

CURRICULUM VITAE – DAVID SAVITT (6/2022)

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Employment

2015 - Johns Hopkins University, Professor (Department Chair 2018–2024)
2011 - 2015 University of Arizona, Associate Professor
2005 - 2011 University of Arizona, Assistant Professor
2001 - 2005 McGill University, NSERC/CICMA Postdoctoral Fellow (on leave 2002-03 at I.H.E.S.)
2002 - 2003 I.H.E.S., NSF International Research Fellow

Education

1998 - 2001 Ph.D., Harvard University (advisor: Richard Taylor)
1996 - 1998 A.M., Harvard University
1992 - 1996 B.Sc., University of British Columbia

Awards and distinctions

2017 Fellow of the American Mathematical Society
2012 Presidential Early Career Award for Scientists and Engineers (PECASE)
2009 Distinguished Early Career Teaching Award, University of Arizona College of Science
2001 Clay Mathematics Institute Liftoff Fellow

Research grants

2020 - 2023 NSF Focused Research Group grant DMS-1952566 (PI), \$263,305
2017 - 2020 NSF Standard grant DMS-1702161 (PI), \$189,854
2011 - 2017 NSF CAREER grant DMS-1054032 (PI), \$418,994
2009 - 2012 NSF Standard grant DMS-0901049 (PI), \$150,000
2006 - 2009 NSF Standard grant DMS-0600871 (PI), \$96,675
2001 - 2004 NSERC Postdoctoral Fellowship (2 years; on leave 2002-03 at I.H.E.S.)
2002 - 2003 NSF International Research Fellowship OISE-0107331, \$63,150

Other grants

2017 - 2019 NSF conference grant DMS-1710133, \$40,000
2011 - 2015 NSF grant DMS-1135049 for Research in Pairs at Canada/USA Mathcamp (co-PI), \$91,231
2009 - 2013 NSF grant DMS-0852464 for the Arizona Winter School (PI), \$447,939
2006 - 2009 NSF grant DMS-0602287 for the Arizona Winter School (PI), \$416,493
2008 - 2009 MAA Tensor-SUMMA grant (PI), \$5,180
2007 - 2008 MAA Tensor-SUMMA grant (PI), \$5,740

Visiting positions

05/2012 King's College London
09/2011 - 08/2012 Northwestern University
01/2010 - 02/2010 Université Paris XI
multiple visits Max-Planck Institut für Mathematik (06/2002, 01-06/2006, 05-07/2008, 06/2010)

Publications

1. *Moduli stacks of two-dimensional Galois representations*, with Ana Caraiani, Matthew Emerton, and Toby Gee, preprint, 123 pages.
2. *General Serre weight conjectures*, with Toby Gee and Florian Herzig, **J. Eur. Math. Soc.** 20 (2018), no. 12, 2859–2949.
3. *Potentially crystalline lifts of certain prescribed types*, with Toby Gee, Florian Herzig, and Tong Liu, **Documenta Math.** 22 (2017), 397–422
4. *Serre weights for locally reducible two-dimensional Galois representations*, with Fred Diamond, **J. Inst. Math. Jussieu** 14 (2015), no. 3, 639–672
5. *Lattices in the cohomology of Shimura curves*, with Matthew Emerton and Toby Gee, **Invent. Math.** 200 (2015), no. 1, 1–96
6. *The weight part of Serre’s conjecture for $GL(2)$* , with Toby Gee and Tong Liu, **Forum of Mathematics, Pi** 3 (2015), e2, 52 pages
7. *The Buzzard–Diamond–Jarvis conjecture for unitary groups*, with Toby Gee and Tong Liu, **J. Amer. Math. Soc.** 27 (2014), no. 2, 389–435
8. *Crystalline extensions and the weight part of Serre’s conjecture*, with Toby Gee and Tong Liu, **Algebra & Number Theory** 6-7 (2012), 1537–1559
9. *Serre weights for mod p Hilbert modular forms: the totally ramified case*, with Toby Gee, **J. Reine Angew. Math.** 660 (2011) 1–26
10. *Serre weights for quaternion algebras*, with Toby Gee, **Compositio Math.** 147 (2011), no. 4, 1059–1086
11. *Poids de l’inertie modérée de certaines représentations cristallines*, with Xavier Caruso, **J. Théorie des Nombres de Bordeaux** 22 (2010), 79–96
12. *Polygones de Hodge, de Newton et de l’inertie modérée des représentations semi-stables*, with Xavier Caruso, **Math. Ann.** 343 (2009), 773–789
13. *Polynomials, meanders, and paths in the lattice of noncrossing partitions*, **Trans. Amer. Math. Soc.** 361 (2009), 3083–3107
14. *Solutions to $x^3 = y^2$ in $PSL(2, \mathbf{F}_q)$* , appendix to “Generalised knot groups distinguish the square and granny knots” by Christopher Tuffley, **J. Knot Theory and its Ramifications** 18 (2009), no. 8, 1129–1157
15. *Breuil modules for Raynaud schemes*, **J. Number Theory** 128 (2008), 2939–2950
16. *Harmonic algebraic curves and noncrossing partitions*, with Jeremy Martin and Ted Singer, **Discrete and Computational Geometry** 37 (2007), 267–286
17. *On a Conjecture of Conrad, Diamond, and Taylor*, **Duke Math. Journal** 128 (2005), no. 1, 141–197
18. *Modularity of some potentially Barsotti–Tate Galois representations*, **Compositio Math.** 140 (2004), no. 1, 31–63
19. *The maximum number of points on a curve of genus 4 over \mathbb{F}_8 is 25*, with an appendix by Kristin Lauter, **Canad. J. Math.** 55 (2003), no. 2, 331–352
20. *Modularity of some potentially Barsotti–Tate Galois representations*, Ph.D. thesis, Harvard University, 2001
21. *A Note on the Symmetric Powers of the Standard Representation of S_n* , with Richard P. Stanley, **Electron. J. Combin.** 7 (2000), no. 1, Research Paper 6, 8 pp

