<div align="center">**Curriculum Vita**</div>

STEVEN ROSENBERG   sr@math.bu.edu

Position: Professor of Mathematics, Boston University

Birthdate: September 2, 1951
Telephone: 617-353-9556 (work)
           508-653-8377 (home)

Education: 1974 B.A.   Hampshire College
              1974 M.A.   University of Massachusetts, Amherst
              1981 Ph.D. University of California, Berkeley

Career: 1981-82   Assistant Professor, Brandeis University
            1982-83   NSF/NATO Postdoctoral Fellow
            1983-85   Assistant Professor, Brandeis University
            1985-87   Assistant Professor, Boston University
            1987   Visitor, I.H.E.S., France
            1987   Visiting Faculty, University of Warwick, U. K.
            1988-89   Assistant Professor, Boston University
            1989   Associate Professor, Boston University
            1992   Visiting Faculty, Keio University, Japan
            1992-93   Visiting Fellow, University of Warwick, U. K.
            1993-97   Associate Professor, Boston University
            1997–   Professor, Boston University
            1997–2002 Chairman, Department of Mathematics, Boston University
            2002-03   Visiting Faculty, Universite Blaise Pascal, France
            2003   Visiting Faculty, Keio University, Japan
            2003–2006 Chairman, Department of Mathematics, Boston University
            2008   Visiting Scholar, University of Notre Dame
            2009   Visiting Faculty, JSPS Fellow, Keio University, Japan
            2009   Visiting Faculty, Australian National University

Honors: NSF/NATO Postdoctoral Fellow at Mathematical Institute, Oxford, England
            1982-83,
            "Analysis, Geometry and Quantum Field Theory. International conference in
            honour of Steven Rosenberg's 60th birthday," Bochum, Germany, September 2011.
            Volume in *Contemporary Mathematics* from this conference to appear in 2013.

Invited addresses

AMS Special Session in Differential Geometry, Amherst, Massachusetts, October 1981

I.H.E.S., Bures-sur-Yvette, France, October, 1982

Northeastern University, May, 1984

AMS Special Session on Differential Geometry, Anaheim, California, January, 1985

Conference on Stochastic Differential Equations and Their Applications, University of Warwick, England, May 1985

Duke University, February, 1985

M.I.T., December, 1985

AMS Special Session on Hodge Theory, Baltimore, Maryland, May, 1986

International Congress of Mathematicians, Short Session on Mathematical Physics, August, 1986

Valley Geometry Seminar, Amherst, Massachusetts, September, 1986

M.I.T. Differential Geometry Seminar, November, 1986

Ecole d'ete de Calcul des Probabilites, St. Flour, France, July, 1987

University of Warwick, November and December, 1987

University of Swansea, December, 1987

University of Edinburgh, December, 1987

Northeastern University, February, 1988

University of Maryland, March, 1988

Harvard University, May, 1988

University of Oregon, May, 1988

Ecole d'ete de Calcul des Probabilites, St. Flour, France, July, 1988

Harvard University, November, 1988

AMS Special Session on Gauge Theory, Worcester, MA, April, 1989

Conference on Diffusion Processes and Related Areas in Analysis, Northwestern University, October, 1989

University of Warwick, May, 1990

University of Edinburgh, May, 1990

Brandeis University, February, 1991

AMS Special Session on Variational Methods, Symmetries and Global Analysis, Orono, Maine, August, 1991

Columbia University, March, 1992

Japan Mathematical Society, Fukuoka, Japan, April, 1992 (Invited one hour talk)

Kumamoto University, Japan, April, 1992

Tokyo Science University, May, 1992

Keio University, June, 1992

Tokyo University, June, 1992

Kanazawa University (three talks), June, 1992

Osaka University, July, 1992

AMS Special Session on Global Analysis, Syracuse, September, 1993

Northeastern University, November 1993

MSRI, November 1993

AMS Special Session on Geometric Analysis, Brooklyn NY, April 1994

AMS Special Session on Elliptic Operators and Index Theory, San Francisco CA, January 1995

Boston College, March 1995

AMS Special Session on PDEs in Geometry and Mathematical Physics, Boston, MA, October 1995

Universitè Claude Bernard, Lyon, France, May, 1996

Univeristè Blaise Pascal, Clermont-Ferrand, France, June, 1996

AMS Special Session on Spectral Theory on Noncompact Manifolds, San Diego, CA, January, 1997

Keio University, January, 1997

Harvard University, March, 1997

Brandeis University, March, 1998

MSRI, March, 1998

Université Blaise Pascal, Clermont-Ferrand, France, June, 1998 (Four lectures)

RIP, Oberwöhlfach, Germany, June, 1998

University of Houston, October, 1998

Rice University, October, 1998

Indiana University, April, 1999 1999.

