

## CURRICULUM VITAE

### Paul Bressler

Instituto de Matemática e Estatística  
Universidade de São Paulo  
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### Education:

- 1985 - 1989      Ph.D in Pure Mathematics, May 1989.  
Massachusetts Institute of Technology, Cambridge, MA.  
Thesis title: Schubert calculus in generalized cohomology.  
Thesis supervisor: Prof. Raoul Bott.
- 1982 - 1985      Brandeis University, Waltham, MA.  
Undergraduate studies.

### Experience:

- 2011              Universidade de São Paulo, visiting professor.
- 2010              CNRS, Université de Strasbourg, Université Paris 7.
- Spring 2010      Max-Planck-Institut für Mathematik, Bonn, Germany.
- 2008 - 2009      Max-Planck-Institut für Mathematik, Bonn, Germany.
- Spring 2008      Indiana University, Bloomington, visiting associate professor.
- Fall 2007        Université Lyon I, Lyon, France, visiting professor.
- 2006 - 2007      Institute for Advanced Study, Princeton.
- 2001 - 2006      The University of Arizona, associate professor.
- Spring 2001      Université d'Angers, CNRS.
- Fall 2000        Institut des Hautes Études Scientifiques, Bures-sur-Yvette, France.
- 1999 - 2000      Max-Planck-Institut für Mathematik, Bonn, Germany.
- Spring 1999      Massachusetts Institute of Technology, Cambridge, visiting lecturer.
- Fall 1998        The Pennsylvania State University, research associate.
- 1992 - 1998      The Pennsylvania State University, assistant professor.
- 1991 - 1992      Sonderforschungsbereich 170, Göttingen, visiting research scholar.

1989 - 1991      Purdue University, Research Assistant Professor.  
1985 - 1989      MIT, teaching assistant.

*Short term visits:*

Erwin Schrödinger International Institute ("Higher Structures in Mathematics and Physics"), Vienna, September 2010

IPMU, Kashiwa, Japan, November 2009

Department of Mathematics, University of Copenhagen, Denmark, September 2006, June 1997

Department of Mathematics, University of Geneva, May 2003, May 2008

Laboratoire de mathématiques Emile Picard, Université Paul Sabatier, Toulouse, June 2003, July 2002, June 2001

I.H.É.S., Bures-sur-Yvette, May 2007, January 2003, May 2002, June 2001, July-August 1999

Université d'Angers, Angers, France, June 2002

Ecole Normale Supérieure, Paris, June 2001

Department of Mathematics, Université de Nice-Sophia-Antipolis, Nice, France, Nov.-Dec. 1999, invited professor.

Institut des Mathématiques de Jussieu, Paris, France, June 1999, invited professor

Department of Mathematics, University of the Negev, Beer-Shevah, Israel, May 1997, May-June 1996

**Fellowships and Grants:**

FAPESP, Processo 2010/16891-2, 3/1/2011 – 2/28/2012

NSF grant 0400785, Workshop "Geometry and Representation Theory", co-PI, 8/1/2004–1/31/2006.

NSF grant 021757, Conference on geometry and topology of quotients, co-PI, 8/1/2002–7/30/2003.

Civilian Research and Development Foundation co-operative grant 11323, member of the american team, 2001–2004

NSF grant DMS-9803403, PI, 1998–2001.

**Courses taught:**

*Undergraduate:*

Calculus for Business, Calculus and Analytic Geometry, Ordinary and Partial Differential Equations, Calculus and vector analysis, Matrices, Introduction to Analysis, Advanced Applied Analysis, Matrix Analysis

*Graduate Level:*

Lie Groups and Representation Theory, Topics in Algebraic Topology

*Minicourses:*

“Lie Algebroids and Characteristic Classes”, short course for Ph.D. students, University of Copenhagen

“Les algébroides de Courant et la classification de faisceaux d’opérateurs chiraux”, Université Lyon I

**Thesis/Examination committees:**

Sergiu Moroianu, Doctoral thesis defence 1999

Derek Habermas, Oral comprehensive examination 2003

Sasha Swenson, Master thesis defence 2004

Frederick Leitner, Doctoral thesis defence 2005

**Service/Outreach:**

Workshop “Geometry and Representation Theory”, The University of Arizona, March 2005, co-organizer

Conference on geometry and topology of quotients, The University of Arizona, December 2002, co-organizer

**Scholarly presentations** (since 1999):

*Colloquia:*

University of Liverpool, Liverpool, United Kingdom (December 2010)

University of Liverpool, Liverpool, United Kingdom (April 2009)

University of Aberdeen, Aberdeen, United Kingdom (November 2008)

University of Copenhagen, Copenhagen, Denmark (September 2006)

University of Colorado, Boulder (March 2006)

Northwestern University, Evanston (March 2003)

University of Notre-Dame, South Bend (December 2001)

*Seminars:*

Algebra Seminar, IMPA, Rio de Janeiro (May 2011)

Analysis-Geometry Seminar, Northeastern University (February 2011)

Manchester Geometry Seminar, University of Manchester, United Kingdom (December 2010)

Séminaire Algèbre et Géométrie, Université Grenoble I (November 2010)

