

Vincent R. Martinez

CONTACT INFORMATION	CUNY-Hunter College Department of Mathematics & Statistics East Building 918 New York, New York 10065	+1-212-772-5791 vrmartinez@hunter.cuny.edu math.hunter.cuny.edu/vmartine/
RESEARCH INTERESTS	Navier-Stokes, Euler, and related hydrodynamic equations, Geophysical fluid dynamics, Turbulence, Data assimilation, Machine learning, Long-time behavior of dissipative systems, Dispersive equations, Stochastic PDEs, Ergodic theory, Mathematical biology, chemotaxis	
POSITIONS	Assistant Professor, CUNY-Hunter College Applied Math Graduate Adviser Postdoctoral Fellow, Tulane University Visiting Scholar, Institute of Pure and Applied Mathematics (IPAM)	Aug 2018–current Summer 2020–current Jan 2015–Jul 2018 Sep–Dec 2014
EDUCATION	Indiana University , Bloomington, Indiana Ph.D., Pure Mathematics Doctoral Thesis: <i>On Gevrey regularity of equations of fluid and geophysical fluid dynamics with applications to 2D and 3D turbulence.</i> Advisor: Michael S. Jolly The College of New Jersey , Ewing, New Jersey B.A., Mathematics <i>Magna Cum Laude</i> with Departmental Honors, <i>Dean's List</i> , 2004-2008 Penn State University , University Park, Pennsylvania Mathematics Advanced Study Semester (MASS) Program <i>Best Performance on Analysis Final Exam</i>	August 2014
AWARDS	City University of New York PSC-CUNY Traditional A Research Award PSC-CUNY Traditional A Research Award Hunter College Travel Award Tulane University OGPS Postdoctoral Fellow Travel Award Mathematisches Forschungsinstitut Oberwolfach US Junior Oberwolfach Fellow Indiana University-Bloomington Glenn Schober Travel Award Rothrock Teaching Award Matias Ochoada Fellowship Graduate Scholars Fellowship	2021-2022 2019-2020 2018-2019 2015-2017 Summer 2015 Spring 2014 Spring 2012 Fall 2011 2008-2009

