CURRICULUM VITAE: PAULINE BARRIEU

Current employment: Reader in Statistics, Department of Statistics, London School of Economics and Political Science.

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HIGHER EDUCATION

2005	**Qualification** as an Actuary from l'Institut des Actuaires Français.
2004	**Qualification** in France as "maitre de conferences" in Finance and in Mathematics.
2002	**PhD in Applied Mathematics** with highest honours, laboratoire de Probabilités et Modéles aléatoires, University of Paris VI (France) (supervisor: Nicole El Karoui).
2002	**PhD in Finance** with highest honours, Doctorat H.E.C. (France), H.E.C. Graduate Business School (supervisor: Marc Chesney).
1998-1999	**Graduated from the Doctorat H.E.C. specialization certificate**, with highest honours. Postgraduate diploma in Economics: "DEA Analyse et politique économiques", E.H.E.S.S., as a free student.
1997-1998	**Postgraduate diploma in Probability**: "DEA Probabilités et Applications Option Finance", University Paris VI, with honours.
1994-1997	**Graduated from E.S.S.E.C.**, Graduate business school.

EMPLOYMENT HISTORY

2005-present	**LSE**, Statistics Department: Reader position.
2008-present	**H.E.C.**: visiting professor (Finance department).
2002-2005	**LSE**, Statistics Department: Lecturer position (**tenure** obtained in February 2005).
2001-2002	**H.E.C.**: temporary lecturer (Finance department).
2000-2001	**E.S.S.E.C.:** temporary lecturer (Finance department).
1998-2000	**University of Evry**: class teacher (Mathematics department).

OTHER DUTIES

2009	Associate Editor of Stochastic Processes and their Applications.
2007-present	Member of the Board of examiners for the Institute of Actuaries.
	Co-Director of the LSE Centre for the Analysis of Time Series (CATS).
2006-present	PhD programme director, Statistics Department, LSE.
	Member of the LSE Research Degree Sub-Committee.
2002- present	Liaison Officer with the Institute of Actuaries

HONOURS AND AWARDS

2006 **Award for the best research paper "Finance and sustainable development"**, European Union (Responsible Investment Forum): "On precautionary policies" (with B. Sinclair Desgagné) published in Management Science in 2006.

2006 **Award for the best research paper in quantitative finance**, Europlace Institute of Finance: "Inf-convolution of risk measures and optimal risk transfer" (with N. El Karoui) published in Finance and Stochastics in 2005.

2003 **Prize for the best Actuarial PhD dissertation** (Prix Actuariat 2003).

GRANTS

As Principal Investigator:

2008-2010 Columbia-LSE Alliance Collaborative Research Fund "Credit derivatives and structured credit products: issues in pricing and optimal design" (£5000).

2007-2008 London Development Agency Grant "Future Developments in the Credit Risk Market" (£8,000).

2007 British Academy Grant for the organization of a conference "Risk and Stochastics Day 2007" (£1,600).

2006-2008 British Academy Grant "Stochastic Delay Differential Equations: Robustness and Portfolio Optimization" (£5,700).

2006 Amamef Exchange Grant "Risk measurement and robust statistics" (€775).

2003-2005 EPSRC Travel Grant "Measures of Risk and Uncertainty at the Interface of Insurance and Finance" (£8,500).

1998-2002 PhD funded by the French Government (Allocation de Recherche).

As Co-Investigator:

2008-2012 EC FP7 People IAPP "Climate Change and the Insurance Industry" (€922,535).

2008-2013 Munich Re "Evaluating the economics of climate risks and opportunities in the insurance sector", project 5a "Evidence of current economic reaction and future financial products" (Total funding of £3m).

2008-2013 ESRC Centre for Climate Change Economics and Policy, project WP4 "Carbon Finance: Society, Technology, Market" (Total funding for the Centre: £4.5m).

2007-2011 EPSRC "Mathematical Sciences Integrated PhD" for the creation of the London Graduate Taught Course Centre in Mathematical Sciences (LTCC) (£450,646).

