Tim Browning

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Present appointment

2018– **Professor**, *IST Austria.*

2012–2019 **Professor**, *University of Bristol.*

Previous appointments

2016–18 **Director of Pure Institute**, *University of Bristol.*

2008–2012 **Reader in pure mathematics**, *University of Bristol.*

2005–2008 **Lecturer in pure mathematics**, *University of Bristol.*

2002–2005 **Postdoctoral researcher**, *University of Oxford.*
RA on EPSRC grant number GR/R93155/01

2001–2002 **Postdoctoral researcher**, *Université de Paris-Sud.*
RA on EU network "Arithmetic Algebraic Geometry"

Academic qualifications

2002 **D.Phil.**, *Magdalen College, University of Oxford.*
"Counting rational points on curves and surfaces", supervised by Prof. Heath-Brown FRS

1998 **M.Sci. Mathematics**, *King's College London, I class.*

Special awards, honours and distinctions

2018 **Editor-in-chief for Proceedings of the LMS.**

2017 **EPSRC Standard Grant.**

2017 **Simons Visiting Professor at MSRI in Berkeley.**

2016 **Plenary lecturer at Journées Arithmétiques in Debrecen Hungary.**

2012 **European Research Council Starting Grant.**

2010 **Leverhulme Trust Phillip Leverhulme Prize.**

2009 **Institut d'Estudis Catalans Ferran Sunyer i Balaguer Prize.**

2008 **London Mathematical Society Whitehead prize.**

2007 **EPSRC Advanced Research Fellowship.**

2006 **<u>Nuffield Award</u> for newly appointed lecturers**.

Research

Publications: books

2010 **Quantitative arithmetic of projective varieties**.
172pp.; Progress in Math. **277**, Birkhäuser

Publications: conference proceedings

2017 **How often does the Hasse principle hold?**.
Algebraic Geometry: Salt Lake City 2015; Proc. Symposia Pure Math. **97.2** (2018), AMS, 89-102.

2015 **A survey of applications of the circle method to rational points**.
Arithmetic and geometry; London Math. Soc. Lecture Note Ser. **420**, Camb. Univ. Press, 89–113

2009 **Recent progress on the quantitative arithmetic of del Pezzo surfaces**.
Proceedings of the 5th China–Japan Number Theory Conference; World Scientific, 1–19

2009 **Integral points on cubic hypersurfaces**.
Analytic Number Theory: Essays in honour of Klaus Roth; Camb. Univ. Press, 75–90 (with D.R. Heath-Brown)

2009 **Solubility of Fermat equations**.
Proceedings of the International Conference on The Algebraic and Arithmetic Theory of Quadratic Forms; Contemporary Mathematics **493**, 99–106 (with R. Dietmann)

2007 **An overview of Manin's conjecture for del Pezzo surfaces**.
Analytic number theory — a tribute to Gauss and Dirichlet; Clay Math. Proceedings **7**, 39–56

2007 **Simultaneous equal sums of three powers**.
Proceedings of the session on Diophantine geometry; CRM series **4**, 93–100 (with D.R. Heath-Brown)

2003 **Counting rational points on del Pezzo surfaces of degree five**.
Proceedings of the Bonn session in analytic number theory and Diophantine equations; Bonner Math. Schriften **360**, 22pp

Publications: refereed journal articles

[74] **Arithmetic of higher-dimensional orbifolds and a mixed Waring problem**.
Submitted, 2019 (with S. Yamagishi)

[73] **Free rational curves on low degree hypersurfaces and the circle method**.
Submitted, 2018 (with W. Sawin)

[72] **Counting rational points on biquadratic hypersurfaces**.
Submitted, 2018 (with L.Q. Hu)

[71] **Density of rational points on a quadric bundle in $\mathbb{P}^3 \times \mathbb{P}^3$**.
Submitted, 2018 (with D.R. Heath-Brown)

[70] **Counting rational points on quadric surfaces**.
Discrete Analysis **15** (2018), 29pp. (with D.R. Heath-Brown)

