Curriculum Vitae

Vadim Vologodsky

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Personal Data: Born November 25, 1975, in Moscow, Russia.
Married. Russian citizen;
Children: Eugenia Vologdskaya
Permanent Resident of the United States of America.

Education and academic degrees:

- 1996-2001
  PhD student at Harvard University, USA
  Scientific adviser: Prof. David Kazhdan.
  PhD awarded June 2001.

- 1991-1996
  Undergraduate student at the Independent University of Moscow, Russia
  B.A. in Pure Mathematics 1996.

Positions:

- Visitor at the Max Planck Institute for Mathematics, Germany, May, 2013.
- 2013 -present: Associate Professor (with tenure), University of Oregon.
- 2009 - 2013: Assistant Professor, University of Oregon.
- Visitor at the University of Padova, Italy, September, 2011.
- Assistant Professor in Mathematics, The University of Chicago, 2004 - 2009.
- Visitor at the Hebrew University of Jerusalem, Israel, December , 2008.
- Member at the Institute for Advanced Study, Spring 2008.
- Visitor at the Max Planck Institute for Mathematics, Germany, September-November, 2006.
- Visitor at the Institut des Hautes Études Scientifiques, France, August-September, 2006.
- Visitor at the Institut des Hautes Études Scientifiques, France, August-September, 2006.
- Instructor in Mathematics, The University of Chicago, 2003 - 2004
- Researcher, European Post-Doctoral Institute, 2002-2003
- Instructor in Mathematics, The University of Chicago, 2001 - 2002
- Visitor at the Institut des Hautes Études Scientifiques, France, August-November, 2005.
- Visitor at the Hebrew University of Jerusalem, Israel, December , 2005.

Teaching: undergraduate courses

- Math 205, Analysis in several dimensions. (University of Chicago, Fall 2001)
- Math 250, Elementary Linear Algebra. (University of Chicago, Fall 2001)
- Math 220, Introduction to Mathematical Methods in Physics. (University of Chicago, Spring 2002)
- Math 205, Analysis in several dimensions. (University of Chicago, Spring 2002)
- Math 196, Mathematical Methods for Biological or Social Sciences. (University of Chicago, Fall 2003)
- Math 221, Mathematical Methods in Physics. (University of Chicago, Fall 2003)
- Math 200, Mathematical Methods for Physical Sciences. (University of Chicago, Spring 2004)
- Math 153, Calculus 3. (University of Chicago, Spring 2004)
- Math 255, Algebra 2, Linear Algebra. (University of Chicago, Winter 2005)
- Math 254, Algebra 1. Group Theory. (University of Chicago, Fall 2005)
- Math 255, Algebra 2, Linear Algebra. (University of Chicago, Winter 2006)

- Math 256, Algebra 3. Galois Theory. (University of Chicago, Spring 2007)
- Math 255, Algebra 2. Linear Algebra. (University of Chicago, Winter 2007)
- Math 254, Algebra 1. Group Theory. (University of Chicago, Fall 2007)
- Math 241, Topics in Geometry. (University of Chicago, Spring 2008)
- Math 256, Algebra 3. Galois Theory. (University of Chicago, Spring 2008)
- Math 242, Algebraic Number Theory. (University of Chicago, Spring 2009)
- Math 251, Single variable calculus, (University of Oregon, Fall 2009)
- Math 252, Single variable calculus, (University of Oregon, Winter 2010)
- Math 444-446, Abstract Algebra, (University of Oregon, 2010-11)
- Math 261-263, Calculus (with proofs), (University of Oregon, 2011-12)
- Math 431-433, Introduction to Topology, (University of Oregon, 2012-13)
- Math 256, Differential Equations, (University of Oregon, Fall 2012)
- Math 444-445, Abstract Algebra, (University of Oregon, Fall 2013, Winter 2014)
- Math 231, Discrete Mathematics, (University of Oregon, Winter 2014)

Teaching: graduate courses

- Theory of motives (University of Chicago, Winter 2005)
- Topics in Algebraic K-theory (University of Chicago, Fall 2005)
- Cyclic cohomology and algebraic K-theory (University of Chicago, Spring 2007)
- Topics in p-adic Hodge Theory (University of Chicago, Fall 2008)
- Math 682, Algebraic Geometry, (University of Oregon, Winter 2010)
- Math 683, Algebraic Geometry, (University of Oregon, Spring 2010)
- Math 607, Number Theory, (University of Oregon, Spring 2011)
- Math 607, Triangulated Categories, (University of Oregon, Winter 2012)
- Math 690, Characteristic classes, (University of Oregon, Fall 2013)

