

# Semyon Blinsein

## Curriculum Vitae

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BACKGROUND	Date of Birth: Dec. 13, 1984 Place of Birth: Odessa, Ukraine Citizenship: United States
CONTACT INFORMATION	UCLA Department of Mathematics Box 951555 Los Angeles CA, 90095-1555 <i>Email:</i> blinsein@math.ucla.edu <i>Web:</i> <a href="http://www.math.ucla.edu/~blinsein/">http://www.math.ucla.edu/~blinsein/</a>
RESEARCH INTERESTS	Geometry and arithmetic of algebraic groups, cohomological invariants, and unramified cohomology, with special focus on algebraic tori
EDUCATION	<b>University of California, Los Angeles</b> , Los Angeles California <b>2007 - 2012</b> <i>Department of Mathematics</i> Ph.D. in Mathematics, expected June 2012 Thesis: <i>Cohomological Invariants of Algebraic Tori</i> M.A. in Mathematics, June 2009 <b>Northwestern University</b> , Evanston Illinois <b>2003 - 2007</b> <i>Weinberg College of Arts &amp; Sciences</i> B.A. in Mathematics, Physics, and Integrated Science Program, June 2007 Senior Thesis: <i>Cohomology Theories on Smooth Manifolds</i>
GRANTS AND SCHOLARSHIPS	Northwestern University Undergraduate Research Grants Committee Summer Research Grant 2006 AFCEA General John A. Wickham Scholarship 2005 & 2006 Northwestern University Weinberg College of Arts & Sciences Summer Research Grant 2005
HONORS AND AWARDS	Northwestern University Departmental Honors: Mathematics 2007 Northwestern University Undergraduate Research Symposium, Outstanding Presentation 2006
PUBLICATIONS	[1] <i>Cohomological Invariants of Algebraic Tori</i> . S. Blinsein, A.S. Merkurjev (in preparation) [2] <i>Globally Anisotropic High Porosity Silica Aerogels</i> . J. Pollanen, K.R. Shirer, S. Blinsein, J.P. Davis, H. Choi, T.M. Lippman, W.P. Halperin, and L.B. Lurio. <i>Journal of Non-Crystalline Solids</i> , <b>354</b> , p. 4668-4674 (2008). [3] <i>Anisotropic Aerogels for Studying Superfluid <math>^3\text{He}</math></i> . J. Pollanen, S. Blinsein, H. Choi, J.P. Davis, T.M. Lippman, L.B. Lurio, and W.P. Halperin. <i>Journal of Low Temperature Physics</i> , <b>148</b> , No. 5/6, p. 579-584 (2006). [4] <i>Compressed Silica Aerogels for the Study of Superfluid <math>^3\text{He}</math></i> . J. Pollanen, H. Choi, J. P. Davis, S. Blinsein, T. M. Lippman, L. B. Lurio, N. Mulders, and W. P. Halperin. <i>AIP Conference Proceedings</i> , <b>850</b> , p. 237-238 (2005).

