

# PROFESSOR ALEXANDRE V. BOROVIK

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<b>Personal</b>	Born: 1956 in Republic of Buriatia, Russia Nationality: British	
<b>Education</b>	INSTITUTE OF MATHEMATICS, MINSK PhD in Mathematics	1982
	NOVOSIBIRSK STATE UNIVERSITY MSc in Mathematics	1978
<b>Appointments</b>	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
<b>Membership</b>	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 from 2010
<b>Awards</b>	The Royal Society Leverhulme Trust Senior Research Fellowship	2000-01
<b>Editorships</b>	Journal of Group Theory The De Morgan Gazette	from 2000 from 2012

## Research

<b>Research Interests</b>	<ul style="list-style-type: none"> <li>• Group theory (probabilistic and non-deterministic methods in group theory, including black box recognition of finite groups; complexity of algorithms).</li> <li>• Model theory (classification of simple groups of finite Morley rank; pseudofinite groups).</li> <li>• Combinatorics (matroids; combinatorial structures related to Coxeter groups).</li> <li>• Philosophy of mathematics and cognitive aspects of mathematics.</li> <li>• Mathematical education.</li> </ul>
<b>Principal Results</b>	<p><b>Model Theory:</b> 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><b>Combinatorics:</b> development of the theory of Coxeter matroids (a series of papers and a book with I. M. Gelfand and N. White).</p> <p><b>Group Theory:</b> Centraliser of involutions method in black box recognition of finite groups.</p> <p>For a list of publications, see pages 13–17.</p>
<b>Recent Grants</b>	<p>THE JOHN TEMPLETON FOUNDATION <span style="float: right;">2008 – 10</span>          By-invitation-only grant for a research project in philosophy and methodology of mathematics, “A Dialogue on Infinity”.</p>
<b>Invited Plenary Talks on Hardcore Mathematics, 2000–</b>	<p>ANTALYA ALGEBRA DAYS XXIII <span style="float: right;">2012</span>          Antalya, Turkey, 16–20 May 2011          “The Hrushovski Programme”</p> <p>ANTALYA ALGEBRA DAYS XXIII <span style="float: right;">2011</span>          Antalya, Turkey, 18–22 May 2011          “Permutation groups of finite Morley rank”</p>
<b>For talks on teaching, education, philosophy, cognitive science see Page 7</b>	<p>ALCOP2011: ALGEBRA AND COALGEBRA MEET PROOF THEORY          Bern, Switzerland, 27–29 April 2011          “Blurring the line between proof and (probabilistic) computation”</p> <p>5<sup>TH</sup> DE BRÚN WORKSHOP: GROUPS, COMBINATORICS, COMPUTING          Galway, Ireland, 11–16 April 2011          “Black box groups and pseudofinite groups”</p> <p>4<sup>TH</sup> DE BRÚN WORKSHOP ON GROUP ACTIONS <span style="float: right;">2010</span>          Galway, Ireland, 6–11 December 2010          “Group actions in model theory”</p> <p>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”</p> <p>ANTALYA ALGEBRA DAYS XI          Antalya, Turkey, 20–24 May 2010          “Pseudofinite groups and groups of finite Morley rank”.</p>

- 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

2002

Oberwolfach, Germany, September 2002

"Black box groups and the Andrews-Curtis Conjecture"

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 2001  
 New York, USA, November 2001  
 "Black box groups".

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 2000  
 Antalya, Turkey, 17–21 May 2000  
 "Some open problems".

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–**

- 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 Mathematiques 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, Université 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