[69] **A geometric version of the circle method**.
Submitted, 2017 (with W. Sawin)

[68] **Sieving rational points on varieties**.
Trans. Amer. Math. Soc., in press (with D. Loughran)

[67] **Averages of arithmetic functions over principal ideals**.
Int. J. Number Theory **15** (2019), 547–567 (with E. Sofos)

[66] **Counting rational points on quartic del Pezzo surfaces with a rational conic**.
Math. Annalen, in press (with E. Sofos)

[65] **Many cubic surfaces have rational points**.
Mathematika **63** (2017), 818–839

[64] **Strong approximation and a conjecture of Harpaz and Wittenberg**.
Int. Math. Res. Not.; in press (with D. Schindler)

[63] **Rational curves on smooth hypersurfaces of low degree**.
Algebra & Number Theory **11** (2017), 1657–1675 (with P. Vishe)

[62] **Norm forms for arbitrary number fields as products of linear polynomials**.
Ann. Sci. École Norm. Sup. **50** (2017), 1375–1438 (with L. Matthiesen)

[61] **Twisted Linnik implies optimal covering exponent for S^3**.
Int. Math. Res. Not.; in press (with V. Kumaraswamy and R. Steiner)

[60] **Power-free values of polynomials on symmetric varieties**.
Proc. London Math. Soc. **114** (2017), 1044–1080 (with A. Gorodnik)

[59] **Square-free values of reducible polynomials**.
Discrete Analysis **8** (2016), 18pp. (with A. Booker)

[58] **Failures of weak approximation in families**.
Compositio Math. **152** (2016), 1435–1475 (with M. Bright and D. Loughran)

[57] **Varieties with too many rational points**.
Math. Zeit. **285** (2017), 1249–1267 (with D. Loughran)

[56] **Improvements in Birch's theorem on forms in many variables**.
Journal reine angew. Math. **731** (2017), 203–234. (with S. Prendiville)

[55] **Forms in many variables and differing degrees**.
J. Eur. Math. Soc. **9** (2017), 357–394 (with D.R. Heath-Brown)

[54] **A transference approach to a Roth-type theorem in the squares**.
Int. Math. Res. Not. **2017** (2017), 2219–2248 (with S. Prendiville)

[53] **Counting rational points on the Cayley ruled cubic**.
Eur. J. Math. **2** (2016), 55–72 (with R. de la Bretèche and P. Salberger)

[52] **The proportion of failures of the Hasse norm principle**.
Mathematika **62** (2016), 337–347 (with R. Newton)

[51] **Rational points on cubic hypersurfaces over $\mathbb{F}_q(t)$**.
GAFA **25** (2015), 671–732 (with P. Vishe)

[50] **Rational points on intersections of cubic and quadric hypersurfaces**.
J. Inst. Math. Jussieu **14** (2015), 703–749 (with R. Dietmann and D.R. Heath-Brown)

[49] **The polynomial sieve and equal sums of like polynomials**.
Int. Math. Res. Not. **2015** (2015), 1987–2019

[48] **Pairs of diagonal quadratic forms and linear correlations among sums of two squares**.
Forum Math. **27** (2015), 2025–2050 (with R. Munshi)

[47] **Rational points on pencils of conics and quadrics with many degenerate fibres**.
Annals of Math. **180** (2014), 381–402 (with L. Matthiesen and A. Skorobogatov)

[46] **Density of Châtelet surfaces failing the Hasse principle**.
Proc. London Math. Soc. **108** (2014), 1030–1078 (with R. de la Bretèche)

[45] **Cubic hypersurfaces and a version of the circle method for number fields**.
Duke Math. J. **163** (2014), 1825–1883 (with P. Vishe)

[44] **Contre-exemples au principe de Hasse pour certains tores coflasques**.
J. Théorie Nombres Bordeaux **26** (2014), 25–44 (with R. de la Bretèche)

[43] **Counting rational points on del Pezzo surfaces with a conic bundle structure**.
Acta Arithmetica **163** (2014), 271–298 (with M. Swarbrick Jones)