16. N.E. Glatt-Holtz, V.R. Martinez, G.H. Richards, “On the long-time statistical behavior of smooth solutions of the weakly damped, stochastically-driven KdV equation,” arXiv:2103.12942v1, pp. 1–70, March 23, 2021
15. M.S. Jolly, A. Kumar, V.R. Martinez, “On the existence, uniqueness, and smoothing to the generalized SQG equation in critical Sobolev spaces,” arXiv:2101.07228v1, pp. 1–34, January 18, 2021.
14. P.F. Aguilera, V.R. Martinez, and K. Zhao, “A PDE model for chemotaxis with logarithmic sensitivity and logistic growth,” arXiv:2012.10521v1, pp. 1–23, December 18, 2020.
13. A. Farhat, N. E. Glatt-Holtz, V. R. Martinez, S. A. McQuarrie, and J. P. Whitehead, “Data assimilation in large-Prandtl Rayleigh-Bénard convection from thermal measurements,” *SIAM J. Appl. Dyn. Syst.*, 19(1), 510–540, 2020.
12. M.S. Jolly, V.R. Martinez, E.J. Olson, and E.S. Titi “Continuous data assimilation with blurred-in-time measurements of the surface quasi-geostrophic equation,” *Chin. Ann. Math., Ser. B*, 40, 721–764, 2019.
11. M.S. Jolly, V.R. Martinez, T. Sadigov, and E.S. Titi, “A determining form for the subcritical surface quasi-geostrophic equation,” *J. Dyn. Differ. Equations*, 31, 1457–1494, 2019.
10. J. Blocher, V.R. Martinez, and E.J. Olson, “Data assimilation using noisy time-averaged measurements,” *Physica D*, 376-377, 49–59, 2018.
9. L.T. Hoang and V.R. Martinez, “Asymptotic expansion for solutions of the Navier-Stokes equations with non-potential body forces,” *J. Math. Anal. Appl.* 462(1), 84–113, 2018.
8. N. Zhu, Z. Liu. V.R. Martinez, and K. Zhao, “Global Cauchy problem of a system of parabolic conservation laws arising from a Keller-Segel type chemotaxis model,” *SIAM J. Math. Anal.*, 50(5), 5380–5425, 2018.
7. V.R. Martinez, Z. Wang, and K. Zhao, “Asymptotic and viscous stability of large-amplitude solutions of a hyperbolic system arising from biology,” *Indiana Univ. Math. J.*, 64(4), 1383–1424, 2018.
6. L.T. Hoang and V.R. Martinez, “Asymptotic expansion in Gevrey spaces for solutions of the Navier-Stokes equations,” *Asymptotic Anal.*, 167–190, 2017.
5. V.R. Martinez and K. Zhao, “Analyticity and dynamics of a Keller-Segel-Navier-Stokes system,” *Dyn. Partial Differ. Equ.*, 14(2), 125–158, 2017.
4. M.S. Jolly, V.R. Martinez, and E.S. Titi, “A data assimilation algorithm for the subcritical surface quasi-geostrophic equation,” *Adv. Nonlinear Stud.*, 35, 167–192, 2017.
3. A. Biswas and V.R. Martinez, “Higher-order synchronization for a data assimilation algorithm for the 2D Navier-Stokes equations,” *Nonlinear Anal., Real World Appl.*, 35, 132–157, 2017.
2. A. Biswas, V.R. Martinez, and P.S. Silva, “On Gevrey regularity of the supercritical SQG equation in critical Besov spaces,” *J. Funct. Anal.*, 269(10), 3083–3119, 2015.
1. A. Biswas, M.S. Jolly, V.R. Martinez, E.S. Titi, “Dissipation length scale estimates for turbulent flows—a Wiener algebra approach,” *J. Nonlinear Sci.*, 24, 441–471, 2014.

WORKS IN
PREPARATION

5. E. Carlson, J. Hudson, A. Larios, V.R. Martinez, E. Ng, J.P. Whitehead, “On convergence of a dynamical algorithm for parameter estimation for the Lorenz '63 system”
4. A. Biswas, K. Brown, and V.R. Martinez, “Globalizable general interpolant observable operators and higher-order synchronization for a data assimilation algorithm”
3. A. Biswas, L.T. Hoang, and V.R. Martinez, “Gevrey regularity and asymptotic expansion for solutions to the 3D Rayleigh-Bénard system for convection”
2. M.S. Jolly, A. Kumar, and V.R. Martinez, “On local well-posedness of logarithmic regularizations of generalized SQG equations in borderline Sobolev spaces”
1. N.E. Glatt-Holtz, V.R. Martinez, and G. Richards, “On global approximate and exact controllability of the damped-driven KdV equation with applications to the stochastically forced case”

SEMINARS AND
COLLOQUIA

Tulane University Applied and Computational Math Seminar	New Orleans, LA April 23, 2021
CUNY GC Einstein Chair Mathematics Seminar	New York, NY March 30, April 4, 13, 20, 27 2021
UI Chicago Analysis and Applied Math Seminar	Chicago, IL March 15, 2021
Rutgers-Newark Physics Colloquium	Newark, NJ February 26, 2021
CUNY GC Data Science and Applied Topology Seminar	New York, NY Oct 23, Nov 13 2020
UMBC Differential Equations Seminar	Baltimore, NY October 19, 2020
CUNY GC Harmonic Analysis and PDE Seminar	New York, NY October 2, 2020
Clarkson Mathematics Colloquium	Potsdam, NY September 28, 2020
CUNY GC Harmonic Analysis and PDE Seminar	New York, NY May 1, 2020
Drexel PDE and Applied Mathematics Seminar	Philadelphia, PA March 5, 2020
Princeton University Analysis of Fluids Seminar	Princeton, NJ February 6, 2020
IU PDE Seminar	Bloomington, IN April 8, 2019
CUNY GC Nonlinear Analysis and PDE Seminar	New York, NY February 28, 2019
Queensborough Community College Mathematics Colloquium	Queens, NY February 27, 2019
CCNY Mathematics Colloquium	Manhattan, NY February 21, 2019
UMBC Applied Mathematics Colloquium	Baltimore, MD December 7, 2018
NJIT Fluids and Waves Seminar	Newark, NJ, October 29, 2018
Bronx Community College Mathematics Colloquium	Bronx, NY, October 23, 2018
UC San Diego Analysis Seminar	San Diego, CA, May 15, 2018