<b>University Teaching</b>	<p>UNDERGRADUATE COURSES TAUGHT <span style="float: right;">since 1979</span>          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, Mathematical Education.</p> <p>COMPUTER BASED TEACHING <span style="float: right;">1994–04</span>          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 <span style="float: right;">since 1980</span>          Model Theory, Multilinear Algebra, Symmetric Spaces, Linear Algebraic Groups, Classical Groups, Reflection Groups, Concrete Group Theory.</p> <p>POSTGRADUATE SUPERVISION          Eight 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 Yalçınkaya (2007), Pınar Uğurlu (2009), Elaine Render (2010).          A number of successful M.Sc. and M. Phil. dissertations in Combinatorics, Algebra, Applied Combinatorics, Cryptography and Mathematical Education.</p> <p>CURRICULUM DEVELOPMENT <span style="float: right;">2002</span>          Curriculum Innovation Award from University of Manchester and UMIST.</p>
<b>Membership of Professional Organisations</b>	<ul style="list-style-type: none"> <li>• Fellow of Higher Education Academy.</li> <li>• London Mathematical Society.</li> <li>• British Logic Colloquium.</li> <li>• American Mathematical Society.</li> <li>• European Mathematical Society.</li> <li>• Association Computability in Europe.</li> <li>• British Society for the History of Mathematics.</li> </ul>
<b>Conferences Related to Teaching</b>	<p>MATHEMATICAL CULTURES <span style="float: right;">2012</span>          London, 10–12 September 2012. “Specialist mathematics schools.”</p> <p>MEETING OF THE ISRAEL MATHEMATICAL UNION          Bar Ilan University, Tel Aviv, Israel, 28 May 2012. “Protomathematics, metamathematics, and some challenges in philosophy of mathematics.”</p> <p>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?”</p> <p>SUMMER SCHOOL “ADVANCED TECHNIQUES IN COMPUTER ALGEBRA SYSTEMS DEVELOPMENT” <span style="float: right;">2011</span>          St Andrews, 20 August 2011. “Computer algebra systems in mathematical education: real life pedagogical challenges.”</p>

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**
- 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 since 2011  
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, ŞIRINCE, 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 Visits** SUMMER SCHOOL 2009 TMD 2009  
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 Teaching and Methodology of Mathematics** MATHEMATICS UNDER THE MICROSCOPE  
<http://www.micromath.wordpress.com>
- 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](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](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](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](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](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](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](http://repository.alt.ac.uk/840/2/Computing_in_schools_AoC_ALT_Submission_to_the_Royal_Society_20101105.pdf).

## Administrative work

<b>Administrative work</b>	<p>MEMBER OF THE FACULTY COMMITTEE Faculty of Engineering and Physical Sciences, University of Manchester</p> <p>MEMBER OF MANCHESTER INSTITUTE FOR MATHEMATICAL SCIENCES COMMITTEE</p> <p>HEAD OF PURE MATHEMATICS GROUP</p> <p>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.</p> <p>CHAIRMAN OF THE DEPARTMENTAL ACADEMIC BOARD</p> <p>HEAD OF PURE MATHEMATICS GROUP Department of mathematics, UMIST.</p>	<p>2007–09</p> <p>2004–07</p> <p>2004–05</p> <p>2003–04</p> <p>2003–04</p> <p>1998, 2000</p>
<b>External work</b>	<p>CAMBRIDGE UNIVERSITY — Moderating External Examiner of Mathematics Tripos Part IA — Advisor, Cambridge Mathematics Education Project</p> <p>OCR — Member of OCR Mathematics Consultative Forum</p> <p>THE LIVERPOOL JOHN MOORES UNIVERSITY — External Reviewer of degree programme “Mathematics with Mathematical Education”</p> <p>THE ASSOCIATION FOR LEARNING TECHNOLOGY — Member of Research Committee</p> <p>LONDON MATHEMATICAL SOCIETY — Trustee and Council Member — Member of Programme Committee, Research Meetings Committee — Member of Education Committee</p> <p>BRITISH LOGIC COLLOQUIUM — Trustee and Committee Member</p> <p>UNIVERSITY OF GLASGOW — External Examiner</p>	<p>2011–14 since 2013</p> <p>since 2011</p> <p>2011</p> <p>2009–12</p> <p>2007–12 2007–10 2010–12</p> <p>since 2010</p> <p>2007–11</p>

## 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. Altinel 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).
- 1994 *Groups of Finite Morley Rank*, Oxford University Press, xi+409 pp. (with A. Nesin).
- Books Edited**
- 2005 *Groups, Languages, Algorithms*, vol. 378 of Contemporary Mathematics, AMS, 348 pp., ISBN 0-8218-3618-8.
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