RESEARCH EXPERIENCE	<p><i>Cohomological Invariants of Algebraic Tori</i>, UCLA <span style="float: right;"><b>2011 - Present</b></span></p> <p>Currently investigating cohomological invariants of algebraic tori, and more specifically, their unramified cohomology. Under the direction of Professor A.S. Merkurjev. Research article forthcoming.</p> <p><i>Ultra Low Temperature Physics</i>, Northwestern University <span style="float: right;"><b>2005 - 2007</b></span></p> <p>Involved in synthesis and characterization of silica aerogel for use in investigating superfluid <math>^3\text{He}</math> as well as applications of silica aerogel for use in isotopic filtration of <math>^3\text{He}/^4\text{He}</math> mixtures. Under the direction of Professor W.P. Halperin.</p>
INVITED TALKS	<p><i>Numbers &amp; Countability</i>, University of Chicago Laboratory Middle School <span style="float: right;"><b>May 2006 &amp; 2007</b></span></p> <p>Presented sets of lectures to advanced seventh and eighth grade students covering basic number systems, countability, and a proof of the uncountability of the real numbers</p>
EXPOSITORY TALKS	<p><i>Lecture Notes on Motivic Cohomology</i>, by C. Mazza, <i>et al.</i></p> <p>§1: The Category of Finite Correspondences <span style="float: right;">Winter 2011</span></p> <p>§8: Derived Tensor Products <span style="float: right;">Spring 2011</span></p> <p><i>Current Literature in Algebra</i></p> <p>Unramified Cohomology of Algebraic Tori <span style="float: right;">Fall 2010</span></p> <p>An Exact Sequence for Cohomological Invariants <span style="float: right;">Spring 2011</span></p> <p><i>Toric Varieties</i>, by W. Fulton, §2.1-2.2: Singularities <span style="float: right;">Winter 2011</span></p> <p><i>The Book of Involutions</i>, by M. Knus, <i>et al.</i></p> <p>§1: Central Simple Algebras <span style="float: right;">Fall 2009</span></p> <p>§20: Hopf Algebras and Group Schemes <span style="float: right;">Spring 2010</span></p> <p>§28: Galois Cohomology of Profinite Groups <span style="float: right;">Fall 2010</span></p> <p><i>Curves &amp; Surfaces</i>, following Chapters IV and V of Hartshorne</p> <p>§IV.5: Curves and the Canonical Embedding <span style="float: right;">Fall 2009</span></p> <p>§II.7: Blowing-up <span style="float: right;">Winter 2010</span></p> <p><i>Lectures on Seiberg-Witten Invariants</i>, by J. D. Moore <span style="float: right;">Fall 2008</span></p> <p>§1.4-1.6: The Curvature of a Connection, Characteristic Classes, and the Thom Form</p> <p>§2.7: The Atiyah-Singer Index Theorem</p> <p><i>Characteristic Class</i>, by J. W. Milnor and J. D. Stasheff <span style="float: right;">Spring 2008</span></p> <p>S13-14: Complex Vector Bundles and Chern Classes</p> <p>§17-18: The Oriented Cobordism Ring <math>\Omega_*</math>, Thom Spaces, and Transversality</p>
TEACHING EXPERIENCE	<p><b>College Lecturer</b>, UCLA Department of Mathematics</p> <p>* <i>Math 32B: Integral Calculus in Several Variables</i> <span style="float: right;">Fall 2011</span></p> <p>Lecturer for undergraduate course covering topics in multivariable integral calculus. Responsibilities include preparing three weekly lectures, assigning homework, writing and grading exams, and determining final grades.</p>

**Teaching Assistant**, UCLA Department of Mathematics

Math 115A: Abstract Linear Algebra	Spring 2010
Math 110B: Abstract Algebra: Group Theory	Winter 2012
Math 32B: Multivariable Integral Calculus	Winter 2008 & 2009
Math 32A: Multivariable Differential Calculus	Fall 2008
Math 31B: Integration & Infinite Series	Fall 2009, Summer 2010
Math 31A: Differential & Integral Calculus	Fall 2009, Winter 2011
Math 3C: Probability for Life Sciences	Spring 2009
Math 3B: Integral Calculus for Life Sciences	Summer 2009, Winter & Spring 2010, Spring 2011
Math 1: Precalculus	Fall 2007

Teaching evaluations available upon request

**Consultant Tutor**

- \* *Renaissance Kids, Inc.*, Los Angeles California March - June 2011  
Independent tutor for an education enrichment program working one-on-one with students ranging from junior high to high school.

**Private Tutor**

Fall 2007 - Present

Group Theory:

- \* Volunteered time to work with an extremely gifted eighth grade student on advanced material covering basic topics in group theory

Linear Algebra:

- \* Abstract
- \* Computational (without proofs)

Calculus:

- \* Multivariable Differential and Integral (Vector Calculus)
- \* Integration and Infinite Series
- \* Differential and Integral

Prealgebra/Algebra:

- \* Junior High students

Test Preparation:

- \* College Algebra, Masters program entrance exam
- \* SAT/ACT

LANGUAGES

Fluent in Russian