

CURRICULUM VITAE

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Education

- 1992-1998** **Ph.D. in Mathematics**, Cornell University.
Thesis: Holomorphic functions and the heat kernel measure on an infinite dimensional complex orthogonal group. Advisor: Professor Leonard Gross.
- 1991-1992** Graduate student at the Department of Mathematics and Mechanics, Leningrad State University. Advisor: Professor Alexey B. Aleksandrov.
- 1985-1990** **Diploma in Mathematics and Education**, Leningrad State University.
Thesis: The denseness of fractions in L_p for $0 < p < 1$. Advisor: Professor Alexey B. Aleksandrov.

Honors and Awards

- **NSF Grant DMS-1007496**, June 2010-present.
- **The Ruth I. Michler Memorial Prize of the AWM (the Association for Women in Mathematics)**, 2009-2010,
the Ruth I. Michler Memorial Prize of the AWM is awarded annually to a woman recently promoted to Associate Professor or an equivalent position in the mathematical sciences. The \$45,000 prize provides a fellowship for the awardee to spend a semester in the Mathematics Department of Cornell University without teaching obligations.
- **a 2 month visiting position at the Max Planck Institute in Bonn (Germany)**, 2009.
- **UCRF/AAUP Travel Award**, Spring 2003, Fall 2003, Fall 2004, Fall 2005, Summer 2006, Winter 2007, Summer 2007, Spring 2008, Spring 2009, Fall 2009, Fall 2010, Fall 2011, Fall 2012.
- **Humboldt Research Fellowship extension (Germany)**, Summer 2008.
- **NSF Grant DMS-0706784**, July 2007-July 2011.
- **a grant from the De Giorgi Center, Scuola Normale Superiore, Pisa, Italy**, 2006.
- **Humboldt Research Fellowship (Germany)**, 2005-2007.
- **NSF Grant DMS-0306468**, June 2003-June 2007.
- **NSF Postdoctoral Fellowship**, 2000-2002.
- **NSF grant** to participate in XIII International Congress on Mathematical Physics, London, UK, 2000.
- **Postdoctoral Fellowship, McMaster University**, 1998-2000.

- **Hutchinson Fellowship**, Cornell University, Spring 1996.
The Hutchinson Fellowship is awarded to mathematics graduate students who have been outstanding in their work as teaching assistants or students in the graduate program. (From the Mathematics Department Annual Report, 1995-1996).
- **Summer Graduate Research Fellowships**, Cornell University, 1997, 1998.
- **Award from the MSRI** to participate in the workshop on *Infinite Dimensional Stochastic Analysis*, November 1997.
- **Diploma with Honors**, Leningrad State University (equivalent of *Summa Cum Laude in Mathematics* and *Distinguished in All Subjects*).
- **Special Fellowship**, Leningrad State University (1988, 1989, 1990) given to the top five students among 1500 students in mathematics.

Employment

- 2007-present** Associate Professor at the Department of Mathematics, University of Connecticut.
- 2003-2007** Assistant Professor at the Department of Mathematics, University of Connecticut.
- 2000-2002** NSF Postdoctoral Fellow at the Department of Mathematics, University of California at San Diego.
- 1998-2000** Postdoctoral Fellow at the Department of Mathematics and Statistics, McMaster University, Canada.
- 1990-1992** Lecturer at the Mathematics Department, Leningrad Electro-Technical Institute.

Teaching Experience

- 2007-present** Associate Professor at the Department of Mathematics, University of Connecticut.
- 2003-2007** Assistant Professor at the Department of Mathematics, University of Connecticut.
- 2001-2002** Instructor at the Department of Mathematics, University of California at San Diego.
- 1998-2000** Lecturer at McMaster University for second and third year courses on differential equations.
- 1992-1997** Lecturer at Cornell University for a first year calculus course.
Recitation instructor for honors calculus courses and an engineering calculus course.
Grading and consulting for graduate and upper level undergraduate courses in *Partial Differential Equations, Real and Complex Analysis, Lebesgue Integration, Groups and Symmetry*.
- 1990-1992** Lecturer (at the Assistant Professor level) for calculus courses and a special course on Fourier analysis for radiophysics students at Leningrad Electro-Technical Institute, Leningrad, Russia.
- 1990-1992** Leader of a project on learning programs and computerized tests for a technical college.
- 1985-1990** Teacher at the School for Young Mathematicians, Leningrad, Russia. Director of the School in 1988-1990.
- 1986, 1987** Organizer and teacher at Summer Camps for Young Mathematicians, Leningrad, Russia.

