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Personal

. Birthplace: Naju, South Korea (1969).

. Citizenship: U. S. A.

Education

. B. S. in Mathematics, Seoul National University, Korea, 1992.

. Ph.D. in Mathematics, Yale University, Advisor: Gregory Margulis, 1997.

Academic Appointments

. Yale University: Abraham Robinson Professor of Mathematics (2015-). Professor (2013-).

. Brown University: Professor (2006- 2013).

. California Institute of Technology: Professor (2006-2007), Associate Professor with tenure (2003-2006).

. Institute for Advanced Study: Member (2002-2003).

. Princeton University: Assistant Professor (1999-2003).

. The Hebrew University of Jerusalem: Golda Meir Postdoctoral Fellow (1998-1999).

Academic recognitions

. Plenary speaker at the ICM 2026.

. Elected to the American Academy of Arts and Sciences, 2024.

. Ho-Am Prize in Science, 2018.

. Guggenheim Fellow, 2017.

. Simons Fellow in Mathematics, 2017, 2020.

. Satter Prize, 2015.

. Simons Professorship, MSRI, 2015.

. Inaugural fellow of the AMS, 2013

Selected service

- The Abel Prize Committee (2024-2026).

- The Shaw Prize Committee (2023-2024).

- Scientific Advisory Board at Simons Foundation (2021-2025).

- E. H. Moore Research Article Prize Committee, AMS (2024-2030, Chair 2024-2027).

- Vice president of the American Mathematical Society (2021-2024).

- Evaluation committee of D-MATH, ETH (2022).

- Appointment Committee for Max Planck Institute in the Sciences (2021).

- AMS Centennial Fellowship Committee (2019-2021).

- Fields Medal Committee, ICM, 2018.

- ICM speaker selection panel: ICM 2022 (Number theory), ICM 2014 (Lie theory and Generalizations).

- Brin Prize Committee (since 2017).

- AMS Editorial Boards Committee (2015-2018).

- AMS Colloquium Lecture Committee (2017-2020, Chair 2019-2020).

- Director of Graduate Studies for Mathematics, Yale (2015-2017)

- US delegate to the 17th IMU General Assembly, 2014.

- Scientific Advisory Board at American Institute of Mathematics (2010-2015).

Selected invited lectures

- Plenary lecture at the International Congress of Mathematicians, Philadelphia, USA, 2026.

- Plenary lecture at British Mathematical Colloquium and British Applied Mathematics Colloquium, Exeter, UK, 2025.

- Chang-Char Tu lecture, Rice University, 2025.

- Clay lecture, Institut Henri Poincaré, Paris, 2024.

- Gergen lecture series, Duke University, 2022.

- Inaugural AMS Erdös lecture for Students, Joint Mathematics Meetings, 2022.

- Landau Lecture series, The Hebrew University of Jerusalem, 2020 (postponed).

- Distinguished lecture series, Indiana University, 2019.

- Namboodiri Lectures, University of Chicago, 2018.

- Plenary lecture at the 3rd PRIMA Congress, Mexico, 2017.

- Evans Lecture, University of California, Berkeley, 2015.

- Beatrice Yormark Distinguished Lecture Series, Stanford University, 2015.

. Plenary lecture at the International Congress of Women Mathematicians, Seoul, 2014.

. Takagi Lecture series, RIMS, Kyoto, Japan, 2013.

. Heilbronn Distinguished Lecture Series, University of Bristol, UK, 2013.

. Joint AMS-MAA invited address at 2012 Joint Mathematics meeting, Boston, 2012.

. Plenary lecture at AWM's celebration of Women in Mathematics: 40 Years and Counting, 2011.

. Invited lecture at International Congress of Mathematicians, Hyderabad, India, 2010.

. Plenary lecture at the 1st Joint International Meeting of AMS and KMS, Dec 2009.

Research grants and supports

. NSF Award: DMS 2450703 (2025-2028)

. NSF Award: DMS 1900101 (2019-2025)

. NSF Award: DMS 1361673 (2014-2019)

. NSF Award: DMS 1068094/1348425 (2011-2014)

. NSF Award: DMS 0629322 (2006-2012)

. NSF Award: DMS 0333397 (2003-2007)

. NSF Award: DMS 0070544 (2000-2004)

. Simons Fellowship (2017, 2020) and Guggenheim Fellowship (2017).

Publications and preprints

99. Properness and finiteness of totally geodesic submanifolds in the convex core. (with Lee),
    Preprint.

98. Dynamics and Rigidity through the lens of circles. *Submitted to the Proceedings of the ICM 2026.*

97. Fractal closures of geodesic planes in Hitchin manifolds. (with Dey),
    Preprint.

96. Counting totally real units and eigenvalue patterns in $SL_n(\mathbb{Z})$ and $Sp_{2n}(\mathbb{Z})$ in thin tubes.
    Preprint.

95. Deformations of Anosov subgroups: limit cones and growth indicators (with Dey),
    J. LMS., Vol 112 (2025), Issue 3.

94. Zariski dense non-tempered subgroups in higher rank of nearly optimal growth (with Fraczyk),
    To appear in the bicentennial volume of Crelle's journal

93. Bi-Lipschitz rigidity of discrete subgroups (with Canary and Zimmer),
    Preprint.

92. Relatively Anosov groups: finiteness, measure of maximal entropy and reparameterization (with Kim),
    J. Reine Angew. Math 826 (2025), 91-142.