UC Santa Barbara Applied Math & PDE Seminar	Santa Barbara, CA, January, 19, 2018
Xavier University of Louisiana Mathematics Seminar	New Orleans, LA November 7, 2017
Utah State University Mechanical & Aerospace Engineering Seminar	Logan, UT November 2, 2016
UCLA Analysis & PDE Seminar	Los Angeles, CA October 28, 2016
University of Nevada-Reno Colloquium	Reno, NV October 13, 2016
Brigham Young University PDE Seminar	Provo, UT October 10, 2016
University of Virginia Harmonic Analysis & PDE Seminar	Charlottesville, VA December 1, 2015
University of Wyoming Analysis Seminar	Laramie, WY September 3, 2014
Tulane University, Applied and Computational Math Seminar	New Orleans, LA March 28, 2014

CUNY GRADUATE CENTER & SEMINARIAL ACTIVITIES	Co-organizer of Data Science & Applied Topology Seminar with Azita Mayeli (CUNY-Queensboro Community College) and Mikael Vejdemo-Johansson (CUNY-Staten Island)	
	Fridays 12:00-1:00pm	Fall 2020–current
	Co-organizer of Harmonic Analysis & PDEs Seminar with Azita Mayeli (CUNY-Queensboro Community College)	
	Fridays 2:00-3:00pm	Summer 2020–current
	Co-organizer of Nonlinear Analysis & PDEs Seminar with Marcello Lucia (CUNY-Staten Island)	
	Thursdays 4:15-5:15pm	Spring 2019–current
Organizer of Hunter College Applied Math (HCAM) Seminar		
Thursdays 4:30-5:30pm, HE 920	Fall 2019–current	

CONFERENCES, WORKSHOPS, & SUMMER SCHOOLS	SIAM Conference on Dynamical Systems	Virtual
	Mini symposium co-organizer (with C.F. Mondaini)	May 23-27, 2021
	AMS Fall Western Sectional Meeting	Virtual
	<i>Invited speaker in PDEs, Data Assim., & Inverse Problems</i>	October 24-25, 2020
	AMS Fall Central Sectional Meeting	Virtual
	<i>Invited speaker in Th. & Comp. Stud. of PDEs of Fluids</i>	September 12-13, 2020
	SIAM Conference on Mathematics of Data Science	Virtual
	Mini symposium co-organizer (with A. Farhat)	June 29-30, 2020
	AMS-MAA Joint Mathematics Meeting (JMM)	Denver, CO
	<i>Invited speaker in Det. & Prob. Approaches for Nonlin. PDEs</i>	January 15-18, 2020
	SIAM Conference on Analysis of Partial Differential Equations	La Quinta, CA
	Mini symposium co-organizer (with T. Drivas and H. Nguyen)	
	<i>Invited speaker in Rig. & Comp. Stud. of Data Assimilation</i>	December 11-14, 2019
	Hausdorff Institute of Mathematics (HIM) Trimester Program on Randomness, PDEs & Nonlinear Fluctuations	Bonn, Germany
	Invited Speaker in Workshop on Stochastic Fluid Dynamics	November 10-15, 2019
	AMS Fall Eastern Sectional Meeting	Binghamton, NY
Special Session co-organizer: Anal. & Appl. of Det. & Stoch. Evol. Eqns. (with K. Yamazaki)	October 12-13, 2019	
SIAM Northern States Sectional Meeting	Laramie, WY	
<i>Invited speaker in Recent Trends in SPDEs</i>	September 27-29, 2019	

