

PROFESSOR ALEXANDRE V. BOROVIK

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Personal	Born: 1956 in Republic of Buriatia, Russia Nationality: British	
Education	INSTITUTE OF MATHEMATICS, MINSK PhD in Mathematics	1982
	NOVOSIBIRSK STATE UNIVERSITY MSc in Mathematics	1978
Appointments	Professor of Pure Mathematics, University of Manchester Professor of Pure Mathematics, UMIST. Reader, Department of Mathematics, UMIST Lecturer, Department of Mathematics, UMIST Visiting Associate Professor, Rutgers University Visiting Associate Professor, University of California, Irvine Associate Professor (half time position), Omsk University, Russia Assistant Professor (half time position), Omsk University, Russia Research Fellow, Russian Academy of Sciences, Omsk, Russia	2004– 1998-04 1996-98 1992-95 1991-92 1990-91 1982-90 1980-82 1978-91
Membership	London Mathematical Society — Trustee and Council Member British Logic Colloquium — Trustee and Member of the Committee American Mathematical Society European Mathematical Society Fellow of Higher Education Academy	2007–12, 2014– from 2010
Awards	The Royal Society Leverhulme Trust Senior Research Fellowship	2000-01
Editorships	Journal of Group Theory The De Morgan Gazette	2000–2017 from 2012

Research

Research Interests	<ul style="list-style-type: none"> • Group theory (probabilistic and non-deterministic methods in group theory, including black box recognition of finite groups; complexity of algorithms). • Model theory (classification of simple groups of finite Morley rank; pseudofinite groups). • Combinatorics (matroids; combinatorial structures related to Coxeter groups). • Computer Science (genetic algorithms; algorithms for trace groups and monoids; data structures for algebraic computations). • Philosophy of mathematics and cognitive aspects of mathematics. • Mathematics education.
Principal Results	<p>Model Theory: Classification of simple groups of finite Morley rank and even type (a series of papers and a book with T. Altinel and G. Cherlin).</p> <p>Combinatorics: Development of the theory of Coxeter matroids (a series of papers and a book with I. M. Gelfand and N. White).</p> <p>Group Theory: Centralisers of involutions method in black box recognition of finite groups.</p> <p>For a list of publications, see pages 15–19.</p>
Grants	<p>THE JOHN TEMPLETON FOUNDATION 2008 – 10 By-invitation-only grant for a research project in philosophy and methodology of mathematics, “A Dialogue on Infinity”.</p>
Invited Plenary Talks on Hardcore Mathematics, 2000–	<p>LYMOT 2017 21 October 2017, Preston. “Permutation groups of finite Morley rank”</p> <p>GROUPS, RINGS, AND THEIR AUTOMORPHISMS 2016 31 August – 2 September 2016, Lincoln. “Black box groups”</p>
For talks on teaching, education, philosophy, cognitive science see Page 8	<p>ASYMPTOTIC GROUP THEORY 2015 17-21 August, 2015, Renyi Institute, Budapest. “Black Box Philosophy”</p> <p>ANTALYA ALGEBRA DAYS Şirince, Turkey, 20–24 May 2015. “Black box groups: back to basics”</p> <p>JOURNÉES EN MÉMOIRE D’ERIC JALIGOT 2014 Institut Camille Jordan, Lyon, 26-27 juin 2014 “Reification of involutions in black box groups ”</p> <p>BRITISH MATHEMATICAL COLLOQUIUM London, 0710 April 2014 “Black box algebra”</p> <p>MODELS AND GROUPS 2 İstanbul Center for Mathematical Sciences, 27–29 March 2014 “Black box algebra and black box model theory”</p> <p>ANTALYA ALGEBRA DAYS XIII 2012 Antalya, Turkey, 16–20 May 2012. “The Hrushovski Programme”</p>

