

# Maria Pia Guldani

## 1 PERSONAL INFORMATIONS

Department of Mathematics  
The University of Texas at Austin  
2515 Speedway  
Austin TX, 78712 USA

phone: +1 512 471 7711  
guldani@math.utexas.edu

Italian Citizenship.  
US Permanent Resident.  
Children: one daughter and one son, born Jan. 2013 and Jan. 2019.

## 2 EDUCATION

Ph.D. in Mathematics	2005	Mainz University, Germany (Adviser: A. Jüngel)
Laurea in Matematica	2000	University of Florence, Italy (Adviser: A. Fasano)

## 3 EMPLOYMENT

Since 09-2019	Associate Professor at the Department of Mathematics, The University of Texas at Austin, Austin TX, USA
08/2018-07/2019	Associate Professor at the Department of Mathematics, Royal Institute of Technology KTH, Stockholm, Sweden (on leave from George Washington University)
09/2016 - 08/2019	Associate Professor at the Department of Mathematics, George Washington University, Washington DC, USA
09/2015-08/2016	Guest Researcher at the Department of Mathematics, Royal Institute of Technology KTH, Sweden (sabbatical year)
09/2012-08/2016	Assistant Professor at the Department of Mathematics, George Washington University, Washington DC, USA
08/2010-08/2012	Research Assistant Professor at the Department of Mathematics, The University of Texas at Austin, Austin TX, USA
01/2007 - 08/2010	Instructor position at the Department of Mathematics, The University of Texas at Austin, Austin TX, USA
01/2006 - 01/2007	Postdoctoral fellowship, financed by the Alexander von Humboldt Foundation, ICES, The University of Texas at Austin, Austin TX, USA

## 4 AWARDS

- 2016: Recipient of the **George Washington University Early Career Researcher Award**.  
*GW Early Career Scholar Award for faculty members who are recognized as the most promising up and coming researchers, whose trajectory projects remarkable success.*

- 2015 - 2018: **Columbian College of Art and Science Dean's Research Chair.**

### Current Funding

- 2022-2025 **NSF Grant DMS-2206677** (Single PI), *Collisions in Plasma: The Landau Equation and Related Models*. Amount: \$229,995.
- 2016-2023 **NSF Grant DMS- 1514761** (Single PI), **CAREER:** *Nonlocal partial differential equations in collisional kinetic theory*. Amount: \$410,000.

### Past Funding

- 2018-2019 **NSF Grant DMS-1838371** (Co-PI, jointly with Svetlana Roudenko), *Nonlinear Partial Differential Equations and Many Particle Systems*. Amount \$28,725.
- 2014 - 2019 **NSF Grant DMS-1406984** (Co-PI, jointly with Yongwu Rong (PI, Mathematics), Yinglei Lai (Statistics), Rahul Simha (Computer Science) and Murli Gupta (Mathematics)), *EXTREEMS-QED: GW Mathematics and Statistics Training, Education, & Research (MASTER)*. Amount: \$600,000.
- 2014 - 2017 **NSF Grant DMS-1412748** (Single PI), *Analysis of nonlocal effects in nonlinear parabolic partial differential equations*. Amount: \$ 170,000.
- 2011 - 2015 **NSF Grant DMS-1109682** (Single PI), *Analysis of Diffusion Equations with Nonlinear Singular Sources in Mean Field Games*. Amount: \$ 208,430.
- 2008 - 2011 **NSF Grant DMS-0807636** (Single PI), *Existence Analysis and Qualitative Behavior of High Nonlinear Partial Differential Equations*. Amount: \$ 78,000.
- 2006, 2007: **Feodor-Lynen Fellowship** (Single PI), Alexander von Humboldt Foundation (Germany).

## 5 PUBLICATIONS

1. W. Golding, M.P. Gualdani and N. Zamponi.  
*Existence of smooth solutions to the Landau-Fermi-Dirac equation with Coulomb potential.*  
To appear in *Communications in Mathematical Sciences* (2022).
2. M.P. Gualdani and N. Guillen.  
*Hardy's inequality and the isotropic Landau equation.*  
*J. Funct. Anal.* 283 (2022), no. 6, Paper No. 109559.
3. J. Bedrossian, M. Gualdani and S. Snelson.  
*Non-existence of some approximately self-similar singularities for the Landau, Vlasov-Poisson-Landau, and Boltzmann equations*  
*Trans. Amer. Math. Soc.* 375 (2022), no. 3, 2187 - 2216.
4. E. Daus, M. Gualdani, J. Xu, N. Zamponi and X. Zhang.  
*Nonlocal porous media equations with fractional time derivative*  
*Nonlinear Anal.* 211 (2021), Paper No. 112486, 35 pp.

