Francesca Balestrieri, MA (Cantab), MSc (Oxon), DPhil (Oxon)

E-mail: fbales@mpim-bonn.mpg.de
Webpage: https://fbalestrieri.github.io
Address: Max-Planck-Institut für Mathematik, Vivatsgasse 7, 53111, Bonn, Germany
Nationality: Italian

Employment

- **Marie Curie Fellow, IST Austria** — 2019–2021
- **Post-Doc Fellow, Max-Planck-Institut für Mathematik** — 2017–2019
  Mentors: Prof Yuri I Manin, Prof Pieter Moree
- **Stipendiary Lecturer in Pure Mathematics, Pembroke College, University of Oxford** — 2016–2017
- **Freelance Editor, Oxford University Press** — 2015–2016

Education

- **DPhil in Number Theory, University of Oxford** — 2013–2017
  Research Interests: Number Theory, Arithmetic Geometry
  Supervisor: Prof E Victor Flynn
- **MSc Mathematics and the Foundations of Computer Science, University of Oxford** — 2012–2013
  Result: Distinction
- **BA (Hons) Mathematical Tripos, University of Cambridge** — 2009–2012
  (Upgraded to MA in 2016)
  Result: Class I (each year)

Academic Visits

- **Institut Henri Poincaré**, Paris, France — Apr–Jul 2019
  Participating in the thematic trimester *À la redécouverte des points rationnels*
- **Mathematisches Forschungsinstitut Oberwolfach**, Oberwolfach, Germany — Dec 2018
  Collaborating with Dr Valentijn Karemaker
- **American University of Beirut**, Beirut, Lebanon — Sep 2018
  Visiting Prof Kamal Khuri-Makdisi
- **University of Washington**, Seattle, USA — Sep–Dec 2015
  Visiting Prof Bianca Viray

Published articles and Preprints

6. **Arithmetic of rational points and zero-cycles on products of Kummer varieties and K3 surfaces**
   (with R. Newton)
   Accepted for publication, *IMRN* (2018).
5. **Brauer-Manin obstruction and families of generalised Châtelet surfaces over number fields**
   International Journal of Number Theory 15 no. 2 (2019), 289–308.
4. **Elliptic fibrations on covers of the elliptic modular surface of level 5**
   (with J. Desjardins, A. Garbagnati, C. Maistret, C. Salgado)
   WINE II: Contributions to Number Theory and Arithmetic Geometry, AWM Springer Series 11 (2018), 159–197.
3. **Iterating the algebraic étale-Brauer set**
   Journal of Number Theory 182 (2018), 284–295
2. **Obstruction sets and extensions of groups**
   Acta Arithmetica 173 (2016), 151–181.
1. **Insufficiency of the Brauer-Manin obstruction for rational points on Enriques surfaces**
   (with J. Berg, M. Manes, J. Park, B. Viray)
   Directions in Number Theory: Proceedings of the 2014 WIN3 Workshop, AWM Springer Series 3 (2016), 1–32.

Fellowships, Scholarships, and Prizes

- **Marie Skłodowska-Curie Actions Individual Fellowship**, European Commission (€174000) — 2019–2021
- **IST Austria Fellowship**, IST Austria (Declined) — 2019–2021
- **Jex-Blake Scholarship**, LMH, University of Oxford — 2013–2014
- **Academic Development Grant (Ginsberg Fund)**, LMH, University of Oxford — 2013
- **Anne Jemima Clough Prize**, Newnham College, University of Cambridge — 2012
- **Chadburn Third-Year Scholarship** , Newnham College, University of Cambridge — 2011–2012

- **Marjorie Stewart Tunnicliffe Prize**, Newnham College, University of Cambridge   2011
- **Anne Jemima Clough Prize**, Newnham College, University of Cambridge   2011
- **Mathilde Blind Second-Year Scholarship**, Newnham College, University of Cambridge   2010–2011
- **Jane Dora Archibald Prize**, Newnham College, University of Cambridge   2010

Teaching (University of Oxford)

