

Sergei Gukov

Curriculum Vitae

Caltech 452-48
1200 E. California Bl.
Pasadena, CA 91125, USA

tel.: (626) 395-6688
fax: (626) 586-8473
gukov@theory.caltech.edu

Personal

Born April 1977 in Moscow, Russia
U.S. Permanent Resident

Education

- 2001 Ph.D. in Physics, Princeton University
Thesis Advisor: Edward Witten
- 1999 M.S. in Physics, Princeton University
- 1997 B.S. in Physics and Mathematics, *summa cum laude*,
Moscow Institute of Physics and Technology (MIPT)

Employment

- 2004-present Associate Professor of Theoretical Physics and Mathematics,
California Institute of Technology
- 2001-2006 Long-Term Prize Fellow, Clay Mathematics Institute

Honors and Awards

- 2001-2006 Clay Mathematics Institute Long-Term Prize Fellowship
- 2000 I.Ya.Pomeranchuk Award for Young Scientists
- 1997-1998 John Hertz Merit Fellowship
- 1996-1997 The Fellowship of the Government of the Russian Federation
- 1995-1996 The Fellowship of the President of the Russian Federation
- 1994-1995 ISSEP Award (Soros Fellow in Physics)
- 1992 1st prize, Soviet Union (USSR) Physics Olympiad
1st prize, Moscow Mathematics Olympiad

Research Interests

- Physics String Theory, Gauge Theory, Quantum Gravity
- Mathematics Algebraic Geometry, Special Holonomy Manifolds, Integrable Systems,
3-manifold Invariants, Arithmetic Geometry

Professional Service

Referee for: *Advances in Theoretical and Mathematical Physics*, *Communications in Mathematical Physics*, *The Journal of High Energy Physics*, *Physical Review D*, *Nuclear Physics B*, *Letters in Mathematical Physics*, *Reviews of Modern Physics*, CRDF, and National Science Foundation

Teaching Experience

- 2005-2006: Caltech classes Ph232 and Ph235
- Jun 2005: Lectures at the summer school TASI-2005, *The Many Dimensions of String Theory*, University of Colorado, Boulder
- May 2003: Tutorial Lectures at the IPAM Program *Symplectic Geometry and Physics*
- Mar 2003: CMI Program for gifted high school students
- Summer 2002: Associate Fellow: *APA Pinnacle Summit*,
(mentored one of the top high school physics students in the US)
- Mar 2002: Lectures at the CMI school on Geometry and String Theory
- Dec 2001: Lectures at the 6th APCTP winter school on String Theory
- Jul 2001: Mentor, the 42nd International Mathematical Olympiad
- 1998-1999: Teaching Assistant, Princeton University
- 1995-1996: Instructor, The Correspondence School of MIPT
- Summer 1995: Co-organizer, ISSEP (Soros) High School Mathematics Olympiad
- 1992-1994: College Instructor in Physics

Seminar Talks

- 2006: University of Chicago, Cal. State LA Physics Colloquium
- 2005: KITP, Caltech Mathematics Colloquium, UCSB Mathematics Colloquium, UC Davis (Math Colloquium and String Theory Seminar), Harvard University (Gauge Theory and Topology Seminar), MIT (Infinite-Dimensional Algebra Seminar), UBC Theoretical Physics Colloquium, Caltech Physics Colloquium
- 2004: Harvard University (Differential Geometry Seminar), UC San Diego, Texas A&M University, Harvard University (Gauge Theory and Topology Seminar), Caltech, DESY Hamburg, MIT, UCSB Mathematics Colloquium, KITP, UC Davis, Perimeter Institute, University of Illinois at Urbana-Champaign
- 2003: University of Amsterdam, Harvard University (Differential Geometry Seminar), Columbia University (Geometric Topology Seminar), Rutgers University, University of Maryland, Princeton University, Caltech, UC Berkeley, Brandeis Math/CS/Physics Everyperson Seminar, Stanford University, UCSB Physics Seminar, UCSB Mathematics Colloquium
- 2002: Duke University, UNC-Chapel Hill, UT Austin, ETH-Zurich, Rutgers University, Columbia University, SUNY Stony Brook
- 2001: University of Pennsylvania, Joint Harvard/MIT Theory Seminar, Boston University, University of Illinois at Urbana-Champaign, University of Chicago, Harvard University, Princeton University, KITP, UC Santa Barbara
- 2000: SLAC, Stanford University, KITP, UC Santa Barbara, University of Pennsylvania, Duke University, L.D. Landau Institute for Theoretical Physics, Harvard University, CIT-USC Center for Theoretical Physics
- 1999: Princeton University, Institute of Theoretical and Experimental Physics, L.D. Landau Institute for Theoretical Physics,
- 1998: LPTHE Jussieu (France)