- ANTALYA ALGEBRA DAYS XII 2011
 Antalya, Turkey, 18–22 May 2011
 “Permutation groups of finite Morley rank”
- ALCOP2011: ALGEBRA AND COALGEBRA MEET PROOF THEORY
 Bern, Switzerland, 27–29 April 2011
 “Blurring the line between proof and (probabilistic) computation”
- 5TH DE BRÚN WORKSHOP: GROUPS, COMBINATORICS, COMPUTING
 Galway, Ireland, 11–16 April 2011
 “Black box groups and pseudofinite groups”
- 4TH DE BRÚN WORKSHOP ON GROUP ACTIONS 2010
 Galway, Ireland, 6–11 December 2010
 “Group actions in model theory”
- WORKSHOP ON TOPICS IN ALGORITHMIC AND GEOMETRIC GROUP AND SEMIGROUP THEORY
 Centre de recherches mathématiques, Montreal, Canada, 23–27 August 2010
 “Pseudofinite groups and black box groups”
- ANTALYA ALGEBRA DAYS XI
 Antalya, Turkey, 20–24 May 2010
 “Pseudofinite groups and groups of finite Morley rank” .
- GROUPS AND MODELS: CHERLIN BAYRAMI 2009
 Istanbul 8–12 June 2009
 “Black box groups, profinite groups, groups of finite Morley rank”
- ANTALYA ALGEBRA DAYS XI
 Antalya 20–24 May 2009
 “What is an ultraproduct?”
- MODNET BARCELONA CONFERENCE 2008
 Barcelona, 3–7 Nov 2008
 “Generic automorphisms of simple groups of finite Morley rank”
- GEOMETRIC AND ANALYTIC METHODS IN GROUP THEORY
 Bristol, 12 May 2008
 “Probabilistic recognition of black box groups” .
- GROUPS AND GEOMETRIES
 Oberwolfach, Germany, 25 April 2008
 “Model theory of black box groups” .
- CHAT YIN HO MEMORIAL CONFERENCE
 Gainesville, Florida, USA, Feb 2008
 “From here to infinity: (finite) black box groups and (infinite) groups of finite Morley rank” .
- PERMUTATION GROUPS 2007
 Oberwolfach, Germany, 7 Aug 2007
 “Permutation groups of finite Morley rank” .
- MODEL THEORY
 Oberwolfach, Germany, 15-19 Jan 2007
 “Permutation groups of finite Morley rank” .

ANTALYA ALGEBRA DAYS IX

Antalya, Turkey, May 2007

"Black box groups and groups of finite Morley rank".

ACID07 – ALGORITHMS AND COMPLEXITY IN DURHAM

Durham, UK, 18 September 2007

"Black box groups – between proof and computation".

LOGICUM LUGDUNENSIS

2006

Lyon, France, 22-24 June 2006

"Linear groups of finite Morley rank".

MODNET ANTALYA CONFERENCE

Antalya, Turkey, 2-11 November 2006

"Permutation groups of finite Morley rank".

LMS SPITALFIELDS DAY - GROUPS OF FINITE MORLEY RANK

2005

Isaac Newton Institute, Cambridge, UK, 16 March 2005

"Finite Group Theory: The Next Generation".

ACID.2005 – ALGORITHMS AND COMPLEXITY IN DURHAM

Durham, UK, 9 July 2005

"Stratification of complexity of algorithmic problems in combinatorial group theory".

COMBINATORIAL GEOMETRY AND APPLICATIONS

Centre International de Rencontres Mathématiques, Luminy, Marseilles, France

November 7 – 11, 2005

"The language of Coxeter matroids".

EUROGP 2004

2004

Coimbra, Portugal, 5-7 April 2004

"Coevolution of algorithms and deterministic solution of equations in free groups".

THE COXETER LEGACY: REFLECTIONS AND PROJECTIONS

University of Toronto, Toronto, Canada, May 2004

"Coxeter matroids".

GEOMETRIC GROUP THEORY

Newcastle, UK, 29 June – 1 July 2004

"The Andrews-Curtis Conjecture and Finite Groups"

GROUPES, GÉOMÉTRIE ET LOGIQUE

Centre International de Rencontres Mathématiques, Luminy, Marseilles, France

27 September – 1 October 2004

"Classification of Simple Groups of Finite Morley Rank: Lessons Learned"

and

"Some Problems on Groups of Finite Morley Rank".

COMBINATORICS IN OPORTO

2003

Oporto, Portugal, 15-17 Sept 2003

"Matroids and Coxeter Groups".

