Iain Gordon Curriculum Vitae

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Area of research

Representation theory of noncommutative algebras and interactions with algebraic geometry, combinatorics, integrable systems, and Lie theory.

Education

University of Glasgow, Ph.D., Mathematics, September 1998 – viva date.
University of Cambridge, Distinction in Part III of the Mathematical Tripos, June 1995.
University of Bristol, First class B.Sc.(Hons) degree in Mathematics, June 1994.

Positions Held

EPSRC Leadership Fellow, September 2008 – August 2013.
University of Edinburgh, Professor of Mathematics, September 2006 – present.
University of Glasgow, Reader, Department of Mathematics, January 2005 – August 2006.
University of Washington, then **University of California at Santa Barbara,** Visiting Assistant Professor, Department of Mathematics, January – March 2004 and April – June 2004.
University of Glasgow, Lecturer, Department of Mathematics, October 2000 – December 2004.
University of Antwerp, EU Postdoctoral Fellow, Department of Mathematics, August 2000 – September 2000.
Mathematical Sciences Research Institute, Postdoctoral Fellow, February and April 2000.
University of Bielefeld, EU Postdoctoral Fellow, Department of Mathematics, October 1999 – July 2000.
University of Edinburgh, Seggie Brown Research Fellow, Department of Mathematics, October 1998 – September 1999.

Honours and Awards

Invited Speaker at International Congress of Mathematicians, 2010.
Honorary Professor of Heriot-Watt University.
EPSRC Leadership Fellow, 2008 – 2013.
Berwick Prize from the London Mathematical Society, 2005.
EPSRC three year grant for a research assistant, 2004 – 2007.
Nuffield Foundation Award, 2002 – 2004.
Jack Prize from the University of Glasgow, 1999.
Hasse Prize from the University of Bristol, 1994.

Teaching

University of Edinburgh

Jewels of Algebra 2008-9. Proposed and helped to design a two semester course for final year honours mathematics students (but did not deliver because of my EPSRC fellowship).
Representation Theory 2007, 2008. A second semester course for final year honours mathematics students.

Introductory Mathematics 2007, 2008. A first semester service course for beginning undergraduates throughout the University.
SMSTC Graduate Course 2007. Contributed to design and delivery (by video-conference) of a pan-Scottish algebra course for first year graduate students.

University of Glasgow

Differential Calculus 2000 – 2006. The first mathematics course at the University of Glasgow.
Linear algebra 2, 2001. A second term course for mathematics undergraduates.
Ring Theory 2002, 2003. A second term course for final year honours mathematics students.
Algebraic Number Theory 2006. A first term course for final year honours mathematics students.
Introduction to Groups and Rings 2004, 2005. A first term introductory algebra course for third year honours mathematics students.

University of Washington

Calculus 324 (2 sections), 2004. A multivariable calculus course.

University of California at Santa Barbara

Calculus 3A, 2004. A differential calculus course.
Calculus 3B, 2004. An integral calculus course.

Conferences and Lectures

I have given plenary lectures at conferences in the UK, continental Europe, north America, Asia and Africa, as well as seminars and colloquiua throughout the world. Recent examples include: 8 lectures on "Modular representations of Lie algebras" at "Workshop and Summer School on Lie Theory and Representation Theory II" (East China Normal University), 5 lectures on "Derived categories of coherent sheaves" at LMS/EPSRC short course on "Derived Categories" (City University), annual Isaac Newton Institute Correspondent's Lecture on "Representations of the Symmetric Group", lecture on "Generalisations of Catalan numbers" at opening of new Mathematics Building at the University of Aberdeen.

Forthcoming invitations include 2 Oberwolfach meetings in 2010, 65th Birthday conference of Ken Goodearl, ICM2010, Special Semester of Representation Theory at the Hausdorff Institute, 2011.

Responsibilities

Committee Work. External examiner for Oxford University third year examinations (September 2009 – present); member of Royal Society Travel Grant Awards committee (September 2009 – present) ; member of General Council of Edinburgh Mathematical Society (October 2008 – present); member of Council of London Mathematical Society (January 2006 – November 2009); member of the EPSRC college (2001–present); member of BMC Scientific Committee (September 2006 – September 2008); member of ICMS management board (September 2006 – present); co-founder and deputy director of EPSRC-funded UK network in Representation Theory (2008-2011).

Conference and Workshop Organisation. Co–organiser of international conferences "Durham Symposium on Representation Theory" (Durham University, July 2009); "Categorification and Geometrisation" (ICMS/Isaac Newton Institute, April 2009); joint LMS-EMS meeting on "Infinite Groups" (Edinburgh, December 2008); "Frontiers of Science Meeting: Royal Society and Junge Akademie" (Potsdam, May 2008); "Cherednik Algebras" (ICMS, June 2007);"Derived categories" (Noncommutative Geometry EU Network, June 2003); founder of Algebra and Representation Theory in the North (ARTIN); Co–organiser of Scottish Algebra Day (2003 – 2006).

Research Fellows. Holder of EPSRC–funded grant for research assistants Stephen Griffeth (September 2009–August 2012), Catharina Stroppel (July 2004–December 2006); supervisor of Commonwealth Research Fellow Ram Sharma (October 2002–September 2003).