[42] **The Lang-Weil estimate for cubic hypersurfaces** .
Can. Math. Bull. **56** (2013), 500–502

[41] **Inhomogeneous cubic congruences and rational points on del Pezzo surfaces**.
J. reine angew. Math. **680** (2013), 69–151 (with S. Baier)

[40] **Incomplete Kloosterman sums and multiplicative inverses in short intervals**.
Int. J. Number Theory **9** (2013), 481–486 (with A. Haynes)

[39] **Rational points on singular intersections of quadrics**.
Compositio Math. **149** (2013), 1457–1494 (with R. Munshi)

[38] **On Manin's conjecture for a family of Châtelet surfaces**.
Annals of Math. **175** (2012), 297–343 (with R. de la Bretèche and E. Peyre)

[37] **Sums of three squareful numbers**.
Experimental Mathematics **21** (2012), 204–211 (with K. Van Valckenborgh)

[36] **Inhomogeneous quadratic congruences**.
Funct. et Approx. **47** (2012), 267–286 (with S. Baier)

[35] **Averages of shifted convolutions of $d_3(n)$**.
Proc. Edinburgh Math. Soc. **55** (2012), 551–576 (with S. Baier, G. Marasingha and L. Zhao)

[34] **Binary forms as sums of two squares and Châtelet surfaces**.
Israel J. Math. **191** (2012), 973–1012 (with R. de la Bretèche)

[33] **Quadratic polynomials represented by norm forms**.
GAFA **22** (2012), 1124–1190 (with D.R. Heath-Brown)

[32] **Power-free values of polynomials**.
Arch. Math. **96** (2011), 139–150

[31] **Manin's conjecture for quartic del Pezzo surfaces with a conic fibration**.
Duke Math. J. **160** (2011), 1–69 (with R. de la Bretèche)

[30] **The divisor problem for binary cubic forms**.
J. Théorie Nombres Bordeaux **23** (2011), 579–602

[29] **Least zero of a cubic form**.
Math. Annalen **352** (2011), 745–778 (with R. Dietmann and P.D.T.A. Elliott)

[28] **The number of representations of rationals as a sum of unit fractions**.
Illinois J. Math. **55** (2011), 685–696 (with C. Elsholtz)

[27] **Linear growth for Châtelet surfaces**.
Math. Annalen **346** (2010), 41–50

[26] **Rational points on cubic hypersurfaces that split off a form**.
Compositio Math. **146** (2010), 853–885

[25] **Le problème des diviseurs pour des formes binaires de degré 4**.
J. reine angew. Math. **646** (2010), 1–44 (with R. de la Bretèche).

[24] **Rational points on quartic hypersurfaces**.
J. reine angew. Math. **629** (2009), 37–88 (with D.R. Heath-Brown)

[23] **Manin's conjecture for a quartic del Pezzo surface with A_4 singularity**.
Ann. Inst. Fourier **59** (2009), 1231–1265 (with U. Derenthal)

[22] **Manin's conjecture for a cubic surface with D_5 singularity**.
Int. Math. Res. Not. **15** (2009), 2620–2647 (with U. Derenthal)

[21] **On the representation of integers by quadratic forms**.
Proc. London Math. Soc. **96** (2008), 389–416 (with R. Dietmann)

[20] **Binary linear forms as sums of two squares**.
Compositio Math. **144** (2008), 1375–1402 (with R. de la Bretèche)

[19] **On Manin's conjecture for singular del Pezzo surfaces of degree four, I**.
Michigan Math. J. **55** (2007), 51–80 (with R. de la Bretèche)

[18] **Density of integer solutions to diagonal quadratic forms**.
Monatsh. Math. **152** (2007), 13–38.

[17] **On Manin's conjecture for a certain singular cubic surface**.
Ann. Sci. École Norm. Sup. **40** (2007), 1–50 (with R. de la Bretèche and U. Derenthal)

[16] **On Manin's conjecture for singular del Pezzo surfaces of degree four, II**.
Math. Proc. Camb. Phil. Soc. **143** (2007), 579–605 (with R. de la Bretèche)

[15] **Counting rational points on cubic hypersurfaces**.
Mathematika **54** (2007), 93–112.

