

# Frederi G. Viens

Professor of Statistics and Mathematics  
Director, Computational Finance Program

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## Education

Maîtrise de Mathématiques Pures    Université de Paris VII, France, Oct 1991  
Master in Mathematics            University of California, Irvine, Dec 1991  
Ph.D. in Mathematics              University of California, Irvine, June 1996

## Previous and present positions

1997-2000. Assistant Professor (tenure track)    University of North Texas, Department of Mathematics.  
2000-2003. Assistant Professor (tenure track)    Purdue University, Dept. Statistics, Dept. Mathematics.  
2003-2008. Associate Professor (with tenure)    Purdue University, Dept. Statistics, Dept. Mathematics.  
2008- . Professor (with tenure)                  Purdue University, Dept. Statistics, Dept. Mathematics.

## Awards and honors (also see funding history on page 11)

1992-1996    **National Defense Science and Engineering Fellow**, U.C. Irvine  
1996         U.C. Irvine Connely Award for best Mathematics teaching assistant  
1996         Honorary Fellow, University of Wisconsin, Probability Internship Program  
1996-1997    **NSF International Opportunities Fellow**, Universitat de Barcelona, Spain  
1997-2000    UNT Faculty Research Award Grants (Internal)  
1998-1999    **NSF-NATO Postdoctoral Fellow**, Université de Paris VI, France.  
2001,05,06    Purdue Research Foundation International Travel Grant (Internal)  
2002         Purdue Research Foundation Summer Faculty Grant (Internal)  
2002-2006    **NSF Standard Grant** (Program in Probability), summer salary and travel  
2002-2004    Purdue Research Foundation grad student support Grant (Internal)  
2003         Purdue New Recruitment Initiative Grant (Internal)  
2003-2004    Purdue Integrated Study Abroad Program Grant (Internal)  
2004         **Fulbright Scholar**, Research and Lecturing grant, U. de Paris XIII, France  
2005         **NSF Conference Grant** (Proba/Appl Math), travel for speakers.  
2006-2009    **NSF Standard Grant** (Program in Probability), salary, travel, grad support  
2007         **NSF Conference Grant** (Probability), travel for speakers and students.  
2008         **NSF Conference Grant** (Proba/Applied Math), travel for speakers & students  
2008         Purdue College of Science Graduate Student Mentoring Award

## Research interests

*Probability Theory and Stochastic Analysis:*

Stochastic PDEs  
Malliavin Calculus  
Products of Random Matrices  
Regularity of Random Fields  
Branching and Interacting Particle Systems  
Numerical Methods for Stochastic Processes  
Nonlinear Stochastic Filtering  
Fractional Brownian Motion  
Propagation of Chaos  
Stochastic Volatility

*Other Fields:*

Nonlinear Semigroups  
Magneto-hydrodynamics  
Financial Mathematics  
Harmonic Analysis on Lie Groups  
Optimal Control  
Parameter estimation (Statistics)  
Financial Time Series  
Spin Glasses  
Monte-Carlo methods

## Professional membership

- *American Mathematical Society* (AMS) since 1994.

## Teaching experience

**Undergraduate lower division:** College algebra, Calculus, Business calculus, Elementary Probability, Elementary Statistics.

**Undergraduate upper division:** Discrete mathematics, Linear Algebra, Intermediate probability and statistics, Real Analysis, Actuarial Models (life contingencies, loss models, financial economics and Black-Scholes theory).

**Graduate, MS / First year Ph.D. level:** Probability theory, first course in Stochastic processes, Numerical methods for stochastic processes, Mathematics of finance, Advanced probability and financial options, with numerical methods.

**Graduate, Advanced Ph.D. level:** Stochastic PDEs and Lyapunov exponents, Fractional Brownian motion and stochastic PDEs, Advanced course in Stochastic Processes. Stochastic Analysis and Malliavin Calculus.

## Curriculum development

**New course:** *Numerical Methods for Stochastic Processes*, with applications to problems in finance, filtering, and fluid dynamics, via particle methods.

**New two-semester sequence:** *Mathematics of Finance*, including the Stochastics of Option Pricing, Stochastic Interest rate models, American options, and their Numerical Methods.

**New course:** *Introduction to Investment Science*, an introduction to financial engineering for math and stat graduate students, covering CAPM theory, VaR, Mean-Variance Portfolio Management, Credit Risk, Volatility estimation...

**Purdue Computational Finance Program** (see [www.stat.purdue.edu/purduecf](http://www.stat.purdue.edu/purduecf)): **Developer and Coordinator.** Restructured the program, designing the MS requirements, coordinating courses in Math, Stat, Mgmt, IE, Econ, advising CF MS students in Math, Stat, Engineering, Econ, AgEcon, and organizing the **2000-2003 Computational Finance seminar.**

**New course:** *Stochastic Partial Differential Equations*, A Ph.D.-research-level course on the Infinite-Dimensional Stochastic Analysis approach to SPDEs, including Gaussian regularity theory, almost-sure Lyapunov exponents, and other topics.

