BIBLIOGRAPHY

- 1. Spectra of singular measures as multipliers on L^p , Journal of Functional Analysis, **37**, (1980).
- 2. Prime geodesic theorems, Ph.D. Thesis, Stanford, (1980).
- 3. Asymptotic behavior of periodic orbits of the horocycle flow and Einsenstein series, Comm. on Pure and Appl. Math., **34** (1981), 719-739.
- 4. Class numbers of indefinite binary quadratic forms, Journal of Number Theory, 15, No. 2, (1982), 229-247.
- 5. Spectral behavior of quasi periodic Schroedinger operators, Comm. Math. Physics, 84, (1984), 377-401.
- 6. Entropy estimates for geodesic flows, Ergodic Theory and Dynamical Systems, 2, (1982), 513-524.
- 7. Arithmetic and geometry of some hyperbolic three manifolds, Acta Mathematica, **151**, (1983), 253-295.
- 8. (with S. Klainerman) Explicit solutions of $\Box u = 0$ on Friedman-Robertson-Walker space times, Ann. Inst. Henri Poincare, **35**, No. 4, (1981), 253-257.
- 9. (with D. Goldfeld) On sums of Kloosterman sums, Invent. Math. $\mathbf{71}$, (1983), 243-250.
- 10. "Maass forms and additive number theory," in *Number Theory*, New York, (1982), Springer Lecture Notes 1052, D.V. Chudnovsky, ed., 286-309.
- 11. Domains in hyperbolic space and the Laplacian, in Diff. Equations Math. Studies Series, North Holland, **92**, (1984), R. Lewis and I. Knowles, eds.
- 12. (with R.S.Phillips) Domains in hyperbolic space and limit sets of Kleinian groups, Acta Math., 155, (1985).
- 13. Class numbers of indefinite binary quadratic forms II, Journal of Number Theory, 21, No. 3, (1985), 333-346.
- 14. Fourth power moments of Hecke zeta functions, Comm. Pure and App. Math., XXXVIII, (1985), 167-178.

15. (with R. Osserman) A new curvature integral and entropy of geodesic flows, Invent. Math., 77, (1984), 455-462.

- 16. (with R. Phillips) On cusp forms for confinite subgroups of PSL (2,**R**), Invent. Math., **80**, (1985), 339-364.
- 17. (with R. Phillips) On the spectrum of the Hecke groups, Duke Math. J., **52**, No. 1, (1985), 211-221.
- 18. (with C. Epstein and J. Hafner) On the zeros of L-functions attached to Maass forms, Math. Zeit, 190, (1985), 113-128.
- 19. "On the number of points on certain curves and an uncertainty principle," in *Number Theory*, D.V. Chudovski, ed., (1984), New York.
- 20. (with I. Efrat) The determinant of the Eisenstein matrix and Hilbert class fields, Trans. A.M.S., **290**, 2, (1985), 815-824.
- 21. (with R. Phillips) The Weyl theorem and the deformations of discrete groups, Comm. Pure and Appl. Math., **XXXVIII**, (1985), 853-866.
- 22. (with Deshouillers, Iwaniec and Phillips) On Maass cusp forms, Proc. of the Nat'l. Aca. of Sci., 82, (1985), 3533-3534.
- 23. On cusp forms, in Contemp. Math., 53, (1986), Hejhal-Terras-Sarnak, eds., 393-407.
- 24. (with A. Lubotsky and R. Phillips) Ramanujan conjecture and explicit construction of expanders and super-concentrators, in Proc. of Symposium on Theory of Computation (STOC), (1986).
- 25. (with A. Lubotsky and R. Phillips) *Hecke operators and distributions points on S*², *I and II*, Comm. Pure and Appl. Math., **34**, (1986), 149-186, and No. XL, (1987), 401-420.
- 26. (with R. Phillips) Geodesics in homology classes, Duke Math. J., **55**, No. 2, (1987), 287-297.
- 27. Determinants of Laplacians, Comm. Math. Physics, 110, (1987), 113-120.
- 28. Determinants of Laplacians on surfaces, Volume in honor of Lax's 60th birthday, (1986), MSRI Publications, (1987), A. Chorin and A. Majda, eds.
- 29. (with A. Lubotsky and R. Phillips) *Ramanujan graphs*, Combinatorica, **8**, 3, (1988), 261-277.