5. J.L. Chern and M. Gualdani  
*Uniqueness of higher integrable solution to the Landau equation with Coulomb interactions.*  
To appear in Math. Res. Let. (2021).
6. F. Golse, M. Gualdani, C. Imbert, and A. Vasseur.  
*Partial regularity in time for the space homogeneous Landau equation with Coulomb potential.*  
To appear in Annales scientifiques de l' ENS (2021).
7. L. Caffarelli, M. Gualdani and N. Zamponi.  
*Existence of weak solutions to a continuity equation with space time nonlocal Darcy Law.*  
Comm. Partial Differential Equations 45 (2020), no. 12, 1799-1819.
8. E. Daus, M. Gualdani and N. Zamponi.  
*Long time behavior and weak-strong uniqueness for a nonlocal porous media equation*  
J. Differential Equations 268 (2020), no. 4, 1820-1839.
9. M.P. Gualdani and N. Guillen.  
*On  $A_p$  weights and the Landau equation.*  
Calc. Var. Partial Differential Equations 58 (2019), no. 1, 58:17
10. M.P. Gualdani and N. Zamponi.  
*A Review on an isotropic Landau model.*  
115 - 144, Springer INdAM Ser., 28, Springer, Cham, 2018.
11. M.P. Gualdani and N. Zamponi.  
*Global existence of weak even solutions for an isotropic Landau equation with Coulomb potential.*  
SIAM J. Math. Anal. 50 (2018), no. 4, 3676 -3714.
12. M.P.Gualdani, S. Mischler and C. Mouhot.  
*Factorization of non-symmetric operators and exponential H-Theorem.*  
Memoires de la SMF 153 (2017), Volume 153, 137 pp.
13. M.P. Gualdani and N. Zamponi.  
*Spectral gap and exponential convergence to equilibrium for a multi-species Landau system.*  
Bulletin des Sciences Mathematiques, Volume 141 (6), 509-538 (2017)
14. M.P. Gualdani and N. Guillen.  
*Estimates for radial solutions of the homogeneous Landau equation with Coulomb potential.*  
Analysis & PDE, Vol. 9 (2016), No. 8, 1772-1809.
15. M.d.M Gonzalez, M.P. Gualdani and J.Sola-Morales.  
*Instability and bifurcation in a trend depending price formation model.*  
Acta Appl. Math. 144 (2016), 121 - 136.
16. M.d.M Gonzalez, M.P. Gualdani and H. Shahgholian.  
*A discrete Bernoulli free boundary problem.*  
Proceedings of the St. Petersburg Mathematical Society, Volume XV: Advances in Mathematical Analysis of Partial Differential Equations, (2014) 119-140.
17. J. A. Carrillo, M.d.M Gonzalez, M.P.Gualdani and M.E. Schonbek.  
*Classical Solutions for a nonlinear Fokker-Planck equation arising in Computational Neuroscience.*  
Comm. Partial Differential Equations 38 (2013), no. 3, 385-409.

