

Curriculum Vitae

Ameya Pitale

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Employment

2019– Professor, University of Oklahoma
2014 – 2019 Associate Professor, University of Oklahoma
2010 – 2014 Assistant Professor, University of Oklahoma
2009 – 2010 NSF-AIM Post-Doctoral researcher, American Institute of Mathematics
2006 – 2009 Post-Doctoral faculty, University of Oklahoma

Education

2000 – 2006 Ph.D., The Ohio State University, Supervisor: Professor Steve Rallis
1995 – 2000 Masters degree in Mathematics at the Indian Institute of Technology, Kanpur, India

Awards and Grants

- The 2021 Journal of Mathematical Society of Japan Outstanding Paper Prize for the article *Explicit refinements of Bocherer’s conjecture for Siegel modular forms of squarefree level* written jointly with Martin Dickson, Abhishek Saha and Ralf Schmidt
- Simons Foundation Collaboration grant for Mathematicians, Award number 586177, “Arithmetic of special values of L-functions”, 2018-2023.
- University of Oklahoma Presidential International Travel Fellowship, University of Oklahoma. Funding for travel to give a lecture series in a workshop at ICTS Bangalore, India during Feb 25 to March 7, 2019.
- University of Oklahoma Presidential International Travel Fellowship for travel to the “Building Bridges : EU-US Workshop on Automorphic Forms and related topics” at University of Bristol, UK from July 7 to 11, 2014
- National Science Foundation (Division of Mathematical Sciences, Number Theory program), DMS 1100541, Principal Investigator, “Bessel Models and the Transfer of Siegel Cusp Forms of Degree 2”, 2011-2014, \$285,068.

- National Science Foundation (Division of Mathematical Sciences) Co - PI, “Collaborative Research: Texas-Oklahoma Representations and Automorphic forms (TORA)”, 2011-2012, \$8000.
- National Science Foundation (Division of Mathematical Sciences) Co - PI, “Collaborative Research: Texas-Oklahoma Representations and Automorphic forms (TORA)”, 2013-2014, \$12000.
- National Science Foundation (Division of Mathematical Sciences) Co - PI, “Collaborative Research: Texas-Oklahoma Representations and Automorphic forms (TORA)”, 2016-2018, \$13000
- National Science Foundation (Division of Mathematical Sciences) Co - PI, “Collaborative Research: Texas-Oklahoma Representations and Automorphic forms (TORA)”, 2019-2022, \$13000
- American Institute of Mathematics (AIM) SQuaRE (Structured Quartet Research Ensembles) for 2010-2013 with David Farmer (AIM), Nathan Ryan (Bucknell University) and Ralf Schmidt (OU).
- OU Faculty Enrichment Grant for travel to International Colloquium in Automorphic Forms and L-functions, at TIFR Mumbai, India Jan 3-11, 2012.
- VIGRE Special Graduate Assignment Fellowship : Autumn 2003, Winter 2005.
- Indian National Board of Higher Mathematics scholarship : 1998 – 2000.

Research Interests

Number theory, automorphic forms and representations, converse theorems, special values of L -functions, Siegel modular forms, analytic number theory

Publications

1. *Lifting from \widetilde{SL}_2 to $\mathrm{GSpin}(1,4)$* , Int. Math. Res. Not., **63**, 3919–3966 (2005)
2. *Sign changes of Hecke eigenvalues of Siegel cusp forms of degree 2*, Proc. Amer. Math. Soc. **136**, 3831–3838 (2008) (with Ralf Schmidt)
3. *Ramanujan type results for Siegel cusp forms of degree 2*, J. Ramanujan Math. Soc. Volume **22** No. 1, 87–111 (2009) (with Ralf Schmidt)
4. *Jacobi Maass forms*, Abh. Math. Sem. Univ. Hamburg, **79**, 87–111 (2009)
5. *Integral representation for L -functions for $\mathrm{GSp}_4 \times \mathrm{GL}_2$* , J. Number Theory, **129**, 1272–1324 (2009) (with Ralf Schmidt)
6. *Bessel models for lowest weight representations of $\mathrm{GSp}(4, \mathbb{R})$* , Int. Math. Res. Not. Volume **2009**, No. 7, 1159–1212 (2009) (with Ralf Schmidt)