Other professional activities

- 2012** An external reviewer for a MSc by Research thesis at Warwick University (UK).

- present** Reviewer for the Mathematical Reviews and Zentralblatt MATH.
- 2011** Reviewer for Futuro in Ricerca projects (the Italian Ministry for University and Research).
- 2007-2012** Reviewer of NSF grant proposals, NSF panel (2008, 2012).
- 2009** FONDECYT (Fondo Nacional de Desarrollo Científico y Tecnológico, Chile) reviewer.
- 2006, 2007** a reviewer of proposals to the Civilian Research and Development Foundation (CRDF) under their Basic Research and Higher Education program (BRHE).
- 2005** evaluating mathematical articles for the CIVR (the Italian National Committee for the evaluation of university research).
- Reviewer for *Annales de l'Institut Henri Poincaré*, *the Transactions of the AMS*, *Mathematical Research Letters*, *the Journal of Functional Analysis*, *the Tohoku Mathematical Journal*, *the Journal of Mathematical analysis and applications*, *Mathematische Zeitschrift*, *Probability Theory and Related Fields*, *the Journal of the AMS*, *Monatshefte für Mathematik*, *Mathematical Proceedings of the Cambridge Philosophical Society*, *Probability Theory and Related Fields*, *Stochastic Processes and its Applications*, *Markov Processes and Related Fields*, *the Journal of Lie Theory, Symmetry, Integrability and Geometry: Methods and Applications (SIGMA)*, *Linear Algebra and its Applications*, *the Proceedings of the EWM*.
- 2013** an organizer (with Takashi Kumagai, Laurent Saloff-Coste, Theo Sturm) of an Oberwolfach meeting in 2013.
- 2011** an organizer (with Bruce Driver and Todd Kemp) of a special session at the Joint AMS meeting, January 2011.
- 2010** an organizer (with Bruce Driver) of a probability conference *in honor of Len Gross* at Cornell University, Ithaca, New York, April 11–13, 2010.
- 2009** an organizer (with Laurent Saloff-Coste) of a special session on the *Heat kernel analysis* at the Penn State sectional meeting of the AMS, October 24-25, 2009.
- 2007** an organizer (with Shizan Fang) of a special session on *Geometry and Probability* at the 32nd Conference on Stochastic Processes and their Applications.
- 1992-present** Member of *the AMS*, *the AWM*, *St.Petersburg Mathematical Society*.

Publications and preprints

- (1) *Brownian and energy representation for path groups*, joint with S. Albeverio, B. Driver, A.M. Vershik, preprint, [38 pp.](#)
- (2) *Lévy processes in a step 3 nilpotent Lie group*, joint with J. Haga, submitted, available at <http://arxiv.org/abs/1207.0304>, [15 pp.](#)
- (3) *Harnack inequalities in infinite dimensions*, joint with R. Bass, to appear in *J. Func. Anal.*, available at <http://arxiv.org/abs/1209.1573>, [32 pp.](#)