**New course:** *Stochastic PDEs and Fractional Brownian Motion*, continuation of previous course, including a complete introduction to Skorohod and pathwise integration w.r.t. fractional Brownian noise.

**New course contents:** *Stochastic Processes*: use of the Textbook by Daniel Revuz and Marc Yor on martingales and stochastic calculus; incorporation of advanced elements of Gaussian theory, including Skorohod integration.

**New course:** *Stochastic Processes II: Stochastic Differential Equations*, Gaussian regularity theory, Malliavin Calculus, Skorohod Stochastic Integration.

**New course:** *Design and Analysis of Financial Algorithms*: a numerical analysis and programming course for CF MS students, including state-of-the-art quant. finance programming languages and algorithms.

**New course contents:** *Actuarial Science II*: incorporation of Black-Scholes theory into Actuarial Science preparatory course for exams M and C.

**New course:** *Malliavin Calculus I and II*: including fractional Brownian motion & financial math.

## Publications

1. Consistent estimators for the long-memory parameter in LARCH and fractional Brownian models. To appear in *Statistical Inference for Stochastic Processes*, 2008. With M. Levine and S. Torres.
2. Sharp Estimation of the Almost Sure Asymptotic Behavior for a Brownian Polymer in a Fractional Brownian Environment. To appear in *Journal of Functional Analysis*, 2008. 51 pages. Available online <http://dx.doi.org/10.1016/j.jfa.2008.06.020>. With T. Zhang.
3. Hitting probabilities for the fractional stochastic heat equation on the circle. To appear in *Stochastic Processes and Applications*, 2008, 38 pages. Available online <http://dx.doi.org/10.1016/j.spa.2008.07.009>. With E. Nualart.
4. Lyapunov exponents for stochastic Anderson models with non-Gaussian noise. *Stochastics and Dynamics*, **8** no. 3 (2008) 451-473. With H.-Y. Kim and A. Vizcarra.
5. Sharp asymptotics for the partition function of some continuous-time directed polymers. *Potential Analysis*, **29** no. 2 (2008) 129-166. With A. Cadel, S. Tindel.
6. Supremum Concentration Inequality and Modulus of Continuity for Sub- $n$ th Chaos Processes. *Journal of Functional Analysis* **248** (2007) 1-26. With A. Vizcarra.
7. Portfolio optimization with consumption in a fractional Black-Scholes market. *Communications on Stochastic Analysis*, **1** no. 3 (2007) 357-379. With Y. Sarol, T. Zhang.
8. Stochastic volatility: option pricing using a multinomial recombining tree. *Applied Mathematical Finance*, **15** no. 2 (2008) 151-181. With I. Florescu.
9. Superdiffusivity for a Brownian polymer in a continuous Gaussian environment. *Annals of Probability*, **36** no. 5 (2008) 1642-1675. With S. Bézerra, S. Tindel.
10. Space regularity of stochastic heat equations driven by irregular Gaussian processes. *Communications on Stochastic Analysis* **1** no. 2 (2007) 209-229. With O. Mocioalca.
11. Ito and Tanaka formulae for the fractional Brownian sheet for any Hurst parameter. *Stochastics, An International Journal of Probability & Stochastic Processes*. **78** (6) (2006), 443-462. With C.A. Tudor.
12. Statistical aspects of the fractional stochastic calculus. *Annals of Statistics*, Vol. **35** no. 3 (2007), 1183-1212. With C.A. Tudor.
13. Some applications of the Malliavin calculus to sub-Gaussian and non-sub-Gaussian random fields. To appear in *Seminar on Stochastic Analysis, Random Fields and Applications*, Progress in Probability **59**, 363-396, Birkhäuser, 2008. With Andrew B. Vizcarra.
14. Selection of an Optimal Portfolio with Stochastic Volatility and Discrete Observations. *Transactions of the Wessex Institute on Modelling and Simulation*, **43** (2006), 371-380. With N. Batalova, V. Maroussov.
15. Sharp estimation for the almost-sure Lyapunov exponent of the Anderson model in continuous space. *Probab. Theory and Related Fields*, **135** no. 4 (2006), 603-644. With I. Florescu.
16. Time regularity of the evolution solution to the fractional stochastic heat equation. *Discrete and Continuous Dynamical Systems B*, **6** (2006) no. 4, 895-910. With Y. Sarol.
17. A Binomial Tree Approach to Stochastic Volatility Driven Model of the Stock Price. *Annals of the University of Craiova, Mathematics and Computer Science Series*, **32** (2005), 126-142. With I. Florescu.
18. Relating the almost-sure Lyapunov exponent of a parabolic SPDE and its coefficients' spatial regularity. *Potential Analysis*, **22** (2005) no. 2, 101-125. With S. Tindel.