7. *Classical interpretation of the Ramanujan conjecture for Siegel cusp forms of genus n* , Manuscr. Math. **130**, Issue 2, 225–231 (2009)
8. *Steinberg representation of GSp_4 : Bessel models and integral representation of L -functions*, Pacific Journal of Mathematics, Vol **250**, no. 2, 365–406 (2011)
9. *Irreducibility Criteria for Local and Global Representations*, Proc. Amer. Math. Soc. **141**, no. 1, 55–63 (2013) (with Hiro-Aki Narita and Ralf Schmidt)
10. *Special values of L -functions for Saito-Kurokawa lifts*, Mathematical Proceedings of the Cambridge Philosophical Society, Vol **155**, Issue 2, 237–255 (2013) (with James L. Brown)
11. *Talking Mathematics: An abstract algebra professor's teaching diaries*, Research in Undergraduate Mathematics Education (RUME) Conference, Denver, Colorado, Feb 21-24 (2013) (with John Paul Cook, Ralf Schmidt and Sepideh Stewart)
12. *Bounds for Rankin-Selberg integrals and quantum unique ergodicity for powerful level*, J. Amer. Math. Soc. **27**, 147–191(2014) (with Paul Nelson and Abhishek Saha)
13. *Transfer of Siegel cusp forms of degree 2*, Mem. Amer. Math. Soc. Volume **232**, Number 1090 (2014) (with Abhishek Saha and Ralf Schmidt)
14. *Bessel models for $\mathrm{GSp}(4)$: Siegel vectors of square-free level*, J. Number Theory **136**, 134–164 (2014) (with Ralf Schmidt)
15. *Characterizations of the Saito-Kurokawa lifting: a survey*, Rocky Mountain J. Math. **43**, 1747–1757 (2014) (with David Farmer, Nathan Ryan and Ralf Schmidt)
16. *Living it up in the formal world: An abstract algebraist's teaching journey*, RUME conference, contributed research paper (2014) (with John Paul Cook, Ralf Schmidt and Sepideh Stewart)
17. *Representations of $\mathrm{SL}(2, \mathbb{R})$ and nearly holomorphic modular forms*, Surikaiseikikenkyusho Kokyuroku (Research Institute for Mathematical Sciences, Kyoto University) 1973, 141–154 (2015) (with Abhishek Saha and Ralf Schmidt)
18. *Lifting to $\mathrm{GL}(2)$ over a division algebra and an explicit construction of CAP representations*, Nagoya Mathematical Journal, **222**, 137–185 (2016) (with Masanori Muto and Hiro-aki Narita)
19. *Glycemic variability is associated with markers of vascular stress in adolescents*, Journal of Pediatrics , doi:10.1016/j.jpeds.2016.01.065, (2016) (with Paul Dasari MD, Benjamin Gandomani BS, April Teague MS, Michael Otto PhD and Kevin Short PhD)
20. *Test vectors for GL_2 and explicit L -values*, Algebra and Number Theory **11**, no 2, 253–318 (2017) (with Daniel File and Kimball Martin)
21. *Local and global Maass relations*, Mathematische Zeitschrift **287**, no. 1-2, 655–677 (2017) (with Abhishek Saha and Ralf Schmidt)
22. *A note on the growth of nearly holomorphic vector-valued Siegel modular forms*, L -functions and automorphic forms, Contributions to Mathematics and Computer Science **10**, 2018 (with Abhishek Saha and Ralf Schmidt)