[14] **The density of rational points on non-singular hypersurfaces, I**.
Bull. London Math. Soc. **38** (2006), 401–410 (with D.R. Heath-Brown)

[13] **The density of rational points on a certain singular cubic surface**.
J. Number Theory **119** (2006), 242–283.

[12] **The density of rational points on non-singular hypersurfaces, II**.
Proc. London Math. Soc. **93** (2006), 273–303 (with D.R. Heath-Brown)

[11] **Sums of arithmetic functions over values of binary forms**.
Acta Arith. **125** (2006), 291–304 (with R. de la Bretèche)

[10] **Counting rational points on algebraic varieties**.
Duke Math. J. **132** (2006), 545–578 (with D.R. Heath-Brown and P. Salberger)

[9] **Equal sums of like polynomials**.
Bull. London Math. Soc. **37** (2005), 801–808

[8] **Counting rational points on hypersurfaces**.
J. reine angew. Math. **584** (2005), 83–115 (with D.R. Heath-Brown)

[7] **Plane curves in boxes and equal sums of two powers**.
Math. Zeit. **251** (2005), 233–247 (with D.R. Heath-Brown)

[6] **Equal sums of three powers**.
Invent. Math. **157** (2004), 553–573 (with D.R. Heath-Brown)

[5] **Sums of four biquadrates**.
Math. Proc. Camb. Phil. Soc. **134** (2003), 385–395

[4] **Counting rational points on cubic and quartic surfaces**.
Acta Arith. **108** (2003), 275–295

[3] **A note on the distribution of rational points on threefolds**.
Quart. J. Math. **54** (2002), 33–39

[2] **Counting rational points on diagonal quadratic surfaces**.
Quart. J. Math. **54** (2002), 11–31

[1] **Equal sums of two kth powers**.
J. Number Theory **96** (2002), 293–318

Grants

2019–2022	**New frontiers of the Manin conjecture**, *FWF (Einzelprojekte)*, €356,799.
2017–2020	**Between rational and integral points**, *EPSRC (Standard Grant)*, £357,561.
2012–2017	**Frontiers of analytic number theory and selected topics**, *European Research Council (Starting Grant)*, €801,187.
2012	**Synergies and vistas in analytic number theory**, *Clay Mathematics Institute*, $10,000.
2011	**Density of rational and integral points**, *Clay Mathematics Institute*, $15,000.
2007–2012	**Diophantine geometry via analytic number theory**, *EPSRC (Advanced Research Fellowship)*, £617,163.
2006-2007	**Diophantine equations**, *University of Bristol (Research Fellowship)*, £5,390.
2006-2008	**Diophantine equations**, *Nuffield (Award for Newly Appointed Lecturers)*, £5,000.

Activities associated with learned journals

2018–	**Editor-in-chief for Proceedings of the LMS**.
2018–	**Member of LMS Publication Committee**.
2012–2013	**Member of LMS Publication Committee**.
2008–2013	**Editorial advisor for the LMS journals**.

Invited programme participation

2019	**Reinventing rational points**, *IHP, Paris*, April–July. Scientific committee and visiting Professor
2017	**Analytic number theory**, *MSRI, Berkeley*, Jan–May. Simons Visiting Professor
2013	**Arithmetic and geometry**, *HIM, Bonn*, 15/03–19/04.
2012	**Diophantine geometry**, *Centro di Ricerca Matematica, Pisa*, 24/09–28/09.
2011	**Group actions in number theory**, *EPFL, Lausanne*, 17/01–17/02.
2010	**Analytic number theory program**, *IAS, Princeton*, Jan—April.
2009	**Diophantine equations trimester program**, *HIM, Bonn*, 04/04–30/04.
2006	**Rational points on higher-dimensional varieties**, *MSRI, Berkeley*, March–May.
2005	**Diophantine geometry**, *Centro di Ricerca Matematica, Pisa*, 18/05-08/06.