18. A. Arnold, I.M.Gamba, M.P.Gualdani, S. Mischler, C. Mouhot and C. Sparber.  
*The Wigner-Fokker-Planck equation: Stationary states and large time behavior.*  
Math. Models Methods Appl. Sci. 22 (2012), no. 11, 1250034-1250065.
19. M.d.M Gonzalez, M.P. Gualdani.  
*Some non-standard Sobolev spaces: interpolation and its application to PDE.*  
Acta Appl. Math. 121 (2012), 57-67.
20. M.d.M Gonzalez, M.P. Gualdani.  
*Asymptotics for a free-boundary problem in price formation.*  
Nonlinear Analysis 74 (2011), pp. 3269-3294.
21. L. Chayes, M.d.M Gonzalez, M.P. Gualdani and I. Kim.  
*Global existence and uniqueness of solutions to a model in price formation.*  
SIAM J. Math. Anal. 41 (2009), no. 5, 2107-2135.
22. I.M. Gamba, M.P. Gualdani and R. Sharp.  
*An Adaptable Discontinuous Galerkin Scheme for the Wigner-Fokker-Planck Equation.*  
Comm. Math. Sci. (2009) Vol. 7, No. 3, 635-664.
23. M.d.M Gonzalez, M.P. Gualdani.  
*Asymptotics for a symmetric equation in price formation.*  
Applied Mathematics and Optimization: Volume 59, Issue 2 (2009), 233-246.
24. I. M. Gamba, M. Gualdani and P. Zhang.  
*On the blowing up of solutions to a quantum hydrodynamic model on a bounded domain.*  
Monatsh. Math 157 (2009), 37-54.
25. I.M. Gamba, M.P. Gualdani, C. Sparber.  
*A note on the time-decay of solutions for the linearized Wigner-Poisson system.*  
Kinetic and Related Models (2009), Volume: 2, Number: 1 (2009), 181-189.
26. J.A. Carrillo, M. Gualdani and A. Jüngel.  
*Convergence of Entropy Decay Schemes for nonlinear Fokker-Planck equations.*  
Publ. Mat. 52 (2008), 413-433.
27. J. A. Carrillo, M. Di Francesco, M. P. Gualdani.  
*Semidiscretization and long-time asymptotics of nonlinear diffusion equations.*  
Commun. Math. Sci. Supplemental Issue, No.1, 21-53 (2007).
28. M. P. Gualdani, A. Jüngel, G. Toscani.  
*A nonlinear fourth-order parabolic equation with non-homogeneous boundary conditions.*  
SIAM J. Math. Anal. 37 (2006), No. 6, 1761-1779.
29. J. A. Carrillo, M. P. Gualdani, G. Toscani.  
*Finite speed of propagation in porous media by mass transportation methods.*  
C. R. Acad. Sci. Paris, Ser. I 338 (2004) 815-818.
30. M. P. Gualdani, A. Jüngel.  
*Analysis of the viscous quantum hydrodynamic equations for semiconductors.*  
Europ. J. Appl. Math., (2004) vol. 15, 577-595.

31. M. P. Gualdani, A. Jüngel, and G. Toscani.  
*Exponential decay in time of solutions of the viscous quantum hydrodynamic equations.*  
Appl. Math. Lett. 16 (2003), 1273-1278.
32. M. P. Gualdani.  
*On a Mathematical model for the crystallization of Polymers.*  
Bollettino U.M.I. (8) 6-B (2003), 161-179.

## 6 TEACHING

### 6.1 Regular courses

At The University of Texas at Austin :

- M 392C *Partial Differential equations part 1* (grad course) Fall 2021.
- M391C *Topics in Kinetic Theory, Graduate course*, Spring 2021.
- M365C *Real Analysis I*, Spring 2020.

At George Washington University:

- *Applied Mathematics I* (Math 6318 graduate course), Fall Semester 2012, Fall Semester 2013
- *Single Variable Calculus* (Math 1231), Fall semester 2013, 2014 and 2016
- *Real analysis* (Math 4239), Fall Semester 2012

At The University of Texas at Austin:

- *Probability*, Spring Semester 2012, Fall Semester 2011
- *Differential and Integral Calculus*, Fall 2010, Spring 2010, Fall 2009, Fall 2008, Fall 2007
- *Matrices and Matrix calculation*, Spring Semester 2008
- *Advanced Calculus For Applications I*, Spring Semester 2007

At the University of California Los Angeles:

- *Real analysis*, Winter Quarter 2009

### 6.2 Curriculum Design and Teaching New Courses

- *Graduate*: Topic Course in Applied Mathematics *Linear Diffusion, Entropy Methods and Functional Inequalities*, (Math 6350) Fall Semester 2014.
- *Undergraduate*: Mathematical Modeling (Math 3359), Spring Semester 2015.

New Teaching support technologies:

- *Crowdmark* (grading software) in the undergraduate courses, Fall 2014 and Spring 2015.

### 6.3 Reading courses

At The University of Texas at Austin:

- Fall 2020 and spring 2021: Reading course with undergraduate Nan Sheldon.
- Fall 2019, Spring 2021: Reading course with graduate student William Goldin.
- Fall 2019: Reading course with undergraduate (exchange) student Jialiang Zhou.