PhD supervision. Supervisor of seven PhD students, October 2002 – present. (Three of them graduated in 2006/2007: Maurizio Martino has a Habilitationstelle at the University of Bonn; Richard Vale is a post-doc at Cornell University.)

PhD examination. External examiner of the theses of Elisabeth Gunnslaugdottir (Montpellier, 2001), Peter Shaw (Leeds, 2005), Ben Franklin (Bristol, 2006), Maria Chlouveraki (Paris VII, 2007), Michael Wemyss (Bristol, 2008); Jeremie Guilhot (Aberdeen, 2008); Thorsten Weist (Wuppertal, 2008).

Editorial Work. Convenor of the Proceedings of the Edinburgh Mathematical Society (October 2008 – present; subject editor October 2004 – September 2009), Editor–in–Chief of the Glasgow Mathematical Journal (October 2005 – December 2007).

Refereeing and Reviewing. Grant reviewing for EPSRC, ISF, RS and NSF. Paper refereeing for Advances in Mathematics, Annals of Mathematics, Communications in Algebra, Communications in Mathematical Physics, Duke Math Journal, Crelle's Journal, International Maths Research Notices, Inventiones Mathematicae, Journal of Algebra, Journal of Algebraic Combinatorics, Journal of Pure and Applied Algebra, Journal of the American Mathematical Society, K–theory, Kyoto Mathematics Journal, London Mathematical Society, Mathematische Zeitschrift, Nagoya Mathematics Journal, Proceedings of the Cambridge Philosophical Society, Publications IHES, Springer Lecture Notes in Mathematics, Selecta Mathematica, Transactions of the American Mathematical Society, Transformation Groups.

Published Refereed Papers

[22] Travaux de Haiman, Lecture Notes for Grenoble Summer School, to appear. notes.

[21] Calogero-Moser space, restricted rational Cherednik algebras, and two-sided cells (jt with M.Martino), to appear in *Math. Res. Lett.*

[20] Differential operators and Cherednik algebras (jt with V.Ginzburg and J.T.Stafford), to appear in *Selecta Mathematica.*

[19] Symplectic reflection algebras, in *Trends in Representation Theory of Algebras and Related Topics (ICRA XII)*, European Mathematical Society, Zurich, 285–347.

[18] Quiver varieties, category $\mathcal{O}$ for rational Cherednik algebras, and Hecke algebras, *Int. Math. Res. Papers* **2008**, 69 pages, doi:10.1093/imrp/rpn006.

[17] Cherednik, Hecke and quantum algebras as free Frobenius and Calabi-Yau extensions (jt with K.A.Brown and C.H.Stroppel), *J. Algebra* **319** (2008), no 3, 1007–1034.

[16] Rational Cherednik algebras and differential operators on the cyclic quiver, *Glasg. Math. J.* **48** (2006), no. 1, 145–160.

[15] Hilbert schemes and rational Cherednik algebras II: representations and coherent sheaves, (jt with J.T.Stafford), *Duke. Math J.* **132** (2006), no. 1, 73–135

[14] Hilbert schemes and rational Cherednik algebras I, (jt. with J.T.Stafford), *Adv. Math.* **198** (2005), no. 1, 222–274.

[13] Representations of symplectic reflection algebras and resolutions of deformations of symplectic quotient singularities, (jt. with S.P.Smith), *Math. Ann.* **330** (2004), 185–200

[12] Subregular representations of sl_n and simple singularities of type A_{n-1} II, (jt. with D.Rumynin), *Represent. Theory* **8** (2004), 328-345..

[11] On the quotient ring by diagonal invariants, *Invent. Math.* **153** (2003), no. 3, 503–518.

[10] Baby Verma modules for rational Cherednik algebras, *Bull. London Math. Soc.* **35** (2003), no. 3, 321–336.

[9] Poisson orders, symplectic reflection algebras and representation theory, (jt. with K.A. Brown), *J. Reine Angew. Math.* **559** (2003), 193–216.

[8] Subregular representations of sl_n and simple singularities of type A_{n-1}, (jt. with D.Rumynin), *Compositio Math.* **138** (2003) 337-360.

[7] Block representation type of reduced enveloping algebras, (jt. with A.Premet), *Trans. Amer. Math.Soc.* **354** (2002), no. 4, 1549–1581.

[6] Representations of Lie algebras in positive characteristic and quantised enveloping algebras at roots of unity, in *Quantum Groups and Lie Theory*, London Mathematical Society Lecture Notes 290, Cambridge University Press.

[5] The ramification of the centres: quantised function algebras at roots of unity, (jt. with K.A.Brown), *Proc. London Math. Soc.* **84** (2002), no. 1, 147–178.

[4] The ramification of the centres: Lie algebras in positive characteristic and quantised enveloping algebras, (jt. with K.A.Brown), *Math.Z.* **238** (2001), no. 4, 733–779.

[3] Complexity of representations of quantised function algebras and representation type, *J. Algebra* **233** (2000), 327–482.

[2] Cohomology of quantized function algebras at roots of unity, *Proc. London Math. Soc.* **80** (2000), 337–359.

[1] Quantised function algebras at roots of unity and path algebras, *J. Algebra* **220** (1999), 381–395.