltzmann Transport Equation / Problemas Analiticos para la Ecuacion de Boltzmann.*
- Lectures “Evolution of statistical models of non-conservative particle interactions”, 4-hour mini-course at the Colab UT-Austin Portugal Summer School in Mathematics, University of Lisbon, July 13-17, 2009.
- Asymptotic Methods for Dissipative Particle Systems, invited speaker, Workshop IV Quantum and Kinetic Transport, IPAM May 22-26, 2009.
- Entropies and Optimal Transport in Quantum Mechanics -Workshop V on Optimal Transport, IPAM Spring 08 (June 08)
- PDE session speaker, International congress on Operation Research, Havana, Cuba, February 08
- Partial Differential Equations in Applied and Engineering Sciences: Modelling and Simulation- In honour of Jim Douglas Jr. INRIA, Paris, December 2007
- Aspects of optimal transport in Geometry and calculus of variations- Workshop I on Optimal Transport, IPAM Spring 08 (March 08)
- PDE session speaker, International congress on Operation Research, Havana, Cuba, February 08.
- *Mod&Sim 07*, Partial Differential Equations in Applied and Engineering Sciences: Modelling and Simulation- *In honour of Jim Douglas Jr. INRIA, Paris, December 2007.*
- Session on Kinetic Theory and Interacting Particle Systems, invited speaker, SIAM Conference on Analysis of Partial Differential Equations (PD07), December 07.
- Midwest PDE, invited speaker, Northwestern University, November 2007.
- Mathematics: Analysis, Modeling, Optimization and Simulation workshop (MAMOS), invited speaker, UT Austin, October 2007.
- SISPAD07 (International Conference on Simulation of Semiconductor Processes and Devices) invited paper presentation, TU Wien, Vienna, September 2007.
- Minisymposium: invited presentation at Dynamics of nonlinear waves in heterogeneous media (IC/MP/040/S/167), ICIAM 07 Zurich, Switzerland, July 2007.
- Minisymposium: invited presentation at Multiscale modeling and computation: fluids(IC/MP/010/R/729), ICIAM 07 Zurich, Switzerland, July 2007.
- 5th Workshop on kinetic theory and applications, Karlstad University, Sweden. June 2007.
- invited speaker to ‘Numerical and asymptotic methods for kinetic equations Workshop’, University of Saarlands, Saarbrucken, Germany, February 2007.
- Graduate PDE course lectures, (24 hours), Universidad de Mar del Plata, Argentina, March 2007.