GROUPS AND PROBABILITY

Budapest, Hungary, 1-4 July 2003

"Nondeterministic aspects of the theory of infinite groups".

19TH BRITISH COMBINATORIAL CONFERENCE

Bangor, UK, June 2003

"Matroids and Coxeter Groups".

COMBINATORIAL, GEOMETRIC, AND DYNAMICAL ASPECTS OF INFINITE GROUPS

Gaeta, Italy, 1-6 June 2003

"Complexity of the conjugacy problem in amalgamated products".

GROUPS AND MODEL THEORY

Leeds, UK, April 2003

"Non-deterministic group theory: languages and complexity".

GROUPS AND COMPUTATION

Columbus, Ohio, USA, March 2003

"Probability measures and computational complexity".

GROUPS AND GEOMETRIES

Oberwolfach, Germany, September 2002

"Black box groups and the Andrews-Curtis Conjecture"

2002

NEW YORK CITY LOGIC CONFERENCE II

New York, USA, April 2002

"Groups of finite Morley rank".

INTERNATIONAL CONFERENCE ON MODERN ALGEBRA

Vanderbilt University, Nashville, USA, May 2002

"Non-deterministic methods in group theory".

ALGEBRA AND COMPUTER SECURITY

New York, USA, November 2001

"Black box groups".

2001

BRITISH LOGIC COLLOQUIUM

Manchester, UK, September 2001

"Classification of simple groups of finite Morley rank and even type".

LMS SYMPOSIUM GROUPS, GEOMETRY AND COMBINATORICS

Durham, UK, July 2001

"Geometry and identification theorems for groups of finite Morley rank".

THE JOINT MEETING OF AMS/SMF

Lyon, France, July 2001

"Classification of simple groups of finite Morley rank and even type".

ANTALYA ALGEBRA DAYS III

Antalya, Turkey, 16–20 May 2001

"Probabilistic and non-deterministic methods in algebra".

ANTALYA ALGEBRA DAYS II

Antalya, Turkey, 17–21 May 2000

"Some open problems".

2000

MODEL-THEORETIC ALGEBRA AND ALGEBRAIC METHODS OF COMPUTATION

Edinburgh, UK, 4–15 September 2000

"Probabilistic and non-deterministic computations in finite groups".

LA CAVE DES GROUPES

Lyon, France, 2–5 November 2000

“Classification of simple groups of finite Morley rank and even type”.

PROBABILISTIC METHODS IN GROUP THEORY

CUNY, New York, USA, 6 December 2000

“Black box groups”.

**Seminars and
Colloquia
Given, 2000–**

- 2017 Birmingham Algebra Seminar; Oxford Logic Seminar, Oxford; Istanbul University, Istanbul, Turkey; University of Sao Paulo, Sao Paulo, Brazil.
- 2016 University of Sheffield.
- 2015 Boğaziçi University, Istanbul, Turkey.
- 2014 University of Konstanz, Germany; University of Newcastle.
- 2013 University of Plymouth; University of Warwick; Mimar Sinan University, Istanbul, Turkey; Mathematics Institute, Prague, Czech Republic; Liverpool University; Birmingham University.
- 2012 École Polytechnique Fédéral de Lausanne, Switzerland; Manchester-Leeds Model Theory Seminar; University of Newcastle; Logic Seminar, Oxford University; Mathematics Colloquium, Mimar Sinan University, Istanbul, Turkey; University of Lancaster.
- 2011 University of Sheffield.
- 2010 Université Paris VII, France; Logic Seminar, University of Oxford; Durham University; University of Leeds; University of Freiburg, Germany; University of Birmingham; Université Lyon 1, France; Queen Mary, University of London;
- 2009 Research Seminar, School of Systems Engineering, University of Reading; Mathematics Colloquium, Boğaziçi University, Istanbul, Turkey; Mathematics Colloquium, Bilgi University, Istanbul, Turkey; Centre for Reasoning, University of Kent; Isaac Newton Institute, Cambridge; Warwick University.
- 2008 Model Theory Seminar and Logic Seminar, Université Paris VII, France; Séminaire “Des Mathématiques”, l’Ecole Normale Supérieure, Paris, France; seminar “Géométrie & Théorie des Modèles”, l’Ecole Normale Supérieure Paris, France.
- 2007 Mideastern Technical University, Ankara, Turkey; University of Leeds; CHSTM, University of Manchester.
- 2006 MidEastern Technical University, Ankara, Turkey; Universidade do Porto (Portugal); London Algebra Colloquium.
- 2005 Algebra Seminar, DPMMS, Cambridge; Isaac Newton Institute, Cambridge; Algebra Seminar, Oxford University; Combinatorics Seminar, Université Paris VI; University of Newcastle; Logic Seminar, Université Paris VI; Colloquium, Institut Girard Desargues (Université Lyon 1), Lyon, France; Logic Seminar, Institut Girard Desargues (Université Lyon 1), Lyon, France.
- 2004 Combinatorics Seminar, Université Paris VI; London Algebra Colloquium; Model Theory Seminar, Oxford University; Universidade do Porto (Portugal); University of Giessen (Germany); NEGGTN Meeting, Nottingham; University of Birmingham; Model Theory Seminar, Université Paris VII.
- 2003 Pennsylvania State University, USA; McGill University, Montreal, Canada; Colloque de Mathématiques CRM-ISM, Montreal, Canada; University of Birmingham, UK; Institut Girard Desargues (Université Lyon 1), Lyon, France; University of Newcastle; University of Leicester; Rutgers University, USA; Manchester Algebra Seminar.
- 2002 Manchester Dynamics Seminar; University of Bielefeld (Germany).
- 2001 University of East Anglia, Norwich (UK); University of Newcastle, University of South Pacific (Fiji); Royal Holloway College (UK).