Invited seminars in the UK

Loughborough (07/03/18), **RHUL** (22/11/17), **Exeter** (02/11/17), **London** (09/03/16), **Cambridge** (16/02/16), **Durham** (25/01/16), **Warwick** (10/02/14), **York** (28/01/14), **RHUL** (15/10/13), **Cambridge** (05/03/13), **Oxford** (21/02/13), **Sheffield** (12/12/12), **RHUL** (20/03/12), **Nottingham** (01/12/10), **Warwick** (07/06/10), **Royal Holloway** (20/10/09), **London** (04/02/09), **Exeter** (29/01/09), **Cambridge** (26/02/08), **Cardiff** (15/06/05), **London** (14/12/04), **Exeter** (04/03/04), **Oxford** (30/10/03), **London** (22/10/03)

Invited seminars outside the UK

University of Vienna (13/03/19), $\mathbb{N}^3$ **meeting (Lund)** (30/11/18), **Wien–Budapest AG** (09/11/18), **Diamant seminar (Netherlands)** (01/12/17), **Cyrpus University** (18/10/17), **Aarhus University** (10/10/17), **Variétés rationnelles (ENS Paris)** (09/06/17), **UC San Diego** (18/05/17), **MIT Boston** (21/03/17), **Rice Houston** (23/02/17), **EPFL Lausanne** (16/06/16), **Variétés rationnelles (ENS Paris)** (05/12/14), **Ohio State University** (17/03/14), **Paris 11** (19/02/13), **Shanghai Jiao Tong University** (12/10/12), **IHP Paris** (11/06/12), **KTH Stockholm** (19/01/12), **Austin** (22/11/11), **Göttingen** (23/05/11), **EPFL Lausanne** (07/02/11), **New York** (25/02/10), **MIT Boston** (02/03/10), **IAS Princeton** (22/04/10), **IHP Paris** (06/11/09), **Barcelona** (22/04/09), **HIM Bonn** (20/04/09), **Rényi Institute in Budapest** (21/10/08), **IHP Paris** (02/06/08), **Paris 7** (26/05/08), **MPI Bonn** (19/05/08), **Variétés rationnelles (ENS Paris)** (16/05/08), **Chalmers Institute, Göteborg** (25/09/07), **ETH Zurich** (01/06/07), **Grenoble** (21/03/07), **Paris 7** (19/03/07), **IHP Paris** (19/03/07), **MSRI Berkeley** (02/05/06), **Bordeaux** (03/02/06), **Nancy** (26/01/06), **Paris 11** (24/01/06), **Montpellier** (25/10/04), **Göttingen** (19/06/04), **Variétés rationnelles (ENS Paris)** (07/06/02), **Grenoble** (15/03/02), **Nancy** (07/02/02)

Invitations to speak at conferences

Feb, 2019	**Higher-dimensional arithmetic geometry**, *Kumamoto*.
Oct, 2018	**Analytic number theory and Diophantine geometry**, *Shanghai*.
Jul, 2018	**Rational points on Schiermonnikoog**, *Schiermonnikoog Island*.
Dec, 2017	**Colliot-Thélène 70th birthday conference**, *Florence*.
Nov, 2017	**Rational points and Zariski-density**, *Copenhagen*.
Sep, 2017	**Diophantine Problems**, *Manchester*.
June, 2017	**Number Theory Days**, *Lausanne*.
April, 2017	**Height zeta functions and rational points**, *UIC, Chicago*.
Nov, 2016	**Analytic number theory**, *Oberwolfach*.
Sep, 2016	**ELAZ 2016**, *Strobl am Wolfgangsee, Austria*.
Jan, 2016	**Number theory and function fields at the crossroads**, *Exeter*.
Jan, 2016	**Rationality questions**, *Bristol*.
Sep, 2015	**Analytic number theory and Diophantine geometry**, *Hannover*.
Jul, 2015	**Algebraic geometry 2015**, *University of Utah, Salt Lake City*.
Jul, 2015	**Journées Arithmétiques**, *Debrecen*. Plenary lecture
Apr, 2015	**BMC/BAMC 2015**, *Cambridge*. Morning lecture
Jan, 2015	**Number theory conference**, *AIMS, Cape Town*.
Sep, 2014	**New developments in algebraic geometry**, *Taiwan*.
Sep, 2014	**Analytic number theory**, *Oxford*.
Jul, 2014	**Frontiers of rationality**, *Svalbard*.
Jul, 2014	**ELEFANT: analytic number theory workshop**, *HCM, Bonn*.
Oct, 2013	**Analytic number theory**, *Oberwolfach*.
Jun, 2013	**Analytic number theory conference in honour of Fouvry**, *CIRM, Luminy*.
May, 2013	**Rational points — geometric, analytic and explicit approaches**, *Warwick*.