- BIRS Workshop in Numerical Analysis of Multiscale Computations, Banff Center, January 2007.
- The University of Buenos Aires, Non-Linear PDE's international school (3 hour lectures), December 2006
- Oberwolfach conference on "Classical and Quantum Mechanical Models of Many-Particle Systems", Oberwolfach, Germany, December 2006
- Invited plenary lecture, Computational Methods of Transport Workshop, Granlibakken, Lake Tahoe, CA, September 2006.
- Minisymposium: Nonlinear Conservation Laws and Related Models, SIAG Applied PDE, SIAM Meeting, Boston, July 2006
- Conference in Discontinuous change in behaviour issues in partial differential equations, Current trends in Mathematics School, June 10 - 16 (2006), Anogia, Crete, Greece.
- Invited speaker for 'Workshop : Quantum mechanics of complex systems'. E. Schroedinger Institute, Vienna, (June 2006).
- International school in Partial differential Equations, Universidad Autonoma de Mexico, 3 hour-lectures, (May 2006)
- Workshop: MSRI, UC Berkeley -- Women in Mathematics: the legacy of Ladyzhenskaya and Oleinik, May 18-20, 2006.
- BIRS Workshop in Non Linear Diffusions, Banff Center, April 2006.
- FRG Workshop on Multi-Dimensional Hyperbolic Conservation Laws, Houston, March 2006.
- Computational Methods and Applied Partial Differential Equations Workshop, Iowa State University, Ames, Iowa, November 2005.
- Rolf Schock Prize Meeting in Mathematics, Stockholm, October, 2005.
- Conference on Non-linear PDE, Univeristy of Vienna, October 2005.
- 5th Workshop. Multiscale Problems in Quantum Mechanics and Averaging Techniques. WIAS Berlin, September 2005.
- International Forum on Multiscale Methods and Partial Differential Equations Workshop in Celebration of Bjorn Engquist's 60th Birthday, IPAM, UCLA, August (2005)
- III International Symposium on Nonlinear PDEs & Free Boundary Problems, Buenos Aires, Argentina, August 2005.
- Symposium on Granular Matter: *Mathematical Modeling and Physical Instances* sponsored by Accademia Nazionale dei Lincei, Reggio Calabria, Italy, June 2005.
- 4th Workshop on kinetic theory and applications, Karlstad University, Sweden. June 2005.
- Classics in PDE, Meeting in Honor of Nina Uraltceva, Stokholm, Sweden, June 2005,
- PCA Workshop IV: Transfer Phenomena, IPAM (Institute for Pure and Applied Mathematics), May 2005.
- AIM (American Institute of Mathematics), Workshop on Stiff Sources and Numerical Methods for Conservation Laws, Palo Alto, CA, April 2005.
- SIAM Conference (SIAMPD04), invited Minisymposium on Recent Advances in Hyperbolic Conservation Laws, Houston, TX, December 2004,
- AMS regional conference, session on Partial Differential Equations and Applications, Pittsburg, PE, November 2004.
- 6th MAFPD-04 (Sixth Mathematical Aspects of Plasma and Fluid Dynamics Conference-2004), Kyoto, Japan, September 2004
- International Conference on Control, Partial Differential Equations and Scientific Computing, dedicated to late Prof. J.-L. Lions, Beijing, September 2004.
- Congress in honor of Carlo Cercignani, Montecatini, Italy, September 2004.

- Workshop in Partial Differential Equations, Escuela de Verano UIMP, Santander, Spain, July 2004.
- International Conference on Modelling and Numerics of Kinetic Dissipative systems, Lipari, June 2004.
- SIAM Conference on Mathematical Aspects of Materials Science (MS04) Mathematical Modeling and Simulation of Granular Flows, May 2004. Los Angeles, California.
- ICOSAHOM04, mini symposium on WENO methods, Brown University, May 2004.
- Workshop on Kinetic Theory, Fields Institute, March 2004.
- Invited to Oberwolfach, Classical and Quantum Mechanical Models of Many-Particle Systems, November 2003
- Second Workshop on Kinetic Theory and applications, invited speaker, Karlstad, Sweden, September 2002.
- ICM2002 International Satellite Conference in Scientific Computing, Jiantong University, Xian, China, 2002.
- ETOPIIM 6: Sixth International Conference on the Electrical Transport and Optical Properties of Inhomogeneous Media, invited session speaker, July 2002.
- AMS-UMI Invited Session speaker, *Mixed Type PDE and Applications*, Pisa, Italy, June 2002.
- International conference in Advances in Non-linear PDE, invited speaker, L'Aquila, Italy, June 2002.
- Summer School on Methods and Models of Kinetic Theory, invited speaker, Porto Ercole (Grosseto) Italy, June 2002.
- TMR workshop on *Asymptotic Methods in Kinetic Theory*, invited speaker, Universitat des Saarlands, Germany, December 2001.
- SIAM Annual Meeting, invited session speaker, *Biological transport in channels*, (2001)
- International conference in non-linear PDE, invited speaker, Huang Zhang, China, June 2001.
- Oberwolfach, *Asymptotic and Numerical Methods for Kinetic Equations*, invited speaker, April 2001.
- TMR workshop on *New applications of kinetic theory*, invited speaker, Gothenburg University, Sweden, June 2000.
- IMA tutorial workshop, *Simulations of transition regimes*, invited two hour tutorial, May 2000.
- Oberwolfach, *Nonlinear Equations in Many-Particle Systems*, invited speaker, Dec 1999.
- SIAM Annual meeting, May 1999, Session on *Computational Methods for PDE's* invited speaker.
- Invited speaker, *Workshop on Analytical Techniques and Asymptotic Methods for Kinetic Problems*, ESI, Vienna, Austria, October 98.
- Northwestern University, April 1994, Workshop May 1996, April 1999.
- Invited speaker at the International PDE conference, Northwestern University, March 1998.
- International Workshop of Computational Electronics 97, (IWCE-97), Invited Contributed talk Notre Dame, May 1997.
- Invited lecture, Escuela de Matematica Aplicada, Mar del Plata, Argentina, July 96
- Paper contribution speaker at Venice P.Lax and L.Nirenberg 70th birthday's conference, June 1996.
- Speaker at ECMI 96 at the Mini symposium on Aerodynamics and Aircraft Industry. June 1996.
- Minisymposium speaker, ICIAM 95, *on Mathematical Theory of Semiconductors*, Hamburg, Germany, June 1995.
- Invited speaker at the Applied Kinetic Theory workshop held at I.A.S., Princeton, March 1995.
- Short communication speaker, V International Conference on Hyperbolic problems, Stony Brook, N.Y., June 1994.
- Invited speaker at the Non-linear PDE and free boundary problems Conference, Buenos Aires, Argentina, August 1994.
- ELAM (Escuela Latino-Americana de Matematica), Cordoba, Argentina, August 91.

