

# CURRICULUM VITAE

SEJONG PARK

## CURRENT POSITION/CONTACT INFORMATION

Lecturer (fixed-term, 2013–2016)  
School of Mathematics, Statistics and Applied Mathematics  
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## EMPLOYMENT

- **National University of Ireland, Galway, Ireland**  
Lecturer, September 2013 – August 2016
- **École Polytechnique Fédérale de Lausanne, Switzerland**  
Postdoctoral Fellow, October 2011 – August 2013
- **Sogang University, Seoul, South Korea**  
Research Fellow, March 2011 – August 2011
- **University of Aberdeen, United Kingdom**  
Research Fellow, April 2009 – February 2011
- **Mathematisches Forschungsinstitut Oberwolfach, Germany**  
Oberwolfach Leibniz Fellow, October 2008 – March 2009

## EDUCATION

- **University of Aberdeen, United Kingdom**  
PhD in Mathematics, September 2005 – August 2008  
Thesis: *The weighted fusion category algebra* (Advisor: Markus Linckelmann)
- **The Ohio State University, Columbus, Ohio, United States**  
PhD courses taken, September 2002 – August 2005
- **Seoul National University, South Korea**  
MS in Mathematics, September 2000 – August 2002  
BS in Mathematics, March 1994 – February 1998

## RESEARCH INTERESTS

- Representation theory of finite groups
- Fusion systems and related homological algebra
- Cohomology of groups and related categories
- Mackey functors, biset functors
- Burnside rings, double Burnside rings

## PUBLICATIONS AND PREPRINTS

- (1) *Mislin's theorem for fusion systems via Mackey functors*, Comm. Algebra, to appear
- (2) *Realizing fusion systems inside finit groups*, Proc. Amer. Math. Soc., **144** (2016), pp. 3291–3294
- (3) *Mackey functors and sharpness for fusion systems*, Homology, Homotopy Appl. **17** (2015), no. 1, 147–164 (joint with Antonio Díaz)
- (4) *Counting conjugacy classes of cyclic subgroups for fusion systems*, J. Group Theory **17** (2014), no. 4, 661–666

- (5) *On the composition product of saturated fusion systems*, J. Algebra **345** (2011), no. 1, 202–212 (joint with Kari Ragnarsson and Radu Stancu)
- (6) *Tate’s and Yoshida’s theorems for control of transfer for fusion systems*, J. London Math. Soc. **84** (2011), no. 2, 475–494 (joint with Antonio Díaz, Adam Glesser, and Radu Stancu)
- (7) *Minimal characteristic bisets and finite groups realizing Ruiz–Viruel exotic fusion systems*, J. Algebra **336** (2011), no. 1, 349–369
- (8) *Analogues of Goldschmidt’s thesis for fusion systems*, J. Algebra **324** (2010), no. 12, 3487–3493 (joint with Justin Lynd)
- (9) *Realizing a fusion system by a single finite group*, Arch. Math. **94** (2010), no. 5, 405–410
- (10) *The gluing problem for some block fusion systems*, J. Algebra **323** (2010), no. 6, 1690–1697
- (11) *Control of transfer and weak closure in fusion systems*, J. Algebra **323** (2010), no. 2, 382–392 (joint with Antonio Díaz, Adam Glesser, and Nadia Mazza)
- (12) *Glauberman’s and Thompson’s theorems for fusion systems*, Proc. Amer. Math. Soc. **137** (2009), no. 2, 495–503 (joint with Antonio Díaz, Adam Glesser, and Nadia Mazza)
- (13) *The weighted fusion category algebra and the  $q$ -Schur algebra for  $GL_2(q)$* , J. Algebra, **319** (2008), no. 1, 93–101

## PRESENTATIONS

### • Invited Talks

- (1) *Biset functors and fusion systems*, Functorial Methods in Representation Theory, EPFL, Switzerland, 1–4 Sep 2015
- (2) *Cohomology of fusion systems*, Groups and geometries, Banff, Canada, 4–8 May 2015
- (3) *Cohomology, fusion systems and bisets*, Fusion systems and finite simple groups, Sanya, China, 15–19 Dec 2014.
- (4) *Mislin’s theorem for fusion systems via Mackey functors*, International conference on groups and algebras, Peking University, China, 26–30 Jun 2014
- (5) *Mackey functors and sharpness for fusion systems*, Bisets in Algebra and Topology, Université de Picardie, Amiens, France, 12–14 Sep 2012
- (6) *Two applications of bisets and idempotents for fusion systems*, Fusion Days, Université de Picardie, Amiens, France, 10–11 Sep 2009
- (7) *Control of fusion and transfer*, Local Methods in Fusion Systems, University of Copenhagen, Denmark, 15–19 Dec 2008

