

Curriculum Vitae

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Education

- 1998 **California Institute of Technology**, Pasadena, CA. Ph.D. in Theoretical Physics, Thesis: "*Three-dimensional Gauge Theories and Gravitational Instantons from String Theory*." Advisor: Prof. John H. Schwarz
- 1993 **Upsala College**, NJ. B.S. in Mathematics *Summa Cum Laude*
- 1989-1992 Moscow Institute of Physics and Technology, Undergraduate Studies, Optics Group
- 1990 Landau minimum in Mechanics, ITEP, Moscow

Academic Positions

- 2004-present Permanent Lecturer, **Trinity College**, Dublin (Passed Merit Bar in May 2005)
- 2001-2004 Member of the School of Natural Sciences, **Institute for Advanced Study**, Princeton
- 1998-2001 Postdoctoral Researcher, Department of Physics and Astronomy, **University of California, Los Angeles**

Grant Funding

- 2006-2009 PI, Science Foundation of Ireland, Research Frontiers Program grant MA050 "Quaternionic Geometry and its Relation to Gauge Theory, String Theory, and Integrable Systems"
- 2007-2009 PI, Embark Initiative, IRCSET, "Extended Space-time Structures in String and Field Theory Project"
- 2007-2010 Research Supervisor, Trinity College Postgraduate Grant
- 2005-2006 PI, Research Supervisor, Embark Postgraduate Research Scholarship, IRCSET
- 2005-2006 PI, Trinity College Start-Up grant

Postdocs Supervised

- 2007-2010 Christian Saemann
- 2007-2009 Giacomo Marmorini
- 2008-2009 Osvaldo Santillan

Graduate Students Supervised

- 2007-2010 Clare O'Hara, PhD
- 2008-2010 David Leen, MSc
- 2009-2010 Sarang Shah, MSc
- 2005-2007 Brian Durcan, MSc

Undergraduate Students Supervised

- Chris Blair: 2010 National Award
- Dan McNamee
- Eoin O'Byrne
- David Leen
- Jessica Stanley
- Sam Palmer

Visiting Positions

2010-2011 Stanford University and UC Berkeley; Aug. 2010 KITP Santa Barbara; Apr. 2010 Duke University; 2005-2007 Princeton University (*Visiting Professor*); Sept. 2007 Caltech, Pasadena, CA (*Visiting Professor*); Feb. 1998, 2005, 2006 Institute for Advanced Study, Princeton (*Visitor*); Summer 2004, 2006, 2010 IHES, Paris (*Visitor*); June 2006 IAS, Jerusalem, Israel (*Visitor*); Jan 1995 and June 2006 Weizmann Institute, Rehovot, Israel (*Visiting Scientist*); June 2005 CEA, SACLAY, Paris (*Visiting Scientist*); 1999-2001 Caltech-USC Center for Theoretical Physics (*Research Fellow*); 2003 Physics Department, Harvard University (*Visitor*); 2001 IGPP, Department of Earth and Space Sciences, UCLA (*Researcher*); 1996 TASI, University of Colorado, Boulder (*Student*); 1994 Jerusalem Winter School (*Student*); Summer 1993 Woods Hole Oceanographic Institute, MA (*Researcher*).

Teaching Experience

- 2009-2010 Quantum Field Theory MA4445, Engineering Mathematics I MA1E01
- 2008-2009 K-theory and Solitons MA448 (Trinity College, Dublin)
- 2006-2008 Quantum Field Theory MA444 (Trinity College, Dublin)
- 2006-2008 Calculus MA1E1 and Linear Algebra MA1E2 for Engineers (Trinity College)
- 2004-2006 Advanced Mechanics MA241; Calculus MA1S1 (Trinity College, Dublin)
- 2004-2005 Mathematical Methods MA131 (Trinity College, Dublin)
- 2001, Spring Mathematical Methods of Physics Ph131 (UCLA)
- 1999 Introduction to String Theory as part of Ph226 (UCLA)
- 1997 Weekly Seminar on Monopoles and Instantons for Graduate Students (Caltech)
- 1993-1997 Teaching Assistant: Relativistic Quantum Mechanics, Gravitation, Theoretical Mechanics (Caltech)
- 1988-1991 Training of High-school Students for Olympiads and Mathematics Competitions