INVITED UNIVERSITY LECTURES:

- The University of Texas at San Antonio, Applied Math Colloquium, January 27, 2023
- ETH and University of Zurich, Colloquium, May 31, 2022.
- Oxford University, PDE seminar, May 20, 2022, Oxford, UK.
- Isaac Newton Mathematical Institute, May 12, 2022, Cambridge, UK.
- National University of Singapore (NUS) Mathematics Colloquium, April 8th, 2021
- Babuska Forum, Oden Institute at the University of Texas at Austin, September 25, 2020
- Oden seminar, Oden Institute, the University of Texas at Austin, April 23, 2020.
- Applied Mathematics Seminar, University of Pennsylvania, February 20, 2020.
- Bergman lecture, Stanford University, April 23, 2019.
- Polytechnic University of Hong Kong, Colloquium lecture, Hong Kong September 2018.
- Texas A&M, Applied Mathematics seminar, September 2018
- Universidad Nacional de Mar del Plata, Applied Mathematics seminar, August 2018.
- Zhejiang University, Hangzhou, China, colloquium seminar June 2018,
- Institute of Computational Mathematics and Scientific/Engineering Computing (ICMSEC), Chinese Academy of Sciences, Beijing, Applied Mathematics and Computational analysis seminar, July 2018.
- Academy of Mathematics and Systems Science (AMSS), Chinese Academy of Sciences, invited lecture, Beijing, China, July 2018.
- Los Alamos National Laboratory (LANL), Applied Computational Mathematics seminar, May 2018.
- The University of Chicago, Applied Mathematics Colloquium, April, 2018.
- Universidad Nacional de Ushuaia, Argentina, Applied Mathematics seminar, March 2018.
- Stanford University, November 2017.
- University of Granada, Spain, June 2017,
- The University of Texas in San Antonio, Applied Mathematics seminar, March 2017.
- Texas State University, Applied Mathematics and Women in Science seminar, September, 2016.
- IFS Seminar, Physics department, UT Austin, September 2016.
- Applied Mathematics Seminar, Duke University, April 2016.
- ICES Forum Lecture, ICES UT Austin, January 2016.
- Boeing Distinguished Colloquia, University of Washington at Seattle, April 2015.
- Analysis Seminar, Columbia University, NY, March 2015.
- Applied Mathematics Colloquium, NJIT, NJ, March 2015.
- Applied Mathematics Colloquium, Columbia University, NY, March 2015.
- Analysis seminar, Courant Institute of Mathematical Sciences, NYU, February, 2015.
- Analysis seminar, The University of Texas at Austin, September 2014.
- Technion, Haifa, Israel, PDE and Applied Mathematics seminar, June 2014.
- Oxford University, UK, invited PDE Seminar, June 2014.
- Faculty colloquium, The University of Texas at Austin, February 2014.
- Notre Dame University, Applied Math Colloquium, May 2013 and Nov 2013.
- The University of Chicago, PDE seminar, May 2013.
- Tokyo Technology Institute, Applied Mathematics seminar, April 2013.
- Waseda University, Applied Mathematics seminar, April 2013.