### • Contributed Talks

- (1) *Cohomology of fusion systems*, Groups, Representations, and Cohomology, Isle of Skye, UK, 23–26 Jun 2015
- (2) *Cohomology of fusion systems*, Representations of Finite Groups, Oberwolfach, Germany, 6–10 Apr 2015
- (3) *Mackey functors for fusion systems*, DMV 2012, Saarbrücken, Germany, 17–20 Sep 2012
- (4) *Realization problem and the exoticity index of a fusion system*, Korean Math. Soc. Spring Meeting, Korea University, South Korea, 30 Apr 2011
- (5) *Applications of characteristic elements for saturated fusion systems*, Group Representation Theory and Related Topics, EPFL, Lausanne, Switzerland, 23 June 2010
- (6) *Bisets and transfer theorems for fusion systems*, Conference on Algebraic Topology, Group Theory and Representation Theory, Isle of Skye, UK, 9–15 Jun 2009
- (7) *Control of transfer and gluing problem for fusion systems*, Representations of Finite Groups, Oberwolfach, Germany, 22–28 Mar 2009
- (8) *‘Control of fusion’ theorems of Glauberman and Thompson for fusion systems*, Glauberman Conference, University of Chicago, USA, 27 Mar 2008
- (9) *Fusion category algebra and  $q$ -Schur algebra for  $GL_n(q)$* , The 12th ARTIN Meeting, University of Sheffield, UK, Mar 2007

### • Seminar Talks

- (1) *Sharpness conjecture for  $p$ -local finite groups and Mackey functors*, Universitat Autònoma de Barcelona, 16 Oct 2015

- (2) *Finite groups via their action*, TU/Eindhoven, Netherlands, 1 Apr 2015
- (3) *Fusion systems and bisets*, London Algebra Colloquium, 26 Feb 2015
- (4) *Fusion systems and vanishing of derived limits*, Bristol-Leicester-Oxford Colloquium, 25 Feb 2015
- (5) *Fusion systems and biset*, Sogang University, South Korea, 18 Jul 2014
- (6) *Burnside ring, double Burnside ring and biset functors*, Sogang University, South Korea, 17 Jul 2014
- (7) *Local structure of finite groups: fusion systems via bisets and partial groups*, Seoul National University, South Korea, 16 Jul 2014
- (8) *Fusion and bisets for finite groups*, National University of Ireland, Maynooth, Ireland, 27 Nov 2013
- (9) *Fusion, bisets and cyclic subgroups*, National University of Ireland, Galway, Ireland, 19 Sep 2013
- (10) *Fusion and bisets in algebra and topology*, University of Ulsan, South Korea, 17 Jun 2013
- (11) *Fusion and bisets for finite groups*, Ghent University, Belgium, 10 Apr 2013
- (12) *Fusion and bisets for finite groups*, Séminaire de théorie des groupes, Université de Picardie, Amiens, France, 3 Apr 2013
- (13) *Mackey functors and sharpness for fusion systems*, Séminaire Chevalley, Paris, France, 28 Mar 2013
- (14) *Fusion and bisets in algebra and topology*, Ewha Women's University, Seoul, South Korea, 19 Oct 2012
- (15) *Hochschild cohomology of Hecke algebras*, Séminaire de théorie des groupes, Université de Picardie, Amiens, France, 15 Feb 2012
- (16) *Some recent developments in the theory of fusion systems*, EPFL, Switzerland, 4 & 11 Oct 2011
- (17) *Introduction to modular representation theory and fusion systems* (a series of four talks), Sogang University, Seoul, South Korea, 23-24 Mar 2011
- (18) *Local study of groups, representations and topology via fusion systems*, POSTECH, Pohang, South Korea, 10 Mar 2011
- (19) *Local study of groups, representations and topology via fusion systems*, Friedrich-Schiller-Universität Jena, Germany, 7 Jan 2011
- (20) *Local study of groups, representations and topology via fusion systems*, Lancaster University, UK, 29 Nov 2010
- (21)  *$p$ -Solvable fusion systems as idempotents in the double Burnside ring*, Séminaire de théorie des groupes, Université de Picardie, Amiens, France, 31 Mar 2010
- (22) *Introduction to fusion systems* (a series of four talks), Postgraduate Seminar, University of Aberdeen, UK, Feb 2010.
- (23) *Bisets, realization, and the exoticity index of a fusion system*, Algebra Seminar, University of Aberdeen, UK, 5 Nov 2009
- (24) *Yoshida's transfer theorem for fusion systems*, Group Theory Seminar, The Ohio State University, USA, 8 Jan 2009
- (25) *Focal subgroups of fusion systems and characters of height zero*, Algebra Seminar, Chiba University, Japan, 11 Jul 2008
- (26) *Control of fusion in fusion systems—analogues of theorems of Glauberman and Thompson*, Group Theory Seminar, The Ohio State University, USA, 24 Jan 2008
- (27) *Fusion category algebra and  $q$ -Schur algebra*, Postgraduate Seminar, University of Aberdeen, UK, May 2006