- (4) *Quasi-invariance for heat kernel measures on sub-Riemannian infinite-dimensional Heisenberg groups*, joint with F. Baudoin, T. Melcher, to appear in *the Transactions of the AMS*, <http://arxiv.org/abs/1108.1527>, [42 pp.](#)
- (5) *A subelliptic Taylor isomorphism on infinite-dimensional Heisenberg groups*, joint with T. Melcher, to appear in *PTRF*, <http://arxiv.org/abs/1106.1970>, available online at Springer, [48 pp.](#)
- (6) *Dimension-independent Harnack inequalities for subordinated semigroups*, joint with Michael Röckner, Feng-Yu Wang, 2011, *Potential Analysis*, **34**, pp. 293-307, <http://arxiv.org/abs/1004.3016>, [15 pp.](#)
- (7) *Square integrable holomorphic functions on infinite-dimensional Heisenberg type groups*, joint with B. Driver, 2010, *Probab. Theory Related Fields*, **147**, pp. 481-528, <http://arxiv.org/abs/0809.4979>, [48 pp.](#)
- (8) *Integrated Harnack Inequalities on Lie Groups*, joint with B. Driver, *Journal of Differential Geometry*, **3**, 2009, pp.501-550, <http://arxiv.org/abs/0711.4392>, [50 pp.](#)
- (9) *Heat kernel analysis on infinite-dimensional Heisenberg groups*, joint with B. Driver, 2008, *J. Func. Anal.*, **255**, pp.2395–2461, <http://arxiv.org/abs/0805.1650>, [67 pp.](#)
- (10) *Diffeomorphisms of the circle and Brownian motions on an infinite-dimensional symplectic group*, joint with M. Wu, *Communications on Stochastic Analysis*, **2**, 2008, pp.71–95, [25 pp.](#)
- (11) *Riemannian geometry of $\text{Diff}(S^1)/S^1$ revisited*, Stochastic Analysis in Physics, Proceedings of a Satellite Conference of ICM 2006 Lisbon, Portugal 4 - 8 September 2006 (edited by Gerard Ben Arous, Ana Bela Cruzeiro, Yves Le Jan & Jean-Claude Zambrini), pp. 19–30, [12 pp.](#)
- (12) *A note on local controllability on Lie groups*, joint with F. Cardetti, *Systems & Control Letters*, 2008, [6 pp.](#)
- (13) *Lévy processes and their subordination in matrix Lie groups*, joint with S. Albeverio, *Bulletin des Sciences Mathématiques*, **131**, 2007, pp. 738–760, [23 pp.](#)
- (14) *Riemannian geometry of $\text{Diff}(S^1)/S^1$* , joint with P. Lescot, 2006, *J. Func. Anal.*, **239**, pp. 611-630, [20 pp.](#)
- (15) *Infinite dimensional stochastic differential equations of Ornstein-Uhlenbeck type*, joint with S.R. Athreya, R.F. Bass, and E.A. Perkins, *Stochastic Process. Appl.* **116**, 2006, pp. 381–406, [26 pp.](#)
- (16) *Hilbert-Schmidt groups as infinite-dimensional Lie groups and their Riemannian geometry*, *Journal of Functional Analysis* **227**, 2005, pp. 245–272, [28 pp.](#)
- (17) *Heat kernel analysis on infinite dimensional groups*, *Infinite dimensional harmonic analysis III*, World Scientific Publishing Co., 2005, pp. 71-81, [11 pp.](#)
- (18) *Stochastic differential equations on noncommutative L^2* , *Contemp. Math.*, **317**, Amer. Math. Soc., Providence, RI, 2003, pp. 87–99, [13 pp.](#)
- (19) *Quasi-invariance for the pinned Brownian motion on a Lie group*, *Stochastic Process. Appl.* **104**, 2003, pp. 243–257, [15 pp.](#)
- (20) *Taylor map on groups associated with a II_1 -factor*, *Infinite Dimensional Analysis, Quantum Probability and Related Topics* **5**, 2002, pp. 93–111, [19 pp.](#)

- (21) *Heat kernel analysis and Cameron-Martin subgroup for infinite dimensional groups*, Journal of Functional Analysis **171**, 2000, pp. 192-232, [41 pp.](#)
- (22) *Holomorphic functions and the heat kernel measure on an infinite dimensional complex orthogonal group*, Potential Analysis **12**, 2000, pp. 325-357, [33 pp.](#)
- (23) *The denseness of fractions in L_p for $0 < p < 1$* , Vestnik S-Peterburgskogo Universiteta, Matematika, **25** (1992), no. 4, pp. 11-16; English translation: Vestnik, St. Petersburg University, Mathematics, vol. **25**(4), 1992, pp. 11-16, [6 pp.](#)