Séminaire Qdquant X, Ecole Polytechnique (November 2010)

Algebraic Analysis Seminar, Institut de Mathématiques de Jussieu (October 2010)

Oberseminar Global Analysis, University of Bonn (April 2010)

Topology Seminar, University of Aberdeen, Aberdeen, U.K. (November 2008)

Geometry/Physics Seminar, Northwestern University (April 2008)

Séminaire GNCPT, Luminy (December 2007)

Seminario de Geometría Algebraica y Singularidades, Valladolid (November 2007)

Seminar “Algebra, Geometry and Physics”, MPIM-Bonn (October 2007)

Seminar on Mathematical Physics, Northwestern University (December 2005)

Seminar on Mathematical Physics, Northwestern University (May 2005)

Representation Theory Seminar, Northeastern University (May 2005)

Lie Theory Seminar, M.I.T. (March 2004)

Seminar on Mathematical Physics, Northwestern University (February 2004)

Algebra Seminar, Indiana University (November 2003)

Geometry Seminar, POMIRAN, St. Petersburg (July 2003)

Representation Theory Seminar, Northeastern University (June 2003)

Differential Geometry Seminar, Université Libre de Bruxelles (January 2003)

Algebraic Analysis Seminar, Institut de Mathématiques de Jussieu (January 2003)

Geometry Seminar, Laboratoire Emile Picard (July 2002)

Geometry Seminar, Université d’Angers (June 2002)

Geometry Seminar, Purdue University (March 2002)

Geometry seminar, Ecole Normale Supérieure (June 2001)

Geometry seminar, Laboratoire Emile Picard (June 2001)

Seminar on Analysis and Complex Geometry, Institut Fourier (February 2001)

Representation Theory Seminar, Northeastern University (February 2001)

Seminar on Quantum Groups, Ecole Polytechnique (December 2000)

Algebraic Analysis Seminar, Institut de Mathématiques de Jussieu (December 2000)

Algebra Seminar, Université Lyon I (March 2000)

Mathematical Physics Seminar, Université de Bourgogne, Dijon (March 2000)

Algebraic Analysis Seminar, Institut de Mathématiques de Jussieu (June 1999)

Representation Theory Seminar, Northeastern University (May 1999)

Algebra and Topology, IRMA, Strasbourg (March, 1999)

*Conferences:*

“Harmonic analysis, deformation quantization, noncommutative geometry”, Scalea (September 2011)

“Loop spaces, loop groups and loop algebras 2011”, CIRM, Luminy (June 2011)

Workshop “Representation theory and quantum field theory - II”, IME-USP, São Paulo, (May 2001)

“Higher Structures in Mathematics and Physics”, Erwin Schrödinger International Institute, Vienna (September 2010)

Workshop on Deligne Cohomology and differential characters, University of Copenhagen (August 2010)

Workshop on Algebraic Geometry and Physics “Deformation, quantization and algebraic index theorems”, St Jean de Monts (June, 2010)

“Representation Theory and Quantization”, ETH, Zurich (January 2010)

Workshop on Recent Advances in Mathematics, IPMU, Kashiwa on (November 2009)

“Workshop on the Chiral de Rham Complex and Geometry”, MPIM, Bonn (June 2008)

“Poisson Sigma Models, Lie Algebroids, Deformations, and Higher Analogues”, The Erwin Schrödinger Institute, Vienna, (August, 2007)

“Poisson Geometry and Applications”, Oberwolfach (May, 2007)

Mini-conference “Homological Methods in Geometry”, University of Miami (March 2007)

International Conference on Quantum Groups, Technion, Haifa (July, 2004)

“Integrable systems and quantum field theory at Peyresq”, Peyresq (June, 2004)

NOG Workshop III, Institut Mittag-Leffler, Stockholm (May, 2004)

“Integrable systems and quantum field theory at Peyresq”, Peyresq (June, 2003)

Symplectic Geometry Workshop, The Pennsylvania State University (December, 2002)

“Integrable systems and quantum field theory at Peyresq” (Peyresq, June 2002)

“Combinatorial Convexity and Algebraic Geometry”, Oberwolfach (January, 2001)

Workshop on “Toric Geometry and Polynomial Maps”, University of Münster (March, 2000)

Workshop on “Non-Commutative Geometry”, MPIM, Bonn (June, 1999)

Workshop on “Symplectic Geometry and Mathematical Physics”, The Pennsylvania State University (April, 1999)

**Conferences (invited participant):**

“Noncommutative Geometry”, Oberwolfach (September 2011)

NestFest: Conference in Honor of Ryszard Nest’s 60th Birthday, University of Copenhagen (September 2010)

Workshop on Mapping Surgery to Analysis, The University of Copenhagen (February 2010)

Winter school in mathematical physics, Les Diablerets (February 2010)

“Algebraic analysis and deformation quantization”, Scalea (June 2009)

Geneva-Lyon Winter School in Mathematical Physics, Les Diablerets (February 2009)

Moshe Flato Memorial Meeting, BGU, Beer-Shevah, Israel (November 2008)

“Noncommutative Geometry”, BIRS, Banff, Canada (April 2006)