19. Skorohod integration and stochastic calculus beyond the fractional Brownian scale (2004). *Journal of Functional Analysis*, **222** (2004) no. 2, 385-434. With O. Mocioalca.
20. Sharp Gaussian regularity on the circle, and applications to the fractional stochastic heat equation. *J. Funct. Analysis*, **217** (2004) no. 2, 280-313. With S. Tindel and C.A Tudor.
21. Convergence of a branching particle system to the solution of a parabolic Stochastic PDE. *Rand. Operators Stoch. Eqs.* **12** (2004), no. 2, 129-144. With S. Tindel.
22. Itô formula and the local time for the fractional Brownian sheet. *Electronic Journal of Probability*, **8** (2003) no. 14, 1-31. With C.A. Tudor.
23. A Monte-Carlo method for portfolio optimization under partially observed stochastic volatility. *IEEE International Conference on Computational Intelligence for Financial Engineering, 2003. Proceedings* (2003), 257 - 263. With R. Desai and T. Lele.
24. Stochastic Evolution Equations with Fractional Brownian Motion. *Probability Theory and Related Fields* **127** (2003), no. 2, 186-204. With S. Tindel., C.A. Tudor.
25. Portfolio optimization under partially observed stochastic volatility. *COMCON 8. The 8th International Conference on Advances in Communication and Control. W. Wells, Ed.* 1-12. Optim. Soft., Inc, Pub. Div., 2002.
26. Almost sure exponential behavior for a parabolic SPDE on a manifold. *Stochastic Processes and Applications* **100** (2002), no. 1-2, 53-74. With S. Tindel.
27. Regularity conditions for the stochastic heat equation on some Lie groups. *Seminar on Stochastic Analysis, Random Fields and Applications III, Centro Stefano Franscini, Ascona, September 1999.* Progress in Probability, **52** Birkhäuser (2002), 275-297. With S. Tindel.
28. Towards pathwise stochastic fast dynamo in magneto-hydrodynamics. *Fields Institute Communications* **34** (2002), 75-89. With S.B. Hazra.
29. Stochastic heat equation with white noise drift. *Annales de l'Institut Henri Poincaré Probab. Statist.* **36** (2000), no. 2, 181-218. With E. Alòs, D. Nualart.
30. Evolution equation of a stochastic semigroup with white-noise drift. *Ann. Probab.* **28** (2000), no. 1, 36-73. With D. Nualart.
31. On space-time regularity for the stochastic heat equations on Lie groups. *J. Funct. Analysis* **169** (1999), no. 2, 559-603. With S. Tindel.
32. Robustness of Zakai's equation via Feynman-Kac representations. *Stochastic analysis, control, optimization and applications*, 339-352, Systems Control Found. Appl., Birkhäuser Boston, Boston, MA, 1999. With R. Atar, O. Zeitouni.
33. Almost-sure exponential behavior of a stochastic Anderson model with continuous space parameter. *Stochastics & Stochastics Reports.* **64** (1998) 251-273. With R. Carmona.
34. Sharp upper bound on exponential behavior of a stochastic partial differential equation. *Random Operators and Stochastic Equations*, **4** no. 1 (1996) 43-49. With R. Carmona, S. Molchanov.

### Preprints and submitted papers

34. Density Estimates and Concentration Inequalities with Malliavin Calculus. *2008. Submitted.* 24 pages. With Ivan Nourdin.
36. Self-similarity parameter estimation and reproduction property for non-Gaussian Hermite processes. *2008. Submitted.* With A. Chronopoulou and C. Tudor.

37. Variations and estimators for the selfsimilarity order through Malliavin calculus. 2007, 37 pages. *Submitted*. With C. Tudor.
38. Option pricing under a Gamma-modulated diffusion process. 2006. *Submitted*. With P. Iglesias, J. San Martín, S. Torres.
39. Gaussian and non-Gaussian processes of zero cubic variation. 2006. *Preprint*. With F. Russo.
40. A localized version of the Sherrington-Kirkpatrick model with external field. 2004. With S. Tindel.
41. Precise propagation of chaos estimates for Feynman-Kac and genealogical particle models. 2003. With P. del Moral and L. Miclo.