Invited conference talks

- AIM, Palo Alto, April, 2013.
- Representations of Lie Groups and Supergroups, Oberwolfach, Germany, March, 2013.
- AMS Sectional meeting, Tulane University, New Orleans, October, 2012, declined.
- Workshop *Discrete Random Structures, Representation Theory and Interacting Particle Systems*, ZiF, Bielefeld, Germany, July 2012.
- Meeting *Probability and Related Aspects*, organized by the Simion Stoilow Institute of Mathematics of the Romanian Academy with support from Laboratoire Européen Associé CNRS Franco-Roumain, Alba Iulia, Romania, May 2012, declined.
- Banff workshop, September 2011.
- AWM celebration, Brown University, September 2011.
- IGK workshop, Bielefeld, Germany, July 2011.
- declined an invitation to the 8th ISAAC Congress, August 22 - 27, 2011, Moscow, Russia.
- declined an invitation to *Probability and related aspects* meeting, May, 2012, Alba Iulia, Romania.
- a Michler-Mentoring Minisymposium at the Joint Mathematics Meetings in New Orleans, January 2011.
- Infinite Dimensional Lie Theory, Oberwolfach, Germany, November 14th–November 20th, 2010.
- the 6th Cornell Probability Summer School, invited lecturer, Cornell University, July 2010.
- declined an invitation: the first joint CIRM-HCM workshop *Stochastic Analysis, SPDEs, Particle Systems, Optimal Transport*, Levico (Trento), January 25–31, 2010.
- Workshop *Fine properties of stochastic processes* Bielefeld University, Germany, November 2009.
- declined an invitation: *Workshop on Geometric Methods in Physics*, Bialowieza, Poland, Summer 2010.
- Heat kernel analysis on an infinite-dimensional Heisenberg group, special session on *Stochastic Differential Equations and Geometry*, the 33rd Conference on "Stochastic Processes and their Applications (SPA)", July 27-31, 2009, the Mathematics Institute of the Technische Universität, Berlin, Germany.
- *Seminar Sophus Lie*, January 2009, University of Paderborn, Germany.
- *the 2nd Workshop for Women in Probability*, October 5-7, 2008, Cornell University.
- Heat kernel analysis on infinite-dimensional Heisenberg groups, Special Session on *Lie Groups and Holomorphic Function Spaces: Analysis, Geometry, and Mathematical Physics*, 2008 Spring Southeastern Meeting, Baton Rouge, LA, March 28-30.
- Energy representation of path groups, conference on *Infinite dimensional analysis and representation theory*, University of Bielefeld, Germany, December 2007.
- Heat kernel analysis on an infinite-dimensional Heisenberg group, workshop *Stochastic calculus on manifolds, graphs, and random structures*, the Hausdorff Research Institute for Mathematics, Bonn, Germany, October 2007.