- **Stipendiary Lectureship**, Pembroke College.   2016–2017
  - **M1 Groups and group actions**. First year course.   Trinity Term 2017
  - **A.SO Group Theory**. Second year course.   Trinity Term 2017
  - **A4 Integration**. Second year course.   Hilary Term 2017
  - **M1 Groups and group actions**. First year course.   Hilary Term 2017
  - **M2 Analysis II: Continuity and Differentiability**. First year course.   Hilary Term 2017
  - **A0 Linear Algebra**. Second year course.   Michaelmas Term 2016
  - **A2 Metric Spaces and Complex Analysis**. Second year course.   Michaelmas Term 2016
  - **M2 Analysis I: Sequences and Series**. First year course.   Michaelmas Term 2016
- **A.SO Graph Theory**, Tutor for New College. Second year course.   Trinity Term 2016
- **C2.6 Introduction to Schemes**, Consultation Sessions Tutor.   Trinity Term 2016
- **C2.6 Introduction to Schemes**, Class Tutor. Fourth year/graduate course.   Hilary Term 2016
- **A.SO Graph Theory**, Tutor for New College. Second year course.   Trinity Term 2015
- **B3.4 Algebraic Number Theory**, Consultation Sessions Tutor.   Trinity Term 2015
- **C3.7 Elliptic Curves**, Consultation Sessions Tutor (2 Sets).   Trinity Term 2015
- **B3.4 Algebraic Number Theory**, Class Tutor. Third year course.   Hilary Term 2015
- **C3.7 Elliptic Curves**, Class Tutor (2 Sets). Fourth year/graduate course.   Hilary Term 2015
- **C3.4 Algebraic Geometry**, Class Tutor. Fourth year/graduate course.   Michaelmas Term 2014
- **B3.1 Galois Theory**, TA (2 sets). Third year course.   Michaelmas Term 2014
- **B9b Algebraic Number Theory**, TA. Third year course.   Hilary Term 2014
- **C9.1b Elliptic Curves**, TA. Fourth year/graduate course.   Hilary Term 2014
- **C9.2a Analytic Number Theory**, TA. Fourth year/graduate course.   Michaelmas Term 2013

Teaching (University of Washington)

- **Algebraic Number Theory**, 2 lectures (substituting Prof Viray). Graduate course.   Fall Quarter 2015

Committees and service

- Reviewer for the Mathematical Reviews of the AMS.   2017–
- Peer-reviewer for the Tunisian Journal of Mathematics and for Advances in Mathematics.   2017–
- Organiser of the Junior Number Theory seminar, University of Oxford.   2015–2016
- Undergraduate admissions interviewer at New College, University of Oxford.   Michaelmas Term 2014
- Organiser of the Young Researchers in Mathematics 2015 conference, University of Oxford.   2013–2015
- Undergraduate admissions interviewer at New College, University of Oxford.   Michaelmas Term 2013
- Facilitator for the Good Practices Steering Group, Mathematical Institute, University of Oxford.   2013–2017

Talks

- *On the arithmetic of rational points and zero-cycles on products of Kummer varieties and K3 surfaces*   23 Apr 2019
  Dutch Mathematical Congress, Veldhoven, Netherlands.
- *On the arithmetic of rational points and zero-cycles on products of Kummer varieties and K3 surfaces*   5 Apr 2019
  University of Pennsylvania, USA.
- *On the arithmetic of rational points and zero-cycles on products of Kummer varieties and K3 surfaces*   15 Mar 2019
  Intercity Number Theory Seminar, Utrecht University, Netherlands.
- *On the arithmetic of rational points and zero-cycles on products of Kummer varieties and K3 surfaces*   14 Nov 2018
  Groups, Arithmetic and Algebraic Geometry Seminar, EPFL, Switzerland.
- *On the arithmetic of rational points and zero-cycles on products of Kummer varieties and K3 surfaces*   18 Sep 2018
  Number Theory Seminar, IST Austria, Austria.
- *On the arithmetic of rational points and zero-cycles on products of Kummer varieties and K3 surfaces*   4 Sep 2018
  CAMS/MATH Seminar, American University of Beirut, Lebanon.
- *On the arithmetic of rational points and zero-cycles on products of Kummer varieties and K3 surfaces*   2 Jul 2018
  Rational Points on Schiermonnikoog, Netherlands.
- *Arithmetic of rational points and 0-cycles of degree 1 on Kummer varieties*   28 Mar 2018
  Number Theory Lunch Seminar, Max-Planck-Institut für Mathematik, Bonn, Germany.

