

## CURRICULUM VITAE – DAVID SAVITT (7/2018)

**Name** David Lawrence Savitt  
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### Employment

2015 - Johns Hopkins University, Professor (Department Chair 2018–present)  
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

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  
2009 - 2011 NSA Standard grant, \$55,575 (declined)  
2006 - 2008 NSA Young Investigator grant, \$30,000 (declined)  
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

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. *General Serre weight conjectures*, with Toby Gee and Florian Herzig, **J. Eur. Math. Soc.**, to appear, 81 pages
2. *Potentially crystalline lifts of certain prescribed types*, with Toby Gee, Florian Herzig, and Tong Liu, **Documenta Math.** 22 (2017), 397–422
3. *Serre weights for locally reducible two-dimensional Galois representations*, with Fred Diamond, **J. Inst. Math. Jussieu** 14 (2015), no. 3, 639–672
4. *Lattices in the cohomology of Shimura curves*, with Matthew Emerton and Toby Gee, **Invent. Math.** 200 (2015), no. 1, 1–96
5. *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
6. *The Buzzard–Diamond–Jarvis conjecture for unitary groups*, with Toby Gee and Tong Liu, **J. Amer. Math. Soc.** 27 (2014), no. 2, 389–435
7. *Crystalline extensions and the weight part of Serre’s conjecture*, with Toby Gee and Tong Liu, **Algebra & Number Theory** 6-7 (2012), 1537–1559
8. *Serre weights for mod  $p$  Hilbert modular forms: the totally ramified case*, with Toby Gee, **J. Reine Angew. Math.** 660 (2011) 1–26
9. *Serre weights for quaternion algebras*, with Toby Gee, **Compositio Math.** 147 (2011), no. 4, 1059–1086
10. *Poids de l’inertie modérée de certaines représentations cristallines*, with Xavier Caruso, **J. Théorie des Nombres de Bordeaux** 22 (2010), 79–96
11. *Polygones de Hodge, de Newton et de l’inertie modérée des représentations semi-stables*, with Xavier Caruso, **Math. Ann.** 343 (2009), 773–789
12. *Polynomials, meanders, and paths in the lattice of noncrossing partitions*, **Trans. Amer. Math. Soc.** 361 (2009), 3083–3107
13. *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
14. *Breuil modules for Raynaud schemes*, **J. Number Theory** 128 (2008), 2939–2950
15. *Harmonic algebraic curves and noncrossing partitions*, with Jeremy Martin and Ted Singer, **Discrete and Computational Geometry** 37 (2007), 267–286
16. *On a Conjecture of Conrad, Diamond, and Taylor*, **Duke Math. Journal** 128 (2005), no. 1, 141–197
17. *Modularity of some potentially Barsotti–Tate Galois representations*, **Compositio Math.** 140 (2004), no. 1, 31–63
18. *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
19. *Modularity of some potentially Barsotti–Tate Galois representations*, Ph.D. thesis, Harvard University, 2001
20. *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

21. *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.

22. *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                    Xiyuan Wang (expected 2019), Zhongyipan Lin (expected 2021), Kalyani Kansal (expected 2022), Keaton Stubis (expected 2022)  
former                    Ryan Smith (2012), Chol Park (2013), Whitney Berard (2016)

### 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  
2005 -                    Referee for Ann. Sci. ENS, Compositio, Crelle, Duke, Inventiones, JAMS, Math Annalen, etc.  
2017 - 2018              Director of Graduate Studies, JHU Mathematics Department  
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  
1998 - 2001              Editor of the Challenge Board Problems section of *Cruce Mathematicorum*  
06/2012                  Instructor, MISE Foundation program for middle school students, Accra, Ghana  
04/2010                  NSF Division of Mathematical Sciences Committee of Visitors

### Conferences organized

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              Teacher/faculty member (except 2007, 2009, 2012)

### Selected talks (conferences/colloquia/international)

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