91. Multiple correlation of spectra for higher rank Anosov representations (with Chow),
    Int. Math. Res. Notices, Volume 2025, Issue 6, 1-27.

90. Ahlfors regularity of Patterson-Sullivan measures of Anosov groups and applications (with Dey and Kim),
    Preprint.

89. Ergodic dichotomy for subspace flows in higher rank (with Kim and Wang),
    Comm. Amer. Math. Soc. Vol 5 (2025), 1-47

88. Jordan and Cartan spectra in higher rank with applications to correlations (with Chow),
    Preprint.

87. Properly discontinuous actions, growth indicators and conformal measures for transverse subgroups (with Kim and Wang),
    To appear in Math. Ann.

86. Non-concentration property of Patterson-Sullivan measures for Anosov subgroups (with Kim),
    Ergodic Theory and Dynamical Systems, Vol 35 (2025), 884-893 .

85. Infinite volume and atoms at the bottom of the spectrum (with Edwards, Fraczyk, and Lee),
    Comptes Rendus Mathematique, Vol 362 (2024), 1873-1880.

84. Conformal measure rigidity for representations via self-joinings (with Kim),
    Advances in Math. 458 (2024), Paper No.109992.

83. Rigidity of Kleinian groups via self-joinings: measure theoretic criterion (with Kim),
    Journal of Topology, Volume 18 (2025), Issue 3

82. Rigidity of Kleinian groups via self-joinings (with Kim),
    Inventiones Mathematicae, Vol 234, issue 3 (2023), 937-948.

81. Torus counting and self-joinings of Kleinian groups (with Edwards and Lee),
    J. Reine Angew. Math . 807 (2024), 151-185.

80. Euclidean traveller in hyperbolic worlds,
    Notices Amer. Math. Soc. 69 (2022), no. 11, 1888-1897.

79. Dichotomy and measures on limit sets of Anosov groups (with Lee),
    Int. Math. Res. Not. IMRN (2024), no. 7, 5658-5688

78. Temperedness of $L^2(\Gamma \backslash G)$ and positive eigenfunctions in higher rank (with Edwards),
    Communications of the AMS, Vol 3 (2023), 744–778.

77. On denseness of horospheres in higher rank homogeneous spaces. (with Landesberg),
    Ergodic Theory and Dynamical Systems, Vol 44 (2024), 3272-3289.

76. Tent property of growth indicator functions and applications (with Kim and Minsky),
    Geom. Dedicata, Vol 218, Article 14 (2024).

75. Hausdorff dimension of directional limit sets for self-joinings of hyperbolic manifolds (with Kim and Minsky),
    Journal of Modern Dynamics, Vol 19 (2023), 433-453.

74. Uniqueness of conformal measures and local mixing for Anosov groups (with Edwards and Lee),
    Michigan Mathematical Journal (Prasad volume), Vol 72, 243-259, 2022

73. Horospherical invariant measures and a rank dichotomy for Anosov groups (with Landesberg, Lee, Lindenstrauss),
    Journal of Modern Dynamics, Vol 19 (2023), 331–362.

72. The Hopf-Tsuji-Sullivan dichotomy in higher rank and applications to Anosov subgroups (with Burger, Landesberg, Lee),
    Journal of Modern Dynamics, Vol 19 (2023) 301–330.

71. Ergodic decompositions of geometric measures on Anosov homogeneous spaces (with Lee),
    Israel J. Math, Vol 260 (2024), 195–234.

70. Invariant measures for horospherical actions and Anosov groups (with Lee),
    Int. Math. Res. Notices, Vol 2023, No 19, 16226-16295.

69. Anosov groups: local mixing, counting, and equidistribution (with Edwards and Lee),
    Geometry & Topology, Vol 27 (2023), 513–573.

68. Spectral gap and exponential mixing on geometrically finite hyperbolic manifolds (with Edwards),
    Duke Math. J, Vol 170 (2021), 3417–3458.

67. Isolations of geodesic planes in geometrically finite hyperbolic 3-manifolds (with Mohammadi),
    Compositio Math. Vol 159 (2023), 488–529.

66. Dynamics for discrete subgroups of SL(2,C)
    Dynamics, geometry, number theory (Margulis volume), 506-566, Univ. Chicago press

65. Topological proof of Benoist-Quint's orbit closure theorem for SO(d,1). (with Lee),
    Journal of Modern Dynamics, Vol 15 (2019), 263–276 .

64. Orbit closures of unipotent flows for hyperbolic manifolds with Fuchsian ends. (with Lee),
    Geometry & Topology, Vol 28 (2024) 3373-3473.

63. Exponential mixing and Shrinking targets for geodesic flow on geometrically finite hyperbolic manifolds (with Kelmer),
    Journal of Modern Dynamics, Vol 17 (2021), 401–434.

62. Orbit closures for the PSL(2,R)-action on hyperbolic 3-manifolds
    Fields Institute Summer School Lecture Notes.

61. Geodesic planes in geometrically finite acylindrical 3-manifolds (with Benoist),
    Ergodic theory and Dynamical systems, Vol 42 (2022), 514-553, Katok memorial volume.

60. Geodesic planes in the convex core of an acylindrical 3-manifold (with McMullen and Mohammadi),
    Duke Math. J. 171 (2022), no. 5, 1029-2060.

59. Local mixing and invariant measures for horospherical subgroups on abelian covers (with Pan),
    Int. Math. Res. Notices, Issue 19 (2019), 6036-6088.