May, 2013 **CEDAR**, *UIC, Chicago.*
Sep, 2012 **Diophantine geometry**, *Pisa.*
Sep, 2012 **Cohomological methods in arithmetic geometry**, *Zurich.*
Jun, 2012 **CNTA 12**, *Lethbridge, Canada.*
Jun, 2012 **Analytic methods for Diophantine problems**, *Göttingen.*
Nov, 2011 **Diophantine methods and arithmetic of quadratic forms**, *Banff, Canada.*
Nov, 2010 **Exponential sums over finite fields and applications**, *ETH, Zurich.*
Oct, 2010 **Arithmetic of surfaces**, *Leiden.*
Sep,2010 **Analytic and combinatorial number theory**, *IMS, Chennai.*
May, 2010 **Arithmetic algebraic geometry — theory and practice**, *ETH, Zurich.*
Oct, 2009 **International conference on analytic number theory**, *TIFR, Mumbai.*
Jun, 2009 **Activités additives et analytiques**, *Lille.*
Aug, 2008 **5th Japan–China number theory meeting**, *Osaka, Japan.*
Aug, 2008 **Analytic number theory**, *Weihei, China.*
Jul, 2008 **CNTA 10**, *Waterloo, Canada.*
Jun, 2008 **Rational points on curves and higher-dimensional varieties**, *Warwick.*
Jun, 2008 **Rencontres Stéphanoises en théorie des nombres**, *Saint-Etienne, France.*
Mar, 2008 **Analytic number theory**, *Oberwolfach.*
May, 2007 **Analytic number theory**, *ICTP, Trieste.*
Sep, 2006 **India–UK number theory conference**, *Chennai.*
May, 2006 **Analytic methods for Diophantine equations**, *Banff, Canada.*
May, 2005 **Diophantine geometry**, *Pisa.*
Dec, 2004 **Finite fields: theory and applications**, *Oberwolfach.*
Jun, 2004 **Diophantine geometry**, *Göttingen.*
Mar, 2003 **Elementare und analytische zahlentheorie**, *Oberwolfach.*
Jun, 2002 **Analytic number theory and Diophantine equations**, *MPI, Bonn.*
Jan, 2002 **Théorie des nombres et applications**, *CIRM, Luminy.*

Invitations to lecture at summer/winter schools

Jan, 2019 **Winter school on trace functions and their applications**, *Monte Veritá.*
Lectures: The circle method

Jul, 2011 **Institut d'été en géométrie arithmétique**, *Chern Institute, Tianjin.*
Lectures: Counting rational points on algebraic varieties

Jan, 2011 **GANT: initial instructional workshop**, *Centre Bernoulli, Lausanne.*
Lectures: The Hardy–Littlewood circle method

May, 2007 **Summer school on analytic number theory**, *ICTP, Trieste.*
Lectures: The Manin conjecture in dimension 2

Invitations to examine postgraduate degrees

2019 Sofia Lindqvist, D.Phil thesis at Oxford University
2019 Lasse Grimmelt, Ph.D. thesis at Utrecht University
2018 Erik Visse, Ph.D. thesis at Leiden University
2017 Morten Hein Tiljeset, Ph.D. thesis at Aarhus University