- Heat kernel analysis on an infinite-dimensional Heisenberg group, special session on *Probability and Geometry*, the 32nd Conference on "Stochastic Processes and their Applications (SPA)", August 6-10, 2007, the University of Illinois at Urbana-Champaign.
- special session on *Probability and Geometry*, Annual meeting of the German Mathematical Society (Jahrestagung der Deutschen Mathematiker-Vereinigung 2006), the University of Bonn, September 2006 (declined due to surgery).
- Heat kernel measures and Riemannian geometry in infinite dimensions, Conference on *Stochastic Analysis in Mathematical Physics*, Satellite conference of the International Congress of Mathematicians (ICM2006), 4-8 September 2006, Lisbon, Portugal.
- Lévy processes in matrix Lie groups, Special Session on *Holomorphic Methods and Heat Kernels in Harmonic Analysis and Quantization Theory*, 2006 Spring Central Sectional Meeting of the AMS, University of Notre Dame, IN, April 2006.
- Infinite-dimensional stochastic differential equations of Ornstein-Uhlenbeck type, Workshop on *Stochastic Partial Differential Equations*, De Giorgi Center, Pisa, Italy, April 2006.
- Heat kernel measures and Riemannian geometry in infinite dimensions, Workshop on *Random Dynamical Systems in Infinite Dimensions*, De Giorgi Center, Pisa, Italy, March 2006.
- Heat kernel measures and Riemannian geometry in infinite dimensions, German-Japanese conference on *Dirichlet forms, Stochastic Analysis and Interacting Systems*, Germany, November 2005.
- Heat kernel analysis and Riemannian geometry on infinite-dimensional groups, Conference on *infinite dimensional analysis and path integrals*, C.I.R.M. (Luminy), France, December 2004.
- Heat kernel analysis and Riemannian geometry for some infinite-dimensional groups, workshop on *potential theoretical methods for infinite dimensional processes*, University of Bielefeld, Germany, August 2004.
- Riemannian geometry and heat kernel measures in infinite dimensions, *Geometric and Analytic Aspects of Stochastic Processes*, the BIRS (Banff International Research Station), Banff, Canada, April 11–15, 2004.
- Heat kernel analysis on infinite dimensional groups, Plenary speaker at *the Conference in Honor of Edgar Feldman, Geometric Analysis and its Applications*, CUNY Graduate Center, February 7-8, 2004.
- Heat kernel analysis on infinite dimensional groups, invited speaker at *the German-Japanese Symposium*, University of Tübingen, Germany, September 2003.
- Stochastic differential equations on noncommutative L^2 -spaces, invited speaker at the *2003 Fall Eastern Section Meeting of the AMS*, Binghamton, NY, October 11-12, 2003.
- Bosonic Fock Space on Infinite-Dimensional Lie Groups, invited speaker at a workshop on *Women of Applied Mathematics: Research and Leadership*, the University of Maryland at College Park, October 8-10, 2003.
- Stochastic differential equations on noncommutative L^2 -spaces, the *2003 Spring Southeastern Section Meeting of the AMS*, Baton Rouge, March 2003.
- Heat kernel analysis in infinite dimensions, Meeting on *Stochastic Analysis and Potential theory*, Saint Priest de Gimel, Correze, France, September 2002.
- Heat kernel analysis on von Neumann algebras, Special session on *Operator Spaces, Operator Algebras, and Applications at the 2001 Fall Western Section Meeting of the AMS*, Irvine, CA, November 2001.
- Heat kernel analysis and Taylor expansion in infinite dimensions, Conference on *Probability and Geometry*, University of Bourgogne with the participation of University of Paris VI, Dijon, France, September 2001.
- Heat kernel analysis in infinite dimensions, Workshop on *Stochastic Analysis and Related Fields*, the Euler Institute, St. Petersburg, Russia, June 2001.

- Heat kernel analysis on infinite-dimensional groups, *Special session in Honor of Leonard Gross*, Annual Meeting of the AMS, New Orleans, January 2001.
- Heat kernel measure and Taylor map on infinite-dimensional groups, *Workshop on Geometry and Analysis on Path Spaces and Related Fields*, University of Warwick, UK, July 2000.
- Heat kernel analysis and the Cameron-Martin subgroup on infinite-dimensional groups, Session on *Quantum Mechanics and Spectral Theory at XIII International Congress on Mathematical Physics*, London, UK, July 2000.
- Heat kernel analysis and holomorphic functions on a II_1 -factor, *28th Canadian Annual Symposium on Operator Algebras at the Fields Institute*, June 2000.
- Heat kernel analysis on infinite dimensional complex groups, *Special Session on Mathematical Physics at 1999 Spring Eastern Sectional Meeting of the AMS*, Buffalo, NY, April 1999.
- The heat kernel measure and Driver-Gross isometry on infinite dimensional groups, Special Session on *Heat Kernel Analysis on Lie Groups at 1998 Spring Eastern Sectional Meeting of the AMS*, Philadelphia, PA, April 1998.
- Holomorphic functions and the heat kernel measure on an infinite dimensional complex orthogonal group, *930th Joint Meeting of the AMS*, Baltimore, MD, January 1998.
- Infinite dimensional SDEs and the Driver-Gross isomorphism, Workshop on *Infinite Dimensional Stochastic Analysis*, MSRI, Berkeley, CA, November 1997.
- Driver-Gross isomorphism for infinite dimensional groups, Special Session on *Recent Developments in C^* -Algebras and Operator Spaces*, the 918th Joint Meeting of the AMS, San Diego, CA, January 1997.