30. (with B. Osgood and R. Phillips) Extremals of determinants of Laplacians, J. of Functional Analysis 80, No. 1, (1988), 148-211.

- 31. (with B. Osgood and R. Phillips) Compact sets of isopectral surfaces, J. of Functional Analysis, 80, No. 1, (1988), 212-234.
- 32. (with B. Osgood and R. Phillips) Compact isospectral sets of planar domains, Proc. Nat. Acad. Sci., U.S.A., 85, (1988), 5359-5361.
- 33. (with J. Li and I. Piatetsky-Shapiro) Poincare series for SO(n, 1), Proc. Ind. Acad. Sci., 97, No. 1-3, (1987), 231-237.
- 34. (with B. Osgood and R. Phillips) Moduli space, heights and isospectral sets of plane domains, Annals of Math., 129, (1989), 293-362.
- 35. "Determinants of Laplacians, heights and finiteness," in *Analysis Etc.*, Acad. Press, P. Rabinowitz, ed., (1990).
- 36. "On cusp forms II," in *I. Piatesky-Shapiro's Festscrift*, S. Gelbart, ed., Weizmann Press, (1990).
- 37. (with J. Cogdell, J. Li and I. Piatesky-Shapiro) Poincare series for SO(n, 1), Acta Math., **167**, (1991), 229-285.
- 38. (with S. Adams), Betti numbers of congruence groups, Israel Journal of Math., 88, (1994), 31-72.
- 39. (with R. Phillips) Spectrum of Fermat curves, GAFA, 1, (1991), 80-146.
- 40. Diophantine problems and linear groups, in Proceedings of I.C.M., Kyoto, (1990), 459-471.
- 41. (with M. Burger and J.-S. Li) Ramanujan duals and automorphic spectrum, B.A.M.S., Vol. 26, No. 2, (1992).
- 42. (with M. Burger) Ramanujan duals II, Invention. Math., 106, (1991), 1-11.
- 43. (with R. Phillips) Perturbation theory of automorphic functions, J. of Amer. Math. Soc., (1992).
- 44. Automorphic spectrum and Fermi's golden rule, Jnl. D'Analyse Mathématique, Vol. 54, (1992), 179-189.
- 45. (with J. Hafner and K. McCurley) *Relatively prime values of polynomials*, to appear in Trans. of Amer. Math. Soc. (1992).

46. "Special values of Selberg's zeta function," Number theory trace formulas and discrete groups, Bombieri-Goldfeld, eds., 457-465, (1989).

- 47. (with A. Eskin and Z. Rudnick) A proof of Siegel's Weight Formula, Int. Math. Res. Notices (Duke Journal), 5, (1991), 65-69.
- 48. (with X. Xue) Bounds for Multiplicities of Automorphic Representations, Duke Math. J., **64**, No. 1, (1991), 207-227.
- 49. (with W. Duke and Z. Rudnick) Density of Integral Points on Affine Homogeneous Varieties, Duke Math. Jnl., 71, (1993), 143-179.
- 50. (with P. Buser) On the Period Matrix of a Riemann Surface of Large Genus, Invent. Math., 117, (1994), 27-56.
- 51. (with S. Katok) Heegner Points, Cycles and Maass Forms, Israel Journal of Math., 84, (1993), 193-227.
- 52. (with H. Iwaniec) L^{∞} Norms of Eigenfunctions of Arithmetic Surfaces, Annals of Math., **141** (1995), 301-320
- 53. (with Z. Rudnick) The behavior of eigenstates of arithmetic hyperbolic manifolds, Com. Math. Physics, **161**, (1994), 195-213.
- 54. (with W. Luo) The Number Variance for arithmetic hyperbolic surfaces, (1993), Com. Math. Phys., **161**, (1994), 419-432.
- 55. (with R. Phillips), Cusp forms for character varieties, GAFA, Vol. 4, No. 1, (1994), 93-118.
- 56. Integrals of Products of Eigenfunctions, IMRN. No. 6, (1994), 251-260.
- 57. (with Z. Rudnick) "Zeros of Principal L-Functions and Random Matrix Theory," preprint, (1994), Duke Math. Journal, Vol 81, No. 2, (1996), 269-322.
- 58. (with Z. Rudnick) "The *n*-level correlations of the zeros of the zeta function," C.R. Acad. Sc., Paris, **319**, (1994), 1027-1032.
- 59. (with W. Luo and Z. Rudnick), "On Selberg's eigenvalue conjecture," GAFA, Vol. 5, No. 2, (1995), 387-401.
- 60. (with M. Rubinstein) "Chebyshev's Bias," Journal of Exp. Math., Vol. 3, No. 3, (1994), 173-197.