RIP, Oberwöhlfach, Germany, June, 1999

Université Henri Poincare, Nancy, France, September, 1999

AMS Special Session on Enumerative Methods in Algebraic Geometry, University of Lowell, April, 2000

MIT, November, 2000

Northeastern University, December, 2000

Université Blaise Pascal, Clermont-Ferrand, France, December 2000 (Three lectures)

Harvard University, February, 2001

Harvard University, April, 2002

Université Blaise Pascal, Clermont-Ferrand, France, November, 2002

King's College, UK, December, 2002

U. Warwick, UK, December, 2002

U. Nantes, France, December, 2002

Université Blaise Pascal, Clermont-Ferrand, France, February, 2003 (five lectures)

Osaka University, Japan, April, 2003

Tohoku University, Japan, May, 2003

Tokyo Metropolitan University, Japan, May, 2003

Kanazawa University, Japan, June, 2003

Keio University, Japan, June, 2003

Indiana University, October, 2003 (two lectures)

Université Blaise Pascal, Clermont, France, May 2004

CIRM, Luminy, France, June 2004

Medger Evers College, October 2004

Roskilde University, Denmark, May 2005

Max Planck Institute, Bonn, Germany, October 2005

Harvard University, November 2005

Notre Dame University, April 2006

Keio University, Japan, Pathways lecture Series, 3 lectures, May 2006

Northeastern University, September 2006

Tufts U. – Boston U. Moduli Space Seminar, November 2006

U. Oregon (two talks), January 2007

U. Iowa, plenary talk, May 2007

Western Connecticut State University, October 2007

University of Northern Florida (two talks), December 2007

University of Arizona, February 2008

University of Notre Dame, September – December 2008 (eight talks)

Michigan State University, September 2008

University de los Andes, Bogota, October 2008 (three talks and a colloquium lecture)

Indiana University, November 2008

Univeristy of Notre Dame, November 2008, Colloquium

Tohoku University, Japan, January 2009

Keio University, Japan, January 2009

Hokkaido University, Japan, February 2009

Keio University, Japan, February 2009, Plenary at Conference on Noncommutative Geometry and Physics

Erwin Schrödinger Institute, Vienna, April 2009, Three talks

Univeristy of Melbourne, April 2009

Australian National University, May 2009

University of Adelaide, June 2009

AMS-Korea Mathematical Society joint conference, Seoul, December 2009

Imperial College/King's College/University College Analysis Seminar, London, December 2010

Bochum University, January 2012

Professional Activities in Mathematics

Organizer, Special Session on Geometric Methods in Mathematical Physics, AMS Meeting, Hartford, CT, April, 1995.

Reviewer for Mathematical Reviews, 1988– . Over 60 articles reviewed.

President, Eastern Section Program Committee, AMS, 1996-1998.

Member, Local Advisory Board, Clay Mathematics Institute, 1999–2001

Reviewer, Clay Mathematics Institute Lift-Off Awards, 2001, 2002.

Department Liason, MSRI, 1999–2006

Co-organizer, "Geometrie de l'Indice et Theorie des Champs," CIRM, Luminy, France, May 31 – June 5, 2004.

Co-organizer, "Quantum Field Theory and Index Theory," MFI, Oberwolfach, Germany, June 2005.
Co-organizer, "Quantum Field Theory, Motives, and Pseudodifferential Operators," Boston University, June 2008.
Co-organizer, "Number Theory and Physics," ESI Vienna, March – April 2009
Co-organizer, "Geometry and Quantum Field Theory," Max Planck Institute, Germany, June 2010.
Co-organizer, "BU-Keio U. Workshop in Number Theory," July 2011.
Co-organizer, "BU-Keio U. Workshop in Geometry," September 2012.
Co-organizer, "Workshop on Geometry, Analysis and Quantum Field Theory," U. Copenhagen, May 2013.
Co-organizer, "BU-Keio U. Workshop in Probablility and Statistics," September 2013.