Awards and Honors:

- J. Soross Fellowship, Independent University of Moscow, Fall 1989 - Spring 1990.
- Clay Mathematical Institute researcher, Summer 2000.
- The European Post-Doctoral Institute grant, 2002-2003.
- Supported by National Science Foundation grants DMS-0401164, DMS-0701106, DMS-0901707.

Invited lectures:

- "Non-commutative local monodromy theorem". Conference on "Recent advances in Hodge theory: period domains, algebraic cycles, and arithmetic." University of British Columbia, Canada. June, 2013.

- "Hochschild cohomology of Azumaya algebras and the Atiyah class". Colloquium talk at the Northwestern University, November, 2012
- "Hochschild homology of the ring of differential operators on a smooth variety over $\mathbb{Z}/p^n\mathbb{Z}$". Conference on "Char-p and p-adic geometry", University of Mainz, June, 2012.
- "The motivic Albanese functor". Workshop on "Cohomological methods in abelian varieties", AIM, March, 2012.
- "On the instanton numbers". Conference on "Curves and categories in geometry and physics", IPMU, Japan, November, 2011.
- "On the center of the ring of differential operators on a smooth variety over $\mathbb{Z}/p^n\mathbb{Z}$". University of Padova, Italy, September, 2011.
- "Introduction to Hodge theory". Brixen Summer School "Cohomology Theories: a Road Map", Italy, September, 2011.
- "Some remarks on the integral Hodge realization of Voevodsky's motives". Conference in honour of Fedor Bogomolov's 65th birthday, Steklov Mathematical Institute, Russia, September, 2011.
- "Motivic integral of K3 surfaces over a non-archimedean field". Conference on "Witt vectors, foliations, and absolute de Rham cohomology", Nagoya, Japan, November, 2010.
- "Cartier transform in the derived algebraic geometry", University of British Columbia, Canada. March, 2010.
- Two lectures on "Nonabelian Hodge theory in characteristic p" . Workshop on p-adic Simpson's correspondence, Université de Rennes 1. Winter 2009.
- "Cristalline Deligne cohomology" . Conference on "Hodge Theory" at Venice International University. June 2006.
- "Non-commutative compactifications and elliptic curves". Workshop on Noncommutative Geometry and Number Theory. August 2003 at the MPIM, Bonn, Germany.
- "Nonabelian Hodge theory in characteristic p". Arbeitstagung 2003, Max-Planck-Institut fur Mathematik, Bonn, Germany.

- "Integrality of the canonical coordinates". Conference in Miami, "Geometric methods in Algebra and Number theory", December, 2003

Professional activities:

- Co-organizer of Algebraic Geometry seminar in the University of Chicago (2007 - 2009).
- Referee for Duke Math. Journal, Moscow Math. Journal, Journal of Mathematical Physics, Compositio Math. Journal, Communication in Number Theory and Physics, Journal of K-Theory, Inventiones Mathematicae.
- Member of Scholarships and Awards committee (University of Oregon, 2009-2010).
- Editor for "Reminiscences of Grothendieck and his school" by L. Illusie, A. Beilinson, S. Bloch and V. Drinfeld, Notices Amer. Math. Soc. 57 (2010), no. 9, 1106-1115.
- University of Oregon Senate member (2010-2012).
- Member of Postdoctoral Search committee (2010-2011).
- Head of Master committee (2011-2013).

Undergraduate students:

- Bif (Andrew) Reiser. Honors Thesis "Hochschild homology of the ring of differential operators in characteristic p". Spring, 2012.

Ph.D. students:

- Allen J Stewart. Expected Ph.D date: Spring, 2014.
- Nick Howell.