58. Remembering Marina Ratner
    AMS Notices Amer. Math. Soc. 66 (2019), No. 3, p. 385.

57. Prime number theorems and holonomies for hyperbolic rational maps (with Winter),
    Inventiones Mathematicae, Vol 208 (2017), 401–440.

56. Geodesic planes in hyperbolic 3-manifolds (with McMullen and Mohammadi),
    Inventiones Mathematicae, Vol 209 (2017), 425–461

55. Horocycles in hyperbolic 3-manifolds (with McMullen and Mohammadi),
    Geometric and Functional Analysis, Vol 26 (2016), 961–973.

54. Invariant Radon measures of unipotent flows and products of Kleinian groups. (with Mohammadi),
    Proc. Amer. Math. Soc. Vol 146 (2018), 1469–1479.

53. Fuchsian groups and compact hyperbolic surfaces (with Benoist),
    L'Enseignement Mathematique, Vol 62 (2016), 189–198.

52. Uniform congruence counting for Schottky semigroups in SL(2,Z) (with Magee and Winter),
    J. Reine Angew. Math., Vol 753 (2019), 89–135

51. Uniform exponential mixing and resonance free regions for convex cocompact congruence subgroups of $SL_2(Z)$ (with Winter),
    Journal of the AMS, Vol 29 (2016), 1069–1115.

50. Closed geodesics and holonomies for Kleinian manifolds. (with Margulis and Mohammadi),
    Geometric and Functional analysis, Vol 24 (2014), 1608–1636

49. Classification of joinings for Kleinian groups (with Mohammadi),
    Duke Math. J., Vol 165 (2016) 2155–2223.

48. Ergodicity of unipotent flows and Kleinian groups (with Mohammadi),
    Journal of the AMS., Vol 28 (2015), pp.531-577.

47. Eigenvalues of congruence covers of geometrically finite hyperbolic groups,
    Journal of Geometric Analysis, Vol 25 (2015), 1421–1430.

46. Matrix coefficients, counting and primes for orbits of geometrically finite groups (with Mohammadi),
    Journal of the EMS., Vol 17 (2015), 837-897.

45. Harmonic analysis, Ergodic theory and Counting for thin groups,
    In "Thin groups and Super-strong approximation", edited by Breuillard and Oh, MSRI. Publ 61, Cambridge Univ Press, 2014.

44. Apollonian circle packings: Dynamics and Number theory,
    Japanese Journal of Mathematics, Special edition for Takagi lecture series, Vol 9 (2014), pp. 69–97.

43. Equidistribution and Counting for orbits of geometrically finite hyperbolic groups (with Shah),
    Journal of the AMS., Vol 26 (2013), pp. 511-562.

42. Effective circle count for Apollonian packings and closed horospheres (with Lee),
    Geometric and Functional Analysis, Vol 23 (2013), pp. 580–621.

41. The asymptotic distribution of circles in the orbits of Kleinian groups (with Shah),
    Inventiones Mathematicae, Vol 187 (2012), pp. 1–35.

40. Apollonian circle packings and closed horospheres on hyperbolic 3-manifolds (with Kontorovich),
    Journal of the AMS., Vol 24 (2011), pp. 603-648.

39. Dynamics on geometrically finite hyperbolic manifolds with applications to Apollonian circle packings and beyond,
    Proceedings of International Congress of Mathematicians (2010), Vol III, pp.1308-1331.

38. Counting visible circles on the sphere and Kleinian groups (with Shah),
    Geometry, topology, and dynamics in negative curvature, 272–288, LMS. Lecture Ser., 425, CUP, 2016.

37. Limits of translates of divergent geodesics and Integral points on one-sheeted hyperboloids. (with Shah),
    Israel J. Math, Vol 199 (2014), pp. 915-931.

36. On the distribution of orbits of geometrically finite hyperbolic groups on the boundary (with Lim),
    Erg. Theory and Dyn. Syst., Vol 32 (2012), pp. 173–189.

35. Almost prime Pythagorean triples in thin orbits (with Kontorovich),
    J. Reiner Angew. Math , Vol 667, pp. 89-131, 2012.

34. Discrete subgroups of $SL_3(R)$ generated by triangular matrices (with Benoist),
    Int. Math. Res. Notices, Volume 2010, Issue 4, 619–632

33. Discreteness criterion for subgroups of products of $SL_2(R)$ (with Benoist),
    Transformation Groups, Vol 15, pp. 503-515, 2010.

32. Orbital counting via Mixing and Unipotent flows,
    in Homogeneous flows, moduli spaces and arithmetic Clay Math Proceedings, Vol 10, pp. 339-375, 2010.

31. Rational points on homogeneous varieties and Equidistribution of Adelic periods (with Gorodnik),
    Geometric and Functional Analysis, Vol 21 (2011), pp. 319–392.

30. Effective equidistribution on *S*-integral points on symmetric varieties (with Benoist),
    Annales de L'Institut Fourier., Vol 62 (2012), pp. 1889-1942.

29. Strong wavefront Lemma and counting lattice points in sectors (with Gorodnik and Shah),
    Israel J. Math., Vol 176 (2010), pp. 419-444.

28. Integral points of symmetric varieties and the Satake compactification (with Gorodnik and Shah),
    American Journal of Math., Vol 131 (2009), pp. 1-57.

27. Manin's and Peyre's conjectures for rational points and Adelic mixing (with Gorodnik and Maucourant),
    Ann. Sci. Ecole Norm. Sup., Vol 41 (2008), pp. 47-97.