- Kyoto University, Aerospace Engineering seminar, March 2013.
- Stanford University, Applied Math seminar, February 2013.
- The University of Wisconsin at Madison, Colloquium lecture, October 2012.
- Technion, Haifa, Israel, PDE and Applied Mathematics seminar, May 2012.
- University of Massachusetts, Amherst, Applied Math Colloquium, March 2012.
- MIT, Analysis Seminar, October 2011.
- The University of Chicago, Applied Mathematics Seminar, February 2011.
- Cambridge University, UK, Newton's Institute, October 2010.
- Brown University, Applied Mathematics Colloquium, May 2010
- Rice University, Applied Math Colloquium, March 2010.
- Stanford University, Applied Math Colloquium, January 2010.
- University of Houston, Colloquium, September 2009.
- University Paul Sabatier, Applied Mathematics Colloquium, Toulouse, France, June 2009.
- The University of California at Irvine, Applied Mathematics seminar, May 2009.
- California State University at Northridge, Applied Mathematics seminar, May 2009.
- Courant Institute of Mathematical Sciences, NYU, Applied Math seminar, February 2009.
- Princeton University, Analysis seminar, February 2009.
- Temple University, Applied Mathematics seminar, February 2009.
- Institute for Advanced Studies, Members seminar, February 2009.
- Mathematical Physics seminar, UT Austin, September 2008.
- Taiwan National University, Tainan, April 2008.
- Providence University, Taichung, Taiwan, April 2008.
- Academia Sinica, Taipei Taiwan, April 2008
- University of Kyoto, Aerospace Engineering Department, March 2008.
- Analysis seminar, Courant Institute of Mathematical Sciences, NYU, March 2008.
- Applied Math Seminar, University of Southern California, November 2007.
- Koc University, Istanbul, Turkey, July 2007.
- Universita de l 'Aquila, June 2007.
- Applied Mathematics colloquium, Brown University, May 2007.
- Universite Paul Sabatier, Toulouse, France (Applied Math. Colloquium) May 2007.
- De Paul University, February 2007.
- University of Pavia, Pavia Italy, June 2006.
- PDE seminar, Hebrew University, Jerusalem, Israel, June 2006.
- The University of Vienna, Vienna, June 2006,
- Applied Math colloquium, The University of Wisconsin at Madison, April 2006.
- Applied Math colloquium, Texas A&M, March 2006.
- The University of Buenos Aires, Colloquium lecture, March 2005.
- Applied Math colloquium, The University of Michigan at Ann Arbor, November 2004
- Applied Mathematics colloquium, Stanford University, October 2004.
- Colloquium Lecture, Ecole Normale Superieure, Paris, France. December 2003.
- Colloquium lecture, Oklahoma State University, Stillwater, OK, November 2003.
- Universidad de Buenos Aires, Invited speaker, July 2003.
- Applied Mathematics Colloquium, Princeton University, May 2003.
- Fields Institute, invited Applied Math Colloquium, february 2003.