Invited Lectures

- Mar 2006: Conference *Around the Volume Conjecture*, Columbia University
- Feb 2006: *Frontiers in String Theory*, Banff
- Nov 2005: *Reinventing Caltech*, Robert F. Bacher Symposium, Caltech
- Oct 2005: *Algebraic Geometry and Topological Strings*, Lisbon
- Oct 2005: Workshop in Algebraic Geometry and Physics 2005, UPenn
- Aug 2005: Simons Workshop in Mathematics and Physics 2005, Stony Brook
- Jun 2005: Amsterdam String Theory Workshop 2005
- Jun 2005: Conference *Geometric Topology and Connections with Quantum Field Theory*, Oberwolfach
- May 2005: 12th Gokova Geometry/Topology Conference, Turkey
- May 2005: Workshop *Strings, Quantum Field Theory and Statistical Mechanics*, UC Berkeley
- Apr 2005: Great Lakes Geometry Conference, Perimeter Institute
- Apr 2005: I. Tamm Conference on Theoretical Physics, Moscow
- Mar 2005: Workshop on $N = 1$ Compactifications, Fields Institute
- Jan 2005: Twistor String Theory Conference, University of Oxford
- Dec 2004: *Algebraic, Symplectic Geometry and Physics*, University of Miami (two lectures)
- Aug 2004: Simons Workshop in Mathematics and Physics 2004, Stony Brook
- Aug 2004: Aspen Workshop *Strings, Branes and Superpotentials*
- Jul 2004: XIIIth Oporto Meeting on Geometry, Topology and Physics, Oporto, Portugal (series of lectures)
- Jul 2004: Quantum Hyperbolic Geometry Workshop, Potsdam, Germany
- Jun 2004: AMS-IMS-SIAM String Geometry Conference, Snowbird, Utah
- May 2004: *Geometry and Topology of String Theory*, Northwestern University
- Dec 2003: Pacific Northwest String Seminar, University of Washington, Seattle
- Sept 2003: Workshop on the Hyperbolic Volume Conjecture, Geneva
- Jul 2003: *Strings 2003*, Kyoto, Japan
- May 2003: *Geometry and Physics of G_2 Manifolds*, UCLA (series of lectures)
- Apr 2003: IPAM Conformal Field Theory Reunion Conference
- Mar 2003: *Recent Developments in String Theory*, Banff
- Aug 2002: *Recent Developments in String/M-theory and Field Theory*, Wernsdorf, Germany (overview lecture)
- Aug 2002: *Geometrical and Cosmological Aspects of Branes and Strings*, XXXIIIth Summer Institute, ENS Paris
- Aug 2002: The International Conference on String Theory in Beijing
- Aug 2002: *ICM satellite conference "Strings Theory"*, China
- Jul 2002: *Strings 2002*, Cambridge UK
- Jul 2001: IAS/PCMI Summer Session 2001, Park City, Utah (two talks)
- Aug 2000: *International Workshop on Quantum Gravity*, Dubna
- Nov 1996: *Modern Problems of Fundamental and Applied Physics and Mathematics*, MIPT, Moscow