#### INVITED LECTURE

- Summer school “The theory of fusion systems”, Peking University, China, 1–15 Jul 2014

#### RESEARCH FUNDING

- Irish Research Council Ulysses Research Program 2014 (Irish-French research travel grant of €2,500 on each side, as a project leader)
  - NUI Galway team: Sejong Park (project leader), Götz Pfeiffer, Brendan Masterson

- Université de Picardie team: Radu Stancu (project leader), Serge Bouc, Maxime Ducellier, Mulla Aktham
- Science Foundation Ireland Workshop funding for Groups in Galway 2016 (€3350, as an organizer)
- “Higher structures on Differential Geometry and Homotopy Theory” (application submitted; a four-year-long Spanish government funding “State Program for the Development of Technical and Scientific Research of Excellence” by the Ministry of Economy and Competitiveness, as a participating foreign member; Principal Investigators: Antonio Viruel, Aniceto Murillo)

#### RESEARCH VISITS

- Universitat Autònoma de Barcelona, Spain, 14–17 Oct 2015 (Host: Natalia Castellana), 18–29 Apr 2016 (Host: Antonio Viruel)
- Université de Picardie, Amiens, France, 19–25 Apr 2015 (Host: Radu Stancu and Serge Bouc; Ulysses Research Program 2014)
- Université de Picardie, Amiens, France, 4–15 Feb, 25 Mar – 5 Apr 2013 (Host: Radu Stancu and Serge Bouc; Université de Picardie Research Visit Program)
- Universidad de Málaga, Spain, 25 Jun – 2 Jul 2011, 19–26 Jul 2012, 14–20 Jul 2013, 16–22 Jun 2014, 8–15 July 2015 (Host: Antonio Díaz)

#### OTHER ACTIVITIES

- Organizer of Groups in Galway 2014, 2015 (joint with Alexander Rahm), 2016 (joint with Ted Hurley)
- Organizer of School Seminar, NUI Galway, 2015–2016 (joint with Haixuan Yang)
- Member of the School Research Committee, NUI Galway (2013–2016)
- Participation in the school office visit program of TY Friday, NUI Galway (2013–2016)

#### TEACHING EXPERIENCE—UNDERGRADUATE COURSES

- National University of Ireland, Galway
  - (1) Semester II, 2015–2016, Groups 2 (MA344)
  - (2) Semester II, 2015–2016, Linear Algebra (MA203)
  - (3) Semester I, 2015–2016, Calculus 1 (MA211)
  - (4) Semester II, 2014–2015, Groups 2 (MA344)
  - (5) Semester II, 2014–2015, Linear Algebra (MA203)
  - (6) Semester I, 2014–2015, Calculus 1 (MA211)
  - (7) Semester II, 2013–2014, Topology (MA342)
  - (8) Semester II, 2013–2014, Linear Algebra (MA203)
  - (9) Semester I, 2013–2014, Calculus 1 (MA211)
- University of Aberdeen, UK
  - (1) First Half Session 2010–2011, Tools for Science (TS1002): maths part
  - (2) Second Half Session 2009–2010, Advanced Calculus (MA2507): full course
  - (3) Second Half Session 2008–2009, Advanced Calculus (MA2507): ODE part
- The Ohio State University, Columbus, Ohio, USA
  - (1) Summer Quarter 2005, Calculus and Analytic Geometry III (153)
  - (2) Summer Quarter 2004, Calculus and Analytic Geometry II (152N)

#### TEACHING EXPERIENCE—GRADUATE COURSES

- EPFL, Switzerland
  - (1) Spring Semester 2012, Introduction to Fusion Systems in Representation Theory and Topology
- University of Aberdeen, UK
  - (1) First Half Session 2010–2011, Derived Equivalences of Block Algebras

#### TEACHING EXPERIENCE—STUDENT PROJECT SUPERVISION

- National University of Ireland, Galway
  - (1) 2015–2016, Master Project: Möbius Inversion

- (2) 2014–2015, Undergraduate Final Project: Sudoku Puzzle and Chromatic Polynomials
  - (3) 2014–2015, Undergraduate Final Project: Google Page Rank and Sports League Ranking
  - (4) 2013–2014, Undergraduate Final Project: Time Series Analysis
- EPFL, Switzerland
  - (1) Autumn Semester 2012, Undergraduate Project: Modules and Cohomology
  - (2) Autumn Semester 2011, Master Project: Character Theory
- University of Aberdeen, UK
  - (1) First Half Session 2009–2010, Undergraduate Final Project (MX4020): Introduction to Mathematical Logic