Jonathan Wang

✉ jwang4@perimeterinstitute.ca
https://www.jonathanpwang.com
Citizenship: United States

Professional Positions

9/2021–Present **Senior Postdoctoral Fellow**, *Perimeter Institute for Theoretical Physics*, Waterloo, Ontario, Canada.

9/2018–5/2021 **NSF Postdoctoral Fellow/Pure Math Instructor**, *MIT*, Cambridge, MA.
Sponsoring Scientist: Roman Bezrukavnikov

9/2017–7/2018 **Member**, *Institute for Advanced Study*, Princeton, NJ.

Research Interests

Representation Theory, Automorphic Forms, L-functions, Relative & Geometric Langlands Programs

Education

2012–2017 **Ph.D. in Mathematics**, *University of Chicago*, Chicago, IL.
Thesis Title: On an invariant bilinear form on the space of automorphic forms via asymptotics
Advisor: Vladimir Drinfeld

2011–2012 **MASt, Mathematics**, *University of Cambridge*, Cambridge, UK.
Essay Title: Introduction to $\mathcal{D}$-modules and representation theory
Advisor: Ian Grojnowski

2007–2011 **A.M., Mathematics**, *Harvard University*, Cambridge, MA.

2007–2011 **A.B., Mathematics**, *Harvard University*, Cambridge, MA, *summa cum laude*.
Thesis Title: The moduli stack of G-bundles
Advisor: Dennis Gaitsgory

Fellowships and Awards

2018–2021 NSF Postdoctoral Research Fellowship (MSPRF) DMS-1803173

2017 Wirszup Fellowship, University of Chicago Mathematics Department

2013–2016 National Defense Science and Engineering Graduate Fellowship (NDSEG)

2011–2013 NSF Graduate Research Fellowship

2011–2012 Churchill Scholarship

2011 Herb Alexander Award, Harvard Mathematics Department

Teaching

Spring 2021 **Instructor**, *MIT*, Virtual.
18.704 Seminar in Algebra, undergraduate seminar with 12 students on Representation Theory of Lie Algebras via Examples.

Fall 2020 **Recitation Instructor**, *MIT*, Virtual.
18.06 Linear Algebra, 2 recitations with 19, 18 students, 145 students in class.

Fall 2019 **Recitation Instructor**, *MIT*, Cambridge, MA.
18.02 Multivariable Calculus, 3 recitations with 17, 10, 20 students, 359 students in class.

2016-17 **Lecturer**, *University of Chicago*, Chicago, IL.
Math 151-152-153 Calculus I-II-III sequence, 21, 26, 24 students.

2013-14 **TA**, *University of Chicago*, Chicago, IL.
Math 161-162-163 Honors Calculus I-II-III (IBL) sequence, $\sim$ 30 students.

Spring 2009 **TA**, *Harvard*, Cambridge, MA.
Math 130 Classical Geometry, $\sim$ 30 students.

Mentorship

Spring 2021 **Mentor**, *MIT PRIMES*, Virtual.
Mentored one high school student in the PRIMES-USA program. *Student Paper Title:* On *LU* matrices and Springer theory.

Spring 2020-Summer 2021 **Mentor**, *MIT UROP*, Cambridge, MA.
Mentored one undergraduate on a research project about minimal K-types and intertwining operators for $\mathrm{GL}_n(\mathbb{Q}_p)$.

Summers 2015-16 **Mentor**, *University of Chicago REU*, Chicago, IL.
Mentored three undergraduates each summer on diverse topics of study.

Winter 2015 **Mentor**, *University of Chicago Directed Reading Program (DRP)*, Chicago, IL.
Mentored an undergraduate in an independent study project.

Summer 2011 **Research Advisor**, *University of Minnesota Duluth REU*, Duluth, MN.
Mentored undergraduates on independent research projects in combinatorics and number theory.

Invited Lectures

Available at `https://www.jonathanpwang.com/talks.html`

Conferences

1/2022 **Periods, Functoriality and L-functions**, Workshop, CIRM.

5/2021 **Relative Aspects of the Langlands Program, L-Functions and Beyond Endoscopy**, CIRM, *Geometric Periods*.

3/2021 **Recent Developments in Automorphic Representations**, AMS Eastern Sectional Meeting Special Session, *Geometric Hecke Periods*.

1/2019 **On the Langlands Program: Endoscopy and Beyond,** National University of Singapore/Institute of Mathematical Sciences, *The Drinfeld–Gaitsgory operator on automorphic functions*.

11/2017 **Junior Number Theory Days**, Rutgers University, *The Drinfeld–Gaitsgory operator on automorphic functions*.

Seminars

11/2021 Duke, Number Theory Seminar.
11/2021 Purdue, Automorphic Forms and Representation Theory Seminar.
10/2021 Yale, Geometry, Symmetry and Physics Seminar.
9/2021 Perimeter Institute, Mathematical Physics Seminar.
4/2021 Michigan State University, Algebra Seminar.
3/2021 Institut de Mathématiques de Marseille, Séminaire Représentations des Groupes Réductifs.
11/2020 IST Austria, Algebraic Geometry and Number Theory Seminar.
11/2020 Hausdorff Center for Mathematics (Bonn), Special Seminar.
10/2020 University of Toronto, Geometric Representation Theory Seminar.
10/2020 National University of Singapore, Representation Theory and Number Theory Seminar.
10/2020 Harvard/University of Chicago, Geometric Langlands Office Hours.
10/2020 Columbia, Automorphic Forms and Arithmetic Seminar.
9/2020 MIT, Lie Groups Seminar.
2/2020 University of Texas–Austin, Geometry Seminar.
2/2019 Northeastern University, Pick My Brain Seminar.
12/2017 University of Wisconsin–Madison, Algebraic Geometry Seminar.

11/2017 UCLA, Number Theory Seminar.
11/2017 California Institute of Technology, Number Theory Seminar.
10/2017 University of Maryland, Lie Groups and Representation Theory Seminar.
11/2017 University of Toronto, Number/Representation Theory Seminar.
12/2016 MIT, Infinite Dimensional Algebra Seminar.
11/2016 Yale, Algebra and Number Theory Seminar.
10/2016 UIUC, Algebraic Geometry Seminar.
10/2016 University of Chicago, Number Theory Seminar.
10/2016 Northwestern University, Number Theory Seminar.

Outreach

2/2017 University of Chicago, Women in Math Symposium.

Professional Services

- Co-organizer of special session at Spring 2021 Meeting of the AMS Western Section (Virtual): Geometric and Categorical Methods in Representation Theory
- Co-organizer of Representation Theory graduate student seminar in 2016-17 at University of Chicago.
- Referee for: Advances in Mathematics, Algebra & Number Theory, Annales ENS, Compositio Mathematica, Duke Mathematical Journal, IMRN, Inventiones Mathematicae, Journal of the AMS, Journal of Topology, Representation Theory
- Teaching assistant for the graduate summer school at PCMI Summer Session 2015, Geometry of moduli spaces and representation theory.