At George Washington University:

- Spring 2015: Reading and Research course with Master student Ning Liu on tumor growth modeling.
- Spring 2015: Reading and Research course (Math 6995) with master student Weiyi Wang on Differential Equations in Finance.
- Spring 2015: Reading and Research course (Math 6995) with graduate student Chubo Deng on Partial Differential Equations and Mean Field Games.
- Fall 2013: Reading and Research course (Math 6995) with graduate student Anudeep Kumar on Hypocoercivity for Kinetic Equations.
- Fall 2013: Reading and Research course (Math 6995) with master student Chubo Deng on Partial Differential Equations in Finance.
- Fall 2013: Reading and Research course (Math 6995) with master student Inmaculada Sorribes on Modeling for Tumor Growth.
- Fall 2012: Reading and Research course (Math 6995) with master student Joshua Furer on Stochastic Differential Equations.

At The University of Texas at Austin:

- Fall 2010: Reading course with Candice DiPaolo on Stochastic Tools in Mathematics and Sciences.

### 6.4 Recitation Sessions

At Johannes Gutenberg University, Mainz, Germany:

- Mathematical Modeling (for students in Mathematics) Summer Semester 2005
- Numerical Analysis , Part 2 (for students in Mathematics) Winter Semester 2005
- Ordinary Differential Equations (for students in Chemistry) Summer Semester 2004
- Mathematical Analysis (for students in Computer Science) Winter Semester 2004
- Mathematical Modeling for industry problems (for student in Mathematics) Summer Semester 2003
- Modeling and Numerical Approximation of Traffic Flow Problems (for students in Mathematics) Winter Semester 2003

## 7 MENTORING ACTIVITIES

- Since 2021: Co-advisor of graduate student William Golding.
- 2017-2019: Advisor of graduate student Jingjing Xu.
- Since Fall 2015: Advisor of graduate student Xinyu Zhang (graduated Spring 2021).
- Since Fall 2013: Advisor of graduate student Chubo Deng, graduated Summer 2018 (currently post-doc at the Institute of remote sensing and digital earth of the Chinese Academy of Sciences, Beijing)
- Academic year 2013-2014: Co-advisor of visiting master student Inmaculada Sorribes (graduated in Spring 2014).
- Academic year 2012-2013: Advisor of Master Student Joshua Furer.

## 8 SELECTED WORKSHOP'S and CONFERENCE'S TALKS

- 2022
  - Banff Workshop: Recent Progress in Kinetic and Integro-Differential Equations. Banff, November 6 - 11, 2022.
  - Workshop Frontiers in kinetic equations for plasmas and collective behavior, 25 - 29 April 2022 at Isaac Newton Institute, Cambridge.
  - The Oxbridge PDE Conference 2022, 11th - 13th April at the Mathematical Institute, Oxford.
  - SIAM Conference on Analysis of Partial Differential Equations (PD22) Technische Universitaet Berlin, 14-18 March 2022. (virtual)
- 2021
  - Workshop *New Trends in Nonlinear Diffusion: a Bridge between PDEs, Analysis and Geometry*. Oaxaca from September 5 to September 10, 2021. (virtual)
- 2020
  - Workshop *Elliptic and parabolic equations in both their local and nonlocal versions*, June 16-22, Madrid, Spain. (*Cancelled*)
  - Workshop *Kinetic Equations: Recent Developments and Novel Applications*. Oaxaca, from May 3 to May 08, 2020. (*Cancelled*)
  - Workshop *Variational Methods in Nonlinear Nonlocal PDEs* at the Sirius Mathematics Center (<https://sochisirius.ru/smc>) in Sochi, Russia, October 5-9, 2020. (*Cancelled*)
- 2019
  - 28th Annual Workshop on Diff Eqns at 2F, NCTS, NTU, Taipei, Dec 26-29.
  - Workshop *Recent advances in kinetic equations and applications*, Rome (Italy) November 11-15. (*not attended for family reasons*)
  - Summer School *Trails in kinetic theory: foundational aspects and numerical methods*, Bonn (Germany) May 20-24. (*not attended for family reasons*)