Professional Activities in Mathematics Education

Member, Massachusetts Mathematics and Science Partnerships Steering Committee, 2003-2007.
Member, Executive Committee and Curriculum Review Committee, NSF-funded MSP "Focus on Mathematics" program, 2003-2010.
Presentor, "The Geometry of Voting," NCTM conference, Hartford, CT, October, 2005.
Editor, NCTM 70th Yearbook, "Algebra and Algebraic Thinking," 2005-2007; book published 2007.
Panel Member, AMS Committee on Education, October 2006.
Presentor, "Focus on Mathematics: an Immersion Experience," MSRI, May 2007.
Panelist, Massachusetts STEM Summit meeting, October, 2007
Presentor, "Partnerships of Mathematicians, Mathematics Educators and High School District Leaders," ATMNE, Springfield, November 2007.
Member, Massachusetts Mathematics and Science Advisory Council; Chair, November 2007 – . Chair, 2007-08, Co-chair 2009 –2012.
Testimony presenter, 21st Century Skills Task Force, Boston, August 2008.
Member, Commisioner of Higher Education's Working Group on Mathematics Diagnostics for Elementary Teacher Preparation, 2010.
External Evaluation Committee Member, Lehigh graduate program in mathematics, 2010.
Treasurer, Math for America Boston, 2010 – .
Presentor, "Math lessons that embody the CCSSM Mathematical Practices and those that don't," Lesley U., July 2013.

Ph.D. Students
    [1] Ying Zhu
    [2] Mihail Frumosu
    [3] Ionutz Vajiac
    [4] Mihaela Vajiac
    [5] Fabian Torres-Ardila
    [6] Gabriel Baditoiu

[7] Andres Larrain-Hubach

[8] Man-Ho Ho

[9] Tommy McCauley (present)

[10] Dara Gold (present)

Publications

[1] Gauss-Bonnet theorems on noncompact surfaces, *Proc. Amer. Math. Soc.* **86** (1982), 184-185.

[2] The Gauss-Bonnet theorem and $\zeta(2)$, *Geometrica Dedicata* **4** (1984), 251-255.

[3] On the Gauss-Bonnet theorem for complete manifolds, *Trans. Amer. Math. Soc.* **287** (1985), 745-753.

[4] L^2 cohomology and harmonic forms on manifolds with cylinders, *Indiana J. of Mathematics* **34** (1985), 355-373.

[5] The variation of the de Rham zeta function, *Trans. Amer. Math. Soc.* **299** (1987), 535-557.

[6] (with T. Parker) Invariants of conformal Laplacians, *J. Differential Geometry* **25** (1987), 199-222.

[7] The determinant of a conformally covariant operator, *J. London Math. Soc.* **36** (1987), 553-568.

[8] (with K.D. Elworthy) Generalized Bochner formulas and the spectrum of complete manifolds, *Acta Appl. Math.* **12** (1988), 1-33.

[9] Semigroup domination and vanishing theorems, in *Geometry of Random Motion*, R. Durrett and M. Pinsky (eds.), *Contemporary Mathematics* **73**, American Mathematical Society, Providence, 1988. pps. 287-302.

[10] (with K.D. Elworthy) Compact manifolds with a little negative curvature, *Bulletin Amer. Math Soc.* **20** (1989), 41-44.

[11] (with K.D. Elworthy) Spectral bounds and the shape of manifolds near infinity, in *IXth International Congress on Mathematical Physics*, (eds. B. Simon, A. Truman, I. M. Davies), Adam Hilger, Bristol, 1989, 369-373.

[12] Applications of semigroup domination, in *Proceedings of the Conference on Diffusion Processes and Related Areas in Analysis*, (ed. M. Pinsky), Boston, Birkhäuser Press, 1990, pp. 285-292.

[13] (with K.D. Elworthy) Manifolds with wells of negative Ricci curvature, *Inventiones Math.* **103** (1991), 471-495.

[14] Anomalies associated to the polar decomposition of $GL(n, \mathbf{C})$, *Trans. A.M.S.* **334** (1993), 749-760.

[15] (with Y. Maeda, P. Tondeur) The mean curvature of gauge orbits, in *Global Analysis in Modern Mathematics* [ed. K. Uhlenbeck], Publish or Perish, Inc. Houston, 1994, pps. 171-220.

[16] (with K.D. Elworthy) The Witten Laplacian on negatively curved manifolds, *Tokyo J. Math.* **16** (1993), 513-524.

[17] (with D. Yang) On the fundamental group of manifolds of almost positive Ricci curvature, *J. Math. Soc. Japan* **46** (1994), 267-288.

[18] (with K. D. Elworthy) Homotopy and homology vanishing theorems and the stability of stochastic flows, *Geom. and Funct. Anal.* **6** (1996), 51-78.