23. *Analytic L-functions: Definitions, Theorems, and Connections*, Bull. Amer. Math. Soc. **56**, no. 2, 261–280 (2019) (with David Farmer, Nathan Ryan and Ralf Schmidt)
24. *Restrictions of Eisenstein series and Rankin-Selberg convolution*, Documenta Mathematica, **24**, 1–45 (2019)(with Rodney Keaton)
25. *Siegel modular forms: A classical and representation-theoretic approach*, Springer Lecturer Notes in Mathematics, vol **2240** (2019)
26. *Explicit refinements of Bocherer’s conjecture for Siegel modular forms of squarefree level*, Journal of the Mathematical Society of Japan, **72** (1), 251–301 (2020) (with Martin Dickson, Abhishek Saha and Ralf Schmidt)
27. *An explicit construction of non-tempered cusp forms on $O(1, 8n + 1)$* , Ann. Math. Quebec. **44**, 349–384 (2020) (with Yingkun Li and Hiro-aki Narita)
28. *On the standard L-function for $GSp_{2n} \times GL_1$ and algebraicity of symmetric fourth L-values for GL_2* , Ann. Math. Quebec. **45**, 113–159 (2021). (with Abhishek Saha and Ralf Schmidt)
29. *Lowest weight modules for $Sp(4, \mathbb{R})$ and nearly holomorphic Siegel modular forms*, Kyoto Journal of Mathematics **61**(4), 745–814 (2021) (with Abhishek Saha and Ralf Schmidt)
30. *Integrality and cuspidality of pullbacks of nearly holomorphic Siegel Eisenstein series*, Publications Matematicas, **66**, 405–434 (2022) (with Abhishek Saha and Ralf Schmidt)
31. *The special values of standard L-functions for $GSp_{2n} \times GL_1$* , Trans. Amer. Math. Soc. **375**, 6947–6982 (2022) (with Shuji Horinaga, Abhishek Saha and Ralf Schmidt)
32. *An explicit lifting construction of CAP forms on $O(1, 5)$* , to appear in International Journal of Number Theory (2022) (with Hiroaki Narita and Siddhesh Wagh)
33. *Multiplicity one for L-functions and applications*, submitted, arXiv:1305.3972 (with David Farmer, Nathan Ryan and Ralf Schmidt)
34. *Sup-norms of Borchers lifts to Maass forms on $GL_2(B)$, for a quaternion division algebra B* , in preparation (with Hiro-aki Narita and Siddhesh Wagh)

Graduate students

1. Siddhesh Wagh, graduated in summer 2019
2. Shuji Horinaga, joint advisor with Prof Tamotsu Ikeda at Kyoto University. Graduated in January, 2020.
3. Patrick Dynes, current
4. Nagarjuna Chary, current

Teaching experience

- 2006– University of Oklahoma. *Courses taught:* Calculus I, II, III, IV, Ordinary Differential Equations, Linear Algebra, Introduction to Abstract Algebra, Abstract Algebra, Abstract Linear Algebra, Topics in Number Theory, Topics in Algebra, Discrete Math, Physical Math, Intro to Number Theory
- 2000 – 2006 Graduate teaching assistant at The Ohio State University. *Courses taught:* Calculus I, II, III, IV, Mathematical analysis for Business, Basic College Mathematics

Service

1. Associate Chair for the Department of Mathematics at OU since Fall 2021. The main task of the Associate Chair is to schedule the teaching of all classes taught by the Mathematics department. In addition, the Associate Chair provides advice to the Chair whenever necessary.
2. Committee A member for the Department of Mathematics at OU for 2019/2020: every department at OU has a committee A which comprises of the department chair and two elected faculty members. Committee A is responsible for everything that happens in the department including recruitment, faculty evaluations, personnel issues, committee assignments etc.
3. Member of the University of Oklahoma Provost's Academic Program Review Committee for 2017/2018: part of an 8 member team which was in charge of helping with, and providing feedback for ten departments in the university undergoing their five year Academic Program Review.
4. Member of the Math Department Academic Program Review committee 2018/2019: Part of the team in the mathematics department responsible for performing the regular five yearly academic program review. This involved preparing a document detailing past achievements, current plans, and future goals. In addition, the committee met with external reviewers and incorporated their suggestions, as well as the suggestions of the Provost's academic review committee.
5. Math Day committee – chair from 2011 to 2013, member from 2014 to 2019: Math Day is a day long outreach event organized by the Mathematics department for high school students in the Oklahoma and northern Texas schools. The attendance has grown from 100 to close to 400 students. The day involves tests in Mathematical subjects like Algebra, Geometry and Trigonometry, as well as a jeopardy style team competition and a talk by an expert.
6. Chair of the organizing committee of the Mathematics Association of America (MAA) Oklahoma-Arkansas section's annual meeting at OU in spring 2017: The sectional meeting alternates between a host institute in Oklahoma and Arkansas every year and it was more than 15 years since OU had hosted it. Logistically, the organization of the meeting was a major challenge since the only faculty at the OU math department intimately involved in MAA was on a sabbatical. But the organization committee rose up to the challenge and we were able to have a successful event at OU.