2019 International Conf. on Industrial & Appl. Math. (ICIAM) Valencia, Spain
 Minisymposium co-organizer (with M.S. Jolly and K. Zhao) July 15-19, 2019
 Recent Advances in Pure and Applied Stochastics New Orleans, LA
Invited Speaker March 14-16, 2019
 AMS Fall Western Sectional Meeting Fayetteville, AR
Invited Speaker in Recent Advances in Math. Fluid Mech. November 3-4, 2018
 AMS Fall Western Sectional Meeting Ann Arbor, MI
Invited Speaker in Anal. and Num. Aspects of Turb. Trans. October 20-21, 2018
 Banff Int. Research Station: Reg. & Blow-up of NS-Type PDEs Alberta, CA
 Participant August 19-24, 2018
 AIMS Conference Series on Dyn. Sys. and Differ. Eqns. Taipei, Taiwan
Invited Speaker July 9, 2018
 AMS-MAA Joint Mathematics Meetings (JMM) San Diego, CA
Invited Speaker January 9-13, 2018
 SIAM Conference on Analysis of Partial Differential Equations Baltimore, MD
 Minisymposium co-organizer (with A. Farhat) December 9-12, 2017
 2017 Mathematical Congress of the Americas (MCA) Montreal, Canada
Invited Speaker July 24-28, 2017
 Workshop on Probabilistic Perspectives in Nonlinear PDEs Edinburgh, Scotland
Invited Speaker June 5-9, 2017
 SIAM Conference on Applications of Dynamical Systems Snowbird, UT
 Minisymposium co-organizer (with J. Maclean and C. Mondaini) May 21-25, 2017
 Essence of $(u \cdot \nabla)u$: Reflections on Math. Fluid Dyn. Charlottesville, VA
Invited Speaker May 11-13, 2017
 AMS Spring Eastern Sectional Meeting New York, NY
 Invited speaker May 6-7, 2017
 Workshop on Nonlinear Waves: Analysis and Applications Pittsburgh, PA
 Participant March 17-19, 2017
 IPAM Workshop on Turbulent Dissip., Mixing and Predictability Los Angeles, CA
 Participant January 9-13, 2017
 2017 Joint Mathematics Meeting (JMM) Atlanta, GA
Invited Speaker in SS 60A on PDEs for Fluid flow January 4-7, 2017
 1st Northeastern Analysis Meeting (NEAM) Brockport, NY
Invited Speaker October 14-16, 2016
 AMS Fall Western Sectional Meeting Denver, CO
 Invited Speaker in Nonlinear and Stochastic PDEs October 8-9, 2016
 2016 IMA Summer Graduate Program: Mathematics and Climate Lawrence, KS
 Mentor and Teaching Assistant July 18-August 5, 2016
 IMA Special Workshop: "Dynamics and Differential Equations" Minneapolis, MN
 Participant June 22-25, 2016.
 IPAM Long Program Reunion: Mathematics of Turbulence Lake Arrowhead, CA
Invited Speaker June 5-10, 2016.
 Analysis & Beyond: Celebrating J. Bourgain's Work & Impact Princeton, NJ
 Participant May 21-24, 2016.
 2016 International Conf. on Evol. Eqn. & 31st Ann. Shanks Lecture Nashville, TN
Invited Speaker May 16-20, 2016
 The Foias Lectures: Peter Constantin College Station, TX
 Participant April 25-28, 2016
 SIAM Conference on Analysis of Partial Differential Equations Scottsdale, AZ
 Minisymposium co-organizer (with A. Biswas and M.S. Jolly) December 7-10, 2015
 Analysis of PDEs of Fluid Mechanics and Related Models Workshop Houston, TX
 Participant October 10-13, 2015
 MFO Mathematical Aspects of Hydrodynamics Oberwolfach-Walke, Germany
 Participant August 9-15, 2015