26. Polar decomposition for p-adic symmetric spaces (with Benoist),
    Int. Math. Res. Notices, Article ID 121, (2007), 20 pages.

25. Equidistribution of rational matrices in their conjugacy classes (with Benoist),
    Geometric and Functional Analysis. Vol 17 (2007), pp. 1-32.

24. Orbits of discrete subgroups on a symmetric space and the Furstenberg boundary (with Gorodnik),
    Duke Math. J., Vol 139 (2007), pp. 483-525.

23. Representations of integers by an invariant polynomial and unipotent flows (with Eskin),
    Duke Math. J., Vol 135 (2006), pp. 481-506.

22. Ergodic theoretic proof of equidistribution of Hecke points (with Eskin),
    Erg. Theory and. Dyn. Sys., Vol 26 (2006), pp. 163-167.

21. On uniform exponential growth for linear groups (with Eskin and Mozes),
    Inventiones Mathematcae, Vol 160 (2005), pp. 1-30.

20. The Ruziewicz problem and distributing points on homogeneous spaces of a compact Lie group,
    Israel J. Math., Vol 149 (2005), pp. 301-316 (in the special volume in honor of Furstenberg).

19. Lattice action on finite volume homogeneous spaces,
    J. Korean Math., Vol 42 (2005), pp. 635-653.

18. On a problem concerning arithmeticity of discrete groups acting on $H \times ... \times H$,
    in Algebraic groups and Arithmetic, TIFR, Mumbai (2004), pp. 427-440.

17. Hardy Littlewood system and representations of integers by an invariant polynomial,
    Geom. Funct. Anal., Vol 14 (2004), pp. 791-809.

16. Finiteness of compact maximal flats of bounded volume,
    Erg. Theory and Dyn. System, Vol 24 (2004), pp. 217-225.

15. Equidistribution of integer points on a family of homogeneous varieties: a problem of Linnik (with Gan),
    Compositio Math., Vol 136, (2003), pp. 323-352.

14. Uniform exponential growth for linear groups (with Eskin and Mozes),
    Int. Math. Res. Notices, Vol 31 (2002), pp. 1675-1683.

13. Harmonic analysis and Hecke operators,
    in Rigidity in Dynamics and Geometry, (2002) Springer-Verlag, pp. 363-378.

12. Hecke operators and equidistribution of Hecke points (with Clozel and Ullmo),
    Inventiones Mathematicae, Vol 144 (2001), pp. 327-351.

11. Uniform pointwise bounds for matrix coefficients of unitary representations and applications to Kazhdan constants,
    Duke Math. J., Vol 113 (2002), pp. 133-192.

10. Cartan decomposition subgroups of SO(2,n) (with Witte),
    Trans. AMS., Vol 356 (2004), pp. 1-38.

9. Compact Clifford-Klein forms of homogeneous spaces of SO(2,n) (with Witte),
   Geom. Dedicata, Vol 89 (2002), pp. 25-57

8. New examples of compact Clifford-Klein forms of homogeneous spaces of SO(2,n) (with Witte),
   IMRN, no 5 (2000), pp. 235-251.

7. Adelic version of Margulis arithmeticity theorem,
   Math. Ann., Vol 321 (2001), pp. 789-815.

6. S-arithmetic properties of discrete subgroups containing lattices in horospherical subgroups,
   Duke Math. J., Vol 101 (2000), pp. 209-219.

5. On discrete subgroups containing a lattice in a horospherical subgroup
   Israel J. of Math., Vol 110 (1999), pp. 333-340.

4. Tempered subgroups and representations with minimal decay of matrix coefficients,
   Bull. Math. Soc. France, Vol 126 (1998), pp. 355-380.

3. Arithmetic properties of some Zariski dense subgroups,
   in Lie groups and Ergodic theory, Tata. Inst. Fund. Res. Stud. Math., Vol 14 (1998), pp. 151-165.

2. Discrete subgroups generated by lattices in opposite horospherical subgroups,
   J. of Algebra, Vol 203 (1998), pp. 621-676.

1. Discrete subgroups of $SL_n(R)$ generated by lattices in horospherical subgroups,
   C. R. Acad. Sci. Paris, Series I, Vol 323 (1996), pp. 1219-1224.

Ph.D Students

1. Dale Winter (2016, Brown)

2. Wenyu Pan (2018, Yale)

3. Minju Lee (2021, Yale)

4. Pratyush Sarkar (2022, Yale)

5. Elijah Fromm (2023, Yale)

6. Mikey Chow (2024, Yale)

7. Amy Wang (2025, Yale)

8. Dongryul M. Kim (current)

Editorial works

. Proceedings of the London Mathematical Society, Editorial board, 2022-

. Forum of Math, Sigma, Editorial board, 2019-

. Journal of Number Theory, Editorial board, 2018-

. Selecta Mathematica. Editorial board, 2015-2019

. Groups, Geometry, and Dynamics. Editorial board, 2014-2018

. MSRI Publication (Book 61) "Thin groups and Super-strong approximation", Cambridge University Press, co-edited with Breuillard.17, 2016.

. Co-editor of the special issue of Quarterly Journal of Pure and Applied Math., in honor of G. Margulis, co-edited with Burger, Ji, Lubotzky and Yau.

Organizational activities

Key organizer

. MSRI program: Geometry and Dynamics for Discrete subgroups of higher rank Lie groups, Spring term of 2026.

. Visions in Arithmetic and Beyond: Celebrating Peter Sarnak's work and impact, IAS, Princeton, June 3-7, 2024

. Homogeneous dynamics and geometry in higher rank Lie groups, IHES, France, June 2023.