### Invited professional visits

1. University of Paris VI, France, Laboratoire de Probabilités, February-July 2008. *Research*.
2. University of Paris XIII, Lab. d'Analyse, Géométrie, et Applications. May 2007. *Research*.
3. University of Paris I Panthéon-Sorbonne, Laboratoire de Statistique Appliquée et Modélisation Stochastique. June 2007. *Research*.
4. University of Valparaíso, Chile, Department of Statistics and centro CIMFAV, 4 months, May-August 2006. *Research and lecturing*.
5. University of Utah, Department of Mathematics, 1 week, April 2006. *Research*.
6. University of Paris XIII, France, Lab. d'Analyse, Géométrie, et Applications, 1 month, June-July 2005. *Research*.
7. University of Paris VI, France, Laboratoire de Probabilités, 1 month, May-June 2005. *Research*.
8. University of Paris XIII, France, Lab. d'Analyse, Géométrie, et Applications, 5 months, March-July 2004. *Research and lecturing*.
9. University of Valparaíso, Chile, Department of Statistics, 3 weeks, March 2003. *Research*.
10. University of Paris VI, France, Laboratoire de Probabilités, 1 month every summer from 2000 to 2004. *Research, unpaid (office space and computing privileges)*.
11. University of Paris VI, France, Laboratoire de Probabilités, 12 months, 1998-99. *Research (NSF-NATO postdoc)*.
12. University of Edinburgh, Scotland, Department of Mathematics, 3 weeks, April 1997. *Spring School on SPDEs*.
13. The Technion, Haifa, Israel, Department of Electrical Engineering, 4 weeks, March 1997. *Research*.
14. University of Barcelona, Spain, Department of Statistics, 12 months, 1996-97. *Research (NSF postdoc)*.

### Lectures

#### Invited conference lectures

1. **Principal Lecturer**. Second Winter School on Applied Mathematics. City University of Hong Kong. December 9-20, 2008. Series of 10 lectures: “Elements of Stochastic and Malliavin Calculus, and Applications”.
2. AMS Southern Section Meeting in Huntsville, AL (Gaussian Analysis and Stochastic Partial Differential Equations). October 25-26, 2008.

3. Malliavin Calculus and Applications. Kent State University, OH. July 7-12, 2008.
4. International Conference on Stochastic Analysis: from Mathematical Physics to Mathematical Finance. Princeton, NJ. June 13-15, 2008.
5. Conference “Journées Fractionnaires Parisiennes”. University of Paris 6. June 9-10, 2008.
6. **Principal Speaker.** AMS Western sectional meeting in Albuquerque, New Mexico (Special Session on Financial Mathematics: The Mathematics of Financial Markets and Structures). October 13-14, 2007.
7. Stochastic Processes and Applications (Special Session on Stochastic Equations). University of Illinois, Aug 6-10, 2007.
8. Stochastic Processes and Applications (Special session on Stochastic Partial Differential Equations and Gaussian Analysis). University of Illinois, Aug 6-10, 2007.
9. Stochastic Processes and Applications (Special Session on Random Media). University of Illinois, Aug 6-10, 2007.
10. Conférence Dynamique Stochastique. University of Paris Panthéon-Sorbonne, June 11-12, 2007.
11. AMS Central sectional meeting in Cincinnati, Ohio (Financial and Actuarial Mathematics), Oct 21-22, 2006.
12. AMS Western sectional meeting in Salt Lake City, Utah (Interface of Stochastic PDEs and Gaussian Analysis), Oct 7-8, 2006.
13. **Principal Speaker.** Invited Mini-course on Malliavin Calculus at the Winter School on Stochastic Analysis and Applications of the Universidad de Valparaiso, Chile, July 3-7, 2006.
14. **Principal Speaker.** Fifth Seminar on Stochastic Analysis, Random Fields and Applications. Ascona, Switzerland. May 30-June 3, 2005.
15. Conference on Particle and Monte Carlo Methods. University of Barcelona, July 24-25, 2004.
16. Journée “Analyse stochastique des phénomènes irréguliers”. Université de Paris 13, March 10th 2004.
17. Fourth International Symposium on Probability and its Applications, Banff, Alberta, Canada. July 31 - Aug 2, 2002. Session on Computational Methods in Finance.
18. Filtering Theory and Applications 2002, Edmonton and Jasper, Alberta, Canada. July 25-29, 2002.
19. Annual AMS meeting, San Diego, CA, Jan 6-9, 2002. Special session on partial Differential Equations and Applications.
20. Southern California Probability Symposium, Irvine, CA Nov 10-11, 2001. Theme: Stochastic Analysis and Mathematical Finance.
21. Eighth International Conference on Communications and Control, Rithymna, Crete, Greece, June 25-30, 2001. Special Session on Financial Mathematics.
22. Annual AMS meeting, New Orleans, LA, Jan 10-13 2001. Special session on Stochastic Analysis and Applications.
23. Western Regional AMS conference, San Francisco, CA, Oct 22, 2000. Special session on Probability with emphasis on Markov Chains and Random Matrices.
24. Workshop on stochastic Navier-Stokes equations, Universitat de Barcelona, Spain, July 3-7, 2000.
25. Stochastic Analysis, Random Fields and Applications, Ascona, Switzerland, Sept 20-24, 1999.
26. Workshop on Numerics and Stochastic, Fields Institute, Toronto, ON, Apr 20-24, 1999.