2017   Kévin Destagnol, Ph.D. thesis at Université Paris 7

2016   Christopher White, Ph.D. thesis at University of Bristol

2016   Mathew Palmer, Ph.D. thesis at University of Bristol

2015   Asim Islam, Ph.D. thesis at RHUL

2015   Ramon Nunes, Ph.D. thesis at Université de Paris-Sud

2015   Marta Pieropan, Ph.D. thesis at University of Hannover

2015   Thomas Reuss, D.Phil thesis at Oxford University

2014   Olivier Wittenberg, Habilitation thesis at École Normale Supérieure

2014   Stefanos Papanikolopoulos, Ph.D. thesis at Warwick University

2014   Arne Smeets, Ph.D. thesis at Université de Paris-Sud

2014   Alastair Irving, D.Phil thesis at Oxford University

2013   Julia Brandes, Ph.D. thesis at University of Bristol

2013   Alan Lee, Ph.D. thesis at University of Bristol

2013   Amina Al Qabani, Ph.D. thesis at Reading University

2011   Karl Van Valckenborgh, Ph.D. thesis at Leuven University

2011   Sean Prendiville, Ph.D. thesis at University of Bristol

2011   Lilian Matthiesen, Ph.D. thesis at Cambridge University

2008   Nic Niedermowwe, D.Phil thesis at Oxford University

2008   Fok-Shuen Leung, D.Phil thesis at Oxford University

2007   Oscar Marmon, Licentiate thesis at Chalmers Institute

2005   Gihan Marasingha, D.Phil. thesis at Oxford University

2004   Lillian Pierce, Masters thesis at Oxford University

Conference organisation

May, 2019   **Points rationnels sur les variétés de Fano ou similaires** , *IHP, Paris*, with E. Peyre (Grenoble).

May, 2018   **Rational and integral points via analytic and geometric methods**, *Oaxaca, Mexcio*, with U. Derenthal (Hannover) and C. Salgado (Rio).

July, 2017   **Where geometry meets number theory**, *Gothenberg, Sweden*, with J. Brandes (Gothenberg), O. Marmon (Copenhagen) and A. Turchet (Washington).

May, 2017   **Recent developments in analytic number theory**, *MSRI, Berkeley*, with C. David (Concordia), K. Soundararajan (Stanford) and T. Tao (UCLA).

Jun, 2015   **Quantitative arithmetic geometry**, *Mittag-Leffler Institute, Sweden*, with P. Salberger (Chalmers).

May, 2014   **Rational and integral points on higher-dimensional varieties**, *AIM, Palo Alto*, with Y. Tschinkel (Simons Foundation).

Jan, 2014   **Collaborations around rational points**, *Bellairs Research Institute, Barbados*, with U. Derenthal (Hannover).

Sep, 2012   **Synergies and vistas in analytic number theory**, *Oxford*, with J. Pila (Oxford).

Jul, 2012   **Interactions of birational geometry with other fields**, *Durham*, with C. Birkar (Cambridge) and I. Cheltsov (Edinburgh).

Jan, 2011   **Density of rational and integral points**, *Ein Geidi, Israel*, with A. Gorodnik (Bristol), A. Nevo (Technion) and B. Weiss (BGU).

Sep, 2009 **Arithmetic and algebraic geometry of higher-dimensional varieties**, *Bristol*, with D. Ryder (GCHQ).

Jul, 2007 **Diophantine equations via analytic number theory**, *Bristol*, with M. Bright (Leiden).

Seminar organisation

2018– **Algebraic geometry & number theory seminar**, with Tamas Hausel.

2015–2018 **BOWL: Bristol–Oxford–Warwick–London combinatorics and number theory one day seminars**, with Andrew Granville, Ben Green, Adam Harper and Julia Wolf. (07/07/2016, 07/12/2016, 20/09/2017)

2012–2016 **Distinguished Lecture Series**, *Bristol*. (speakers: K. Soundararajan, 2012; H. Oh, 2013; P. Diaconis, 2014; P. Sarnak, 2016)

2014–2017 **Bristol public talks in mathematics**, *Bristol*.