- Workshop *XVIII Italian Meeting on Hyperbolic Equations* Palermo (Italy) May 15-17.(not attended for family reasons)
- 2018
  - Conference *Nonlinear phenomena in Stockholm: kinetic meets dispersive*, KTH Sweden, Nov 19-21.
  - AMS Sectional Meeting at the University of Michigan in Ann Arbor, Michigan, October 20-21.
  - AIMS Taipei, July 5-9.
  - AIM San Jose, Ca, June 18-22.
- 2017
  - Workshop *Kinetic Equations: Modeling, Analysis and Numerics*, in honor of I. Gamba 60th birthday, UT Austin, September 2017.
  - Conference *PDE/Probability Interactions: Kinetic Equations, Long time and Propagation of Chaos*, Marseille (France) April 18 -22.
- 2016
  - Workshop on *PDE models for multi-agents phenomena*, November 28 - December 2, Rome (Italy).
- 2015
  - Summer school *Frontiers of Mathematics and Applications IV*, Summer Course UIMP 2015, Santander (Spain), July 20-24, 2015.
  - Conference *40th Sapporo symposium on PDEs* at Hokkaido University, Sapporo (Japan) August 19-21, 2015.
  - Session *From individual interactions to collective behavior in socio-economics and life sciences* at ICIAM, Beijing 10-14 August 2015.
- 2014
  - Conference *Optimization, transportation and equilibrium in economics* at the Fields Institute, Toronto (Canada) Sept 15-19 2014.
  - Session *PDE models of collective phenomena in life sciences and socioeconomics* at The Joint Annual Meeting of the Japanese Society for Mathematical Biology and the Society for Mathematical Biology, Osaka, 28 July - 1 Aug 2014.
  - Session *Kinetic equations: theory and applications* in the 10th AIMS conference on Dynamical Systems, Differential Equations and Applications", 7 - 11 July 2014 , Madrid, Spain.
  - Recent Developments and Challenges in Interface and Free Boundary Problems, 25 - 28 March 2014, University of Warwick (UK).
- 2013
  - Meeting on *Classical and Quantum Mechanical Models of Many-Particle Systems*, Oberwolfach (Germany), December 1-7, 2013.



- Session *Mathematics in the Sciences and Technology*, DMV-OeMV Kongress, September 23-27 2013, Innsbruck (Austria).
- Introductory Workshop on Optimal Transport: Geometry and Dynamics, MSRI Berkeley, August 26 - 30, 2013. (*Declined, maternity leave*)
- Minisymposium *Microscopic modeling and mean field limits in socioeconomics and life sciences* in SIAM Applications of Dynamical Systems, May 19-23, 2013 Utah, USA.
- Session on Newtonian and Non-Newtonian fluids, AWM Research Symposium, Santa Clara University, California, March 16-17 2013.
- 2011
  - Nonlinear PDEs Workshop CoLab Program UT Austin - Portugal - Mathematics, Instituto Superior Tecnico, Lisbon, June 20-24, 2011.
- 2010
  - Special Program *Partial Differential Equations in Kinetic Theories*, at the Isaac Newton Institute for Mathematical Sciences, Cambridge UK, Nov. 23, 2010.
  - Minisymposium *Nonlinear transport PDE's in biology and physics: asymptotics and entropies*. SIMAI 2010 Universita' di Cagliari (Italy) June 21-25, 2010.
  - Minisymposium *Mathematics in decisions, economics, finance and games*. SIMAI 2010 Universita' di Cagliari (Italy) June 21-25, 2010.
  - *Optimal transportation and applications* April 18-23, 2010 at Banff International Research Station (Canada).
  - Conference *9th International Conference on Operations Research*, February 22- 26 2010, La Habana (Cuba).
- 2009
  - Minisymposium *Kinetic description, hyperbolic dynamics, and wave propagation* in SIAM Analysis of Partial Differential Equations, December 7-10 2009, Miami, FL.
  - Workshop *Kinetic and Mean-field models in the Socio-Economic Sciences*, July 27 - 31 2009, ICMS Edinburgh (UK).
  - *Theory and Applications of Classical and Quantum Kinetic Theory*. June 22- 26 2009 at Banff International Research Station (Canada).
  - Special Program *Geometric Partial Differential Equations*, IAS Princeton NJ, April 2 2009.
  - Workshop *Kinetic Description of Multiscale Phenomena*, CSCAMM University of Maryland, College Park, 3 - 5 March 2009.
- 2008
  - Workshop *Numerics and Dynamics for Optimal Transport*, April 14 - 18, 2008 in IPAM, UCLA, Los Angeles CA, USA.
- 2006
  - Meeting on *Classical and Quantum Mechanical Models of Many-Particle Systems*, Oberwolfach (Germany), December 1-8, 2006.

- *Nonlinear Diffusions: Entropies, Asymptotic Behavior and Applications*, April 15 -20, 2006 at Banff International Research Station (Canada).
- 2003
  - Meeting on *Classical and Quantum Mechanical Models of Many-Particle Systems*, Oberwolfach (Germany), November 23-29, 2003.