Service

- 2004-present Member of the Hamilton Mathematical Institute executive committee.
- 2004-Present Initiated and lead weekly Theoretical Physics Working Seminar at Trinity College.
- 2009 Organizer of the 16th Irish Quantum Field Theory Meeting at Trinity College, Dublin.
- 2007 Organizer of the 14th Irish Quantum Field Theory Meeting in NUI Galway.
- 2006-2007 Elected President of the Trinity College Mathematics Society.
- 2007 Master Thesis Defense Committee Member, Trinity College.
- 2006 Organizer of the 13th Irish Quantum Field Theory Meeting in Dublin Institute for Advanced Studies.
- 2005-2006 Member of the Theoretical Physics Program Committee.
- 2005 Member of the Departmental Committee redesigning the Theoretical Physics Program
- 2004-2006 Member of the Postdoctoral Selection committee.
- 2005 Organizer of the 12th Irish Quantum Field Theory Meeting in Trinity College Dublin
- 29/6/2005 PhD Thesis Defense Committee Member, Leiden University.
- 2004-2005 Organizer of Dublin Theoretical Physics Colloquium.
- 2005 Departmental Committee: Mathematics Curriculum of the Theoretical Physics Program.
- 1999-2000 Organizer of the UCLA Theoretical Physics Seminar.

Referee and Reviewer

Physics Letters B; European Young Investigator Grant Referee; Communications in Mathematical Physics; Advances in Theoretical and Mathematical Physics; Journal of High Energy Physics; Classical and Quantum Gravity; Symmetry, Integrability and Geometry: Methods and Applications; Mathematical Reviews; Journal of Mathematical Physics; Nuclear Physics B; Proceedings of Edinburgh Mathematical Society; Mémoires de la Société Mathématique de France; Journal of Physics A: Mathematical and Theoretical; Physical Review D

Invited Talks

- 10-11/2010 Lectures at Odense Winter School on Geometry and Theoretical Physics, Denmark
- 10/2010 Caltech Theory Seminar
- 9/2010 Berkeley String Theory Seminar
- 6/2010 Oxford Theoretical Particle Physics Seminar
- 4/2010 Duke University Theoretical Physics; Geometry/topology Seminar
- 4/2010 University of North Carolina mathematics colloquium
- 4/2010 Simons Center for Theoretical Physics, SUNYSB Seminar
- 1/2010 Stanford Geometry Seminar
- 1/2010 UC Davies String Theory Seminar
- 10/2009 Yukawa Institute and RIMS, Kyoto
- 9/2009 Theoretical High Energy seminar, Niels Bohr Institute, Copenhagen
- 5/2009 Strings and Fields seminar, LMU, Munich
- 3/2009 String Theory Research Seminar, Queen Mary University of London
- 3/2009 The London Triangle Seminar, King's College London
- 11/2008 Integrable Day in Loughborough, London Mathematical Society, UK
- 10/2008 Geometrical Aspects of String Theory, Nordita, Stockholm
- 6/2008 Geometry Integrability and Twistor Theory, Cambridge
- 4/2008 Mathematical Physics Seminar, UCD, Dublin
- 3/2008 Mathematical Physics Seminar, ETH, Zurich
- 10/2007 String Theory Seminar, Oxford University
- 9/2007 Theory Seminar, Caltech
- 3/2007 Theory Group Seminar, Santiago de Compostela
- 1/2007 Joint Mathematical Physics Seminar, Heriot-Watt and Edinburgh University
- 5/2006 Center for Theoretical Physics Seminar, Durham
- 4/2006 Institute of Theoretical Physics Seminar, ETH, Zurich
- 2/2006 School of Physics Seminar, University College Dublin
- 6/2005 Theoretical Physics Seminar, SACLAY, Paris
- 6/2005 High Energy Seminar, Leiden University
- 5/2005 12th Irish Quantum Field Theory Meeting, Dublin
- 3/2005 Hamilton Mathematics Institute Meeting, Dublin
- 2/2004 Mathematical Physics Seminar, Dublin City University
- 3/2004 American Institute of Mathematics workshop on L^2 -harmonic Forms in Geometry and String Theory, Palo Alto, CA
- 5/2004 Mathematical Physics Seminar, University of Texas at Austin
- 2/2004 High Energy Physics Seminar, Rutgers University