**Contributed conference talks**

1. 5th Congress of the Bernoulli Society, Guanajuato, Mexico, May 15-20, 2000.
2. Annual AMS Meeting, Jan 14-17, San Antonio, TX, 1999.
3. Stochastic Analysis and its Applications, May 25-30, IHP Paris, 1998.
4. Annual AMS Meeting, Jan 6-10, Baltimore, MD, 1998.
5. Infinite Dimensional Workshop, Nov 3-7, 1997, MSRI, Berkeley, CA.
6. Ecole d'Eté de Probabilités de Saint-Flour, France, July 7-23, 1997
7. Stochastic Analysis and its Applications, June 30-July 4, Univ. Barcelona, Spain, 1997.
8. Lyapunov exponents, U. Bremen, Germany. April 21-25, 1997. (Poster).
9. Stochastic PDEs and Applications - IV, CIRM, Trento, Italy. Jan 6-11, 1997. (Poster).
10. Workshop on Stochastic PDEs and Applications, Jan 3-7, 1996. USC, Los Angeles, CA
11. Ecole d'Eté de Probabilités de Saint-Flour, France, July 10-26, 1995.

**Invited seminar lectures**

1. Université de Rennes, Séminaire de Probabilités, June 2, 2008.
2. Université de Paris 6, Séminaire de Probabilités, March 11, 2008.
3. Université de Paris 13, Séminaire de Probabilités, March 5, 2008.
4. Université Paris Panthéon-Sorbonne, Séminaire de Probabilités, June 15, 2007.
5. Séminaire de Probabilités. Université de Paris 13, June 6, 2007.
6. Groupe de travail Aspects Fractals. Université de Paris 6, May 23, 2007.
7. Universidad Católica de Chile, Santiago. June 20, 2006. Seminario de Análisis Estocástico y Física Matemática.
8. Universidad de Valparaíso, Chile, Seminario del Centro de Investigaciones y Modelamiento Aleatorio. May 30, 2006.
9. University of Utah, Salt Lake City, Probability Seminar, April 7, 2006.
10. Kent State University, *Mathematical Sciences Colloquium*, March 24, 2006.
11. University of Wisconsin, Madison, *Mathematics Colloquium*, Feb 10, 2006.
12. University of Wisconsin, Madison, Probability Seminar, Feb 9, 2006.
13. University of Texas, Austin, Seminar in Financial Mathematics, Oct 28, 2005.
14. Indiana University, Probability and Statistics Seminar, Oct 21, 2005.
15. Institut Elie Cartan, Univ. Nancy I, France. Séminaire de Probabilités, June 27, 2005.
16. Université de Paris 13, Séminaire de Probabilités, June 29, 2005.
17. Université Paris Panthéon-Sorbonne, Matinée de Calcul Stochastique, June 17, 2005.
18. University of Utah, Salt Lake City, Probability Seminar, March 4, 2005.
19. Institut Elie Cartan, University de Nancy 1, Groupe de travail Brownien fractionnaire, April 30, 2004.

20. Laboratoire de Statistique et Probabilites, Univ. de Toulouse, Séminaire de probas/stats. May 29, 2004.
21. Université de Paris 13, Séminaire de Probabilités, June 5, 2002.
22. Université de Bretagne Occidentale, Séminaire de Mathématiques, June 4, 2002
23. Université de Paris 6, *Séminaire de Probabilités*, May 28, 2002.
24. University of Illinois, Urbana-Champaign, Probability Seminar, Sep 11, 2001.
25. Texas A & M University, College Station, Undergraduate Seminar, Oct 4, 2000.
26. North Carolina State University, Probability seminar, Sep 11, 2000.
27. Texas A & M University, Commerce, Probability seminar, Nov 10, 1999.
28. Université de Paris VI, “Milieux Aléatoires”, June 15, 1999.
29. University of California, Irvine, Probability seminar, Apr 26, 1999.
30. Ecole Polytechnique, Paris, Probability seminar, May 19, 1998.
31. Université de Paris VI, “Modélisation Stochastique”, Mar 31, 1998.
32. Université de Paris VI, “Etude fine du Mouvement Brownien”, Mar 20, 1998.
33. Ecole Nationale Supérieure des Télécommunications, Paris, Mar 10, 1998.
34. Université de Paris XIII, Probability seminar, Feb 24, 1998
35. Université de Paris X, Probability seminar, Feb 7, 1998.
36. Technion, Haifa, Israel, Probability seminar, Mar 15, 1997.
37. Université de Marseille, France, Probability seminar, Feb 1, 1997.