. Dynamics, Rigidity and Arithmetic in hyperbolic geometry and beyond, ICERM, May 2023

. Ergodic geometry, Number theory and Margulis legacy: the next generation, Chicago, May 2022.

. The Oberwolfach Arbeitsgemeinschaft on Thin Groups and Super-approximation. Oct. 2021.

. Dynamics, Geometry, and Number theory: Margulis 2016 (IHP, Paris, June 13-17).

. Connections for Women workshop: Geometric and Arithmetic aspects of homogeneous dynamics, Jan 2015

. Workshop on Advances in Homogeneous Dynamics, May 2015.

. Geometric and Arithmetic aspects of homogeneous dynamics (MSRI semester, Jan-May 2015).

. Summer school on Homogeneous Dynamics (KIAS, July 2-6, 2013).

. MSRI Hot Topics Workshop: Thin Groups and Super-strong Approximation (MSRI Feb 6-10, 2012).

. Homogeneous flows and Arithmetic (MFO, Oberwolfach, July 4-10, 2010).

. Lie groups: Dynamics, Rigidity, Arithmetic, in honor of Margulis' 60th birthday (Yale, Feb 24-27, 2006).

. Group Actions and Dynamics seminar at Yale since 2013.

. Group Actions seminar at Brown 2007-2013.

. Lie group seminar at Caltech for 2003-2006.

Committee member

. Scientific committee of the conference "Homogeneous dynamics and Anosov representations", SLMath, Berkeley, CA April 20-24, 2026.

. Scientific committee of Young Geometric Group Theory (YGGT) workshop for 2025.

. Scientific committee for "Women in Dynamical systems and Ergodic theory", Centro di Ricerca Matematica Ennio De Giorgi, Pisa Italy, May 20-24, 2024.

. Scientific committee for the Fields symposium for Mirzhakani, 2018.

. Scientific committee for "Dynamics of group actions", 2019 (a conference in honor of Benoist).

Selected minicourses

. Minicourse in Dynamics, Rigidity and Arithmetic in Hyperbolic Geometry, *ICERM*, May 15-19 2023

. Minicourse in the 22nd Midrasha Mathematicae : Equidistribution, Invariant Measures and Applications (A tribute to the Legacy of Marina Ratner), *Hebrew University*, May 2019

. Minicourse in Summer school on Teichmuller theory and its connections to geometry, topology and dynamics, *Fields Institute, Toronto*, Aug 20- 24, 2018

. Minicourse at the Introductory workshop of the MSRI program on Geometric and Arithmetic aspects of homogeneous dynamics, Feb 2-3, 2015

. Minicourse at the 7th European Women in Mathematics Summer School on Apollonian circle packings, *Institut Mittag-Leffler*, June 23-27, 2014.

. Minicourse at RTG workshop on Thin groups at University of Michigan, April 25-27, 2014.

. Minicourse at the 3rd Young Geometric Group Theory Meeting, *CIRM, Luminy, France*, Jan 20-24, 2014.

. Minicourse on MSRI Hot Topics workshop on Thin Groups and Super-strong approximation, Feb 6-10, 2012

. Advanced Mini courses, Clay Mathematics Institute Summer school on Homogeneous Flows, Moduli Spaces and Arithmetic, *Pisa, Italy*, June 11-July 6, 2007.

Invited Lectures

1. Dynamics of Group actions seminar, *Yale University*, Oct 2, 1995.

2. Dynamics of Group actions seminar, *Yale University*, Oct 9, 1995.

3. Algebra seminar, *Yale University*, Oct 18, 1995.

4. Conference on Dynamical systems, *Pennsylvania State University*, Oct 21, 1995.

5. International Colloquium on Lie groups and Ergodic theory, *TIFR*, Bombay, India, Jan 7, 1996.

6. Special session on Discrete groups and Hyperbolic geometry, *AMS meeting*, New York, April 13, 1996.

7. Harmonic analysis and Number theory seminar, *Ohio State University*, Feb 20, 1997.

8. Lie group seminar, *University of Michigan*, Feb 24, 1997.

9. Conference in Ergodic theory, Geometry and Arithmetic, *ESI, Vienna*, Feb 5, 1997.

10. Lie group seminar, *Bielefeld University*, Germany, July 9, 1997.

11. Conference on Recent advances in Algebra, *KAIST*, Korea, Aug 12, 1997.

12. Lie group seminar, *Oklahoma State University*, U. S. A, Sep 10, 1997.

13. Colloquium, *Oklahoma State University*, Nov 7, 1997.

14. Special session on Lie Groups, Algebraic Groups: Their Arithmetic and Representation Theory, *AMS meeting, Manhattan, KS*, March 27, 1998.