2000 London Algebra Seminar (Imperial College), Oxford; Universidade do Porto (Portugal); Graduate Centre, CUNY, New York.

**Major
Academic
Visits, 1997–**

2009 Visiting Fellow, Isaac Newton Institute, Cambridge, January-February.

2005 Visiting Fellow, Isaac Newton Institute, Cambridge, February-April.

2005 Visiting Researcher, Universite Paris VI, June.

2003 Visiting Professorship, Institut Girard Desargues (Université Lyon 1), Lyon, France.

2000 Visiting Professorship, Institut Girard Desargues (Université Lyon 1), Lyon, France.

1998 Visiting member, MSRI, Berkeley, USA, January.

1998 Visiting member, IHES, Bures-sur-Yvette, France, February-March.

1997 Visiting member, Fields Institute, Toronto, Canada, January.

Teaching and Educational Research

University Teaching	<p>UNDERGRADUATE COURSES TAUGHT since 1979 Calculus, Advanced Calculus, Differential Equations, Linear Algebra, Probability and Statistics, Analytic Geometry with Tensor Analysis, Number Theory, Number Theory and Cryptography, Logic, Discrete Mathematics, Group Theory, Coding Theory, Mathematics Education.</p>
	<p>COMPUTER BASED TEACHING 1994–04 Courses in Elementary Logic based on software packages SYMLOG and TARSKI'S WORLD, and a course Number Theory and Cryptography based on computer experiments with MATLAB.</p>
	<p>POSTGRADUATE COURSES TAUGHT since 1980 Model Theory, Multilinear Algebra, Symmetric Spaces, Linear Algebraic Groups, Classical Groups, Reflection Groups, Concrete Group Theory, Black Box Algebra.</p>
	<p>POSTGRADUATE SUPERVISION 10 students supervised or co-supervised by me have received their Ph.D.: Ayşe Berkman (1998), Christine Altseimer (1998), Richard Booth (1999), Matt Craven (2005), George Petrides (2006), Şükrü Yalçinkaya (2007), Pınar Uğurlu (2009), Elaine Render (2010), Omaira Alshantiti (2015), Goran Malic (2015). A number of successful M.Sc. and M. Phil. dissertations in Combinatorics, Algebra, Applied Combinatorics, Cryptography and Mathematics Education.</p>
	<p>CURRICULUM DEVELOPMENT 2002 Curriculum Innovation Award from University of Manchester and UMIST.</p>
Membership of Professional Organisations	<ul style="list-style-type: none"> • Fellow of Higher Education Academy. • London Mathematical Society. • British Logic Colloquium. • American Mathematical Society. • European Mathematical Society. • Association Computability in Europe.
Conferences Related to Teaching	<p>LMS EDUCATION DAY 2017 2017 Teacher shortages in mathematics: how can HE mathematics departments help reverse the trend? London, 25 May 2017. Talk "Mathematics for Teachers of Mathematics"</p> <p>PALESTRAS SOBRE O ENSINO DA MATEMÁTICA Instituto de Matematica e Estatística, Sao Paulo, 18 April 2017. "Didactic Transformation".</p> <p>SUBLIME SYMMETRY. THE MATHEMATICS BEHIND DE MORGAN'S CEREMIC DESIGNS London, 13 January 2017. "Sublime Symmetry: Mathematics and Art."</p> <p>MATHEMATICAL ASSOCIATION ANNUAL CONFERENCE 2016 Oxford, 2 April. "Cute little inner wolfies."</p> <p>INGRID WINTER SCHOOL: FROM UBER TO AMAZON MECHANICAL TURK: NON-TRADITIONAL LABOUR MARKETS</p>