61. (with W. Luo) "Quantum Ergodicity of Eigenfunctions on $PSL_2(\mathbf{Z})\backslash \mathbf{H}^2$ ", I.H.E.S., Vol. 81, (1995), 207-237.

- 62. (with L. Wang) "Some hypersurfaces in \mathbf{P}^4 and the Hasse-Principle," C.R. ACAD. SCI., Paris, t. **321**, Series I, (1995), 319-322.
- 63. "Spectra and Eigenfunctions of Laplacians," in Contor de Researches Mathématiques, CRM Proceedings, Vol. 12, 1997, 261-276.
- 64. "Spectral Theory and L-functions," to appear in Proc. of Taneguchi Foundation Conference in Analytic Number Theory, Kyoto, (1996).
- 65. (with Luo and Rudnick) "On the Generalized Ramanujan Conjectures for GL(n)," preprint, (1996), Proc. Symp. Pure Math (AMS), Vol. 66, Part 2, (1999), 301-311.
- 66. "Extremal Geometries," in Extremal Riemann Surfaces, Cont. Math., Vol. 201, (1996), 1-7.
- 67. "Values of Quadratic Forms at Integers," in "Harmonic Analysis and Number Theory," Editors, S. Drury, R. Murty, CMS Conf. Proc., Vol. 21, (1997), 181-205.
- 68. "Quantum Chaos, Symmetry and Zeta Functions," in Current Developments in Math, Boston, (1997), (Yau, Editor).
- 69. (with N. Katz) "Zeros of Zeta Functions, Their Spacings and Their Spectral Nature," preprint, (1997).
- 70. (with H. Iwaniec), "The Non-vanishing of Central Values of Dirichlet L-Functions," in Number Theory in Progress, Walter DeGruyter, Ed. K. Gyory, (1999), 941-952.
- 71. (with H. Iwaniec), "The Non-vanishing of Central Values of Automorphic *L*-Functions and Landau-Siegel Zeros," *Israel Journal of Math.*, **120**, (2000), 155-177.
- 72. "A Sample of Lax's Contributions to Classical Analysis, Linear Partial Differential Equations and Scattering Theory," Proc. Symp. Pure Math (AMS), Vol. 65, (1999), 169-179.
- 73. "L-Functions" Documenta Math, Proc. ICM, Berlin, (1998), 453-467.
- 74. (with N. Katz) "Zeros of Zeta Functions and Symmetry," B.A.M.S., (1999), Vol.36, No. 1, 1-26.
- 75. (with A.P. Gamburd and D. Jakobson), "Spectra of elements in the group ring of SU(2)," J. Eur. Math. Soc., 1, (1999) 51-85.

76. (with M. Wakayama), Equidistribution of Holonomy about Closed Geodesics, Duke Math. Journal, Vol. 100, (1999), 1-57.