### Outreach

- High-School Science Fair judge: annual International School of Indiana Science Fair, Feb 19, 2007: judged 6th, 7th, and 8th graders science projects; spoke with students in English, Spanish, and French.
- Service to community / medical research: free consulting for G. O’Keefe, Dept. Surgery, U. Texas Southwestern Medical Center: Designing a more efficient critical care respirator. 1998-99.

### Internal seminar talks

Internal seminar talks include one or more talks in each of the following:

- Universitat de Barcelona, Seminari de Probabilitats
- UNT Mathematics Colloquium
- UNT Stochastic Lunch Seminar
- UNT Graduate Student Seminar
- Purdue Mathematics Advisory Board Council
- Purdue Statistics Advisory Board Council
- Purdue Statistics Colloquium
- Purdue Probability Seminar

- Purdue VIGRE-GAAN Seminar
- Purdue Computational Finance Seminar
- Purdue Science Freshman Honors Seminar
- Purdue Mathematics Bridge to Research seminar

## Other Professional Activity

1. Associate Editor for:
  - *The Annals of Finance*
  - *Communications on Stochastic Analysis*
2. Reviewer of manuscripts for the following professional journals:
  - *Journal of Physics A (mathematical and general)*
  - *Stochastic Processes and Applications*
  - *Advances in Applied Mathematics*
  - *Economic Theory*
  - *Potential Analysis*
  - *Electronic Journal of Differential Equations*
  - *Houghton Mifflin and Lauren Schultz, Editors: review of textbook manuscript*
  - *Springer V.: review of research monograph manuscript*
  - *Annals of Finance*
  - *Rocky Mountain Journal of Mathematics*
  - *Canadian Journal of Mathematics*
  - *Annals of Statistics*
  - *European Series in Applied and Industrial Mathematics: Probability and Statistics*
  - *Communication on Stochastic Analysis*
  - *Journal of Theoretical Probability*
3. Reviewer of book manuscripts for
  - Brooks Cole
  - Houghton Mifflin
  - Springer V.
4. Panel Review member for National Science Foundation: Probability, 2007.
5. Reviewer of grant proposals for:
  - *National Science Foundation*
  - *National Security Agency*
  - *National Science and Engineering Research Council (Canada)*
  - *U.S. Civilian Research & Development Foundation*
6. Reviewer for
  - *Mathematical Reviews*

## 7. Book review for

- *J. Amer. Stat. Assoc.*, **97**, no. 460: Stochastic Processes from Physics to Finance, W. Paul and J. Baschnagel. Springer V. 1999.
- *Mathematical Reviews*, Feynman-Kac Formulae: Genealogical and Interacting Particle Systems with Applications, Pierre del Moral. 2004.

## 8. Conference and Seminar Organizer:

- Special session on Probability, *4th Joint Meeting of the American Mathematical Society and the Sociedad Matemática Mexicana*, May 19-24, 1999, Denton, TX.
- Purdue Computational Finance Seminar, 2000-2003.
- Special session on Stochastic Analysis with Applications, *American Mathematical Society Sectional Meeting*, April 4-6, 2003, Bloomington, IN.
- First Purdue Minisymposium on Financial Mathematics, *Purdue University*, April 3, 2003, West Lafayette, IN.
- Purdue Probability Seminar, Fall 2004 - Spring 2006.
- Scientific program committee Chair, 26th Midwest Probability Colloquium, Oct 15-17, 2004.
- Second Purdue Minisymposium on Financial Mathematics, *Purdue University*, April 15-16, 2005, West Lafayette, IN.
- Kent-Purdue Minisymposium on Financial Mathematics, *Kent State University*, April 27-28, 2007, Kent, OH.
- Special Session on Financial Mathematics, Stochastic Processes and Applications conference, University of Illinois, Aug 6-10, 2007.
- Purdue Probability Seminar, Fall 2007
- International conference on stochastic analysis: from mathematical physics to mathematical finance, *Princeton University*, June 13-15, 2008.
- Malliavin Calculus and Applications, Kent State University, August 7-12, 2008, Kent, OH.