- DRIVEN BY TECHNOLOGICAL AND ORGANISATIONAL CHANGE 2015
 Brussels, Center for European Policy Studies, 24–25 October 2015. “Employment and technological change: An educator’s point of view”.
- 34TH MATHEMATICS TEACHERS AND ADVISERS CONFERENCE
 Leeds, 23 June 2015. ““Modelling” and “Word Problems””.
- ISIS SUMMIT VIENNA 2015
 Vienna, June 2015. “Makers and Users”
- ANTALYA ALGEBRA DAYS XVII
 . 23 May 2015. After dinner talk “Mathematics Teaching on the Deck of *Titanic*”
- TEDx DURHAM 2014
 7 June 2014, “Smoke and Mirrors”.
- MATHEMATICAL CULTURES III
 London, 10–12 April 2014
 “Mathematics in the new pattern of division of labour”.
- MATHEMATICAL CULTURES I 2012
 London, 10–12 September 2012. “Specialist mathematics schools.”
- MEETING OF THE ISRAEL MATHEMATICAL UNION
 Bar Ilan University, Tel Aviv, Israel, 28 May 2012. “Protomathematics, metamathematics, and some challenges in philosophy of mathematics.”
- PEUT-ON RÉPARER L’ENSEIGNEMENT DES MATHÉMATIQUES AU LYCÉE ET COLLÈGE? RÉUNION D’INFORMATION-DÉBAT
 Institut Henry Poincaré, Paris, 4 April 2012. “What do children learn when we teach them mathematics?”
- SUMMER SCHOOL “ADVANCED TECHNIQUES IN COMPUTER ALGEBRA SYSTEMS DEVELOPMENT” 2011
 St Andrews, 20 August 2011. “Computer algebra systems in mathematical education: real life pedagogical challenges.”
- 30TH MATHEMATICS TEACHERS AND ADVISERS CONFERENCE
 Leeds, 28 June 2011. “The eternal cycle of mathematics.”
- THE LONDON MATHEMATICAL SOCIETY EDUCATION DAY
 London, 31 May 2011. “Lecturer Training.”
- MATHEMATICS HE SUMMIT
 University of Birmingham, 12 January 2011
 Proposer in the Debate ‘We believe that memory, subject knowledge and technical fluency remain vital for undergraduate mathematics in the digital age.’
- MATHEMATICS AS PRACTICE AND CULTURE: INTERDISCIPLINARY PERSPECTIVES 2010
 Bielefeld, Germany
 “Is the mathematics that children learn the same as the mathematics that is taught to them?”
- COGNITIVE VII. 7TH INTERNATIONAL COGNITIVE NEUROSCIENCE MEETING
 Istanbul, Turkey, 18–20 May 2010
 “What mathematicians would like to learn from cognitive scientists?”
- SYMPOSIUM ON MATHEMATICAL PRACTICE AND COGNITION
 De Montfort University, Leicester, 29–30 March 2010
 “Little green men from Mars and other thought experiments in philosophy of mathematics.”

BRITISH CONGRESS OF MATHEMATICAL EDUCATION
University of Manchester.
Sectional talk "Childhood stories of mathematics."