15. Conference on Rigidity, representation and ergodic theory, *Paris*, June 19, 1998.

16. Special session on Rigidity in Geometry and Dynamics, *AMS meeting, Chicago*, Sep 14, 1998.

17. Geometry and Topology seminar, *University of Illinois at Chicago*, Sep 23, 1998.

18. Lie group seminar, *The Hebrew university of Jerusalem*, Nov 1999.

19. Geometric analysis seminar, *Technion, Haifa, Israel*, Jan 21, 1999.

20. Geometry and topology seminar, *University of Chicago*, Mar 1999.

21. Amitsur Algebra seminar, *The Hebrew University of Jerusalem*, April 1999.

22. Geometry seminar, *ETH, Zurich*, May 19, 1999.

23. Conference on Crystallographic groups and their generalizations II, *Kortrijk, Belgium*, May 28, 1999.

24. Lie group seminar, *Yale University*, Oct 7, 1999.

25. Algebra and Algebraic Geometry seminar, *Princeton University*, Nov 16, 1999.

26. Analysis seminar, *Princeton University*, Nov 22, 1999.

27. Lie group seminar, *Rutgers University*, Mar 24, 2000.

28. Workshop on Rigidity in Dynamics and Geometry, *Issac Newton Institute, Cambridge*, March 31, 2000.

29. Harmonic analysis seminar, *University of Neuchatel, Swiss*, June 14, 2000.

30. Workshop on Ergodic theory, Riemannian Geometry and Number theory, *Issac Newton Institute, Cambridge*, June 28, 2000.

31. Conference on Harmonic analysis and Representation theory of topological groups, *MFO, Oberwolfach*, July 12, 2000.

32. Dynamics of Group actions, *Yale University*, Feb 12, 2001.

33. Geometry and Topology seminar, *University of Chicago*, Feb 22, 2001.

34. m IAS/Princeton joint Number theory seminar, *Princeton University*, Oct 4, 2001.

35. Semi-annual Workshop in Dynamical Systems and Related Topics, *Pennsylvania State University*, Oct 12, 2001.

36. Lie group seminar, *University of Michigan*, Nov 19, 2001.

37. Algebraic groups and Arithmetic, *Tata Institute of Fundamental Research, Mumbai, India*, Dec 18, 2001.

38. Representation seminar, *University of Maryland*, Apr 10, 2002.

39. Dynamics seminar, *University of Maryland*, Apr 11, 2002.

40. Conference on Advances in rigidity theory, *ETH, Zurich*, June 20, 2002.

41. Summer school on Automorphic forms and Applications, *Parkcity, Utah*, July 19, 2002.

42. Topology seminar, *Cornell University*, Oct 31, 2002.

43. Geometry seminar, *Brown University*, Nov 14, 2002.

44. Colloquium, *Brown University*, Nov 15, 2002.

45. Colloquium, *CalTech*, Dec 9, 2002.

46. Special Geometry seminar, *CalTech*, Dec 10, 2002.

47. Dynamics of Group actions, *Yale University*, Feb 18, 2003.

48. Colloquium, *UCLA*, Feb 27, 2003.

49. Lie group seminar, *CUNY*, April 1, 2003.

50. AMS sectional meeting on Rigidity in Dynamics, Geometry and Group theory, *New York*, April 12, 2003.

51. Conference on Ergodic properties of geometric group actions, *Max-Plank-Gesellschaft (Schloss Ringberg)*, July 2, 2003.

52. Geometry and Topology seminar, *Caltech*, Oct 31, 2003.

53. Workshop on special points in Shimura varieties, *Lorentz center, Leiden, The Netherlands*, Dec 17, 2003.

54. Representation theory seminar, *UCSD*, Mar 9, 2004.

55. Colloquium, *Rice University*, Apr 15, 2004.

56. Colloquium, *Seoul National University, Korea*, Sep 2, 2004.

57. Maryland-Pennstate Workshop on Dynamical Systems and Related Topics, *Maryland*, March 19, 2005.

58. Plenary lecture at AMS 2005 Spring Central Sectional Meeting, *Texas*, April 9, 2005.

59. Number theory seminar, *UCLA*, May 2, 2005.

60. Lie group seminar, *Caltech*, May 11, 2005.

61. Conference on Rigidity, Dynamics, and Group actions, *BIRS, Canada*, July 10, 2005.

62. Joint Lie group/Number theory seminar, *Caltech*, Oct 20, 2005.

63. Colloquium, *Brown university*, Dec 2, 2005.

64. Joint Princeton/IAS Number theory seminar, *Princeton University*, Feb 22, 2006.

65. Colloquium, *USC*, Apr 12, 2006.

66. Plenary lecture at the 3rd international workshop for Korean women in Mathematics, *Seoul*, June 26, 2006.

67. Special seminar, *Seoul National University*, June 29, 2006.

68. Special seminar, *KIAS*, June 30, 2006.

69. Brandeis-Harvard-MIT-Northeastern Joint Math Colloquium, *Brandeis University*, Sep 21, 2006.

70. Colloquium, *Yale university*, Oct 11, 2006.

71. Special seminar, *ENS., Paris*, June 2007.

72-74. Advanced Mini courses, Clay Mathematics Institute Summer school on Homogeneous Flows, Moduli Spaces and Arithmetic, *Pisa, Italy*, June 11-July 6, 2007.

75. Conference on Lie algebras and applications, *KIAS, Seoul*, Korea, July 30, 2007.

76. Algebra seminar, *Brown university*, Sep 17, 2007.

77. Algebra seminar, *Brown university*, Feb 4, 2008.

78. Conference on Equidistribution on homogeneous spaces, *Ohio State university*, June 10, 2008.

79. Group Actions seminar, *Brown university*, Sep 23, 2008.

80. Dynamics of Group Actions seminar, *Yale university*, Oct 6, 2008.

81. Semi-annual Workshop in Dynamical systems and Related topics, *Penn-State university*, Oct 23-26, 2008.

82. Group Actions and Automorphic forms, *Princeton university*, Dec 2, 2008.

83. Special seminar, *KIAS*, Dec 23, 2008.

84. Dynamics and Geometry seminar, *Harvard university*, Feb 18, 2009.

85. Joint COLUMBIA-CUNY-NYU Number theory seminar, *Columbia university*, Feb 19, 2009.

86. Geometry seminar, *ETH, Zurich*, March 25,2009.

87. International conference: Dynamical Numbers: Interplay between Dynamical Systems and Number theory, *MPIM, Bonn*, July 23, 2009.