- 77. (with W. Luo and H. Iwaniec), "Low Lying Zeroes of Families of *L*-Functions, *Publ. I.H.E.S.* **91**, (2000), 55-131.
- 78. Some Problems in Number Theory, Analysis and Mathematical Physics, in Mathematics: Frontiers and Perspectives 2000 (IMU).
- 79. "Kloosterman, Quadratic Forms and Modular Forms," NAW, (2000), 140-145.
- 80. (with H. Iwaniec), "Perspectives on the Analytic Theory of L-Functions," GAFA, (2000), Special Volume, 705-741..
- 81. (with Y. Petridis), "Quantum Unique Ergodicity for $SL_2(O)\backslash \mathbb{H}^3$ and Estimates for L-Functions," Jnl of Evolution Equation, 1, (2001), 277-290.
- 82. "Estimates for Rankin Selberg L-Functions," Jnl. Funct. Anal., 184, (2001), 419-445.
- 83. "Ralph Phillips, (1913-1998), Notices of AMS, May, 2000, Vol. 47, No. 5.
- 84. (with Z. Rudnick and A. Zaharescu), "The Distribution of Spacings Between Fractional Parts of $n^2\alpha$ ", *Invent. Math.*, **145**, (2001), No. 1, 37-57.
- 85. (with A. Zaharescu), "Some Remarks on Landau-Siegel Zeroes," Duke Math. Jnl, Vol. 111, (2002), No 3, 495-507.
- 86. (with Z. Rudnick), "The pair correlation function of fractional parts of polynomials," Comm. Math. Phys., 194, 61-70, (1998).
- 87. "Maass Forms with Integer Coefficients." In "A panorama of number theory," Cambridge Press, ed. G. Wustholz, (2002), 121-127.
- 88. (with W. Luo), "Mass Equidistribution for Hecke Eigenforms," *CPAM* **56**, (2003), No. 7, 874-891.
- 89. (with H. Kim), "Refined estimates towards the Ramanujan and Selberg Conjectures," J. Amer. Math. Soc., 16, No. 1, (2003), 139-183.
- 90. "Non-vanishing of L-functions on $\Re(s) = 1$," contributions to automorphic forms, geometry and number theory, John's Hopkins University Press, (2004), 717-732.
- 91. (with S. Bocherer and R. Schulze-Pillot), "Arithmetic and equidistribution of measures on the sphere," C.M.P., Vol. 242, 1-2, (2003), 67-81.

- 92. "Spectra of Hyperbolic Surfaces," BAMS, Vol. 40, No. 4, (2003), 441-478.
- 93. (with W. Luo), "Quantum ergodicity of eigenfunctions on $SL_2(\mathbb{Z})\backslash\mathbb{H}$ II," Annal. Inst. Ecolé Norm. Sup., 37, (2004), No. 5, 769-799.
- 94. (with A. Strombergsson), "Minima of Epstein's Zeta Function and heights of flat tori," *Inventiones Math*, **165**, (2006), No. 1, 115-151.
- 95. "The generalized Ramanujan Conjectures," In "Harmonic analysis, the trace formula, Shimura varieties," Clay Math Proc., vol. 4, (2005), 659-685.
- 96. "What is an expander?," Notices of the AMS, Vol. 51, No. 7, (2004), 762-763.
- 97. (with X. Li), "Number Variance for $SL(2,\mathbb{Z})\backslash\mathbb{H}$," (revision being prepared).
- 98. (with S. Gelbart and E. Lapid), "A new method for lower bounds for *L*-functions," C.R. Math. Acad. Sci., Paris **339**, (2004), 91-94.
- 99. "Problems of the Millenium: The Riemann Hypothesis," 2004, The Proceedings of the Clay Mathematics Institute 2004, Budapest, Hungary, http://www.claymath.org, (2005).
- 100. (with J. Bourgain and A. Gamburd), "Sieving and expanders, C.R. Math. Acad. Sci., Paris, 343, (2006), No. 3, 155-159.
- 101. (with J. Bourgain and A. Gamburd), "Affine linear sieve, expanders and sum product," *Invent. Math.*, (2010), **179**, 559-644.
- 102. (with A. Nevo), "Prime and Almost Prime Integral Points on Principal Homogeneous Spaces", *Acta Math.*, (to appear).
- 103. "Reciprocal Geodesics", Clay Math Proceedings, vol. 7, AMS, (2007), 217-237.
- 104. (with J. Tsimerman), "On Linnik and Selberg's Conjecture about Sums of Kloosterman Sums," in the "Manin Festschrift", Progress in Math., Birkhauser, (2008).
- 105. (with J. Liu), "Integral points on quadrics in three variables whose coordinates have few prime factors," *Israel Jnl. of Math.*, (to appear).
- 106. (with H. Holden), "A survey of Peter D. Lax's Contributions to Mathematics", in *The Abel Prize*, Volume 2008.
- 107. "Advice to young mathematicians", in *The Princeton Mathematics Companion*, editor T. Gowers, (2009).