TWO STREAMS IN THE PHILOSOPHY OF MATHEMATICS.
RIVAL CONCEPTIONS OF MATHEMATICAL PROOF. 2009
University of Hertfordshire, Hatfield, 1–3 July 2009
"Above the streams: the philosophy of mathematics as seen by a mathematician."

FOUNDATIONS OF THE FORMAL SCIENCES VII.
BRINGING TOGETHER PHILOSOPHY AND SOCIOLOGY OF SCIENCE 2008
Vrije Universiteit Brussel, 21–24 October 2008.
"Science wars: a time for a truce."

NEW DIRECTION IN PHILOSOPHY OF MATHEMATICS
MIMS Workshop, Manchester, 4 October 2008. Co-organiser.

ARTS MEET SCIENCE
Jodrell Bank, 23 September 2008.
"Social Life of Infinity: from Mathematics to Kitsch."

IS MATHEMATICS SPECIAL? (PHIMSAMP 3, PHILOSOPHY OF MATHEMATICS, SOCIOLOGICAL ASPECTS AND MATHEMATICAL PRACTICE)
University of Vienna, Vienna, Austria, 16–18 May 2008
"Metamathematics of elementary mathematics".

THE TEACHING–RESEARCH INTERFACE: IMPLICATIONS FOR PRACTICE IN HE
University of Stirling, UK, 29–30 April 2008
"Didactic transformation in mathematics teaching".

MATHEMATICIANS AND MATHS EDUCATIONALISTS: HOW CAN WE COLLABORATE?
Mathematics Institute, University of Warwick, UK, 19 March 2008
Keynote talk "Didactic transformation".

EUROPEAN MATHEMATICAL PSYCHOLOGY GROUP 2007
Luxembourg, 10-13 Sep 2007
Talk "From mathematical psychology to psychology of mathematics"

MATHEMATICAL THINKING: AN INTERDISCIPLINARY APPROACH
Nottingham, 21-22 Nov 2007
Keynote talk: "Mathematical thinking as experienced by a mathematician"

WORLD FEDERATION OF NATIONAL MATHEMATICS COMPETITIONS CONFERENCE 2006
Cambridge, 25 July 2006
Keynote talk: "Mathematical abilities and mathematical skills"

WHERE WILL THE NEXT GENERATION OF UK MATHEMATICIANS COME FROM? 2005
Manchester, 18-19 March 2005
Co-organiser
Conference website: <http://www.maths.manchester.ac.uk/avb/wherefrom.html>

Seminars and Colloquia on Teaching and Methodology of Mathematics

UNIVERSITY OF LINCOLN 2017
Annual Boole Lecture in Mathematics, "What is Mathematics Education, Really?"
INSTITUTE OF MATHEMATICS AND ITS APPLICATIONS, NORTH WEST BRANCH MEETING 2015
"Mathematics for Users and Mathematics for Makers"

BOĞAZIÇI UNIVERSITY, ISTANBUL, TURKEY
 Mathematics Community Seminar, "Mathematics Education on the Deck of *Titanic*"

NESIN MATHEMATİK KÖYÜ, ŞİRİNÇE, TURKEY
 "Mathematics Education on the Deck of *Titanic*"

SHEFFIELD UNIVERSITY 2011
 Mathematics Colloquium: "Proto-mathematics, meta-mathematics, and hidden abstract structures of elementary school mathematics"

QUEEN MARY, UNIVERSITY OF LONDON 2010
 Mathematics Colloquium: "Proto-mathematics, meta-mathematics, and hidden abstract structures of elementary school mathematics"

UNIVERSITY OF BIRMINGHAM
 Computer Science Colloquium: "Hidden abstract structures of elementary mathematics"

UNIVERSITY OF LEEDS
 Mathematics Colloquium: "Hidden structures of elementary mathematics"

BOĞAZIÇI UNIVERSITY 2009
 Istanbul, Turkey
 Mathematics Colloquium: "Eternity forever: social life of Infinity"

MID-EASTERN TECHNICAL UNIVERSITY
 Ankara, Turkey
 General Seminar of Mathematics Department: "Eternity forever: social life of Infinity"

BILGI UNIVERSITY, ISTANBUL
 Computer Science Colloquium: "Hidden abstract structures of elementary mathematics"

L'ÉCOLE NORMALE SUPÉRIEURE, PARIS 2008
 Séminaire "Des Mathématiques": Talk "Ubiquity and uniqueness: everyday mathematics from a model-theoretic perspective".