88. Dynamics and Geometry seminar, *Harvard university*, Sep 30, 2009.

89. Invited address at the first joint International meeting of the AMS and Korean Math Society, *Seoul*, Dec. 2009.

90. Colloquium, *Korea Advanced Institute of Science and Technology*, Feb 25, 2010.

91. Special seminar, *Ehwa Women's university, Seoul* May 7, 2010.

92. Colloquium, *Postech*, May 14, 2010.

93. Colloquium, *Seoul National university*, May 27, 2010.

94. Colloquium, *Chonnam National university, Gwangju*, June 25, 2010.

95. Workshop on Homogeneous Dynamics and Number theory, *MFO, Oberwolfach*, July 5, 2010.

96. Invited 45min address at International Congress of Math., *Hyderabad, India*, Aug 21, 2010.

97. Colloquium, *Yale Univesity*, Nov 3, 2010.

98. Colloquium, *Brown University*, Nov 17, 2010.

99. Workshop on Discrete methods in ergodic theory *Evanston, IL*, Feb 25, 2011

100. Spring 2011 Meeting of the Workshop on Dynamical Systems and Related Topics with a special session in honor of Mike Boyle on his 60th birthday *Maryland*, April 3, 2011

101. MIT Number theory seminar, May 3, 2011

102. Conference on Ergodic Geometry, Orsay, France, May 25, 2011

103. 40 Years and Counting: AWM's celebration of Women in Mathematics, *Providence, RI*, Sep 17-18, 2011

104. Workshop on Dynamics and Number Theory, *ESI, Vienna*, Oct 14, 2011

105. Joint seminar of Geometry/Topology and Group Actions, *Brown University*, Oct 19, 2011

106. Joint AMS-MAA address at 2012 Joint Mathematics meetings, *Boston, MA*, Jan 4-7, 2012

107-108. Lecture series on MSRI Hot Topics workshop on Thin Groups and Super-strong approximation, Feb 6-10, 2012

109. Special Topology/Number theory seminar, *UT Atstin*, March 26, 2012

110. 50th Topology Festival, *Cornell*, May 4-7, 2012

111. Colloquium at University of Michigan, *Ann Arbor*, Sep 25, 2012

112. AGNES (Algebraic Geometry Northeastern Series), *Providence*, Oct 27, 2012

113. Number theory seminar, *EPFL, Lausanne, Swiss*, Mar 14, 2013

114. The 10th edition of Number Theory Days *EPFL, Lausanne, Swiss*, Mar 15, 2013

115-118. Heilbronn Distinguished Lecture Series, *University of Bristol, UK*, March 25-27, 2013

119. Dynamics on Homogeneous spaces and Applications (Conference in honour of Margulis), Lyon (France), June 12-14, 2013

120. Fields medal symposium in honour of Lindenstrauss, The Fields Institute, Toronto, Sep 30-Oct 3, 2013

121. Conference on Homogeneous dynamics, Unipotent flows and Applications, in honor of Marina Ratner, *Hebrew University, Israel*, Oct 13-17, 2013

122-123. The 13th Takagi Lectures, *RIMS, Kyoto*, Nov 16-17, 2013

124. Inauguration ceremony for Center for Mathematical Challenges, *Seoul* Nov 19, 2013

125. Colloquium, Seoul National University, *Seoul*, Nov 21, 2013

126-128. Lecture series at the 3rd Young Geometric Group Theory Meeting, *CIRM, Luminy, France*, Jan 20-24, 2014.

129-131. Lecture series at RTG workshop on Thin groups at University of Michigan, April 25-27, 2014.

132-135. Lecture series at the 7th European Women in Mathematics Summer School on Apollonian circle packings, *Institut Mittag-Leffler*, June 23-27, 2014.

136. Number theory seminar, Postech, *Pohang, Korea*, July 9, 2014.

137. Plenary lecture at International Congress of Women Mathematicians, *Seoul*, Aug 12-13, 2014.

138. Joint COLUMBIA-CUNY-NYU Number theory seminar, *New York*, Oct 9, 2014

139-140. Lecture series at the Introductory workshop of the MSRI program on Geometric and Arithmetic aspects of homogeneous dynamics, Feb 2-3, 2015

141. Conference on Zariski dense groups, IPAM, Feb 9, 2015

142. Beatrice Yormark Distinguished Lecture Series, *Stanford University*, Feb 12, 2015

143-144. Colloquium at Princeton University, *Princeton*, March 4, 2015

145. Evans Lecture, University of California, Berkeley, April 27, 2015

146. Conference on Advances in homogeneous dynamics, MSRI, May 11, 2015

147. Group actions and Dynamics seminar, *Yale University*, Feb 8, 2016

148. Conference on Fractal geometry, Hyperbolic dynamics, and Thermodynamical formalism, *Icerm, Providence*, March 7, 2016