## 9 Seminars, Lectures and Short Courses

- 2022
  - Talk at the London PDE seminar, UCL, London, May 13th.
  - Talk at the Geometric Analysis and PDEs seminar at the University of Cambridge, March 22nd.
  - Talk at the Analysis seminar University of Warwick, UK, March 1st.
  - Tutorial: The Landau Equation. January 24th and Febr 1st, Isaac Newton Institute, Cambridge, UK.
- 2021
  - Talk at the University of Illinois, Chicago, April 12th 2021.
  - Talk at the Autonoma University Madrid (Spain) April 19, 2021.
- 2018
  - Talk at the *Mini Conference in PDE*, Sept 3-4, Stockholm, Sweden.
  - Short Course at the National Taiwan University on *Regularity for the homogeneous Landau equation*. June 2018.
  - **Colloquium** at Michigan State University, April 12.
  - **Colloquium** at Howard University, March 30.
- 2017
  - Talk at the summer graduate school on “Nonlinear dispersive PDE, quantum many particle systems and the world between” in Cortona (Italy) July 21 2017.
  - Short Course at the National Taiwan University on  *$A_p$ -weights and regularization for the Landau equation*. June 26-27 2017.
  - Columbia University, February 17th 2017.
  - University of Minnesota, April 5th 2017.
  - **Colloquium** at Baylor University, March 2nd 2017.
- 2016
  - Short Course at the National Taiwan University on *Global well-posedness for an isotropic Landau model*. July 20 - 22nd 2016.
  - Cambridge (UK), Applied and Computational Mathematics Department, May 18th 2016. (*Cancelled because of health reasons*)

- Imperial College London (UK), Department of Mathematics, May 17th 2016. (*Cancelled because of health reasons*)
- Vienna University of Technology (TU Wien), Department of Mathematics, April 9th 2016.
- 2015
  - University of Massachusetts Amherst, Department of Mathematics, May 5th, 2015.
  - University of Pennsylvania, Department of Mathematics, February 3rd 2015.
  - University of California Riverside, Department of Mathematics, January 21st 2015.
  - University of California Irvine, Department of Mathematics, January 20th 2015.
- 2014
  - North Carolina State University, Department of Mathematics, October 28th 2014.
  - Academia Sinica, Institute of Mathematics, Taiwan, July 30th 2014.
  - Short Course at the National Taiwan University on *Issues on Global well-posedness for the homogeneous Landau equations and related results*. July 17-18th 2014.
  - Center for Interdisciplinary Mathematics Seminar, Uppsala University (Sweden), June 3rd 2014.
  - PDE/Applied Math Seminar, KTH Stockholm (Sweden), May 21st 2014.
- 2013
  - Short Course at the National Taiwan University on *Entropy Methods for Nonlinear Partial Differential Equations*, June 2013.
- 2012
  - Applied and Computational Math Seminar, George Mason University, Nov. 16th, 2012.
  - Analysis Seminar, Dept. of Mathematics, George Washington University, Oct. 19th 2012.
  - Seminar at Center for Scientific Computation and Mathematical Modeling (CSCAMM), University of Maryland at College Park, Oct. 10th 2012.
  - Day of PDE and applications, Girona, Spain, May 24th. 2012.
  - AMS Western Section Meeting, *Special Session on Nonlinear Partial Differential Equations of Fluid and Gas Dynamics*, Honolulu, Hawaii, March 3-4th 2012.
- 2011
  - SIAM PDE, Minisymposium “ *Nonlocal Equations: Perspectives from Probability and PDEs* ” San Diego, November 14-17th 2011.
  - AWM’s Celebration of Women in Mathematics: 40 Years and Counting. Section “ *Advances in Nonlinear Dynamics*.” Brown University, September 17-18th 2011.
  - IMA Seminar, University of Minnesota, April 26th 2011.
  - Mathematics and its Applications Seminar, University of Illinois at Chicago, April 20th 2011.
  - Analysis Seminar, Northwestern University, April 18th 2011.
- 2010
  - PDE & Geometric Analysis Seminar, University of Wisconsin Madison, November 8th 2010.