- 3/2004 String Theory Seminar, Berkeley
- 7/2004 Talk at General Relativity 17, Dublin
- 11/2004 Geometry Seminar, Mathematical Institute, Oxford
- 11/2004 String Theory Seminar, Mathematical Institute, Oxford
- 3/2004 Mathematical Physics Seminar, University of Pennsylvania
- 4/2003 American Mathematical Society meeting at Courant Institute
- 1/2003 Institute for Advanced Study, Princeton
- 6/2003 Symplectic Geometry and Physics Workshop, IPAM, UCLA
- 6/2003 Algebraic Geometry and Physics, Salamanca, Spain
- 7/2003 Talk at the Young Researchers Symposium,
XIV International Congress on Mathematical Physics, Lisbon
- 11/2003 String Theory Seminar, Madison, Wisconsin
- 11/2003 Mathematical Physics Seminar, SUNYSB, Stony Brook, NY
- 7/2003 Talk at the workshop Infinite Dimensional Algebras and Quantum Integrable
Systems, Faro, Portugal
- 6/2002 Mathematical Physics Seminar, SUNYSB, Stony Brook, NY
- 5/2002 String Theory in Greater Paris Seminar, IHES
- 4/2002 Theoretical Physics Seminar, Rutgers University, NJ
- 3/2002 Theoretical Physics Seminar, Institute for Advanced Study, NJ
- 11/2001 Geometry Seminar, University of Pennsylvania
- 10/2001 Workshop at the Institute for Mathematics and its Applications, Minnesota University
- 9/2001 String Theory Seminar of Greater Paris
- 9/2001 Talk at the Xth Oporto Meeting on Geometry, Topology, and Physics, Portugal
- 2/2001 High Energy Physics Seminar, MIT
- 2/2001 String Theory Seminar, Harvard
- 1/2001 Theoretical Physics Seminar, Rutgers University, NJ
- 1/2001 Theoretical Physics Seminar, UC San Diego
- 1/2001 Mathematical Physics Seminar, USC, Los Angeles
- 12/2000 Elementary Particle Physics Seminar at UCLA
- 11/2000 String Theory Seminar, KITP, Santa Barbara
- 7/1999 Talk at the School on Singularities in Algebraic Geometry and Physics, Lisbon

Invited Participation in Conferences and Research Workshops

- 9/2010 KITP, Santa Barbara Langlands-Type Dualities in Quantum Field Theory Program
- 8-9/2010 Institut Henri Poincaré, Paris “Advances in string theory, wall crossing, and
quaternion-Kähler geometry.”
- 10/2008 Nordita Workshop “Geometrical Aspects of String Theory” Stockholm
- 9/2008 SISSA “From integrable structures to topological strings and back” Trieste
- 8/2008 Prestrings workshop, ETH, Zurich
- 7-8/2008 “Gauge Theory and Langlands Duality,” KITP Workshop, Santa Barbara
- 6/2008 “Geometry, Integrability and Twistor Theory,” DAMPT, Cambridge
- 8/2007 Workshop on Non-linear Integral Transforms: Fourier-Mukai and Nahm,
Centre de Recherche Mathématiques, Montreal
- 8/2007 Twistors, Strings and Scattering Amplitudes, LMS Durham Symposium

- 7/2007 p-adic Analysis, Periods and Physics, Benasque Cener for Science
- 7/2006 Integrability in Gauge and String Theory, Potsdam
- 7/2006 Geometric Aspects of Integrable Systems Workshop, University of Coimbra
- 8-9/2005 KITP workshop “Mathematical Structures in String Theory,” Santa Barbara, CA
- 1/2005 Workshop on Pure Spinors Formalism in String Theory, IHES, France
- 1/2005 Twistor String Theory, London Mathematical Society Workshop, The Mathematical Institute, Oxford
- 7/2004 17th International Conference on General Relativity and Gravitation, Dublin
- 3/2004 Workshop “ L^2 -harmonic Forms in Geometry and String Theory,” American Institute of Mathematics, Palo Alto, CA
- 8-9/2003 Simons Workshop in Mathematics and Physics, YITP Stony Brook, NY
- 7/2003 Infinite Dimensional Lie Algebras and Quantum Integrable Systems, Faro, Portugal
- 7/2003 Talk at the Young Researchers Symposium, XIV International Congress on Mathematical Physics, Lisbon
- 6/2003 Symplectic Geometry and Physics Workshop, IPAM, UCLA
- 6/2003 Workshop on Geometric Integral Transforms and Applications, Salamanca
- 4/2003 Algebraic Geometry, Integrable Systems and Gauge Theory, AMS 2003 Spring Eastern Section Meeting, NY
- 6/2002 Minimal Varieties in Geometry and Physics, Stony Brook, NY
- 6/2002 Complexity in Geophysical Systems Workshop, Institute for Mathematics and its Applications, Minneapolis, MN
- 11/2001 John Schwarz 60 Symposium, Caltech
- 9/2001 Xth Oporto Meeting on Geometry, Topology and Physics
- 9/2000 IX Oporto Meeting on Geometry, Topology and Physics
- 9/2000 Particle Physics and Gravitation Conference, Kolymbari, Crete
- 9-10/1999 The Geometry and Physics of Monopoles, Edinburgh
- 9/1999 Géométrie algébrique et physique, CIRM, Luminy, Marseille, France
- 11/1998 Trends in Mathematical Physics, University of Tennessee
- 3/1998 International Symposium on Particles, Strings and Cosmology, Boston, MA

Personal Information

US Citizen, married, three children. Languages: English, Russian, French, and Hebrew.