149. Workshop on Thin groups and Super-approximation, *IAS Princeton*, March 28, 2016

150. Colloquium, *Stony Brook University*, April 7, 2016

151. Fields medal symposium in honour of Bhargava, The Fields Institute, Toronto, Nov 1, 2016

152. Colloquium, *New York University*, Nov 21, 2016

153. Group actions and Dynamics seminar, *Yale University*, Feb 6, 2017

154. Plenary lecture at the 3rd PRIMA Congress, *Oaxaca, Mexico* Aug 2017

155. Clay research conference, *Oxford, UK*, Sep 2017

156. Geometry and Topology seminar, *Yale University*, Oct 10, 2017

157-159. Namboodiri lecture series, *University of Chicago*, April 16-18, 2018

160-161. 2 Colloquium lectures, *University of Rochester*, April 26-27, 2018

162. Thin groups in Number theory, Geometry and Topology, *Rice university*, May 14-18, 2018

163. The mathematical legacy of Maryam Mirzhakani, *Stanford University*, May 18-20, 2018

164. Ho-Am lecture for high school students, *Seoul*, May 28, 2018

165. Ho-Am science prize lecture, *KIAS, Seoul*, May 30, 2018

166-169. A course (4 lectures) in Summer school on Teichmuller theory and its connections to geometry, topology and dynamics, Fields Institute, Toronto, Aug 20- 24,2018

170. Workshop in Dynamical systems and related topics, in memory of Katok, *Penn-State*, Oct 6, 2018

171. 2018 Fields Medal Symposium, in honor of Maryam Mirzakhani, *The Fields Institute*, Nov 6, 2018

172. Group actions and Dynamics seminar, *Yale*, Jan 28, 2019

173-174. A minicourse in the 22nd Midrasha Mathematicae : Equidistribution, Invariant Measures and Applications (A tribute to the Legacy of Marina Ratner), *The Hebrew University at Jerusalem*, May 2019

175-177. Distinguished lecture series, *Indiana University*, Dec 2019

178-179. MSRI research seminar (2 lectures), *MSRI*, Oct 19, 2020

180. Colloquium, Rutgers University, April 7, 2021

181. Colloquium, *Stony Brook University*, April 29, 2021

182. International conference on Discrete groups, Geometry and Arithmetic *(a virtual event in honor of Raghu-nathan)*, Aug 10, 2021

183. Group actions and Dynamics seminar, *Yale*, Sep 13, 2021.

184. Erdos lecture for students, *Joint Mathematics Meetings*, Apr 6, 2022

185. Junior colloquium for Graduate students, *Yale*, Apr 8, 2022

186. Yale Undergraduate Seminar, *Yale*, Apr 15, 2022

187. The circle at infinity: an international colloquium in honor of Curtis T. McMullen, *Harvard*, June 16, 2022

188. Burger's prime: a conference in honor of Burger, *ETH*, June 27, 2022.

189. Group actions, Geometry and Dynamics seminar, *Yale*, Sep 12, 2022

190. Group actions, Geometry and Dynamics seminar, *Yale*, Sep 19, 2022

191-194. Gergen lecture series, *Duke University*, Oct 19-21, 2022

195. Plenary lecture at GROW, *Duke University*, Oct 22, 2022

196. Special year topics seminar, *IAS, Princeton*, Nov 15, 2022

197. Colloquium, *Princeton University*, Nov 16, 2022

198. Conference on Ergodic theory and Dynamical systems in honor of S. G. Dani, *ICTP India*, Dec 6, 2022

199. Four decades of the Einstein Chair seminar in honor of D. Sullivan, *CUNY, Graduate Center*, Jan 17, 2023

200. Group actions, Geometry and Dynamics seminar, *Yale*, Jan 30, 2023

201. Group actions and Harmonic Analysis in Number theory, *MFO, Oberwolfach*, May 11,2023

202-4. Dynamics, Rigidity and Arithmetic in Hyperbolic Geometry *ICERM*, May 15-18, 2023

205. Zurich Dynamics conference, *Zurich*, June 14, 2023

206. Group actions, Geometry and Dynamics seminar, *Yale*, Sep 28, 2023

207. Workshop on Dynamical systems and related topics, *Maryland*, April 6, 2024

208. Clay lecture at the conference: Group actions with hyperbolicity and measure rigidity, *IHP, Paris*, May 28, 2024

209. Visions in Arithmetic and Beyond: Celebrating Peter Sarnak's Work and Impact, *IAS and Princeton University*, June 5, 2024

210. Canaryfest. Moving to higher rank: from hyperbolic to Anosov, *Cetraro, Italy*, July 16, 2024

211. Recent trends in Homogeneous and Teichmuller Dynamics, *Brin MRC, University of Maryland*, Sep 26, 2024.

212. 20 years of Anosov representations, *Max Planck Institute, Leipzig, Germany*, Oct 9-11, 2024.

213. Abel in Bonn, *Bonn, Germany*, Jan 23, 2025.

214. Chang-Char Tu lecture, *Rice University*, Feb 20, 2025.

215. Joint COLUMBIA-CUNY-NYU Number theory seminar, April 24 2025.

216. Joint British Mathematical Colloquium/British Applied Mathematics Colloquium, Exeter, UK, June 23-26, 2025.

217. Dynamics and Rigidity: a celebration of the mathematics of Alex Eskin Cetraro, Italy, June 29- July 4, 2025.

218. Arithmetic and Diophantine geometry, via ergodic theory and o-minimality, in honor of Emmanuel Ullmo IHES, France, Sep 8-12, 2025.

219. 2025 MPS Annual Meeting, Simons Foundation, Oct 16-17, 2025.

220. Group actions and Dynamics seminar, Yale, Nov 10, 2025

221. Semi-annual workshop in Dynamical systems and related topics, Penn-State, Nov 15, 2025.