Colloquium and seminar talks

- Differential Geometry seminar, CUNY, December 2012.
- Probability seminar, Purdue University, March 2011.
- MTH Lunch Talk, Smith College, February 2011.
- Probability seminar, University of Virginia, September 2010.
- Lie groups seminar, Cornell University, April 2010.
- Oliver club (colloquium), Michler fellow lecture, Cornell University, April 2010.
- Probability seminar, Cornell University, March 2010.
- Analysis seminar, Cornell University, February 2010.
- Seminar Sophus Lie, TU Darmstadt, Germany, November 2009.
- Probability seminar, MIT, November 2008.
- Probability seminar, Duke University, November 2008.
- joint Harmonic analysis and probability seminar, Louisiana State University, Baton Rouge, September 2008.
- Mathematics department Colloquium, University of Pittsburgh, Spring 2008.
- Physics department, University of Rochester, Spring 2007.
- Analysis seminar, Cornell University, Spring 2007.
- Colloquium at the Mathematics Department, University of Western Ontario, Canada, Winter 2007.
- University of Bonn, Germany, May 2006.
- University of Bielefeld, Germany, June 2006.
- the Courant Institute of Mathematical Sciences, NYU, October 2005.
- Analysis and Probability Seminar, University of Connecticut, Fall 2005.
- Geometry Seminar, University of Connecticut, Fall 2005.
- North Carolina State University, Spring 2005.
- Bonn University (Germany), Spring 2005.
- Brown University, Fall 2004.

- Uppsala University (Sweden), Bielefeld University (Germany), Bonn University (Germany), Fall 2002.
- Kansas State University, University of Texas at Austin, Texas A& M University, University of Connecticut, University of Illinois at Urbana-Champaign, Fall 2001-Spring 2002.
- University of Lisbon, Portugal, September 2001.
- University of Illinois at Urbana-Champaign, Winter 2001.
- Indiana University at Bloomington, Winter 2001.
- Probability Seminar, University of California at San Diego, September 2000.
- Department of Mathematics Colloquium, Purdue University, March 2000.
- Analysis Seminar, McMaster University, February 2000.
- Analysis Seminar, McMaster University, March 1999.
- Probability Seminar, the Fields Institute, February 1999.
- Analysis Seminar, McMaster University, November 1998.
- Colloquium, Wayne State University, January 1998.
- Analysis Seminar, Cornell University, Spring 1997.
- Probability Seminar, Cornell University, Spring 1997.

Service at the University of Connecticut in 2010-2011

- Academic Advisory Board for the CLAS, 2011-present (elected)
- The Advisory Board meeting for the Advancement of Women in STEM at UConn, September 2010
- Advisory board to the committee on diversity in the department of physics, 2010-present
- Area coordinator for geomtery/topology, 2010-present
- Mathematics department graduate committee, 2011-present
- Mathematics department advisory committee, -present (elected)
- Mathematics department hiring committee, 2010-2012
- A coordinator of Women in Math group, -present
- High energy (physics department) search committee, 2010-2011

Graduate students at the University of Connecticut

Robert Wooster (graduated in May 2009, postdoc at the West Point Academy, now an assistant professor at the College of Wooster)

Mang Wu (graduated in 2010, postdoc at the University of California, Riverside)

John Haga (graduated in 2012, assistant professor at the Wentworth Institute of Technology)

Alex Baldenko (2010-present)

Malva Asaad (2011-present)

Honors senior thesis supervised at the University of Connecticut

Aaron Nelson (2011-2012)

Postdoctoral fellow mentoring at the University of Connecticut

Matthew Cecil (2006-2009, later held positions at University of Notre Dame, Purdue University)

Chen-Yun Lin (2010-present, joint with Changfeng Gui)

Thomas Laetsch (2012-present)

REU at the University of Connecticut

Summer 2012: Multiplicative stochastic processes.

Graduate mentor: Alex Baldenko

Undergraduate participants: Becky Simonsen (Columbia University), David Wierschen (University of Connecticut), who presented a talk at the Young Mathematicians Conference, the Ohio State Univeristy, July 2012

Outreach activities

Workshop for Women in Probability, October 2012, an invited guest

MathCounts instructor at the Mansfield Middle School, Fall 2010-present

Speaker at the UConn Physics Club as part of the Women in Physics celebration

Smith College: MATH Lunch Talk, Spring 2011