- *Categorie: un cambiamento di paradigma in matematica* (in Italian)   7 Dec 2017
  Seminario di Logica, Università Ca' Foscari, Venice, Italy.
- *Studying arithmetic properties of rational points on varieties*   26 Oct 2017
  MPI-Oberseminar, Max-Planck-Institut für Mathematik, Bonn, Germany.
- *Iterating the algebraic étale-Brauer obstruction*   19 May 2017
  Number Theory Seminar, University of Cambridge, UK.
- *When do rational points on varieties exist?*   15 Mar 2017
  Pure Mathematics Seminar, University of Reading, UK.
- *Iterating the algebraic étale-Brauer obstruction*   17 Feb 2017
  RTG Lectures in Arithmetic Geometry at Rice, Rice University, Houston, USA.
- *Iterare l'insieme di étale-Brauer algebrico* (in Italian)   22 Dec 2016
  Algebraic Geometry and Representation Theory in Rome, Università Sapienza, Rome, Italy.
- *Iterating the algebraic étale-Brauer obstruction*   27 Oct 2016
  Number Theory Seminar, University of Manchester, UK.
- *Iterating the algebraic étale-Brauer obstruction*   12 Oct 2016
  Linfoot seminar, Bristol University, UK.
- *Obstructions to the existence of rational points on Enriques surfaces*   13 Jun 2016
  GAeL XXIV, Nesin Mathematics Village, Turkey.
- *Iterating the algebraic étale-Brauer obstruction*   23 May 2016
  Leibniz Universität Hannover, Hannover, Germany.
- *Modular methods for Diophantine equations*   25 Apr 2016
  Junior Number Theory seminar, University of Oxford, UK.
- *Iterating the algebraic étale-Brauer obstruction*   25 Jan 2016
  Junior Number Theory seminar, University of Oxford, UK.
- *Iterating the algebraic étale-Brauer obstruction*   17 Nov 2015
  AGNT Seminar, Rice University, Houston, USA.
- *Belyi's Theorem*   12 Nov 2015
  Dessins d'enfants seminar, University of Washington, Seattle, USA.
- *Iterating the algebraic étale-Brauer obstruction*   10 Nov 2015
  UW Number Theory Seminar, University of Washington, Seattle, USA.
- *Obstructions: a dictionary*   19 Aug 2015
  Young Researchers in Mathematics 2015, University of Oxford, UK.
- *Insufficiency of the Brauer-Manin obstruction for Enriques surfaces*   13 Apr 2015
  TCC Number Theory day, Imperial College, London, UK.
- *Insuffisance de l'obstruction de Brauer-Manin pour les surfaces d'Enriques* (in French)   10 Apr 2015
  Séminaire "Variétés Rationnelles", Institut Henri Poincaré, Paris, France.
- *Obstruction sets and extensions of groups*   9 Feb 2015
  Junior Number Theory seminar, University of Oxford, UK.
- *Ranks of elliptic curves*   24 Nov 2014
  Junior Number Theory seminar, University of Oxford, UK.
- *Obstructions!*   2 Jul 2014
  Young Researchers in Mathematics 2014, University of Warwick, UK.
- *Obstructions to the Hasse principle*   25 Nov 2013
  Junior Number Theory seminar, University of Oxford, UK.

Conferences and Workshops

- **Rational Points 2019**   14–20 Jul 2019
  Franken-Akademie Schloss Schney, Schney, Germany.
- **Dutch Mathematical Congress**   23–24 Apr 2019
  Veldhoven, Netherlands.
- **À la redécouverte des points rationnels**   15 Apr –12 Jul 2019
  Institut Henri Poincaré, Paris, France.
- **Rational Points on Schiermonnikoog**   2 – 6 Jul 2018
  Schiermonnikoog, Netherlands.
- **XIV Giornate di Geometria Algebrica ed Argomenti Correlati**   29 May – 1 Jun 2018
  Università di Genova, Genova, Italy.
- **Rational Points 2017**   2–8 Jul 2017
  Franken-Akademie Schloss Schney, Schney, Germany.
- **RTG Lectures in Arithmetic Geometry at Rice**   17–19 Feb 2017

