

Alexander Duncan

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Education

- 2007-2011 **Doctor of Philosophy**, Mathematics
University of British Columbia
Advisor: Zinovy Reichstein
- 2005-2007 **Master of Science**, Mathematics
University of British Columbia
- 2001-2005 **Honours Bachelor of Science**, Mathematics and Physics
University of Toronto

Academic Positions

- 2011-Present **RTG Assistant Adjunct Professor**
Department of Mathematics
University of California, Los Angeles

Publications

- A. Duncan** and Z. Reichstein. Versality of algebraic group actions and rational points on twisted varieties. (Submitted)
- A. Duncan.** Finite groups of essential dimension 2. *Comment. Math. Helv.* (Accepted 2010)
- A. Duncan.** Essential dimensions of A_7 and S_7 . *Math. Res. Lett.* 17 (2010), no. 2, 263-266.
- A. Duncan** and Z. Reichstein. SAGBI bases for rings of invariant Laurent polynomials. *Proc. Amer. Math. Soc.*, 137 (2009), no. 3, 835-844.
- A. Duncan**, M. LeBlanc, and D. L. Wehlau. A SAGBI basis for $\mathbb{F}[\mathbb{V}_2 \oplus \mathbb{V}_2 \oplus \mathbb{V}_3]^{C_p}$. *Canad. Math. Bull.*, 52 (2009), no. 1, 72-83.

Teaching

University of California, Los Angeles

- Winter 2012 Math 3B, Calculus for Life Sciences Students
Fall 2011 Math 115A, Linear Algebra

University of British Columbia

- Fall 2009 MATH 102, Differential Calculus with Applications to Life Sciences
Winter 2008 MATH 105, Integral Calculus with Applications to Commerce and Social Sciences
Fall 2006 MATH 184, Differential Calculus for Social Science and Commerce

Talks

- 2012 **Versal Varieties with a Twist**
Algebraic Geometry Seminar
Rice University
- 2011 **Toric Varieties and Essential Dimension**
Algebraic Groups and Related Structures Seminar
University of British Columbia
- 2011 **Versal Varieties and Twisting**
Southern California Algebraic Geometry Seminar
University of California, Los Angeles
- 2011 **Introduction to Essential Dimension I**
Introduction to Essential Dimension II
Finite Groups of Low Essential Dimension
Essential Dimension and Birational Geometry
University of Edinburgh
- 2011 **Versal Torsors**
Ramification in Algebra and Geometry
Emory University
- 2011 **Finite Groups of Low Essential Dimension**
Algebraic Geometry Seminar
University of Michigan
- 2011 **Finite Groups of Low Essential Dimension**
Algebraic Geometry Seminar
University of British Columbia
- 2010 **Solving Equations with Gröbner Bases**
Undergraduate Mathematics Colloquium
University of British Columbia
- 2009 **Essential Dimensions of A_7 and S_7**
Algebraic Groups, Galois Cohomology and Related Topics Seminar
University of British Columbia
- 2009 **Finite Groups of Essential Dimension 2**
Linear Algebraic Groups and Related Structures
Banff International Research Station
- 2009 **Finite Groups of Essential Dimension 2**
Algebraic Group Actions and Invariant Theory Session
CMS Summer Meeting, Memorial University of Newfoundland
- 2009 **Finite Groups of Essential Dimension 2 over \mathbb{C}**
Algebraic Groups, Galois Cohomology and Related Topics Seminar
University of British Columbia

Graduate Student Seminar, Department of Mathematics, UBC

- 2010 **What is an Undecidable Problem?**
- 2010 **What is Hilbert's Thirteenth Problem?**
- 2008 **Cubic Surfaces**
- 2008 **Continued Fraction Arithmetic**
- 2006 **The Surreal Numbers**

Talks (continued)