- Academia Sinica, Beijing, China, August 2002.
- Universidad Autonoma de Madrid, Spain, invited speaker, June 2002.
- Universidad de Granada, Spain, invited speaker, June 2002.
- University of Napoli, Italy, two hour lecture invited speaker, June 2002.
- Beijing University, invited speaker, June 2001.
- Southern Methodist University, Colloquium speaker, March 2001.
- University of Houston, Applied Mathematics colloquium, November 2000.
- INRIA, Paris, France, Applied Mathematics colloquium, June 2000.
- UT-Austin, Physics Department, October 1999, March 2002.
- Applied Mathematics Colloquium, University of California at Santa Barbara, March 98.
- Universite Paul Sabatier, invited lecture, Toulouse, France, May 95, June 98.
- IBM Watson Labs, invited lecture, New York, May 97.
- Stanford University, August 1992, April 1996.
- UCLA, April 1996, April 2002
- Brown University, April 1995, September 1996.
- Rutgers University, April 95 and November 96.
- Cornell University, November 95.
- Tech. University of Berlin, May 90, June 95 and May 96.
- Universit'e Pierre et Marie Curie, Paris VI, May 95
- Speaker at Y.Sinai seminar, Princeton University, Princeton, April 1995.
- CNEA (Comision Nacional de Energia Atomica), Physics of Solids Department, Buenos Aires, Argentina, August 1994
- University of Texas at Austin, November 1993 and December 1994.
- The University of Chicago, October 1993.
- John Hopkins University, September 1993.
- M.I.T., April 1993.
- Courant Institute of Math Sc. at New York University, February 1993
- Colloquium lecture, University of Connecticut, February 1993.
- Colloquium Lecture at AHPCRC, University of Minnesota, May 91.
- IMA, University of Minnesota, May 91.

IRENE M. GAMBA

LIST OF PUBLICATIONS AND RECENT PREPRINTS

- 142- **K. Huang and I.M. Gamba;** [Existence of Global Weak Solutions to Quasilinear Theory for Plasmas in One Dimension](#), ArXiv 2304.12430v2. Submitted for Publication (2024).
- 141- **I. Ampatzoglou, I.M.Gamba, N. Pavlovic and M. Taskovic;** [Moment estimates and well-posedness of the binary-ternary Boltzmann equation](#); Arxiv. [2210.09600](#) [math.AP] Submitted for Publication (2024)
- 140- **K. Huang, M. Abdelmalik, B. Breizman and I.M. Gamba;** [A Conservative Galerkin Solver for the Quasilinear Diffusion Model in Magnetized Plasmas](#), [ArXiv: 2212.07229](#) Jour. Comp. Phys, Volume 488, (2023), <https://doi.org/10.1016/j.jcp.2023.112220>.
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Editorial review work:

1. **(Review)** *Dispersive transport equations and multiscale models*, *The IMA Volumes in Mathematics and its Applications Series*, edited by Arnold, Anton; Ben Abdallah, Naoufel; Degond, Pierre; Gamba, Irene M.; Glassey, Robert T.; Levermore, C. David; Ringhofer, Christian. *Papers from the Workshops 'Dispersive Corrections to Transport Equations'*, held May 1-5, 'Simulation of Transport in Transition Regimes', held May 22-26 and *Multiscale Models for Surface Evolution and Reacting Flows*, held June 5-9, in Minneapolis, MN, 2000, *The IMA Volumes in Mathematics and its Applications*, Vol 136, Springer-Verlag, New York, pp. 292 (2004).

2. (**Review**) *Transport in transition regimes, The IMA Volumes in Mathematics and its Applications Series, edited by Arnold, Anton; Ben Abdallah, Naoufel; Degond, Pierre; Gamba, Irene M.; Glassey, Robert T.; Levermore, C. David; Ringhofer, Christian. Papers from the Workshops 'Dispersive Corrections to Transport Equations', held May 1-5, 'Simulation of Transport in Transition Regimes', held May 22-26 and 'Multiscale Models for Surface Evolution and Reacting Flows', held June 5-9, in Minneapolis, MN, 2000. The IMA Volumes in Mathematics and its Applications, Vol 135, Springer-Verlag, New York, pp. 298 (2004).*

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