Rice University, Houston, USA.
- **Algebraic Geometry and Representation Theory in Rome** 22 Dec 2016
  Università Sapienza, Rome, Italy.
- **Women In Numbers Europe 2** 25–30 Sep 2016
  Lorentz Center, Leiden, Netherlands.
- **GAeL XXIV** 13–17 Jun 2016
  Nesin Mathematics Village, Turkey.
- **Fundamental groups in Arithmetic Geometry** 26 May – 3 Jun 2016
  Institut Henri Poincaré, Paris, France.
- **Explicit Methods in Number Theory (in honour of John Cremona's 60th Birthday)** 4–8 Apr 2016
  University of Warwick, UK.
- **Sage Days 71: Explicit p-adic methods in number theory** 20–24 Mar 2016
  University of Oxford, UK.
- **Oxford Cryptography Day** 17 Mar 2016
  University of Oxford, UK.
- **Western Algebraic Geometry Symposium** 17–18 Oct 2015
  University of Washington, Seattle, USA.
- **LMS-CMI summer school on Diophantine Equations** 15–19 Sep 2015
  Wales, UK.
- **Young Researchers in Mathematics 2015** 17–20 Aug 2015
  University of Oxford, UK.
- **Rational Points 2015** 28 Jun – 5 Jul 2015
  Franken-Akademie Schloss Schney, Schney, Germany.
- **Rational Points/ Pontos Racionais** 25–29 May 2015
  IMPA, Rio de Janeiro, Brazil.
- **Elliptic Curves, Modular Forms and Iwasawa Theory** 25–27 Mar 2015
  In honour of J Coates' 70th Birthday, University of Cambridge, UK.
- **Arizona Winter School 2015: Arithmetic and Higher-Dimensional Varieties** 14–18 Mar 2015
  The Southwest Center for Arithmetic Geometry, University of Arizona, USA.
- **Algebraic Geometry and Representation Theory in Rome** 18–19 Dec 2014
  Università Roma 3, Rome, Italy.
- **Comptage d'objets arithmétiques (rangs des courbes elliptiques)** 10–14 Nov 2014
  CRM, Université de Montréal, Canada.
- **Analytic Number Theory** 29 Sep – 3 Oct 2014
  Clay Research Conference and Workshops, University of Oxford, UK.
- **Bounded Gaps Between Primes** 22–26 Sep 2014
  LMS-CMI Research School, University of Oxford, UK.
- **Arithmetic of Hyperelliptic Curves** 25 Aug – 5 Sep 2014
  NATO Advanced Study Institute, Ohrid, FYROM.
- **Young Researchers in Mathematics 2014** 30 Jun – 3 Jul 2014
  University of Warwick, UK.
- **Women in Numbers 3** 20–25 Apr 2014
  Banff International Research Station, Canada.
- **Model theory and its interactions with NT and arithmetic geometry** 10-11 Feb 2014
  MSRI, University of California, Berkeley, USA.
- **Introductory Workshop: Model Theory, Arithmetic Geometry and NT** 3–7 Feb 2014
  MSRI, University of California, Berkeley, USA.
- **Number Theory and Physics** 29 Sep – 4 Oct 2013
  Clay Research Conference and Workshops, University of Oxford, UK.
- **Rational Points - Geometric, Analytic and Explicit Approaches** 27–31 May 2013
  EPSRC Warwick Number Theory Symposium, University of Warwick, UK.
- **Women in Mathematics** 18–19 Apr 2013
  Organised by the LMS. Newton Institute, University of Cambridge, UK.
- **Foundations of Mathematics: What are they and what are they for?** 10–12 Jul 2012
  Department of Philosophy, University of Cambridge, UK.

Other Research Experiences

- **Research Assistant in Numerical Analysis**   Summer 2012
  DAMTP, University of Cambridge.
  Undergraduate summer research project funded by MathWorks.
  Supervisors: Prof A Iserles, Dr C-B Schoenlieb, and Dr S J Cowley.

Languages

- **Italian:** Native speaker
- **English:** Fluent
- **French:** Fluent