- 2005 **Introduction to Gröbner Bases**
Canadian Undergraduate Mathematics Conferences
- 2005 **Dissection of Rectangles into Squares**
Queen's University, Kingston
- 2004 **The Gamma Function**
Dalhousie University
- 2003 **An Introduction to Invariant Theory**
York University

Awards

- 2011 NSERC Postdoctoral Fellowship (\$40,000 / year) (declined)
- 2009 – 2011 Four Year Fellowship (\$16,000 / year)
- 2009 Pacific Century Graduate Scholarship (\$10,000 / year)
- 2009 Graduate Teaching Award, UBC Math. Dept.
- 2007 – 2009 NSERC Canada Graduate Scholarship D (\$35,000 / year)
- 2007 – 2011 Ph.D. Tuition Fee Award
- 2005 – 2007 NSERC Postgraduate Scholarship M (\$17,300 / year)
- 2005 Graduate Entrance Scholarship (\$1000)
- 2005 Faculty of Science Grant Supplement Award (\$4000)
- 2004 NSERC Undergraduate Student Research Award (\$6800)
- 2003 NSERC Undergraduate Student Research Award (\$6400)
- 2003 – 2004 James A and Connie P Dickson Scholarship (\$500)
- 2002 – 2003 Reuben Wells Leonard Scholarship (\$500)
- 2002 – 2003 Dr John Knowles Colling Memorial Scholarship (\$964)
- 2001 – 2005 Howard Ferguson Provincial Scholarship (\$2,500 / year)
- 2001 – 2002 University of Toronto Entrance Award (\$3,000)

Conferences Attended

- 2011 Southern California Algebraic Geometry Seminar
University of California, Los Angeles
- 2011 Essential Dimension and Birational Geometry
University of Edinburgh
- 2011 Ramification in Algebra and Geometry
Emory University
- 2010 Workshop on Torsors, Lie algebras and Galois Cohomology
University of Ottawa
- 2009 Linear Algebraic Groups and Related Structures
Banff International Research Station
- 2009 Toric Varieties Workshop
Mathematical Sciences Research Institute
- 2009 CMS/CSHPM Summer Meeting
Memorial University of Newfoundland

Conferences Attended (continued)

- 2008 Mini Course 2008 : Essential dimension and canonical dimension
 Lens, France
- 2008 Lie Theory and Geometry: The Mathematical Legacy of Bertram Kostant
 University of British Columbia
- 2008 ABC Algebra Workshop
 Simon Fraser University
- 2007 PIMS Algebra Summer School
 University of Alberta
- 2007 ABC Algebra Workshop
 University of Alberta
- 2006 Symmetry and Spaces: On the Occasion of Gerry Schwarz's 60th Birthday
 Fields Institute, Toronto
- 2006 PIMS/UNAM Algebra Summer School
 Banff International Research Station
- 2006 ABC Algebra Workshop
 University of British Columbia

Related Experience

- 2011 – Present 3 Reviews
 Mathematical Reviews, American Mathematical Society
- May 2011 Moderator, Open Problem Session
 Ramification in Algebra and Geometry, Emory University
- Fall 2010 Teaching Assistant, MATH 184 Workshops
 University of British Columbia, Department of Mathematics
- 2010 Graduate Student Instructional Skills Workshop
 University of British Columbia, Centre for Teaching and Academic Growth
- 2008 Co-organiser, Graduate Student Seminar
 University of British Columbia, Department of Mathematics
- Fall 2007 Marker, MATH 342
 University of British Columbia, Department of Mathematics
- Winter 2006 Teaching Assistant, Tutorial Centre
 University of British Columbia, Department of Mathematics
- Fall 2005 Marker, MATH 342
 University of British Columbia, Department of Mathematics
- 2004 – 2005 Teaching Assistant
 University of Toronto, Department of Mathematics
- Summer 2004 Student Researcher, NSERC USRA
 Queen's University, Department of Mathematics
- Summer 2003 Student Researcher, NSERC USRA
 Queen's University, Department of Mathematics