

Julia Brandes

February 2, 2018

Education

- Jun 2014** PhD in Mathematics (University of Bristol)
Area of specialisation: Number Theory
Thesis: *Local-Global Principles for Linear Spaces on Hypersurfaces*
Supervisor: Prof. Trevor D. Wooley FRS
- Oct 2010 – Sep 2013** Postgraduate Studies in Mathematics at the University of Bristol
- Dec 2009** Diplom in Mathematics (University of Stuttgart)
Area of specialisation: Analytic Number Theory
Thesis: *Paare s -freier Zahlen (Twins of s -free numbers)*
Supervisor: Prof. Jörg Brüdern
secondary subject: Theoretical Physics
- Oct 2007 – Dec 2009** Studies in Mathematics at the University of Stuttgart
- Oct 2004 – Sep 2007** Studies in Mathematics at the University of Göttingen
- June 2004** Graduation from Felix-Klein-Gymnasium Göttingen
Top of the year

Positions held

- since **Feb 2018** Associate Senior Lecturer at Chalmers Institute of Technology/University of Gothenburg
- Sep 2017 – Jan 2018** Postdoc at the University of Waterloo
Courses: Instructor for *MATH135: Algebra for Honours Students*.
- Jan 2017 – May 2017** Viterbi Postdoc at MSRI within the programme *Analytic Number Theory*
- Sep 2015 – Aug 2017** Postdoc at Chalmers Institute of Technology/University of Gothenburg
Courses: Lecturer for *Analytic Number Theory* and for *Linear Algebra*.
Supervision: J. Davegård, T. Magnusson and F. Mofleh, *Primtalssatsen. Två olika bevis (in Swedish)*, Kandidatsarbete (Bachelor thesis), May 2016.
- Oct 2013 – Sep 2015** Postdoc (‘wissenschaftliche Mitarbeiterin’) at the University of Göttingen
Courses: Lecturer for *Introduction to the circle method*
Assistant (Vice course coordinator) for *Analysis I*, for *Abstract Algebra*, for *Number Theory* (twice) and for *Diophantine Equations*.
- Oct 2010 – Sep 2013** Teaching support assistant at the University of Bristol
Courses: Tutorials in *Analysis* (4 times), *Further Topics in Analysis* (3 times), *Number Theory and Group Theory*, *Calculus*, *Maths 1AM* and *Maths 1A20* (Mathematics for science degrees)
- Oct 2007 – Mar 2009** Student Assistant Teacher at the University of Stuttgart
Courses: Tutorials in *Advanced Maths I–III* (Maths for engineers and physicists; 2 classes each)

Grants and Awards

- Starting Grant from Vetenskapsrådet for project *Higher-dimensional Structures on Hypersurfaces* (2018–2021).
- Conference grant from Vetenskapsrådet for conference *Where Geometry meets Number Theory*, held in Gothenburg in summer 2017.
- Grant from Gothenburg Centre of Advanced Studies for conference *Where Geometry meets Number Theory*, held in Gothenburg in summer 2017.
- Grant from Gothenburg Centre of Advanced Studies to fund a seminar in Algebraic Geometry and Number Theory in Gothenburg in autumn 2016.
- Grant from Gothenburg Centre of Advanced Studies for workshop \mathbb{N}^3 -Days V, held in Gothenburg in November 2016.
- Oberwolfach Leibniz Graduate Student, Oberwolfach Workshop *Analytic Number Theory*, Oct 2013.
- EPSRC DTA Studentship, Oct 2010 – Mar 2014.
- Fellowship of the Studienstiftung des deutschen Volkes e.V., Mar 2005 – Dec 2006.

Conference and Seminar Organisation

- Co-organiser of a conference in honour of Per Salberger's 60th birthday, held in Gothenburg in July 2017.
- Organiser of the Seminar in Number Theory and Algebraic Geometry at Chalmers/University of Gothenburg (Sep 2016 – Dec 2016)
- Co-organiser of the fifth \mathbb{N}^3 -days in Gothenburg in November 2016.
- Organiser of the Junior Number Theory Seminar in Göttingen (Dec 2013 – Aug 2015).
- Co-organiser of the conference *Young Researchers in Mathematics 2012*, held in Bristol in April 2012.

Outreach

- Lower Saxon Maths Olympiad
2004 – 05 and 2014–15: Member of the organising committee
2006 – 10: Member of the support team
- German Maths Olympiad
2010: Member of the support team
- Mathematischer Korrespondenzzirkel (A maths problems club for high school students)
2004–06: Member of the team
Contributor to the second volume of collected problems and solutions [Zir]

Publications

- [1] *Forms representing forms and linear spaces on hypersurfaces*. Proc. London Math. Soc. **108** (2014), 809–835.
- [2] *A note on p -adic solubility for forms in many variables*, Bull. London Math. Soc. **47** (2015), 501–508.
- [3] *Sums and differences of power-free numbers*, Acta Arith. **169** (2015), 169–180.
- [4] *Forms representing forms: The definite case*, J. London Math. Soc. **92** (2015), 393–410.
- [5] (with Scott T. Parsell) *Simultaneous additive equations: Repeated and differing degrees*, Canad. J. Math. **69** (2017), 258–283.
- [6] *The Hasse Principle for systems of quadratic and cubic diagonal equations*, Q. J. Math. **68** (2017), 831–850.
- [7] *Linear spaces on hypersurfaces over number fields*, Michigan Math. J. **66** (2017), 769–784. Available under arXiv:1610.08863.
- [8] (with Trevor D. Wooley) *Vinogradov systems missing the linear slice*, Mathematika **63**, no. 3 (2017), 797–817
- [9] *On the number of linear spaces on hypersurfaces with a prescribed discriminant*, accepted for publication in Math. Zeitschrift.

Selected talks

- *Forms in many variables and p -adic solubility*. Pure Maths Seminar, UEA, 25.02.2013.
- *A multidimensional Birch's Theorem*. Oberwolfach Workshop Analytic Number Theory, 24.10.2013.
- *Non-singular p -adic solubility for systems of forms*. ENFANT/ELEFANT conference, Bonn, 11.07.2014.
- *Variations on Birch's Theorem*. DMV-PTM conference, Poznań, 17.09.2014.
- *Simultaneous additive equations: Repeated and differing degrees*. Séminaire de Théorie des nombres de Nancy-Metz, 26.03.2015.
- *Simultaneous additive equations: Repeated and differing degrees*. Workshop Quantitative arithmetic geometry, Institut Mittag-Leffler, Stockholm, 25.06.2015.
- *On the number of linear spaces on hypersurfaces with a prescribed discriminant*, Nordic Congress of Mathematicians, 18.03.2016.
- *Systems of quadratic and cubic diagonal equations*, Connections for Women, MSRI, Berkeley, 03.02.2017.
- *Lines on smooth cubic hypersurfaces*, Seminar for Number Theory and Representation Theory, Toronto, 08.03.2017.
- *Systems of quadratic and cubic diagonal equations*, Workshop on Efficient Congruencing and Translation-Invariant Systems, Fields Institute, Toronto, 17.03.2017.
- *Vinogradov Systems missing the linear slice*. CMS Winter Meeting 2017, Number Theory Session, Waterloo, 11.12.2017.
- *Lines on smooth cubic hypersurfaces*. Quebec-Vermont Number Theory Seminar, 25.01.2018.