- PDE/Applied Math Seminar, National Taiwan University, August 9th 2010.
- PDE/Applied Math/Analysis Seminars University of Toronto (Canada), Febr. 19th 2010.
- 2009
  - PDE Seminars at KTH Stockholm (Sweden), November 2009.
  - PDE Seminars at UPC Barcelona (Spain), July 2nd 2009.
- 2008
  - PDE/Applied Math/Analysis Seminars in Marseille (France) September 16th 2008.
  - PDE Seminars at UPC Barcelona (Spain) June 26th 2008 .
- 2007
  - Workshop "PDE and Variational Tools in Image Inpainting" Vienna (Austria), June 11th 2007.
- 2006
  - Applied Mathematics Seminars, Universita' di Tor Vergata, Roma (Italy), October 3rd, 2006.
  - PDE/Applied Math/Analysis Seminars University of Toronto (Canada), April 7, 2006.
  - Mathematical Physics Seminar, UT Austin, TX, March 8, 2006.
- 2004
  - Fourth Workshop on Multiscale Problems in Quantum Mechanics and Averaging TU München (Germany), November 4-5, 2004.
  - Second annual meeting of the HYKE network "Around HYperbolic and Kinetic Equations", ENS Paris (France), April 14-17, 2004.
- 2003
  - Workshop on Multiscale Problems in Quantum Mechanics and Averaging Techniques, Max-Planck-Institute for Mathematics in the Sciences, Leipzig (Germany), December 11-12, 2003.
  - Seminari d'EDP's i Aplicacions, Universitat Autònoma de Barcelona (Spain), October 16, 2003.
  - Fourth Colloquium DFG-Priority Program on Analysis, Modeling and Simulation of Multiscale Problems, Bonn Röttgen (Germany), June 2-4, 2003.

## 10 Conferences and Workshops Organizing Committees

- 2022
  - Banff International Research Station, workshop *Recent Progress in Kinetic and Integro-Differential Equations*, November 6 - 11, 2022.
- 2019
  - Co-organizer of the SIAM Conference on Analysis of Partial Differential Equations (PD19) Dec 11-14, La Quinta, CA.
- 2018

- Co-Organizer of the conference *Nonlinear phenomena in Stockholm: kinetic meets dispersive*, KTH Sweden, Nov 19-21.
  - Co-Organizer of the special session at the 12th AIMS conference *Nonlinear evolution equations* Taipei, Taiwan, July 4-8th 2018.
  - Co-Organizer of Workshop *Nonlocal PDEs in collective behavior*, AIM, San Jose, CA, June 18-22 2018.
  - Co-Organizer of the workshop *Nonlinear phenomena in DC* Washington DC, April 24, 2018.
- 2017
    - Co-Organizer of Minisymposium *Mean Field Games and Social Dynamics*, SIAM PDE Baltimore, December 2017.
    - Co-organizer of Workshop *Kinetic Equations: Modeling, Analysis and Numerics*, in honor of I. Gamba 60th birthday, UT Austin, September 2017.
    - Co-organizer of Undergraduate EXTREME-QED Conference, College of William and Mary, April 8th 2017.
- 2016
    - Co-organizer of Undergraduate EXTREME-QED Conference, George Washington University, April 2nd 2016.
- 2015
    - Co-organizer of Session *PDEs in Continuum Mechanics* AWM Research Symposium, U. Maryland, April 11 -12, 2015.
- 2013
    - Co-organizer of Workshop *PDEs in the social and life sciences: emerging challenges in modeling, analysis and computations*. BIRS, Banff, Canada, Mar 31 - Apr 05, 2013.
- Before 2013
    - Co-organizer of Session *Mean-field and Kinetic Models in Socio-economics and Life Sciences* at ICIAM, Vancouver (Canada), July 18-22, 2011.
    - Co-organizer of Minisymposium *Parabolic dynamics, mean-field equations and related particle systems* at SIAM DSPDEs, Barcelona (Spain), May 31- June 4 2010.
    - Co-organizer of Minisymposium *Nonlinear fluid equations: dissipated energies and equilibration* at SIAM Nonlinear Wave, July 21 - 24 2008 Rome (Italy).
    - Co-organizer of Minisymposium at SIAM PDE, December 2007, Temple, AZ.
    - Co-organizer of Session at ICIAM07, Zurich (Switzerland), July 16-20 2007.
    - Co-organizer of Minisymposium at SIAM PDE, Boston, MA, July 10-12 2006.