CIRM Summer School on Transport, Fluids, and Mixing Participant	Levico Terme, Italy July 19-24, 2015
AMS Spring Western Sectional Meeting <i>Invited Speaker in SS on Nonlinear Conservation Laws</i>	Las Vegas, NV April 19, 2015
NSF-CBMS RRC: Problems of PDEs related to fluids Participant	Stillwater, OK July 21 - 25, 2014
MSRI Summer Graduate School in Dispersive PDE Participant	Berkeley, CA June 16-27, 2014
4th Workshop on Fluids and PDE at IMPA <i>Invited speaker</i>	Rio de Janeiro, Brazil May 26-30, 2014
Workshop on Analysis of Nonlinear PDEs and Fluid Flows <i>Invited speaker</i>	Baltimore, MD January 19-20, 2014
2014 JMM, Participant	Baltimore, MD January 15-18, 2014
SIAM Conference on Analysis of Partial Differential Equations <i>Invited talk in MS20</i>	Orlando, FL December 7-10, 2013
72nd Midwest PDE Seminar Participant	West Lafayette, IN November 16-17, 2013
AMS Fall Southeastern Sectional Meeting <i>Invited talk in Special Session on PDEs from Fluid Mechanics</i>	Louisville, KY October 5-6, 2013
Stanford Summer School: Recent Adv. in PDEs & Fluids Participant and <i>Contributed talk</i>	Palo Alto, CA August 5-18, 2013
AMS MRC: Regularity Problems for PDEs Modeling Fluids Participant	Snowbird, UT June 25-July 1, 2013
Geostrophic Turb. and Active Tracer Transport in 2 dimensions Participant	Princeton, NJ March 13-15, 2013
IU Dissipative Systems Workshop <i>Invited speaker</i>	Bloomington, IN February 8-10, 2013
9th AIMS Conference <i>Invited talk in Special Session #30</i>	Orlando, FL July 1-5, 2012
AMS Spring Central Section Meeting Participant	Lawrence, KS March 30-April 1, 2012
Workshop on Study of Turb. in Phys. Sys. Through Complex Sing. & Det. Modes College Station, TX <i>Invited speaker</i>	February 17-20, 2012
Incomp. Fluids, Turb. & Mix.: P. Constantin's 60th Birthday Participant	Pittsburgh, PA October 13-16, 2011
3rd Workshop on Fluids and PDE at UNICAMP Participant	Campinas, Brazil June 27-July 1, 2011

TEACHING
EXPERIENCE

CUNY-Hunter College, Instructor	
MATH 795 Analysis of Partial Differential Equations	1 semester, 10 students
MATH 777 Distribution Theory & Analytic Functions	1 semester, 6 students
MATH 750 Calculus on Manifolds	1 semester, 15 students
MATH 746 Functions of a Real Variable I	1 semester, 15 students
MATH 254 Ordinary Differential Equations	1 semester, 30 students
STAT 701 Advanced Probability I	1 semester, 20 students
STAT 702 Advanced Probability II	1 semester, 15 students
Tulane University, Instructor	
M4470 Analytical Methods in Applied Mathematics	2 semesters, 20 students
M2240 Introduction to Applied Mathematics	1 semester, 80 students
M2210 Calculus III, Honors	1 semester, 10 students
M2210 Calculus III	1 semester, 30 students
Indiana University, Instructor	

M119 Brief Survey of Calculus I	3 semesters, 90 students
J113 Introduction to Calculus with Applications	3 semesters, 20 students
J112 Introduction to College Math I	2 semesters, 30 students
J111 Introduction to College Math I	1 semester, 30 students
J110 Introductory Problem Solving	1 semester, 20 students
M014 Basic Algebra	1 semester, 10 students
Indiana University, Teaching Assistant	
T101 Math for Elementary Teachers	2 semesters, 90 students