Volumes edited

1. *Quadratic and higher degree forms*, co-edited with Krishna Alladi, Manjul Bhargava, and Pham Huu Tiep, Developments in Mathematics Vol. 31, Springer, New York, NY, 2013.
2. *p-adic geometry: lectures from the 2007 Arizona Winter School*, co-edited with Dinesh Thakur, University Lecture Series 45, American Mathematical Society, Providence, RI, 2008.

Doctoral students

current Keaton Stubis (expected 2022), Kalyani Kansal (expected 2023),
Shenrong Wang (expected 2024), Qing Qi (expected 2027)

former Ryan Smith (2012, now at Google), Chol Park (2013, now at UNIST),
Whitney Berard (2016, now at DoD), Xiyuan Wang (2021, first job at Ohio State),
Zhongyipan Lin (2022, first job at Northwestern)

Editorial work

2022 - 2026 Editor, Proceedings of the American Mathematical Society
1998 - 2001 Editor, Challenge Board Problems section of *Cruce Mathematicorum*

School/University service

2021 - Member, KSAS Shared Governance Council
2021 - Senator, KSAS Faculty Senate
2021 Member, KSAS Senior Associate Dean for Finance search committee
2019 - 2021 Member, KSAS Dean's Faculty Advisory Committee
2017 - 2018 Director of Graduate Studies, JHU Mathematics Department

External service

multiple times Grant proposal review panel for NSF
multiple times Grant proposal review panel for NSA
multiple times Remote proposal review for NSF, NSA, EPSRC, ERC, NSERC
2005 - Referee for Ann. Sci. ENS, Compositio, Crelle, Duke, Inventiones, JAMS, Math Annalen, etc.

2023 External review committee for University of Oregon Department of Mathematics
2019 External review committee for Emory Department of Mathematics (chair)
2014 - 2017 AMS Committee on the Profession (chair 2016-2017)
2013 - Arizona Winter School Advisory Board
2012 - 2015 William Lowell Putnam Competition problem committee, MAA (chair 2014-2015)
2003 - 2011 Reviewer for Mathematical Reviews
2002 - 2008 Committee on the American Mathematics Competitions Advisory Board, MAA
2006 - 2007 Co-director, Institute for Mathematics and Education, University of Arizona

06/2012 Instructor, MISE Foundation program for middle school students, Accra, Ghana
04/2010 NSF Division of Mathematical Sciences Committee of Visitors

Conferences co-organized

12/2021 *Junior Number Theory Days*, JHU
12/2020 *Junior Number Theory Days*, JHU
12/2019 *Junior Number Theory Days*, JHU
10/2019 *Modularity and moduli spaces*, BIRS-Casa Matematica Oaxaca
03/2017 *Local zeta functions and the arithmetic of moduli spaces*, JHU
03/2013 Advisory panel for *How to run a Math camp*, American Institute of Mathematics

