CURRICULUM VITAE

Carlo Lancellotti

Work Address:	Department of Mathematics, College of Staten Island, Staten Island, NY 10314
Work Phone:	(718) 982-3634
E-Mail	carlo@math.csi.cuny.edu
Home Address:	197 Locust Drive, Cranford, NJ 07016
Home Phone:	(908) 653-0214
Date and Place of Birth:	September 13, 1965, in Milan, Italy
Immigration Status:	U.S. Citizen

Employment

2008-Present Associate Professor of Mathematics, College of Staten Island
2004-Present Graduate Faculty in Physics, City University of New York
2002-2007 Assistant Professor of Mathematics, College of Staten Island
1999-2002 Hill Assistant Professor of Mathematics, Rutgers University
1998-1999 Research Associate, University of Virginia
1993-1998 Research/Teaching Assistant, University of Virginia

Education

Ph.D in Applied Mathematics	University of Virginia, Charlottesville, VA, January 1998 Doctoral Dissertation: "Time-Asymptotic Wave Propagation in Collisionless Plasmas" Dissertation Director: Prof. John J. Dorning
M.S. in Engineering Physics	University of Virginia, Charlottesville, VA, May 1993 Master Thesis: "Plasma Waves in a Lagrangian Frame" Thesis Advisor: Prof. John J. Dorning
Dottore in Fisica	Università di Milano, Milan, Italy, March 1990 Final Thesis: "Curvature Corrections to the Rankine-Hugoniot Conditions" Thesis Advisor: Prof. Carlo Cercignani Final Grade: 110/110 Cum Laude

Academic Honors and Awards

Recognized twice for outstanding scholarly achievements by the City University of New York on the occasion of the "Salute to Scholars" receptions, December 9, 2003, and November 28, 2006.

Recipient of the Allan Talbott Gwathmey Memorial Award for outstanding achievement in the physical sciences, 1998 ($1,000 cash award for the best doctoral dissertation in physics at the University of Virginia)

Recipient of the C.N.R. Final Award for Outstanding Graduate Research Fellows, 1993 ($5,000 cash award from the Italian National Research Council)

Research Grants and Fellowships

Awarded a NSF (Division of Undergraduate Education) grant ($760,087), "STEM Talent Expansion via Applied Mathematics (STEAM)," 2007-2011.

Awarded a PSC-CUNY research grant ($3,224), "Applications of the radiative transfer equation to backscattering in tissue optics," 2007-2008

Awarded a NSF (Applied Mathematics program) grant ($103,599), "Mathematical methods in the kinetic theory of plasmas and gravitating systems," 2006-2009

Awarded a PSC-CUNY research grant ($3,155), "Electrokinetic effects in mixtures of rodlike and spherical colloids forced by a low-frequency electric field," 2006-2007

Awarded a CSI Faculty Research Stipend ($2,000), "Some mathematical problems in the dynamics of globular clusters of stars," Summer 2006

Awarded a PSC-CUNY research grant ($7,946), "Self-similar globular cluster evolution," 2004-2006

Awarded a PSC-CUNY research grant ($4,340), "Singularity formation in large systems of nonlinearly coupled oscillators," 2003-2004

Awarded a NSF (Applied Mathematics program) grant ($72,455), "N-body methods in the kinetic theory of plasmas and gravitating systems," 2002-2005

Awarded a NSF VIGRE (Vertical Integration of Research and Education) Fellowship at Rutgers University, 1999-2002

Awarded the Eugene W. Wigner Fellowship at Oak Ridge National Laboratory, 1999 (highest post-doctoral award attainable at ORNL) declined

Awarded a Fusion Energy Postdoctoral Fellowship by the U.S. Department of Energy, 1999 (to work at the University of Wisconsin) declined

Recipient of C.N.R. Graduate Research Fellowships, 1990-1991 and 1991-1992
($16,000 stipend each year for study and research abroad)

Research Interests

Mathematical Physics in general, with special emphasis on applications of probability and functional analysis to the integro-differential equations of the kinetic theory of gases.
Mathematical Plasma Physics: nonlinear plasma waves, plasma transport.
Mathematical Astrophysics: gravitating systems, stellar dynamics.
Also, Rarefied Gas Dynamics, Numerical Fluid Dynamics.

