Andrew P. Staal

Faculty of Mathematics
Higher School of Economics
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Employment

Research Fellow, Higher School of Economics, 2016–17

Education

Ph.D. in Mathematics, Queen's University, 2011–16

Advisor: Gregory G. Smith

M.Sc. in Mathematics, The University of British Columbia, 2006–08

Advisor: Kalle Karu

B.Sc. in Mathematics, Magna Cum Laude, University of Ottawa, 2002–06

Study abroad: *Math in Moscow*, Independent University of Moscow, Fall 2004

Research Interests

My main interest is algebraic geometry. In particular, I study the geography and geometry of Hilbert schemes via computational deformation theory and combinatorial commutative algebra, and have studied jet schemes in log geometry.

Research Publications

Research Papers

Staal, A. P. (2017). The Ubiquity of Smooth Hilbert Schemes. Submitted. Available at arXiv:1702.00080 [math.AG].
Karu, K. and Staal, A. P. (2012). Singularities of Log Varieties via Jet Schemes. Submitted. Available at arXiv:1201.6646 [math.AG].

Theses

Staal, A. P. (2016). Irreducibility of Random Hilbert Schemes. Ph.D. Thesis, Queen's University QSpace.
Staal, A. P. (2008). On The Existence of Jet Schemes Logarithmic Along Families of Divisors. Masters Thesis, UBC cIRcle

Invited Talks

Algebraic Geometry Seminar, University of Warsaw, April 2017
Laboratory of Algebraic Geometry and its Applications Seminar, Higher School of Economics, December 2016
Combinatorial Commutative Algebra Thematic Program Seminar, Fields Institute, July 2016

Seminar Presentations

Geometric Invariant Theory Student Seminar, Queen's University, 2014–15
Positivity and Hilbert Schemes Student Seminar, Queen's University, 2013–14
Deformation Theory Student Seminar, Queen's University, 2012–13
Motivic Integration Seminar, The University of British Columbia, April 2011

Honors, Awards, & Fellowships

Major Awards

Ontario Graduate Scholarship, Province of Ontario and Queen's University, 2012–15
E.G. Bauman Fellowship, Queen's University, 2011–12
NSERC Canada Graduate Scholarship – M, Natural Sciences and Engineering Research Council of Canada, 2007–08

Minor Awards

Queen's Graduate Award, Queen's University, Summer 2014
Special UBC Graduate Scholarship, University of British Columbia, Fall 2006
Graduate Entrance Scholarship, University of British Columbia, Fall 2006
Linis Award in Mathematics, University of Ottawa, Spring 2006
University of Ottawa Admission Scholarship, University of Ottawa, 2002–06
Dean's Honour List, Faculty of Science, University of Ottawa, 2002–06 except semester abroad

Conference and Workshop Participation

Groups of birational automorphisms, Higher School of Economics, 14–18 Nov 2016
Conference in honour of Fedor Bogomolov's 70th birthday, Higher School of Economics, 29–30 Sep 2016
Thematic Program on Combinatorial Algebraic Geometry, Introductory Workshop, Fields Institute, 15–19 Aug 2016
Thematic Program on Combinatorial Algebraic Geometry, Graduate Summer School, Fields Institute, 18–22 Jul 2016
Route 81, Queen's University, 17 Oct 2015
AMS Summer Institute in Algebraic Geometry, University of Utah, 13–17 Jul 2015

Algebraic Geometry Northeastern Section (AGNES), University of Pennsylvania, 31 Oct–2 Nov 2014
Route 81, Cornell University, 27 Sep 2014
Macaulay2 Summer School and Conference, University of Illinois Urbana-Champaign, 16–20 Jun 2014
AGNES, Stony Brook University, 25–27 Apr 2014
AGNES, Boston College, 25–27 Oct 2013
Route 81, Syracuse University, 19 Oct 2013
AGNES, Yale University, 19–21 Apr 2013
AGNES, Brown University, 26–28 Oct 2012
Route 81, Queen's University, 20 Oct 2012
CMI Summer School "The Resolution of Singular Algebraic Varieties", Obergurgl University Centre of University of Innsbruck, 3–30 Jun 2012
AGNES, University of Massachusetts Amherst, 30 Mar–1 Apr 2012
AGNES, Stony Brook University, 28–30 Oct 2011
Route 81, Cornell University, 24 Sep 2011
Western Algebraic Geometry Seminar (WAGS), Stanford University, 6–7 Apr 2011
WAGS, The University of Arizona, 7–8 Nov 2010
WAGS, The University of British Columbia, 1–2 May 2010
Lie Theory and Geometry: The Mathematical Legacy of Bertram Kostant, The University of British Columbia, 19–24 May 2008
33rd Canadian Operator Symposium, University of Ottawa, 19–24 Apr 2005