CENTER FOR HISTORY OF SCIENCE, MEDICINE AND TECHNOLOGY 2007
 University of Manchester
 Talk "History of mathematics as seen by a mathematician".

MID-EASTERN TECHNICAL UNIVERSITY 2007
 Ankara, Turkey
 General Seminar of Mathematics Department: "Elementary mathematics as seen by a mathematician".

UNIVERSITY OF BIRMINGHAM
 Talk "Metamathematics of Elementary Mathematics".

Advisory Work

CAMBRIDGE UNIVERSITY 2011–13
 External Moderating Examiner of Mathematical Tripos Part IA.

THE LIVERPOOL JOHN MOORES UNIVERSITY 2011
 External Reviewer of degree programme "Mathematics with Mathematical Education"

GLASGOW UNIVERSITY, UK 2007–11
 External Examiner for degree programmes in Pure Mathematics.

ACADEMIC COUNCIL OF NESIN MATHEMATICS VILLAGE, ŞİRİNÇE, TURKEY 2007–
 Member of the Council.

UNIVERSITY OF SOUTH PACIFIC, FIJI 2001
Visiting Scholar/Consultant under the auspices of the Third World Academy of Sciences Programme run by the Abdus Salam International Centre for Theoretical Physics (Trieste, Italy).

Teaching SUMMER SCHOOL 2009 TMD 2009
Visits 3 weeks course *Metamathematics of Elementary Mathematics* to a select group of Turkish undergraduate students. August 2009, Şirince, Turkey.

MID-EASTERN TECHNICAL UNIVERSITY 2009
Ankara, Turkey
Series of masterclasses given under provisions of the Erasmus Teaching Mobility Programme, April 2009.

SUMMER SCHOOL 2008 TMD 2008
3 weeks course *Metamathematics of Elementary Mathematics* to a select group of Turkish undergraduate students. July-August 2008, Şirince, Turkey.

SUMMER SCHOOL 2007 TMD 2007
Summer School 2007 TMD Yazokulu Duyurusu, Şirince, Turkey: giving a 2 week crash course *Reflection Groups* to a select group of Turkish undergraduate students. July 2007, Şirince, Turkey.

Blogs on MATHEMATICS UNDER THE MICROSCOPE
Teaching and <http://www.micromath.wordpress.com>
Methodology of
Mathematics A DIALOGUE ON INFINITY
<http://dialinf.wordpress.com/>

Book MATHEMATICS UNDER THE MICROSCOPE: NOTES ON COGNITIVE ASPECTS OF MATHEMATICAL PRACTICE. 2010
Amer. Math. Soc., Providence, RI. 317 pp. ISBN-10: 0-8218-4761-9. ISBN-13: 978-0-8218-4761-9. Available from <http://www.ams.org/bookstore-getitem/item=mbk-71>.

Contribution to Reports

SUBMISSION OF EVIDENCE TO THE HOUSE OF COMMONS SELECT COMMITTEE PARLIAMENTARY INQUIRY: HOW SHOULD EXAMINATIONS FOR 15-19 YEAR OLDS IN ENGLAND BE RUN? 2011
London Mathematical Society, http://www.lms.ac.uk/sites/default/files/files/reports/Parliamentary_Inquiry.pdf.

POSITION STATEMENT ON EXAMINATION BOARDS' INVOLVEMENT IN PRODUCTION OF TEXTBOOKS AND CONTINUING PROFESSIONAL DEVELOPMENT OF TEACHERS 2011
London Mathematical Society, http://www.lms.ac.uk/sites/default/files/files/reports/LMS_Statement_on_Exam_Boards_and_Textbooks.pdf.

USE AND MISUSE OF INFORMATION AND COMPUTER TECHNOLOGY IN THE TEACHING OF MATHEMATICS AT HE INSTITUTIONS. POSITION STATEMENT 2011
London Mathematical Society, http://www.lms.ac.uk/sites/default/files/Mathematics/policy_responses/ICT_statement.pdf.

