CURRICULUM VITAE

Vladimir BARANOVSKY

CITIZENSHIP:
Russian, US permanent resident

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EDUCATION:
2000 Ph.D. in Mathematics, University of Chicago
1996 M.S. in Mathematics, University of Chicago
1995 Honors Diploma, Moscow State University

EMPLOYMENT HISTORY:
Jul. 2004 - present: Assistant Professor, University of California - Irvine
Sep. 2002 - Jun. 2004: Johnson Senior Research Fellow, Calfornia Institute of Technology
Jan. 2001 - Aug. 2002: Tausski-Todd Instructor, California Institute of Technology
Sep. 2000 - Dec. 2000: Institute for Advanced Study, Princeton

RESEARCH INTERESTS: Algebraic Geometry and Representation Theory.

COURSES TAUGHT (PAST 10 YEARS):

- Arithmetic Geometry: reprsentations (Math 239c, UC Irvine, Spring 2009)

- Introduction to Algebraic Geometry (Math 233abc, UC Irvine, 2004/05, 2006/07 and 2008/09)

- Analytic Functions (Math 220A, Fall 2007)

- Undergraduate Algebra (Math 120A, Spring 2007 and 2008)

- Elementary Differential Equations (Math 3D, Summer I 2006)

- Graduate Algebra (Math 230abc, UC Irvine, Fall 2005 - Spring 2006)

- Introduction to Number Theory (Math 180, UC Irvine, Summer II 2005 and Winter 2006)

- Introduction to Rings and Fields (Math 120B, UC Irvine, Spring 2005, Winter 2008)

- Introduction to Algebraic Geometry (Math 130bc, Caltech, Winter-Spring 2004)

- Introduction to Number Theory (Math 7, Caltech, Spring 2003)

- Fundamental Groups and Homology (Math 109a, Caltech, Fall 2002)

- Galois Theory and Representations of Finite Groups (Math 5c, Caltech, Spring 2001 and Spring 2002)

- Rings and Modules (Math 5b, Caltech, Winter 2002)

- Quotients in Symplectic and Algebraic geometry (Math 191e, Caltech, Winter 2002)

- Atiyah-Singer Index Theorem (Math 191e, Caltech, Winter 2001)

- Calculus Sequence (151-153, University of Chicago, Fall 1997 - Spring 1999)

VISITING POSITIONS:

- Jul. 2000: Visitor at MPI-Bonn

- Jul.-Aug. 1999: Visitor at IHES

- Jun.-Jul. 1998: Guest student at MPI-Bonn

AWARDS AND FELLOWSHIPS:

- Sept 2006 - Aug 2009 Sloan Research Fellowship

- 2001-2002 Associated Students of Caltech Annual Award for Excellence in Teaching

- Jun. - Aug. 2000: Clay Mathematics Institute Liftoff Fellowship

- Oct. 1999 - Jun. 2000: Sloan Dissertation Fellowship

- Aug.-Sept. 1998: CRDF grant "Russian-American Young Investigators Exchange Program"

- Oct. 1995 - June 1998: R. McCormick Fellowship for Graduate Studies

PUBLICATIONS:

1. "Norm functors and zero cycles", to appear in *Proc. Edin. Math Soc.* (2010).

2. (with V. Ginzburg) Gerstenhaber-Batalin-Vilkoviski structures on coisotropic intersections, to appear in *Math. Res. Lett.* (2010).

3. "Algebraization of bundles on non-proper schemes", to appear in *Trans. AMS* (2009).

4. "A universal enveloping for L-infinity algebras", *Math.Res. Lett.* **15** (2008).

5. "BGG correspondence for toric complete intersections" *Moscow Mathematical Journal*, **7** no. 4 (2007), 581-599, (*special issue dedicated to Victor Ginzburg's 50th birthday*).

6. (with Tihomir Petrov) "Brauer Groups and Crepant Resolutions", *Advances in Math* **209**, no 2 (2007), 547-560.

7. "BGG correspondence for projective complete intersections", *Internat. Math. Res. Not.*, **45** (2005), 2759-2774.

8. "Orbifold cohomology as periodic cyclic homology", *International Journal of Mathematics*, **14** (2003), no. 8, 791-812.

9. (with S. Evens and V. Ginzburg) "Representations of quantum tori and G-bundles on elliptic curves", in *"The orbit method in geometry and physics" (Kirillov's Festschrift)*, Progr. Math., **213**, Birkhäuser, Boston, 2003, 29-48.

10. (with V. Ginzburg and A. Kuznetsov) "Wilson's Grassmannian and a noncommutative quadric", *Int. Math. Res. Not.*, no. 21 (2003), 1155–1197.

11. (with V. Ginzburg and A. Kuznetsov) "Quiver varieties and a noncommutative $\mathbb{P}^2$", *Compositio Math*, **134** (2002), no. 3, 283–318.

12. "The variety of pairs of commuting nilpotent matrices is irreducible.", *Transformation Groups*, **6** (2001), no. 1, 3-8.

13. "Moduli of Sheaves on Surfaces and Action of the Oscillator Algebra", *Journal of Differential Geometry*, **55** (2000), no.2, 193-227.