Publications See attached List of Publications

Invited Talks

"The World and Christian Imagination," at the 2006 Lilly Fellows Program National Research Conference November 10, 2006, Baylor University, Waco TX.

"Self-Similar Solutions to the Fokker-Planck-Vlasov-Poisson Equations," at the 17th International Conference on Transport Theory, July 10, 2001, Imperial College, London, UK.

"Time-Asymptotic Plasma-Wave Propagation" at the Piero Caldirola Institute of Plasma

Physics, May 18, 1999, Milan, Italy.

"Long-time Wave Propagation in Collisionless Plasmas," at the 16th International Conference on Transport Theory, May 11, 1999, Georgia Institute of Technology, Atlanta, GA.

"Time-Asymptotic Amplitude Analysis for Nonlinear Plasma Waves," at the University of Wisconsin Physics Department, January 27, 1999, Madison WI.

"Time-Asymptotic Plasma Waves," at the Fusion Energy Division, Oak Ridge National Laboratory, January 18, 1999, Oak Ridge TN.

Other Talks

"Self-similar solutions to the orbit-averaged Vlasov-Poisson-Fokker-Planck equations," at the 19th International Conference on Transport Theory, July 2005, Budapest, Hungary.

"N-body approach to the classical Landau equation," at the 18th International Conference on Transport Theory, July 2003, Rio de Janeiro, Brazil.

"Kinetic theory of gravitational collapse," at the 84th Statistical Mechanics Conference, December 19, 2000, Rutgers University, Piscataway NJ.

"Nonlinear saturation of the bump-on-tail instability," poster presentation at the 1999 Annual Meeting of the APS Division of Plasma Physics, Seattle WA.

"Time-asymptotic waves in collisionless plasmas," poster presentation at the 1998 Annual Meeting of the APS Division of Plasma Physics, New Orleans LA.

"Time-asymptotic plasma waves," poster presentation at the 1997 Annual Meeting of the APS Division of Plasma Physics, Pittsburgh PA.

(Also, several departmental seminars and colloquia at the University of Virginia, Rutgers University and the City University of New York.)

Teaching Experience

Graduate Faculty in Physics at the City University of New York, Fall 2004-Present

- Taught special topics course in Nonequilibrium Statistical Mechanics (Fall 2006).
- Taught graduate course in Statistical Mechanics (Springs 2005, 2006).
- Directed a graduate student for his doctoral dissertation.
- Taught an independent study course (Kinetic Theory).

Assistant Professor at the College of Staten Island, Fall 2002-Present

- Redeveloped and taught Numerical Analysis (MATH 335).
- Taught Linear Algebra (MATH 338) and Applied Mathematics (MATH 330).
- Taught Calculus I and III (MATH 230, MATH 233).
- Taught an independent study course (Complex Variables).
- Taught pre-calculus courses (MATH 121, MATH 123)

Assistant Professor at Rutgers University, 1999-2002

- Taught a complete 3 semester Calculus cycle. These courses employed both traditional lectures and workshops. Maple also was used in the third semester.
- Taught Elementary Differential Equations (200 level, 1 semester. Used Maple.)
- Taught Mathematical Analysis (400 level, two semesters).
- Supervised TA's for Calculus and ODE courses and peer mentors for Calculus workshops.
- As a NSF VIGRE post-doc, advised students in preparing mathematical presentations and supervised a VIGRE graduate student for a semester-long "research rotation" in 1999-2000 on "Lie Groups and PDE's".
- In the Summers of 2000 and 2001 co-mentored students in NSF REU (Research Experience for Undergraduates) projects on mathematical methods in Quantum Mechanics.

Teaching Assistant at the University of Virginia, 1997-98. Administered and graded Calculus III weekly quizzes. Held office/tutoring hours for Calculus students.

Professional Societies

American Mathematical Society
American Physical Society (Division of Plasma Physics)

Other Activities

Attended C.N.R. Summer School in Mathematical Physics Ravello, Italy, September 1989. Co-organized Lecture Series on the Foundations of Quantum Mechanics, University of Milan, Spring 1990.

PUBLICATIONS

Journal Articles

Carlo Lancellotti and J.J. Dorning, "Nonlinear Landau Damping in a Collisionless Plasma," Phys. Rev. Letters, **80**, 5236 (1998).

