Curriculum Vitae

Sergey Cherkis

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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*

EMPLOYMENT

- 2017-present **University of Arizona**, Full Professor, Department of Mathematics
- 2012-2017 **University of Arizona**, Associate Professor, Department of Mathematics
- 2004-2011 **Trinity College Dublin**, Permanent Lecturer, School of Mathematics (Merit Bar in 2005)
- 2001-2004 **Institute for Advanced Study**, Princeton, Member of the School of Natural Sciences
- 1998-2001 **UCLA**, Postdoctoral Researcher, Department of Physics and Astronomy

Visiting Positions

2020-2021 Sabbatical at the School of Mathematics, Institute for Advanced Study, Princeton; Summer 2019 Institute des Hautes Études Scientifique, France (*Visiting Professor)*; Summer 2018&2017 Center for Theoretical Physics, Berkeley University (*Visiting Professor)*; Summer 2015 Institute for Advanced Study, Princeton (*Visiting Professor)*; Summer 2014 Institute des Hautes Études Scientifique, France (*Visiting Professor)*; Summer 2014 Center for Theoretical Physics, Berkeley University (*Visiting Professor)*; Fall Semester 2011 Simons Center for Geometry and Physics in Stony Brook (*Visiting Professor)*; 2010-2011 Stanford University, Department of Mathematics and UC Berkeley, Center for Theoretical Physics (*Sabbatical Year Visit)*; 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 Institute des Hautes Études Scientifique, France (*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*); January 2003 Physics Department, Harvard University (*Visitor*); 2001 IGPP, Department of Earth and Space Sciences, UCLA (*Researcher*); Summer 1996 TASI, University of Colorado, Boulder (*Student*); Winter 1994 Jerusalem Winter School (*Student*); Summer 1993 Woods Hole Oceanographic Institute, MA (*Researcher*).

GRANTS AND CONTRACTS

- 2012-2017 Simons Foundation Collaboration Grant "From Integrable Systems to Hyperkähler Geometry via String Theory."
- 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

- 2016-2019 Matthew Wheeler
- 2012-2015 Andres Larrain-Hubach
- 2007-2010 Christian Saemann
- 2007-2009 Giacomo Marmorini
- 2008-2009 Osvaldo Santillan

Graduate Students Supervised

- 2013-2019 Rebekah Cross, PhD
- 2018-present Thomas Harris
- 2016-present Jason Quinones, PhD candidate
- 2007-2010 Clare O'Hara, PhD
- 2009-2010 Sarang Shah, MSc
- 2008-2010 David Leen, MSc
- 2005-2007 Brian Durcan, MSc

Undergraduate Projects Supervised

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

CONFERENCES CoORGANIZED

- 2023 Instantons and Monopoles in Quantum Gauge Theory Workshop, IHES
- 2/2021 BIRS, Banff, Canada, "Geometry, Analysis, and Quantum Physics of Monopoles" workshop.
- 2/2019 Hoppin Miniconference on Monopoles, University of Arizona
- 7/2017 Mathematical Congress of the Americas, Section: Gauge Theory and Special Geometry, Montreal
- 8-9/2017 The Analysis of Gauge-Theoretic Moduli Spaces Workshop, BANFF, Canada
- 7-8/2015 Program and Workshop: Metric and Analytic Aspects of Moduli Spaces, Isaac Newton Institute for Mathematical Sciences, Cambridge, UK
- 2013-19 Annual Chess & Science Festival and All-Girls tournament at Flandrau Science Center, Tucson

CONFERENCES AND SCHOLARLY CONTRIBUTIONS

Invited Talks

- 7/2021 Analysis, Geometry and Topology of Singular PDE workshop, Oberwolfach, Germany
- 2/2021 Center for Advanced Studies, Skoltech, Moscow
- 7/2019 Geometric and analytic aspects of moduli spaces, Hannover, Germany
- 5/2019 Microlocal Methods in Analysis and Geometry, CIRM, Luminy, France
- 3/2019 Challenges at the Interface of Hitchin Systems and String Theory, SCGP, Stony Brook
- 3/2019 EMPG Seminar, Maxwell Institute, ICMS, Edinburgh
- 7/2018 Quantum Fields, Geometry and Representation Theory ICTS-TIFR, Bengaluru, India