## **11 ADMINISTRATIVE AND COMMITTEE SERVICE**

### **11.1 University service assignments at The University of Texas at Austin**

- External member of Jeremy Wu's doctoral exam (Oxford, UK, May 11, 2022).
- Assistant Graduate Advisor (since June 2020).
- Chair of the Graduate Diversity/Equity/Inclusion Committee (Since Fall 2020).
- Member of the CNS Emerging Faculty Leaders, AA 2019-2020, AA 2020-2021.
- Amie Urban's candidacy committee, June 2020.
- Member of Bing Instructor Hiring Committee , AA 2019-2020

### **11.2 University service assignments at George Washington University:**

- Member of Doctoral Exam for Kai Yang (Spring 2018)
- Member of Doctoral Exam for Chong Wang (Spring 2018)
- Member of Doctoral Exam for Jiajun Lu (Fall 2017)
- Member of Doctoral Exam for Yeyao Hu (Spring 2016)
- Member of Doctoral Exam for David Shoup (Spring 2015)
- Member of Specialty Exam committee for:
  - Yeyao Hu (Spring 2016)
  - Chong Wang (Spring 2015)
  - Kai Yang (Fall 2014)
  - Anudeep Kumar (Fall 2014)

#### **11.2.1 Special Programs to promote diversity in STEM**

- 2013 - 2019: Faculty Advisor of the GWU Association of Women in Mathematics Student Chapter
- 2012-2019: Co-organizer of the Applied Mathematics Seminar
- 2013-2014: Organizer of the Department Colloquium
- Co-organizer and participants of various events organized by the Association of Women in Mathematics (AWM)

### 11.2.2 Committees

- 2017-2018: Member of the Undergraduate Committee.
- 2016-2017: Member of Search Committee for faculty position.
- 2016-2017: Member of the Undergraduate Committee.
- 2014-2015: Member of the Search Committee for Post-Doctoral candidate.
- 2014-2015: Member of the Search Committee for the Computational Biology Institute.
- 2014-2015: Member of the Undergraduate Committee.
- 2014-2015: Advisor for undergraduate minors and majors in mathematics.
- 2014-2015: Chair of the Diversity Committee.
- 2013-2014: Member of Graduate Committee.
- 2013-2014 : Member of Member of Search Committee for faculty position.
- Fall 2013: Member of Outreach Committee.
- Fall 2012: Member of Graduate Committee

## 12 ACADEMIC-RELATED PROFESSIONAL SERVICE AT NATIONAL and INTERNATIONAL LEVEL

- Committee Member for AWM Sadosky Research Prize in Analysis 2022-2024.
- Panelist for NSF Division of Mathematical Science in 2009, 2010, 2012, 2015, 2017, 2018 and 2020.
- Ad hoc proposals reviewer for NSERC and NSF.
- Referee for: Communications in Mathematical Physics, Journal of the European Mathematical Society, SIAM Journal on Mathematical Analysis, Communications on Pure and Applied Analysis, Archive for Rational Mechanics and Analysis, Communication in Partial Differential Equations, Journal of Mathematical Physics, Discrete and Continuous Dynamical System, Journal de l'Ecole Polytechnique, European Journal of Applied Mathematics, Computers and Mathematics with Applications, Applied Mathematics Letters, Bulletin des sciences mathematiques, Entropy.

### 12.1 LONG-TERM RESEARCH VISITS

- Long term program *Frontiers in kinetic theory: connecting microscopic to macroscopic scales - KineCon 2022*, Isaac Newton Institute for Mathematical Sciences in Cambridge, Jan - Jun 2022.
- Guest Researcher at Royal Institute of Technology KTH, Stockholm (Sweden) 09/2015-08/2016.
- Program *Free Boundary Problems and Related Topics*, at Isaac Newton Institute, Cambridge, UK, April 2014.

- Participant in the program *Free Boundary Problems, Theory and Applications*, (2 months) in MSRI, Berkeley, CA., January 10-March 10, 2011.
- Participant in the program *Partial Differential Equations in Kinetic Theories*, (1 month) in Isaac Newton Institute for Mathematical Sciences, Cambridge UK, August 6 - December 22 2010.
- Core participant in the program *Quantum and Kinetic Transport: Analysis, Computations, and New Applications* in IPAM University of California Los Angeles, March 9 - June 12 2009.
- Special Program *Geometric Partial Differential Equations* , IAS Princeton NJ, March 26 - April 3 2009.
- Visiting Post-doc position at the Department of Mathematics, University of California Los Angeles, January-March 2009.
- Visiting position at CRM at Universitat Autònoma de Barcelona (Spain), June 22 - July 11 2008.
- Core participant in the program *Optimal Transport* in IPAM, University of California Los Angeles, March 10 - June 13 2008.

### 13 LANGUAGES

Italian (native language)

German (fluent)

English (fluent)

Spanish (basic knowledge).