2011–2016 **Linfoot seminar**, *Bristol*.

2005–2009 **Heilbronn seminar**, *Bristol*.

2002–2005 **Number theory seminar**, *Oxford*.

Postdocs in my group

2019–2021 Julian Lyczak

2018–2020 Kevin Destagnol

2017–2018 Shuntaro Yamagishi

2012–2013 Sean Prendiville

2011–2013 Lillian Matthiesen

2009–2011 Stephan Baier

Teaching

Undergraduate and taught postgraduate units

2017 **Analytic number theory (M0007)**, *4th year undergraduates*, with M. Lee, 36 hours.

2016 **Analytic number theory (M0007)**, *4th year undergraduates*, with A. Booker, 36 hours.

2015 **Analytic number theory (M0007)**, *4th year undergraduates*, with S. Chow, 36 hours.

2013 **Local fields**, *TCC graduate course (from scratch)*, 20 hours.

2011 **Galois theory (M2700)**, *4th year undergraduates*, with A. Booker, 36 hours.

2010 **Exponential sums over finite fields**, *TCC graduate course (from scratch)*, 20 hours.

2008 **Sieve methods**, *TCC graduate course (from scratch)*, 20 hours.

2007 **Analytic number theory**, *TCC graduate course (from scratch)*, 20 hours.

2005 **Elementary number theory**, *Part A lecture course at Oxford (from scratch)*, 20 hours.

PhD supervision

2016– Nick Rome

2015– Adelina Manzateanu

2014–2018 Raphael Steiner, *The harmonic conjunction of automorphic forms and the Hardy-Littlewood circle method* (joint with A. Booker)

2014–2018 Vinay Kumaraswamy, *Zeros of quadratic forms and the delta-method*

2013–2017 Vladimir Mitankin, *Integral points on affine surfaces*

2013–2014 Yuchao Wang, *On the saturation number for cubic surfaces* (joint with J. Liu at Shandong University)

2011–2015 Efthymios Sofos, *Counting rational points on smooth cubic surfaces* (joint with A. Booker)

2010–2013 Damaris Schindler, *On Diophantine equations involving norm forms and bihomogeneous forms* (joint with T. Wooley)

2009–2013 Michael Swarbrick Jones, *Rational points on rational varieties over algebraic number fields*

2007–2011 Daniel Loughran, *Manin's conjecture for del Pezzo surfaces*

2006–2010 Michael Harvey, *The density of solutions to Diophantine equations and Diophantine inequalities*

Academic leadership and citizenship

2018– Editor-in-chief for **Proceedings of the LMS**.

2017 **Simons Visiting Researcher** at MSRI in Berkeley, where I was in charge of mentoring postdocs and contributing to the research environment of the programme

2016–2018 **Director of the Pure Institute**, responsible for research environment and hiring.

2016–2018 Coordinating installation of art work in the new Fry Building by famous British artist **Richard Long CBE RA**

2016 Applied for and organised 3 month visit to Bristol by E. Peyre (Grenoble) as **IAS Benjamin Meaker Visiting Professor**

2015 I appeared in a **Numberphile** video about *The Uncracked Problem with 33*, which has so far had over 1.1 million hits: `https://www.youtube.com/watch?v=wymmCdLdPvM`

2014–2016 Set up **Bristol public talks in mathematics**, featuring:
- *From Numerology to number theory: the fascination of numbers* by E. Peyre (25/02/16)
- *How to make yourself heard at a rock concert* by J. Wolf (13/10/15)
- *7 things you need to know about prime numbers* by V. Neale (24/02/15)
- *Ada Lovelace: the first programmer* by P. Welch (14/10/14)
- *Quantum computing* by N. Linden (05/06/14)
- *Primes and Zeros* by B. Conrey (20/03/14)

2013–2016 **Director of Public Engagement**, University of Bristol

2008–2013 Editorial advisor for the journals **Bulletin/Journal/Proceedings of the LMS**.