PUBLICATIONS

Research Papers (in referred journals):

1. "An adaptive nonparametric model for the systematic factors of portfolio credit risk premia" with F. Giammarino. Journal of Empirical Finance, Vol. 16, p. 655-670 (2009).
2. "Hybrid Cat-bonds" with H. Loubergé. Journal of Risk and Insurance, Vol. 76, p. 547-578 (2009).
3. "Robust asset allocation under model risk" with S. Tobelem. Risk Magazine, p. 91-95 (February 2009). Republished in Life and Pensions , p. 36-40 (May 2009).
4. "Closedness results for BMO semi-martingales and application to quadratic BSDEs "with N. Cazanave and N. El Karoui. Comptes Rendus de l'Academie des Sciences, Vol. 346, p. 881-886 (2008).
5. "On Pareto-optimal allocations for multi-period risks" with G. Scandolo. ASTIN Bulletin, Vol. 38, p. 105-136 (2008).
6. "Flood insurance in the Netherlands" with R. Jongejan. Geneva Papers on Risk and Insurance, Vol. 33, p. 250-268 (2008).
7. "Optimal hitting time and perpetual option in a non-Levy model: Application to real options" with N. Bellamy. Advances in Applied Probability, Vol. 39, p. 1-20 (2007).
8. "On precautionary policies" with B. Sinclair Desgagné. Management Science, Vol. 52, nb 8, p.1145-1154 (2006).
9. "Iterates of the infinitesimal generators and generalized Stirling numbers associated with certain subordinators" with W. Schoutens. Journal of Computational and Applied Mathematics, Vol. 186, p. 300-323 (2006).
10. "Inf-convolution of risk measures and optimal risk transfer" with N. El Karoui. Finance and Stochastics, Vol. 9, nb 2, p. 269-298 (2005).
11. "Optimal risk transfer" with N. El Karoui. Finance, Vol. 25, p. 31-47 (2004).
12. "A study of the Hartman-Watson distribution motivated by numerical problems related to Asian options pricing" with A. Rouault and M. Yor. Journal of Applied Probability, Vol. 41 nb 4, p. 1049-1058 (2004).
13. "Optimal derivatives design under dynamic risk measures" with N. El Karoui. Article in Mathematics of Finance, Contemporary Mathematics (A.M.S. Proceedings), p. 13-26 (2004).
14. "Introduction aux produits dérivés climatiques". Journal de la Société Française de Statistique Vol. 144, nb 3, p. 53-68 (2003).
15. "Optimal timing for an environmental policy in a strategic framework" with M. Chesney. Environmental Modeling and Assessment, Vol. 8, p. 149-163 (2003).
16. "Structuration optimale de produits dérivés et diversification en présence de sources de risque non-négociables" with N. El Karoui. Comptes Rendus de l'Académie des Sciences, Vol. 336, nb. 6, p. 493-498 (2003).
17. "Reinsuring climatic risk using optimally designed weather bonds" with N. El Karoui. Geneva Papers – Risk and Insurance Theory, Vol. 27, p. 87-113 (2002).
18. "Optimal design of weather derivatives" with N. El Karoui. Algo Research Quaterly, Vol. 5, n°1, p. 79-92 (spring 2002).
19. "Optimal design of derivatives in illiquid framework" with N. El Karoui. Quantitative Finance, Vol. 2, p. 1-8 (2002).

20. “Weather hedging at the Hot Air Gas Company” with R. Dischel. Electronic Journal: Erivativesreview.com (July 2001).

Chapters in Books

21. “A primer on weather derivatives” with O. Scaillet. To appear in: Handbook on Uncertainty and Environmental Decision Making (eds: Jerzy Filar and Alain Haurie). Springer International Series in Operations Research and Management science.
22. “Pricing, hedging and optimally designing derivatives via minimization of risk measures” with N. El Karoui. In Volume on Indifference Pricing (ed: Rene Carmona), Princeton University Press (2009).
23. “Dynamic Financial Risk Management” with N. El Karoui. In: Aspects of mathematical Finance (ed: Marc Yor), Springer Verlag (2008).
24. “Dynamic Financial Risk Management” with N. El Karoui. In: Aspects des mathématiques financières, Institut de France, Académie des Sciences, Editions Tec & Doc (2006).
25. “Impact of a market crisis on real options” with N. Bellamy. In: Exotic Option Pricing and Advanced Levy Models (eds: Andreas Kyprianou, Wim Schoutens and Paul Wilmott), Wiley Finance (2005).
26. “Gestion du risque climatique à l’aide de contrats financiers: l’expérience Américaine” with R. Dischel, in “La réassurance: Approche technique”, Economica (2003).
27. “Fundamentals of weather Financial contracts, what protection they provide, and strategies for their use” with R. Dischel, in “The Perpetually Evolving Climate: variability, adverse weather and climate risk management”, Risk Book, Risk Waters Group (2002).