[19] (with K. D. Elworthy, X.-M. Li) Curvature and topology: spectral positivity, *Methods and Applications of Global Analysis*, [ed. Y. Gliklikh], New Developments in Global Analysis Series, Voronezh University Press, 1993, p. 45-60.

[20] (with Y. Maeda, P. Tondeur) Minimal submanifolds in infinite dimensions, , in *Analysis and Geometry in Foliated Manifolds*, [eds. J.A. Alvarez, E. Macias, X. Masa], World Scientific Press, 1995, p. 177-182.

[21] (with Y. Maeda, P. Tondeur) Minimal orbits of metrics, *J. of Geom. and Phys.* **23** (1997), 319-349.

[22] (with K. D. Elworthy, X.-M. Li) Bounded and L^2 harmonic forms on universal covers, *Geom. and Funct. Anal.* **8** (1998), 283-303.

[23] Nonlocal invariants in index theory, *Bull. Amer. Math. Soc.* **34** (1997), 423-434.

[24] (with M. Frumosu) Mathai-Quillen forms and Lefschetz theory, *Tokyo J. Math.* **27** (2004), 337-355.

[25] An introduction to geometric aspects of Poincarè duality and Lefschetz theory, course notes, Université Blaise Pascal, Clermont-Ferrand, France, 1998.

[26] (with S. Paycha) About infinite dimensional Lie group actions and determinant bundles, *Analysis on Infinite-Dimensional Lie Groups and Algebras*, [eds. H. Heyer and J. Marion], World Scientific, Singapore, 1998.

[27] (with S. Paycha) Determinant line bundles and renormalized Chern classes, *J. of Geom. and Phys.* **45** (2003), 393-429

[28] (with M. Vajiac) Gauge theory techniques in quantum cohomology, *Advances in algebraic geometry motivated by physics (Lowell, MA, 2000),* [ed. E. Previato], 259–277, Contemp. Math., 276, Amer. Math. Soc., Providence, RI, 2001.

[29] (with S. Paycha) Chern-Weil constructions on ΨDO bundles, `math.DG/0301185`.

[30] (with S. Paycha) Traces and characteristic classes on loop spaces, in *Infinite Dimensional Groups and Manifolds*, [ed. T. Wurzbacher], IRMA Lectures in Mathematics and Theoretical Physics 5, de Gruyter, Berlin, 2004.

[31] (with S. Paycha) Conformal anomalies via canonical traces, in *Analysis, Geometry and Topology of Elliptic Operators*, [ed. B. Booss-Bavnbek], World Scientific Press, Singapore, 2006, p. 263-296.

[32] (with F. Torres-Ardila) Chern-Simons theory in infinite dimensions, `math.DG/0411150`.

[33] (with G. Baditoiu) Feynman diagrams and Lax pair equations, `math-ph/0611014`, *Communications in Mathematical Physics* **296** (2010), 655-680.

[34] (with Y. Maeda, F. Torres-Ardila) Riemannian geometry on loop spaces, `arXiv/0507.1008`, submitted

[35] (with A. Larrain-Hubach, S. Scott, F. Torres-Ardila), Characteristic classes and zeroth order pseudodifferential operators, *Contemporary Mathematics*, vol. 532, 2011.

[36] Chern-Weil theory for some infinite dimensional Lie groups, in *Lie Groups: Structure, Actions, and Representations*, ed. A. Huckleberry et al., Birkhäuser, 2013, p. 355-380.

[37] (with A. Larrain-Hubach, Y. Maeda, F. Torres-Ardila) Equivariant,string, and leading order characteristic classes associated to fibrations, `arXiv:1309.2692`, submitted.

Book

The Laplacian on a Riemannian Manifold, Cambridge U. Press, January, 1997. (Second printing, 1999) (ISBN 0 521 46300 9)

Books Edited

"Motives, Quantum Field Theory, and Pseudodifferential Operators," Clay Mathematics Proceedings, American Mathematical Society, Providence, RI, 2010.

Mathematics Education Publications

[1] (with M.Spillane, D. Wulf) Heron Triangles and Moduli Spaces, *The Mathematics Teacher*, **101** (2008), 656-663.

[2] (with C. Greenes, K. Bodie, D. Chevaire, C. Garabedian, D. Wulf, A. Halteman, K. Wynn) The Professional Development of Leaders and Teachers of Mathematics: The FOM Model, to appear in *J. Math. Ed. Leadership*