

Paul Beirne

Personal

Date of birth March 22, 1994
Place of birth Dublin, Ireland
Citizenship Irish

Research Interests

Knot theory, number theory and combinatorics

Education

Ph.D. **Mathematics**, *University College Dublin*, expected summer 2020.
B.Sc. (Hons) **Mathematics**, *University College Dublin*, 2016.

Awards/Grants

2018- **Government of Ireland Postgraduate Scholarship**, *Irish Research Council*, Quantum knot invariants and modular forms, €48000.
2016 - 2018 **Research Demonstratorship**, *University College Dublin*, Quantum knot invariants and modular forms, €32000.

Publications

2. *On the 2-head of the colored Jones polynomial for pretzel knots*, *Q. J. Math.* **70**, (2019), no. 4, 1353–1370,
1. *q-series and tails of colored Jones polynomials* (with Robert Osburn), *Indag. Math. (N.S.)* **28**, no. 1, (2017), 247–260.

Recent and Upcoming Talks

- 1/2020 **Knot invariants and coefficient stability**, *Joint Mathematical Meetings, Special Session on Interactions Among Partitions, Basic Hypergeometric Series, and Modular Forms*, Denver, USA.
- 11/2019 **Knot invariants and coefficient stability**, *CUNY Geometry and Topology Seminar*, New York, USA.
- 11/2019 **Explicit computation of tails of colored Jones polynomials**, *CUNY Geometry and Topology Student Seminar*, New York, USA.

- 10/2019 ***Knot invariants and coefficient stability***, University College Dublin Algebra and Number Theory Seminar, Dublin, Ireland.
- 6/2019 ***Knots, the colored Jones polynomial and stability***, Analytic and Combinatorial Number Theory: The Legacy of Ramanujan, Urbana-Champaign, USA.
- 1/2019 ***Knots, the colored Jones polynomial and stability***, Heilbronn Number Theory Seminar, Bristol, England.
- 3/2018 ***Knot invariants and modular forms***, 32nd Automorphic Forms Workshop, Boston, USA.

Recent and Upcoming Conferences

- 1/2020 ***Joint Mathematical Meetings of the American Mathematical Society***, Denver, USA.
- 7/2019 ***SwissKnots***, Zurich, Switzerland.
- 6/2019 ***Analytic and Combinatorial Number Theory: The Legacy of Ramanujan***, Urbana-Champaign, USA.
- 3/2018 ***32nd Automorphic Forms Workshop***, Boston, USA.
- 3/2018 ***Modular forms and quantum knot invariants***, Banff, Canada.

Tutoring

- 1/2016 - **UCD**: 13 courses
- MATH 10040 (Numbers and Functions)
 - MATH 10200 (Matrix Algebra)
 - MATH 10320 (Mathematical Analysis)
 - MATH 10350 (Calculus in the Mathematical and Physical Sciences)
 - MATH 20180 (Foundations for Financial Mathematics)
 - MATH 30250 (Cryptography: Theory and Practise)
 - MST 20070 (Multivariable Calculus with Applications)
 - MST 30010 (Group Theory and Applications)
 - MST 30030 (Financial Mathematics)
 - STAT 10050 (Practical Statistics)
 - STAT 10060 (Statistical Modelling)
 - STAT 20060 (Statistics and Probability for Engineers)
 - STAT 30240 (Linear Models 1)

Outreach

- 11/2016- **Demonstrator** at UCD Outreach Lab
- 2018 **Director** at UCD Math Sparks program
- 2015 **Facilitator** at UCD Math Sparks program

References

Robert Osburn, robert.osburn@ucd.ie, UCD, Dublin, Ireland
 Amanda Folsom, afolsom@amherst.edu, Amherst College, Massachusetts, USA

Abhijit Champanerkar, abhijit@math.csi.cuny.edu, CUNY, New York, USA
Thomas Unger, thomas.unger@ucd.ie, UCD, Dublin, Ireland
Anthony Cronin, anthony.cronin@ucd.ie, UCD, Dublin, Ireland