MENTORING

Math Alliance	Alliance Mentor, Fall 2020-current
Isabella Chittumuri	Spring 2021-current
Hunter College	
Nathan Taylor	Applied Math M.A.
<i>Dynamical parameter estimation for linear systems</i>	Fall 2020-Spring 2021
Bart Rosenzweig	Applied Math M.A.
<i>Analysis & Computation of Exact Factorization for NLS</i>	Spring 2020-2021
	(committ) Math PhD (Ohio State University)
Kenneth Brown	Pure Math M.A.
<i>Higher-order synch. for nudging 2D NSE with nodal obs.</i>	Spring 2020-2021
	(committ) Math PhD (UC-Davis)
Eunice Ng	Pure Math M.A.
<i>Dynamical parameter estimation for Lorenz '63</i>	Spring 2020-2021
	(committ) Math PhD (SUNY-Stony Brook)
Sanjit Gill	Applied Math M.A.
<i>Markov Chain Monte Carlo methods for DA</i>	Fall 2020-current
	Trading Associate for Merrill Lynch
Melissa DiMaio	Applied Math M.A.
<i>On the Fermi-Pasta-Ulam-Tsingou paradox and the KdV equation</i>	Fall 2020
Paul Popa	Applied Math M.A.
<i>Dynamic Mean-Adjustment for Filtering Noise in DA</i>	Spring 2019-2020
	Analyst System2
Ariel Glassberg	Pure Math M.A.
<i>Bayesian Parameter Estimation for Lorenz '63</i>	Spring 2019-Summer 2020
	Math PhD student (UNC-Chapel Hill)
Weiyang Lin	Pure Math M.A.
<i>Electron Orbitals for the Hydrogenic Atom</i>	Fall 2019
	Math PhD student (CUNY-GC)
Jared Berman	Applied Math M.A.
<i>Bayesian DA for a model of Brand Attraction</i>	Spring 2019-Fall 2019
	Associate Consultant for Slalom
Aidin Murtha	Pure Math M.A.
<i>Ill-posed. of the 2D Incomp. Euler Eqn in the Critical Sobolev Space</i>	Fall 2019
	Math PhD student (CUNY-GC)
Michael Ferguson	Applied Math M.A.
<i>Adaptive Nudging Schemes for DA of Lorenz '63</i>	Spring 2019
Tulane University	
<i>Rosa 'Padi' Fuster-Aguilera</i>	Math Ph.D Candidate
Co-advising with Kun Zhao	Spring 2018-current
<i>Kui Zhang</i>	Quant Analyst for Wells Fargo
Ph.D Thesis Committee	Spring 2017
<i>Parker Evans</i>	Math Ph.D. Student (Rice University)
Guided reading in Linear Algebra, Real Analysis	Spring 2015-Spring 2016
<i>Skylar Deckoff-Jones</i>	Physics Ph.D. Student (M.I.T)
Undergraduate Senior Thesis Committee	Spring 2016

2016 IMA Summer Graduate Program: Mathematics and Climate

Mentor: group project mentor on Lagrangian Data Assimilation involving three graduate students (Colin Guider (UNC-Chapel Hill), Kiwon Lee, (Seoul National University), Luyu Sun (UMD-College Park))

Teaching Assistant: lead group discussions and problem solving sessions

EDITORIAL
ACTIVITIES

Reviewer for *Annals of Applied Mathematics, Applicable Analysis, Complex Analysis & Operator Theory, Discrete & Continuous Dynamical Systems, Indiana University Mathematics Journal, Journal of Differential Equations, Journal of Evolution Equations, Journal of Mathematical Analysis & Applications, Journal of Mathematical Physics, Nonlinear Analysis, Journal of Nonlinear Science, Journal of Physics A, Journal of Pure & Applied Functional Analysis, Mathematische Nachrichten, Nonlinearity, Physica D, Physica Scripta, PSC-CUNY Research Award Program, Results in Applied Mathematics*