Published and accepted papers:

1. A. Stewart, V. Vologodsky, *On the center of the ring of differential operators on a smooth variety over* $\mathbb{Z}/p^n\mathbb{Z}$, Compositio Math. Journal (2012), DOI: http://dx.doi.org/10.1112/S0010437X12000462

2. V. Vologodsky, *Some applications of weight structures of Bondarko,* IMRN (2012), DOI: 10.1093/imrn/rnr261

3. V. Vologodsky, *Hodge realizations of 1-motives and the derived Albanese,* The Journal of K-theory (2012), DOI: http://dx.doi.org/10.1017/is011012008jkt178

4. A. Stewart, V. Vologodsky, *Motivic integral of K3 surfaces over a non-archimedean field,* Advances in Mathematics, Volume 228, Issue 5 (2011), 2688-2730.

5. V. Vologodsky, *On the derived DG functors,* Math. Research Letters, Volume 17, Issue 6, (2010), 1155-1170 .

6. A. Schwarz, V. Vologodsky, *Integrality theorems in the theory of topological strings*, Nuclear Physics B, Volume 821, Issue 3 (2009), 506-534.

7. A. Beilinson, and V. Vologodsky, *A DG guide to Voevodsky's motives*, Geom. Funct. Anal. 17 (2008), no. 6, 1709-1787.

8. A. Schwarz, V. Vologodsky, *Frobenius transformation, mirror map and instanton numbers*, Phys. Lett. B 660 (2008), no. 4, 422–427.

9. A. Ogus, and V. Vologodsky, *Nonabelian Hodge Theory in Characteristic p*, Publ. Math. Inst. Hautes Études Sci. No. 106 (2007), 1–138.

10. M. Kontsevich, A. Schwarz, V. Vologodsky, *Integrality of the instanton numbers and p-adic B-model*, Physics Letters B 637 (2006), p. 97-101.

11. Y. Soibelman, V. Vologodsky, *Non-commutative compactifications and elliptic curves*, IMRN 2003, no.28, 1549-1569

12. V. Vologodsky, *Hodge structure on the fundamental group and its application to p-adic integration*, Mosc. Math. J. 3 (2003), no. 1, 205–247.

13. V.Vologodsky, Appendix. The main article γ - *functions of representations and lifting* by A. Braverman and D. Kazhdan, GAFA 2000, Special Volume, part 1, 237-278.

14. V. Vologodsky, *On measure of K-points of an abelian variety, where K is a local field*, Appendix in *An Algebraic Integration* by D. Kazhdan, in "Mathematics: frontiers and perspectives", V. Arnold, M. Atiyah, P. Lax and B. Mazur eds., AMS, 2000

Preprints and papers in preparation:

1. A. Schwarz, V. Vologodsky, J. Walcher *Framing the Di-Logarithm (over $\mathbb{Z}$),* arXiv:1306.4298

2. V.Vologodsky, Appendix. The main article *Wreath Macdonald polynomials and categorical McKay correspondence* by R. Bezrukavnikov and M. Finkelberg, arXiv:1208.3696 (2012). Submitted.

3. J. Tu, V. Vologodsky *Motivic vanishing cycles,* in preparation (2012)

4. A. Berenstein, E. Richmond, V. Vologodsky *Equivariant homology of fibered products,* in preparation (2012)

5. D. Platt, V. Vologodsky, *On the devisage property of periodic cyclic homology,* in preparation (2012)

6. V. Vologodsky, *A geometric construction of the Mirror map,* in preparation (2012)

7. V. Vologodsky, *On the integral Orgogozo Theorem,* in preparation (2012)

8. V. Vologodsky *Hochschild cohomology of Azumaya algebras and the Atiyah class,* available electronically at http://pages.uoregon.edu/vvologod/papers/atiyahclass.pdf (2012)

9. V. Vologodsky, *On the N-integrality of instanton numbers ,* arXiv:0707.4617 (2008). Submitted to Commun. Number Theory Phys. Currently under revision. (2012)

10. V. Vologodsky, *P-adic Cartier transform,* available electronically at http://pages.uoregon.edu/vvologod/papers/p-adiccartier.pdf (2008).

11. V. Vologodsky, *Some applications of Goodwillie's Theorem,* available electronically at http://pages.uoregon.edu/vvologod/papers/ktheory.pdf (2008).

12. A. Otwinowska, V. Vologodsky, *Motivic sheaves over a curve,* available electronically at http://pages.uoregon.edu/vvologod/papers/motivicsheaves.pdf (2007).