Technical Reports

28. “Assessing cleanup costs” with N. Bellamy and B. Sinclair Desgagne.
29. “Understanding, modeling and managing longevity risk: aims and scope” with H. Bensusan, N. El Karoui, C. Hillairet, S. Loisel, C. Rvanelli and Y. Sahli.
30. “Robust Decision Under Ambiguity” with S. Tobelem.
31. “Economic Policy when Models Disagree” with B. Sinclair Desgagne.

“Optimal boat repair” with T. Schmidt.

32. “Flood insurance and its implications for flood protection: the Dutch case” with R. Jongejan.
33. “Some remarks on capital requirement using robust statistics” with C. Ravanelli.
34. “Optimal design of risk sharing between insurer, reinsurer and capital markets” with P. Devolder.

Book

35. The Handbook of Insurance-Linked Securities (co-edited by Luca Albertini), published by Wiley (July 2009).

INVITED ACADEMICS VISITS

Swiss Banking Institute, University of Zurich (Zurich, Switzerland) (August 2006), Haskayne School of Business, University of Calgary (Calgary, Canada) (July 2006), CIRANO

(Montreal, Canada) (April 2006), University of Geneva (Geneva, Switzerland) (April 2004), Humboldt University (Berlin, Germany) (May 2003), CIRANO (Montreal, Canada) (April 2003).

CONFERENCE ORGANIZERS

2009 - London Graduate School in Mathematical Finance, PhD Day (London, UK).
- Special lecture for the Worshipful Company of Actuaries by Paul Embrechts, LSE (London, UK).

2008 - London Graduate School in Mathematical Finance, PhD Day (London, UK).

2007 - Minisymposium on Environmental Economics and Stochastics in the ICIAM Conference (Zurich, Switzerland).
- Risk and Stochastics Day 2007 (London, UK).
- London Graduate School in Mathematical Finance, PhD Day (London, UK).

2006 - London Graduate School in Mathematical Finance, PhD Day (London, UK).

CONFERENCES AND GUEST LECTURES

2009 - Conference from the German and Austrian mathematical societies (Graz, Austria).
- Seminar in the economics department, University of Geneva (Geneva, Switzerland).
- AXA Mastery, guest lecture on Insurance Linked Securitization (Bordeaux, France).

2008 - AXA Mastery, guest lecture on Insurance Linked Securitization (Bordeaux, France).
- Marcus Evans Conference on Life Insurance Securitization (London, UK).
- Financial stability seminar at the Bank of England (London, UK).
- Actuarial and Financial Mathematics Conference (Brussels, Belgium).
- Workshop on Prospective mortality tables, longevity and mortality linked securities (Paris, France).

2007 - Marcus Evans Conference on Life Insurance Securitization (London, UK).
- SCOR-JRI Conference on New Forms of Risk Sharing (Paris, France).
- Workshop on Economic Capital and Diversification effect at Group Level (Lyon, France).
- Seminar in the mathematics department, ETH (Zurich, Switzerland).
- Workshop on Mathematics and the Environment: Energy Risk, Environmental Uncertainty and Public Decision Making (Banff, BIRS center, Canada).
- German Association for Insurance and Financial Mathematics (DGVFM), Scientific Conference (Berlin, Germany).
- Workshop Risk metrics and modelling with applications (Eurandom, Eindhoven, The Netherlands).

2006 - Conference “Helping the invisible hand” in honour of Professor Claude Henry, Ecole Polytechnique (Paris, France).