LMS RESPONSE TO THE EDUCATION WHITE PAPER 2011
London Mathematical Society, http://www.lms.ac.uk/sites/default/files/Mathematics/policy_responses/education_white_paper_response.pdf.

COMMENTS ON REVIEW OF THE UK PROFESSIONAL FRAMEWORK FOR HIGHER EDUCATION 2011

London Mathematical Society, http://www.lms.ac.uk/sites/default/files/Mathematics/Policy_reporers/2011LMS_Response_to_PSF_Consultation.pdf.

TECHNOLOGY IN LEARNING. A RESPONSE TO SOME QUESTIONS FROM THE DEPARTMENT
OF BUSINESS INNOVATION AND SKILLS 2010
Association for Learning Technology, http://repository.alt.ac.uk/839/2/ALT_TEL_evidence_document_for_BIS_low-res.pdf.

AOC/ALT RESPONSE TO ROYAL SOCIETY CALL FOR EVIDENCE: COMPUTING IN SCHOOLS
2010
Association for Learning Technology, http://repository.alt.ac.uk/840/2/Computing_in_schools_AoC_ALT_Submission_to_the_Royal_Society_20101105.pdf.

Administrative work, since 2001

Administrative work	MEMBER OF THE FACULTY COMMITTEE Faculty of Engineering and Physical Sciences, University of Manchester	2007–09
	MEMBER OF MANCHESTER INSTITUTE FOR MATHEMATICAL SCIENCES COMMITTEE	2004–07
	HEAD OF PURE MATHEMATICS GROUP	2004–05
	THE MERGING UNIVERSITIES Development of the new School of Mathematics in the new merged University of Manchester: I was the Research Coordinator in the Interim School Leadership Team and chaired the School's Research Working Group.	2003–04
	CHAIRMAN OF THE DEPARTMENTAL ACADEMIC BOARD	2003–04
External work	CAMBRIDGE UNIVERSITY — Moderating External Examiner of Mathematics Tripos Part IA — Advisor, Cambridge Mathematics Education Project	2011–14 since 2013
	OCR — Member of OCR Mathematics Consultative Forum	since 2011
	UNIVERSITY OF LINCOLN — Member of Advisory Board, School of Physics and Mathematics	since 2014
	THE LIVERPOOL JOHN MOORES UNIVERSITY — External Reviewer of degree programme “Mathematics with Mathematical Education”	2011
	THE ASSOCIATION FOR LEARNING TECHNOLOGY — Member of Research Committee	2009–12
	LONDON MATHEMATICAL SOCIETY — Trustee and Council Member — Member of Programme Committee, Research Meetings Committee — Member of Education Committee	2007–12, 2014–18 2007–10 2010–12
	BRITISH LOGIC COLLOQUIUM — Trustee and Committee Member	2010–16
	UNIVERSITY OF GLASGOW — External Examiner	2007–11

Publications

Books Authored

- 2010 Mathematics under the Microscope: Notes on Cognitive Aspects of Mathematical Practice. Amer. Math. Soc., Providence, RI. 317 pp. ISBN-10: 0-8218-4761-9. ISBN-13: 978-0-8218-4761-9. Available from <http://www.ams.org/bookstore-getitem/item=mbk-71>.
- 2009 Mirrors and Reflections. The Geometry of Finite Reflection Groups. Springer, 2009. xii + 172 pp., 72 illus. (With Anna Borovik.) ISBN 978-0-387-79065-7.
- 2008 Simple Groups of Finite Morley Rank, Amer. Math. Soc. Monographs Series, Amer. Math. Soc., Providence, RI. Approx. 556 pp. ISBN-10: 0-8218-4305-2, ISBN-13: 978-0-8218-4305-5 (with T. Altınel and G. Cherlin).
Review: D. Macpherson, *Simple groups of finite Morley rank, by T. Altinel, A.V. Borovik, and G. Cherlin*. Bull. Amer. Math. Soc. 47 no. 4 (2010), 729–734.
- 2003 Coxeter Matroids, Birkhäuser, xiv+264 pp., ISBN 0-8176-3764-8 (with I. M. Gelfand and N. White).
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