Synergistic Activities

- Co-organizer of TORA IX at the University of Oklahoma, Norman, OK, April 7-8, 2018.

- Invited by the Government of India to give a two week course on “Siegel modular forms and associated representations” as part of the **Global Initiative of Academic Networks (GIAN)** proposal. This course was held at IISER, Pune from August 8 to 18, 2017 and was directed towards graduate students and young researchers. It consisted of 10 lectures of 90 minutes and 10 tutorials of 75 minutes each. Detailed lecture notes and video recordings of lectures were prepared and made available to the general public. Was awarded \$12000 for the workshop.
- External member for the PhD dissertation committee for Jolanta Marzec at the University of Bristol, UK, May 2016.
- Part of a STEM panel at the University of Oklahoma Tenure and Promotion Workshop, Feb 20, 2016
- Presented a talk “Continued fractions” in a session for Math Teacher’s Circle for middle school teacher held at OSSM, Oklahoma City on Nov 16, 2015
- Member of the OU math department team awarded a CIP award from the Center for Teaching Excellence at OU to redesign the introductory course MATH 1523 - Trigonometry and Precalculus.
- Member of “Math Success Group”, a group of mathematics faculty from the universities in the state of Oklahoma. The group is created by the Oklahoma State Regents for higher education and is expected to facilitate input on – Improving math preparation of students entering college, reforming math remediation and strengthening the pipeline for math preparation in all majors.
- “All you wanted to know about prime numbers” Invited student lecture at the Mathematical Association of America sectional meeting at the Oklahoma State University, Stillwater, OK, April 5-6, 2013.
- Co-organizer of TORA III at the University of Oklahoma, Norman, OK, September 28-30, 2012.
- Co-organizer of TORA II at Oklahoma State University, Stillwater, OK April 6-8, 2012.
- “The Riemann Hypothesis or How to be a millionaire doing math?”, talk at the Math Club at the University of Central Oklahoma, September 20, 2011.
- Co-organizer of TORA I at University of North Texas, Denton, TX September 16-17, 2011.
- “Riemann Hypothesis”, talk at the Math Club at OU, March 2, 2011.
- Co-organizer of the Oklahoma-Texas conference on Automorphic Forms and Representation Theory at University of Oklahoma, Norman, Oct 2-3, 2010.
- Co-organizer of special session titled “Automorphic forms, L -functions and applicaitons” at the AMS 2010 Spring Eastern Sectional Meeting at New Jersey Institute of Technology, Newark, NJ, May 22 – 23, 2010.
- Participated in the Math Teacher’s Circle for middle-school teachers at AIM on Sept. 17, 2009.
- Ran a session of the San Jose Math Circle (for middle school students), Nov. 4, 2009.

- Referee for papers for *Mathematische Annalen*, *Commentarii Mathematici Helvetici*, *International Journal of Number Theory*, *Mathematics of Computation*, *International journal of open problems in Computer Science and Mathematics*, *International Mathematical Research Notices*, *Journal für die reine und angewandte Mathematik*, *Mathematische Zeitschrift*, *Proceedings of the AMS*, *Journal de Théorie des Nombres de Bordeaux*, *Research in Number Theory*, *Hamburg Abhandlungen*, *Proceedings for the London Mathematical Society* and grant proposals for NSA.
- Participated in a panel discussion “Everything you wanted to know about the postdoctorate position” in the graduate student seminar at University of Oklahoma, Feb. 2, 2009.