“String Theory and Geometry”, Oberwolfach (August 2004)

“Quantization”, The Erwin Schrödinger Institute, Vienna (June 2001)

Workshop on “Trends in Noncommutative Algebra and Geometry”, MPIM, Bonn (September 2000)

Conference in memory of M. Flato, Dijon (Sept. 2000)

“Noncommutative Geometry”, Oberwolfach (March 2000)

**Personal details:**

Date and place of birth: 5 December 1963, St.-Petersburg, Russia

Citizenship: United States of America

## Refereed Publications:

- “Deformations of algebroid stacks” (with A. Gorokhovsky, R. Nest, and B. Tsygan), *Adv. in Math.* **226**, Issue 4 (2011), 3018–3087, preprint: arXiv:0810.0030
- “Chern character for twisted complexes” (with A. Gorokhovsky, R. Nest, and B. Tsygan), *Geometry and Dynamics of Groups and Spaces* in memory of Alexander Reznikov, M. Kapranov, S. Kolyada, Y.I Manin, P. Moree, L.A. Potyagailo (eds), Progress in Mathematics, Vol. 265, Birkhäuser 2008, preprint arXiv:0710.0643
- “Deformations of gerbes on smooth manifolds” (with A. Gorokhovsky, R. Nest, and B. Tsygan), *Proceedings of VASBI, ICM Satellite Conference on K-theory and Non-commutative Geometry (Valladolid, Spain, 2006)*, G. Cortiñas ed., preprint arXiv:math.QA/0701380
- “Riemann-Roch for real varieties” (with M. Kapranov, B. Tsygan, and E. Vasserot), *Algebra, Arithmetic and Geometry, Vol.I: in Honor of Y. I. Manin*, Y. Tschinkel and Y. Zarhin (eds), Progress in Mathematics, Vol. 269, Birkhäuser 2008, preprint arXiv:math.DG/0612410
- “Deformation quantization of gerbes” (with A. Gorokhovsky, R. Nest, and B. Tsygan), *Adv. in Math.*, **214** (2007), 230–266.
- “The first Pontryagin class”, *Compositio Math.* **143** (2007), 1127–1163.
- “Deformations of Azumaya algebras” (with A. Gorokhovsky, R. Nest, B. Tsygan), In *Actas del XVI Coloquio Latinoamericano de Algebra (Colonia, Uruguay, 2005)*, Biblioteca de la Revista Matematica Iberoamericana, 131–152.
- “Hard Lefschetz theorem and Hodge-Riemann relations for intersection cohomology of nonrational polytopes” (with V. Lunts), *Indiana University Mathematics Journal* **54** (2005), 263–307.
- “Homological mirror symmetry, deformation quantization and noncommutative geometry” (with Y. Soibelman) *Journal of Mathematical Physics* **45** (2004), 3972–3982.
- “Courant Algebroids” (with A. Chervov) *Journal of Mathematical Sciences* **128** (2005), 3030–3053.
- “Intersection cohomology on non-rational polytopes” (with V. Lunts), *Compositio Math.* **135** (2003), 254–278.
- “Riemann-Roch theorems via deformation quantization I” (with B. Tsygan and R. Nest), *Adv. in Math.* **167** (2002), 1–25.
- “Riemann-Roch theorems via deformation quantization II” (with B. Tsygan and R. Nest), *Adv. in Math.* **167** (2002), 26–73.
- “On the singularities of Theta divisors on Jacobians” (with J.-L. Brylinski), *J. Algebraic Geometry* **7** (1998), 781–796.

“Filtered perverse complexes” (with M. Saito and B. Youssin), *Math. Research Letters* **5** (1998), 119–136.

“A Riemann-Roch type formula for the microlocal Euler class” (with B. Tsygan and R. Nest), *Int. Math. Research Notices* **20** (1997), 1033–1044.

“On the fundamental group of a compact Kähler manifold” (with D. Arapura and M. Ramachandran), *Duke Journal of Math.* **68** (1992), 477–488.

“Schubert calculus in complex cobordism” (with S. Evens), *Trans. Amer. Math. Soc.* **331** (1992), 799–813.

“Vanishing cycles on Grassmannians” (with M. Finkelberg and V. Lunts), *Duke Journal of Math.* **61** (1990), 763–777.

“The Schubert calculus, braid relations, and generalized cohomology” (with S. Evens), *Trans. Amer. Math. Soc.* **317** (1990), 799–811.

“On certain Hecke rings” (with S. Evens), *Proc. Natl. Acad. Sci. USA* **84** (1987), 624–625.

#### **Preprints:**

“Formality for algebroid stacks” (with A. Gorokhovsky, R. Nest, and B. Tsygan), preprint: arXiv:0903.1841

“Polarized deformation quantization” (with J. Donin), preprint: arXiv:math.QA/0007186

“Toric varieties and minimal complexes” (with V. Lunts), preprint: alg-geom/9712007

#### **In progress:**

“Secondary characteristic classes for  $\mathcal{D}$ -modules” (with B. Tsygan)

“Chern character for perfect complexes over algebroid stacks” (with A. Gorokhovsky, R. Nest, and B. Tsygan)