## Funding History

### 1. Past

Sponsor	Title	Start and Duration	Amount	Role and Location
NSF conference grant	Kent-Purdue Minisymposium on Financial Mathematics	Apr 27-28 2007	8,500	<b>PI: Mocioalca</b> Kent State <i>Viens is co-PI</i>
NSF conference grant	2nd Purdue Minisymposium on Financial Mathematics	Apr 15-16 2005	7,500	<b>Role: PI</b> Purdue Univ.
NSF Stand Rsch Grant, Probability program	Stochastic PDEs: interrelation of local and long-term behavior, and representation	Sep 2002 4 years	122,000	<b>Role: PI</b> Purdue
PRF International Travel Grant	Seminar on Stochastic Analysis Random Fields and Applications	June 2005 1 week	1,000	<b>Role: PI</b> Ascona, CH.
Fulbright U.S. Scholar Lecturing/Research	Stochastic PDEs: interrelation of local and long-term behavior	Feb 2004 4 months	$\cong$ 12,000	<b>Role: PI</b> Univ. Paris 13
PRF Faculty Research Grant	Stochastic PDEs: interrelation of local and long-term behavior	Sep 2003 2 years	40,000	<b>Role: PI</b> Purdue Univ.
Purdue Office of Int'l Programs Grant	Grad stud. travel to Saint-Flour Probab. Summer School 2003/04	Jul 03/04 3 weeks	3,500 * 2	<b>Role: PI</b> France
PRF Faculty Research Grant	Fractional Brownian motion in Stoch Diff Eqs & Math Finance	Sep 2002 1 year	13,000	<b>Role: PI</b> Purdue Univ.
Purdue Graduate School Grant	New Recruitment Initiative for Stochastics in Paris, France	May 2003 3 weeks	5,900	<b>Role: PI</b> Paris, France
PRF Summer Faculty Grant	Stochastic PDEs: interrelation of local and long-term behavior	Jun 2002 1 month	6,000	<b>Role: PI</b> Purdue Univ.
PRF International Travel Grant	Travel to COMCON 8, Crete	Jun 2001 5 days	1,200	<b>Role: PI</b> Rethymno
NSF-NATO Postdoc. Fellowship	Lyapunov exponents for linear systems of stochastic PDEs	Jan 1998 12 months	42,749	<b>Role: PI</b> Univ. Paris 6
UNT Junior Faculty and Research Initiation grants	5 proposals funded in 3 years for summer salary	1998-2000 10 months	20,300	<b>Role: PI</b> Univ. N. Texas
NSF Int'l Opport. Postdoc. Fellow	Behavior of systems of stochastic PDEs	Sep 1996 12 months	44,500	<b>Role: PI</b> Univ. Barcelona
Hon. Fellow, Internship Program in Probability		Jun 1996 2 months	6,000	<b>Role: PI</b> Univ. Wisconsin

### 2. Current

Sponsor	Title	Prop'd Start & Duration	Amount	Role and Location
NSF Research Grant, Probability Program	Stochastic analysis and random medium in continuous space and time	July 2006 3 years	375,000	<b>Role: PI</b> Purdue
NSF conference grant	International conference on stochastic analysis	June 13-15 2008	14,000	<b>Role: PI</b> Princeton

**3. Pending**

Sponsor	Title	Prop'd Start and Duration	Amount	Role and Location
NSF Research Grant, Probability Program	Density and tail estimates via Malliavin calculus and applications	July 2009 3 years	200,000	

**Postdoctoral advisees at Purdue University**

<i>Name</i>	<i>Subject</i>	<i>Dates</i>	<i>Major mentor</i>	<i>Current Academic Affiliation</i>
Ciprian Tudor	Probability	Jan-May 2002	Viens	Université Paris Sorbonne (with tenure)
Oana Mocioalca	Probability	2002-2004.	Viens	Kent State University (tenure track)

**Ph.D. major advisor for students at Purdue University (graduated)**

<i>Name</i>	<i>Subject</i>	<i>Ph.D. date</i>	<i>Advisor</i>	<i>Current Academic Affiliation</i>
Ionut Florescu	Stat	Dec 2004	Viens	Stevens Inst. of Tech. (tenure track)
Yalcin Sarol	Math	Aug 2005	Viens	U. Southern Indiana (tenure track)
Tao Zhang	Math	Dec 2006	Viens	Bear Stearns, NYC (investment banker)
A. Vizcarra	Math	May 2008	Viens	D5 Advisors, CT (hedge fund manager)

**Ph.D. major advisor for students at Purdue University (current)**

<i>Name</i>	<i>Subject</i>	<i>Ph.D. date expected</i>	<i>Advisor</i>
Chao Yin	Math	(on leave)	Viens
Ha-Young Kim	Math	May 2009 expected	Viens
A. Chronopoulou	Stat	Dec 2009 expected	Viens
Nikita Tuzov	Stat	May 2009 expected	Viens
Jesse Cunningham	Stat	May 2009 expected	Viens
Joseph Zadeh	Math		
Luis Barboza	Stat		