03/2013 *Modular forms and modular curves*, Arizona Winter School
 03/2012 *Ramification and Geometry*, Arizona Winter School
 03/2011 *Stark–Heegner points*, Arizona Winter School
 03/2010 *Number theory and dynamics*, Arizona Winter School
 03/2009 *Quadratic forms*, Arizona Winter School
 03/2008 *Special functions and transcendence*, Arizona Winter School
 03/2007 *p -adic geometry*, Arizona Winter School
 02/2006 *p -adic representations, modularity, and beyond*, American Institute of Mathematics

Canada/USA Mathcamp (a 5-week summer program for mathematically talented high school students)

2002 - Vice-chair of the board of directors
 1996 - 2014 Instructor/faculty member (except 2007, 2009, 2012)

Selected talks (conferences/colloquia/international)

04/2021 Selected Speaker, Arbeitsgemeinschaft on “Derived Galois Deformation Rings,” Oberwolfach, Germany
 06/2020 Invited Speaker, “Connecticut Summer School in Number Theory,” UConn
 06/2019 Invited Speaker, “Special research activity on the p -adic Langlands program,” Padova, Italy
 06/2018 Invited Speaker, “Geometrization of the Langlands program,” Lyon, France
 06/2017 Invited Speaker, “ p -adic Hodge theory and automorphic forms,” Beijing, China
 08/2016 Invited Speaker, “Galois representations and automorphic forms,” Będlewo, Poland
 06/2016 Invited Speaker, “Geometric methods in the mod p Langlands correspondence,” Pisa, Italy
 05/2016 Invited Speaker, “The p -adic Langlands program and related topics,” University of Indiana
 10/2015 U.S. Naval Academy Colloquium
 06/2015 Invited Speaker, “Frontiers in Serre’s Modularity Conjecture,” Luxembourg
 02/2015 Brown University Colloquium
 12/2014 UIUC Colloquium
 11/2014 University of Waterloo Colloquium
 04/2014 City College (CUNY) Colloquium
 01/2014 Lehman College (CUNY) Colloquium
 05/2013 Invited Speaker, “C.E.D.A.R. Workshop,” UIC
 04/2013 Invited Speaker, “Higher rank automorphic forms,” Warwick Symposium, United Kingdom
 04/2013 Invited Speaker, “Workshop on explicit p -adic Hodge theory,” Luminy, France
 02/2013 Bar Ilan University Number Theory Seminar, Israel
 07/2012 University of Ghana Colloquium, Accra, Ghana
 05/2012 University of Sheffield Number Theory Seminar, United Kingdom
 05/2012 University of Cambridge Number Theory Seminar, United Kingdom
 05/2012 London Number Theory Seminar, United Kingdom
 04/2012 Invited Speaker, “The p -adic Langlands program: recent developments and applications,” Fields Institute, Toronto
 11/2011 Invited Speaker, “Midwestern Number Theory Day,” UW-Madison
 01/2011 Invited Speaker (4 lectures), “Winter School on Serre’s Conjecture,” POSTECH, South Korea
 08/2010 Invited Speaker, ICM satellite conference “Automorphic forms and number theory,” Goa, India
 02/2010 Invited Speaker (2 lectures), Galois Trimester, Institut Henri Poincaré, Paris
 01/2010 Université Paris VI Automorphic Forms Seminar
 11/2008 Invited Speaker (2 lectures), p -adic semester at T.I.F.R., Mumbai, India
 06/2008 Max-Planck Institut für Mathematik Number Theory Seminar, Bonn, Germany
 01/2008 Invited Speaker, Special Session on Modular Forms and Modularity, Joint Math Meetings
 07/2007 Invited Speaker, Serre’s conjecture summer school, Luminy, France
 05/2007 NCTS Number Theory Seminar, Taiwan
 05/2007 Invited Speaker, “Galois Representations and Function Field Arithmetic,” NCTS, Taiwan
 09/2006 MASS Colloquium, Penn State

05/2006 ETH-Zürich Number Theory Seminar
04/2006 Invited Speaker, Alexander von Humboldt Foundation Meeting, Bonn
03/2006 Max-Planck Institut für Mathematik Oberseminar
02/2005 University of Iowa Colloquium
02/2005 CUNY College of Staten Island Colloquium
02/2005 University of Arizona Colloquium
02/2005 University of Colorado Colloquium
02/2005 University of Georgia Colloquium
01/2005 University of Waterloo Colloquium
12/2004 Invited Speaker, Special Session on Arithmetic Geometry, CMS Winter Meeting
06/2004 Invited Speaker, Canadian Number Theory Association
07/2003 Invited seminar at Microsoft Research
02/2003 I.H.E.S. (C. Soulé seminar)
02/2003 University of Münster (P. Schneider seminar)
02/2003 Max-Planck Institut für Mathematik Number Theory seminar