Talks and seminars

2022 :

Nov 14 invited guest lecture, Science Society, Hislop College, Nagpur, India

2021 :

Apr 23 Colloquium, IISER, Pune, India

2020 :

Jan 22 RIMS, Kyoto, Japan

2019 :

Sep 19 “Modular forms on higher rank groups” Darmstadt, Germany

Aug 7 Colloquium, Indian Institute of Technology, Mumbai, India

Mar 23 AMS sectional meeting, University of Hawaii at Manoa, Honolulu, HI

Mar 5 “Algebraic and Analytic aspects of Automorphic forms” ICTS Bangalore, India

2018 :

Sep 11 Number Theory Seminar, IISER, Pune, India

Jul 27 Number Theory Seminar, Waseda University, Tokyo, Japan

Feb 15 Number Theory Seminar, Cal Tech

Feb 14 Number Theory Seminar, UCLA

2017 :

Sep 10 AMS sectional meeting, University of North Texas, Denton, TX

May 6 AMS sectional meeting, Hunter College, City University of New York, NY

Apr 22 AMS sectional meeting, Washington State University, Pullman, WA

Apr 2 TORA VIII, Oklahoma State University, OK

2016 :

Dec. 16 International Conference of The Indian Mathematics Consortium (TIMC) in cooperation with AMS, Banaras Hindu University, Varanasi, India

- Dec. 9 Tata Institute of Fundamental Research, Mumbai, India
 July 4 Automorphic forms on metaplectic groups and related topics, IISER, Pune, India
 May 25 Heilbronn Number Theory seminar, University of Bristol, UK
- 2015 :
- Oct. 15 Number Theory and Algebraic Geometry seminar, Boston College, MA
 May 25 Automorphic Forms : Advances and Applications, CIRM, Marseilles, France
 Mar. 29 Plenary talk, SERMON XXVII, Winthrop University, Rock Hill, SC
 Feb. 5 RIMS, Kyoto, Japan
- 2014 :
- July 15 Workshop on Bianchi and Siegel modular forms, University of Sheffield, UK
 July 10 EU/US workshop on automorphic forms and related topics, University of Bristol, UK
 Apr. 12 AMS Sectional meeting, Texas Tech University, Lubbock, TX
 Jan. 15 RIMS, Kyoto, Japan
- 2013 :
- Oct. 18 AMS Sectional meeting, Washington University, St Louis, MO
 May 29 Heilbronn Number Theory seminar, University of Bristol, UK
- 2012 :
- Apr. TORA II, Oklahoma State University, Stillwater, OK
- 2010 :
- Oct. Number Theory seminar, Texas A & M
 Feb. Colloquim, University of Oklahoma
- 2009 :
- Nov. Special session on Modular Forms and Automorphic Forms, AMS Fall Southeastern Sectional Meeting, Boca Raton, FL
 Oct. Haar Seminar, The Ohio State University
 Sep. Joint OU-OSU Automorphic forms seminar, Norman, Oklahoma
 June Graduate workshop on zeta functions, L -functions and their applications, Utah Valley University, Orem, Utah
 Feb. Colloquim, Iowa State University
 Jan. Colloquim, Oklahoma State University
 Jan. Colloquim, McGill University
 Jan. Quebec-Vermont Number Theory Seminar, McGill University
- 2008 :

- Oct. Special session on representations of real and p -adic Lie groups, AMS Fall Central Sectional Meeting, Kalamazoo, MI
- Sep. Representation Theory seminar, University of Oklahoma, Norman
- July Indian Institute of Science, Bangalore, India
- June Number Theory seminar, The Ohio State University
- May Number Theory seminar, University of Wisconsin
- 2007 :
- Nov. Representation Theory seminar, University of Oklahoma, Norman
- Oct. Graduate Student seminar, University of Oklahoma, Norman
- Oct. Special Session of Automorphic forms, AMS Fall Central Sectional Meeting, Chicago
- Jan. Joint OU-OSU Automorphic forms seminar, Stillwater, Oklahoma
- 2006 :
- Sep. Representation Theory seminar, University of Oklahoma, Norman
- April Number Theory seminar, University of California at San-Diego
- April Number Theory seminar, The Ohio State University
- Feb. Number Theory seminar, University of Wisconsin
- Jan. Number Theory seminar, University of California at Los Angeles
- 2005 :
- Dec. Conference on “Application of Representation Theory to Analytic Number Theory”, Technion University, Haifa, Israel
- Nov. Number Theory seminar, University of Minnesota
- Sep. Tata Institute of Fundamental Research, Mumbai, India
- Aug. Indian Institute of Technology, Kanpur, India
- March Special Session on L -functions, AMS Spring Southeastern Sectional Meeting, Western Kentucky University, Bowling Green, KY
- 2004 :
- Nov. Number Theory seminar, The Ohio State University