Instruction and Grading

Instruction

Higher School of Economics

2017 W: Math in Moscow: Algebraic Geometry: Start-up Course (Two-week substitute)

Queen's University

2016 S: MATH 212: Ordinary Differential Equations (Queen's CDS online course)
2016 W: MATH 212: Linear Algebra II
2015 S: MATH 121: Differential and Integral Calculus (Queen's CDS online course)
2014 F: MATH 231: Differential Equations (One-week lecturing apprenticeship)

The University of British Columbia

2010 W: Math 105: Integral Calculus with Applications to Commerce and Social Sciences

Tutorials

Queen's University

2015 W:	MTHE 228:	Complex Analysis
2014 F:	MTHE 338:	Topics in Applied Mathematics – Fourier Series
2014 W:	MATH 121:	Differential and Integral Calculus
	HCH:	Help Centre Hours
2013 F:	MTHE 225:	Ordinary Differential Equations
2013 W:	HCH:	Help Centre Hours
2012 F:	HCH:	Help Centre Hours
2012 W:	MATH 122:	Calculus for Students in Biology and Life Sciences
2011 F:	MATH 122:	Calculus for Students in Biology and Life Sciences

The University of British Columbia

2009 F:	Math 180:	Differential Calculus with Physical Applications
	Math 184:	Differential Calculus for Social Science and Commerce
2008 F:	Math 180:	Differential Calculus with Physical Applications
	Math 184:	Differential Calculus for Social Science and Commerce
2008 W:	MLC:	Math Learning Centre, Linear Systems

Grading

Queen's University

2015 W:	MATH 439/836:	Lagrangian Mechanics, Dynamics, and Control
	MATH 328:	Real Analysis
	APSC 172:	Calculus II
2014 F:	MATH 341:	Differential Geometry
	APSC 171:	Calculus I
2014 W:	MATH 439/836:	Lagrangian Mechanics, Dynamics, and Control
	MATH 328:	Real Analysis
2013 F:	MTHE 338:	Topics in Applied Mathematics – Fourier Series
	MATH 121:	Differential and Integral Calculus
2013 W:	MATH 112:	Introduction to Linear Algebra
	APSC 174:	Linear Algebra
2012 F:	MATH 280:	Advanced Calculus
	MATH 310:	Group Theory
2012 W:	MATH 122:	Calculus for Students in Biology and Life Sciences
	MATH 232:	Differential Equations
2011 F:	MATH 122:	Calculus for Students in Biology and Life Sciences

The University of British Columbia

2009 W:	Math 152:	Linear Systems
2007 F:	Math 220:	Mathematical Proof
2007 W:	Math 101:	Integral Calculus with Applications to Physical Sciences and Engineering
2006 F:	Math 100:	Differential Calculus w/ Applications to Physical Sciences and Engineering

Memberships

Canadian Mathematical Society (CMS)
American Mathematical Society (AMS)

Miscellaneous

Media Coordinator, Kingston Bouldering Cooperative Board of Directors 2015 – 2016
Facilities Officer, Kingston Bouldering Cooperative Board of Directors 2014 – 2015
19th place – Canadian National Bouldering Championships 2012
Treasurer, UBC Math Grads Committee, 2008 – 2010

Professional References

Prof. Alan Ableson (teaching) – ableson@mast.queensu.ca
Prof. Kalle Karu – karu@math.ubc.ca
Prof. Diane Maclagan – d.maclagan@warwick.ac.uk
Prof. Mike Roth – mikeroth@mast.queensu.ca
Prof. Gregory G. Smith – ggsmith@mast.queensu.ca

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