- 108. "Remembering Paul Cohen," MAA Focus, December Issue (2007), 20-22.
- 109. (with W. Luo and Z. Rudnick), "The variance of Linnik-Duke measures on the modular surface", *Inl of Modern Dynamics*, Vol. 3 (2009), 271-309.
- 110. (with D. Kelmer), "Strong spectral gaps for compact quotients of $PSL(2,\mathbb{R})$ " JEMS, **11** (2009), 283-313.
- 111. (with D. Hejhal), "Some commentary on Selberg's Mathematics" *BAMS*, **45** (2008), 485-487.
- 112. "Equidistribution and primes" in Asterisque, 163 (2008), Societe Math de France.
- 113. "Integral Apollonian Packing", to appear in the American Mathematical Monthly.
- 114. "Linking numbers of modular knots," Commun. Math. Anal., 8 (2010), 136-144.
- 115. (with J. Bourgain and A. Kontorovich), "Sector estimates for hyperbolic isometries," to appear in *GAFA*.
- 116. (with J. Bourgain and A. Gamburd), "Generalizations of Selberg's $3/16^{\mathsf{th}}$ Theorem and Affine Sieve," preprint 2010.
- 117. "Recent progress on QUE," to appear in BAMS.

LETTERS, LECTURES AND NOTES[†] (can all be found on:)

- † http://www.math.princeton.edu/sarnak/
- Notes with Paul Cohen on the trace formula (analytic continuation of Eisenstein series) (1980).
- Letter to E. Bombieri on symplectic pairings and L-functions (2001).
- Comment on Langlands Lecture "Endoscopy and Beyond" (2001).
- Letter to Z. Rudnick on number variance for the modular group (2002).
- Notes on A. Booker's paper "Poles of Artin L-functions and the strong Artin Conjecture" (2002).
- Letter to C. Morawetz on L^{∞} norms of eigenfunctions (2004).
- Letter to J. Lagarias on integral Apollonian packings, (2007).
- Letter to A. Rezinkov on restrictions of eigenfunctions (2008).

- Letter J. Mozzochi on linking numbers of closed geodesics (2008).
- Letter to B. Mazur on Chebyshev's bias for $\tau(\rho)$ (2008).
- Recent progress on QUE (2009).

BOOKS

- 1. Some applications of modular forms, this is an expanded version of the Wittemore lectures given at Yale in 1988, Cambridge University Tracts, Vol. 99, (1990).
- 2. "Arithmetic Quantum Chaos," in a monograph by A.M.S., (1995), containing the Schur Lectures by R. Howe and P. Sarnak.
- 3. (with N. Katz) "Random Matrices, Frobenius Eigenvalues and Monodromy," A.M.S. Colloquium Publications, Vol. 45, (1999).
- 4. (with G. Davidoff and A. Valette), "Elementary Number Theory, Group Theory and Ramanujan Graphs," *London Math. Soc. Students Texts*, **55**, Cambridge (2003).

BOOKS EDITED

- 1. (with D. Hejhal and A. Terras), "Selberg Trace Formula and Related Topics," Cont. Math., 53, (1986).
- 2. (with J.R. Quine), "Extremal Riemann Surfaces," Cont. Math., Vol. 201, (1996).
- 3. (with J. Cogdell and S. Gindikin), Selected Works of Ilya Piatetski-Shapiro, (2002).
- 4. (with P. Lax and A. Majda), Selected Papers of P.D. Lax, Springer, (2005).
- 5. (with F. Shahidi), "Automorphic Forms and their Applications," PCMI Lecture Publ. Series, Vol. 12, (2007).

gpp: June 24, 2010