- Workshop on New actuarial topics in longevity and transfer of risks, University of Louvain La Neuve (Louvain, Belgium).
- Seminar at Cass Business School (London, UK).
- Workshop on Credit risk modeling, ICMS (Edinburgh, UK).
- Workshop on Securitization of weather and climate risks, Humboldt University (Berlin, Germany).
- 4th Bachelier conference (Tokyo, Japan).
- 31st Conference on Stochastic Processes and their Applications (Paris, France).
- 4th International Financial Research Forum, Europlace Institute of Finance (Paris, France).
- Colloquium "Les risques industriels, environnementaux et financiers", organized by the French Statistical Society in Clamart (France).
- Seminar at Princeton University (Princeton, USA).
- Seminar at Nice University (laboratoire Dieudonné) and INRIA (Nice, France).
- DGVFM Meeting, yearly assembly of the German Actuaries (Cologne, Germany).
- Workshop on Climate change, CIRANO (Montreal, Canada).
- Seminar at the mathematics department, Evry University (Evry, France).
- Joint econometrics and statistics workshop, LSE (London, UK).

2005
- Conference on Quantitative Methods in Finance, University of Technology Sydney (Sydney, Australia).
- Seminar at Cornell University (Cornell, USA).
- Conference on new mathematical methods in risk theory, Florence University (Florence, Italy).
- Workshop on the interface between quantitative finance and insurance, Developments in Quantitative Finance, International Centre for Mathematical Sciences (Edinburgh, UK).
- Workshop on risk management, Developments in Quantitative Finance, Isaac Newton Institute (Cambridge, UK).

2004
- Finance seminar, NCCR Finrisk, Zurich University (Switzerland).
- Workshop on weather and energy risks, E.M. Lyon and ISFA (Lyon, France).
- Seminar at the FMG (London, UK).
- Bernoulli Conference (Barcelona, Spain).
- Conference on Stochastic Analysis and Mathematical Finance in honor of Nicole El Karoui's 60th Birthday (Paris, France).
- Seminar at the Nomura Centre for Quantitative Finance (Oxford, UK).
- Seminar at the mathematics department, King's College (London, UK).
- Workshop on Exotic option pricing under advanced Levy models, Eurandom (Netherlands).
- Conference on Financial and Actuarial Mathematics in Florence (Italy).
- Seminar at the statistical laboratory, Cambridge University (UK).
- Seminar at the economics department, University of Geneva (Switzerland).
- Journee Francaise de Statistique (Paris, France).
- Workshop for young researchers at Humboldt University (Berlin, Germany).

2003
- Blaise Pascal International Conference on Financial Modelling in Paris (France),
- Seminar at the mathematics department, Imperial college (London, UK),
- Seminar at the finance department, HEC Montreal (Canada),

- Seminar at the mathematics department, Humboldt University (Berlin, Germany),
- Seminar at the mathematics department of the University of Marne-la-Vallée (france).

2002
- Seminar at the mathematical department of the University of Evry (France),
- Colloquium "Les apports de la statistique à l'assurance", organized by the French Statistical Society in Niort (France),
- Conference EyeforEnergy 2002, in Amsterdam (Netherlands) as a guest.

2001
- Conference of Mathematical Finance in Hammam-Sousse (Tunisia),
- Seminar at the University of Geneva (Switzerland) in the framework of the NCCR "Climate" project,
- Member of the workshop at Ecole Polytechnique (France) on financial calibration.

2000
- Seminar at the University Léonard de Vinci in Paris,
- Seminar at the research department of E.D.F. (Electricité de France),
- Conference on weather derivatives, organized by Frontières en Finance in Paris,
- Colloquium "Couverture des risques naturels et climatiques", organized by the French Actuary Society in Paris,
- Member of the workshop at Ecole Polytechnique (France) on credit risk.

1999
- Seminar at the research department of Crédit-Lyonnais.
- Seminar at the mathematical department of the University of Evry (France).

REFEREE SERVICES

Annals of Applied Probability, Applied Mathematical Finance, Automatica, ASTIN Bulletin, Energy Economics, Environment and Development Economics, Environmental and Resource Economics, Finance and Stochastics, IMA - Journal of Management Mathematics, International Journal of Theoretical and Applied Finance, Journal of Applied Probability, Journal of Economic Theory, Journal of Futures Markets, Journal of Risk and Insurance, Mathematical Finance, Mathematical Social Sciences, Mathematics of Operations Research, Mathematical Reviews, SIAM Journal on Control and Optimization, Stochastic Processes and their Applications, Stochastics and Stochastics Reports, EPSRC, RGC.

(As of September 2009)