14. (with V. Ginzburg) "Conjugacy classes in loop groups and G-bundles on elliptic curves." *Internat. Math. Res. Notices*, no. 15 (1996), 733–751.

15. "The cohomology ring of the moduli space of stable bundles with odd determinant." (Russian) *Izv. Ross. Akad. Nauk Ser. Mat.*, **58** (1994), no. 4, 204–210; English translation in *Russ. Acad. Sci. Izv. Math.*, **45** (1995), no. 1, 207–213

PREPRINTS:

1. (with V. Ginzburg and J. Pecharich) "Deformation of line bundles on coisotropic subvarieties", preprint September 2009.

2. (with J. Pecharich) "On equivalences of derived and singular categories" submitted, also preprint arXiv:0907.3717.

3. "Bundles on non-proper schemes: representability", submitted, also preprint arXiv:0810.0091.

4. "Permutahedra and Eulerian idempotents", in preparation

5. "Chow variety as a functor", in preparation

6. "Bundles on non-proper schemes: Uhlenbeck-Chow compactification", in preparation.

TALKS ON SEMINARS AND CONFERENCES (PAST 10 YEARS):

- Nov 7-8, 2009 (projected); AMS meeting in Riverside,CA
  "Deformation of line bundles on coisotropic intersections."

- June 17, 2009; Conference "Vector Bundles in Algebraic Geometry", Berlin
  "Uhlenbeck compactification as a stack."

- May 5, 2009; Math-Physics joint seminar, UPenn
  "Uhlenbeck compactification from algebraic point of view"

- Apr 7, 2009; Mathematics Seminar, Korean Institute for Advanced Study, Seoul, Korea
  "Sheaves on toric Calabi-Yau hypersurfaces"

- Apr 4, 2009; Workshop for birationalists, POSTECH, Pohang, Korea
  "Toric Calabi-Yau hypersurfaces and a generalization of a result of Orlov"

- Feb 13, 2009; Algebraic Geometry Seminar, University of Wisconsin-Madison
  "Chow functors and Uhlenbeck compactifications"

- Jan 9, 2009; Conference on Toric Varieties, Oberwolfach, Germany
  "Coherent sheaves on complete intersections in Toric Varieties"

- Feb 4, 2008; Geometric Langlands Seminar, University of Chicago
  "Algebraization of bundles on non-proper schemes"

- Nov 18, 2006; Southern California Algebra Conference, UCLA
  "(Another) universal enveloping for L-infinity algebras"

- Sept 8, 2006; Algebra Section Seminar, Steklov Institute, Moscow
  "A discrete twist of the categorical McKay correspondence"

- Aug 17, 2006; ICM Satellite Conference in Algebraic Geometry, Segovia, Spain
  "Brauer Groups and Crepant Resolutions"

- May 24, 2006; Algebraic Geometry Seminar, Caltech
  "Brauer groups and Crepant resolutions"

- Jan 23, 2006; Algebraic Geometry Seminar, Caltech
  "Calogero-Moser system and points on the plane"

- Dec 03, 2005; Western Algebraic Geometry Seminar (WAGS), Salt Lake City
  "Brauer Groups and Crepant Resolutions"

- Apr 16, 2005; AMS Sectional Meeting in Santa Barbara
  "Brauer Groups and Resolutions of V/G"

- Feb 4, 2004; Colloquium, USC
  "Algebraic vector bundles and the analogue of $L^2(X)$ in algebraic geometry"

- January 20, 2004; Special Colloquium, UCI
  "Algebraic vector bundles and the analogue of $L^2(X)$ in algebraic geometry"

- October 29, 2003; Algebraic Geometry Seminar, Caltech
  "Vector Bundles on Complete intersections in Projective Spaces"

- May 4, 2003; Algebraic Geometry Seminar, UCI
  "BGG correspondence for complete intersections"

- November 10, 2002; Algebraic Geometry Seminar, Caltech
  "Orbifold Cohomology as periodic cyclic homology"

- October 5, 2002; AMS meeting in Boston, Special Session on Hilbert Schemes
  "Orbifold cohomology as periodic cyclic homology"

- Nov 2, 2001; Algebraic Geometry Seminar, Caltech
  "Some results on Hitchin moduli spaces"

- May 20, 2001; Algebraic Geometry Seminar, University of Washington - Seattle
  "Noncommutative geometry and quiver varieties"

- May 12, 2001; Conference on Linear Algebra, Cal. State - Northridge
  "The variety of commuting nilpotent matrices is irreducible"

- February 7, 2001; Algebraic Geometry Seminar, Caltech
  "Wilson's Grassmanian and a Noncommutative Quadric"

- November 3, 2000; Geometry Seminar at IAS, Princeton
  "Quiver Varieties, Adelic Grassmaninans and Noncommutative P^2"

- March 1, 2000; Algebraic Geometry Seminary, Ohio-State University
  "Semismall resolutions and convolution actions"

- September 24, 1999; Workshop on Modular Invariants, Operator Algebras and Quotient Singularities, University of Warwick, UK
  "Moduli spaces and convolution algebras"

- May 23, 1999; Algebraic Geometry Seminar, Harvard
  "Uhlenbeck compactifications and gerbes over K_2"

- May 21, 1999; Joint Hilbert scheme seminar MIT
  "Punctual Quot Schemes and moduli of sheaves"