**Graduate committee member for Ph.D. students at Purdue University**

<i>Name</i>	<i>Subject</i>	<i>Degree</i>	<i>Advisor</i>
Bryan Scott	Civil Engr	Ph.D. 2002	R. Salgado
Adam Maung	AgEcon	Ph.D. 2001	K. Foster
Xiaodong Sun	Math	Ph.D. 2001	J. Ma
Jianfeng Zhang	Math	Ph.D. 2001	J. Ma
Xiang Long	Math	Ph.D. 2001	Ph. Protter
Kiseop Lee	Stat	Ph.D. 2002	Ph. Protter
Olga Korosteleva	Stat	Ph.D. 2002	T. Sellke
Meike Niederhausen	Math	Ph.D. 2005	J. Ma
Yuping Liu	Math	Ph.D. 2005	J. Ma
Francisco Piera Ugarte	ECE	Ph.D. 2005	R. Mazumdar
Yuhua Yu	Math	Ph.D. 2006	J. Ma
Yujuan Jien	Math	Ph.D. 2008	J. Ma
Jinguang (Tony) Li	Stat	Ph.D. 2008	M. Levine
Song Yao	Math	Ph.D. 2008	J. Ma
Yusun Wang	Math	Ph.D. 2009 expected	J. Ma
Jongyin Daye	Stat	Ph.D. 2009 expected	Michael Zhu
Shan Yang	Math	Ph.D. 2009 expected	J. Ma

**MS major advisor for students at Purdue University**

Since his arrival at Purdue in Fall 2000, Viens has *graduated more than 60 MS students* at Purdue, principally in Computational Finance, and is typically the advisor to a dozen such MS students at any given time.

Yalcin Sarol	Math	CF MS 2001.	Betsy Miceli	Stat	CF MS 2003
Balkrishna Singhanian	Stat	CF MS 2002	Chunbo Wang	Math	CF MS 2003
Lin Zhang	Math	CF MS 2002	Mei Wang	Math	CF MS 2003
Meike Niederhausen	Stat	CF MS 2005	Zhihong Li	Math	CF MS 2006
Yupin Liu	Stat	CF MS 2005	Yu Qin	Stat	CF MS 2003
Xiaodong Sun	Math	CF MS 2001	Jing Shao	Math	CF MS 2004
Jianfeng Zhang	Math	CF MS 2001	Soo yeon Shin	Math	CF MS 2005
Xiang Long	Math	CF MS. 2001	Andrew Vizcarra	Stat	CF MS 2006
Kiseop Lee	Stat	CF MS. 2002	Prasanth Karumanchi	Stat	CF MS 2004
Arjun dasGupta	Math	CF MS 2003	Dan Ma	Stat	AppliedMS04
Raul Desai	Stat	CF MS 2003	Keith Portman	Stat	CF MS 2004
Ranadeb Chaudhuri	Math	CF MS 2003	Scott Diehl	Stat	CF MS 2004
Kuo-mei Chen	Stat	CF MS 2002	Tao Zhang	Stat	CF MS 2005
Chonghak Park	Stat	CF MS 2001	Evi Laksana	Stat	CF MS
Shane Cline	Stat	CF MS 2005	Yu-Juan Jien	Math	CF MS 2006
Salman Chand	Stat	CF MS 2006	Duncan Leaf	Stat	CF MS 2007
Jesse Cunningham	Stat	CF MS 2005	Balagopal Panicker	Stat	CF MS 2006
Seonyoung Kim	Math	CF MS 2005	Gang Shen	Stat	CF MS 2007
Ankur Mehta	Stat	CF MS 2005	Sheng Zeng	Math	CF MS
Yuping Liu	Math	CF MS 2005	Ambica Rajagopal	Math	CF MS 2006
Benjamin Tyner	Stat	CF MS 2005	Alla Merkuleva	Stat	CF MS 2007
Hailong Wang	Stat	CF MS 2006	Amit Dixit	Math	CF MS 2007
Jinguang Li	Stat	CF MS 2006	Eduard Kolberg	Stat	CF MS 2008
Jianchun Zhang	Stat	CF MS 2006	Nicassia Williams	Math	CF MS 2006
Dimitar Vangelov	Stat	CF MS 2006	Kimberly Gibbons	Math	CF MS 2006
Baris Cetin	Stat	CF MS 2006	Laura Ramos	Stat	CF MS 2006
Craig Codrington	Stat	CF MS 2006	Ilter Saygin	Stat	CF MS 2007
Michael Gorman	Stat	CF MS 2007	Joseph Zadeh	Math	CF MS 2006
Xin He	Stat	CF MS 2006	Alexandra Chronopoulou	Stat	CF MS 2007
Meng Li	Stat	CF MS 2007			
Wei Li	Stat	CF MS 2007			
Kamesh Loganathan	Stat	CF MS 2008			
Chao Pan	Stat	CF MS			
Shuhua Cao	Math	CF MS			
Huijie Wang	Math	CF MS			
Kuo-Hao Chang	Math	CF MS			
Michael Lawlor	Stat	CF MS			
Yanhui Mi	Stat	CF MS			
Ruijuan Wang	Stat	CF MS			
Brendan Lacounte	Stat	CF MS			
Jing Wang	Math	CF MS 2008			
Weijia Wang	Math	CF MS 2008			
Xingbo Xu	Maht	CF MS 2008			
Catherine Zvinevich	Math	CF MS 2008			