Carlo Lancellotti and J.J. Dorning, "Critical Initial States in Collisionless Plasmas," Phys. Rev. Letters, **81**, 5137 (1998).

Carlo Lancellotti and J.J. Dorning, "Time-Asymptotic Wave Solutions to the Nonlinear Vlasov-Poisson-Ampère Equations," J. of Math. Phys, **40**, 3895 (1999).

Carlo Lancellotti and Michael Kiessling, "Self-Similar Gravitational Collapse in Stellar Dynamics," Ap. J. Letters **549**, p. 93-96 (2001).

Carlo Lancellotti and J.J. Dorning, "Time-Asymptotic Wave Propagation in Collisionless Plasmas," Phys. Rev. E **68**, p. (026406)1-31 (2003).

Michael Kiessling and Carlo Lancellotti, "On the master equation approach to kinetic theory: linear and nonlinear Fokker-Planck equations," J. Transp. Th. and Stat. Phys. **33**, p. 379-401 (2004).

Carlo Lancellotti, "On the Vlasov limit for systems of nonlinearly coupled oscillators without noise," J. Transp. Th. and Stat. Phys. **34**, p. 523-535 (2005).

Michael Kiessling and Carlo Lancellotti, "The linear Fokker-Planck equation for the Ornstein-Uhlenbeck process as an (almost) nonlinear kinetic equation for an isolated N-particle system," J. Stat. Phys. **123**, p. 525-546 (2006).

Carlo Lancellotti, "On self-similar collapsing solutions to the kinetic equations of stellar dynamics," J. Trans. Th. and Stat. Phys. **36**, p. 281-297 (2007).

Conference Proceedings (Final Paper Refereed)

Carlo Cercignani and Carlo Lancellotti, "Velocity Slip for Curved Shock Waves," Rarefied Gas Dynamics, **17**, 153-160 (1991).

Carlo Lancellotti and J.J. Dorning, "Plasma Waves in Lagrangian Coordinates," Trans. Am. Nucl. Soc., **66**, 235 (1992).

Carlo Lancellotti and J.J. Dorning, "A Lagrangian Kinetic Theory of Wave Propagation in Rarefied Plasmas," Prog. in Aeronautics and Astronautics, **160**, 419-427 (1994).

Carlo Lancellotti and J.J. Dorning, "Nonlinear Trajectory Corrections in Landau Damping of Plasmas," Trans. Am. Nucl. Soc., **70**, 164 (1994).

Carlo Lancellotti and J.J. Dorning, "Nonlinear Particle Trajectories and the Damping of Waves in Rarefied Plasmas," Rarefied Gas Dynamics, **19**, 85-92 (1995).

Carlo Lancellotti and J.J. Dorning, "Time-Asymptotic Wave Propagation in Collisionless Plasmas," Trans. Am. Nucl. Soc., **73**, 190 (1995).

Carlo Lancellotti and J.J. Dorning, "Time-Asymptotic Amplitude Analysis for Nonlinear Plasma Waves," Trans. Am. Nucl. Soc., **75**, 166 (1996).

Conference Proceedings (Abstract Refereed)

Carlo Lancellotti and J. Dorning, "Nonlinear Plasma Wave Propagation," in Proceedings of the 23rd International Conference on Phenomena in Ionized Gases, I.210-I.213, Université Paul Sabatier of Toulouse Press, Toulouse, France (1997).

Abstracts (Not Refereed)

Carlo Lancellotti and J.J. Dorning "Time-Asymptotic Plasma Waves," Bull. Am.

Phys. Soc., **42**, No. 10, 1828 (1997).

Carlo Lancellotti and J.J. Dorning "Time-Asymptotic Waves in Collisionless Plasmas," Bull. Am. Phys. Soc., **43**, No. 8, 1686 (1998).

Carlo Lancellotti and J.J. Dorning "Nonlinear Saturation of the Bump-on-Tail Instability," Bull. Am. Phys. Soc., **44**, No. 7, 69 (1999).

Submitted for publication

Carlo Lancellotti and Bala Sundaram, "Field-induced phases of an orientable charged particle in a dilute background of point charges," submitted for publication.