- 8/2017 Hurtubise Fest, CRM, Montreal, Canada
- 8/2017 BIRS, Banff, Canada
- 7/2017 Sen's Conjecture and Beyond, UC London, UK
- 3/2017 Gauge Theory and Categorification, IPAM, UCLA, CA
- 2/2017 Hitchin Systems in Mathematics and Physics, Perimeter Institute, Canada
- 11/2016 JHS75, The Walter Burke Institute for Theoretical Physics, Caltech, CA
- 5/2016 Moduli, Integrability and Dynamics workshop, Institut Mittag-Leffler, Sweden
- 8/2016 LMS-EPSRC Durham Symposium "Geometric and Algebraic Aspects of Integrability" UK
- 7/2015 "Metric and Analytic Aspects of Moduli Spaces," Cambridge, UK
- 10/2014 Geometry Seminar, UT Austin, TX
- 11/2014 Geometry Seminar, Kansas State University
- 11/2014 Geometry Seminar, Duke University
- 6/2014 Theoretical Physics Seminar, IPhT, Saclay, France
- 5/2014 Edinburgh Geometry Seminar, International Centre for Mathematical Sciences, Edinburgh
- 3/2014 Mitchell Institute Seminar. Texas A&M University: Texas A&M University
- 3/2014 Geometry Seminar, Stanford University, CA
- 11/2013 Theory Seminar, Caltech
- 2/2013 Physics Colloquium, ASU, AZ
- 7/2013 Workshop "Moduli Spaces and Their Invariants in Mathematical Physics", CRM, Montreal
- 10/2013 Program "Geometry of Strings and Fields," Galileo Galilei Institute, Florence
- 7/2013 Geometry and Physics GAP13 School, University of Montreal, Canada
- 11/2013 Quiver Varieties Program, Simons Center, Stony Brook, NY
- 9/2013 Mathematical Physics Seminar, University of Arizona
- 11/2012 Hyperkähler Geometry Workshop, Simons Center
- 9/2012 University of Arizona Physics Colloquium
- 9/2012 Caltech Theory Seminar
- 9/2012 Topological Solitons, Cambridge, UK
- 3/2012 Advances in hyperkähler and holomorphic symplectic geometry, BIRS, Banff
- 5/2012 Manifolds with Special Holonomy, Calibrated Submanifolds & Connections, BIRS, Banff
- 5/2012 Analysis and Geometric Singularities, Oberwolfach
- 10/2012 Analysis Seminar, University of Arizona
- 1/2012 Algebraic Geometry Seminar, University of Arizona

Invited Participation in Conferences and Research Workshops

- 12/2019 Geometric Representation Theory and Quantum Field Theories, TSIMF, Sanya, China
- 7/2018 Quantum Fields, Geometry and Representation Theory, ICTS, Bangalore, India
- 9/2014 Special Geometric Structures in Mathematics and Physics, Hamburg Univ., Germany
- 8/2014 Riemann Workshop "Gauge Theories in Higher Dimensions", Hannover, Germany
- 10/2013 Quiver Varieties Program, Simons Center for Geometry and Physics
- 10/2013 Geometry of Strings and Fields, Galileo Galilei Institute, Florence, Italy
- 5/2013 Wall-crossing and integrable systems, CRM, Montreal, Canada
- 6/2013 Moduli Spaces and their Invariants in Mathematical Physics, CRM, Montreal, Canada
- Spring, 2012 Mathematics and Applications of Branes in String and M-theory, Newton Institute, Cambridge, UK
- Fall, 2011 Complex Geometry Program, Simons Center for Geometry and Physics at Stony Brook University

TEACHING EXPERIENCE

- 2022 Topology MA432/532, Asymptotic Methods MA587
- 2021 Mathematical Physics MA541
- 2019 Geometry and Topology MA534, Undergraduate Research Seminar MA396C
- 2018 Lie Groups and Lie Algebras MA559
- 2017 Riemannian Geometry MA537, Advanced Engineering Math MA322, Topology MA432
- 2016 String Theory MA538 (spring), Calculus MA129 (spring)
- 2015 Calculus MA129 & Topology MA432 (spring); Global Differential Geometry MA537 (fall)
- 2014 Geometry of Yang-Mills MA538 (spring)
- 2013-2015 Geometry and Topology MA534
- 2013 Calculus MA129 (spring)
- 2012 Calculus MA129 (spring), Advanced Analysis MA422 (fall)
- 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)
- 1988-1991 Training of High-school Students for Mathematics Olympiads and Competitions

Referee and Reviewer

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