

# Curriculum Vitae

## Stephen Gelbart

**Born:** June 12, 1946  
**Married:** Plus 3 children, 5 grandchildren  
**Degrees:** B.A. Cornell University 1967  
M.A. Princeton University 1968  
Ph.D. Princeton University 1970

### Academic Positions (Full-Time):

1968 - 1970 (Pre-doctoral) Instructor, Rutgers University  
1970 - 1971 Instructor, Princeton University  
1971 - 1975 Assistant Professor, Cornell University  
1975 - 1980 Associate Professor, Cornell University  
1980 - 1985 Full Professor, Cornell University  
1984- Full Professor, Weizmann Institute of Science, Israel  
1998- Nicki and J. Ira Harris Professorship, Weizmann Institute of Science

### Academic Positions (Visiting):

1972 -1973 Member, Institute for Advanced Study, Princeton  
Spring 1978 Visiting Professor, The Hebrew University and Tel Aviv University  
1981 -1982 Visiting Professor, The Hebrew University  
1983 -1984 Visiting Professor, Tel-Aviv University  
1987 -1988 Visiting Professor, Inst. Adv. Studies, Hebrew University  
Spring 1995 Visiting Professor, MSRI, Berkeley, California  
Fall 1997 Visiting Scholar, University of California Berkeley  
Spring 2002 Visiting Professor, Boston University  
Fall 2004 Scholar, Yale University  
Fall 2008 Visiting Professor, University of Pennsylvania  
2012-2013 Visiting Professor, Univ. of Pennsylvania

### Grants and Fellowships:

1977 - 1979 Alfred P. Sloan Fellow  
1970 - 1985 N.S.F. Summer Grants  
1985 - 1994 U.S.-Israel Binational (B.S.F.) Grants  
1993 - 1996 Israel Academy of Sciences  
1995 - 1997 Minerva, Germany  
1999 - 2001 Minerva, Germany

**Editor, Israel Journal of Mathematics**

**Editor, Israel Mathematical Conference Proceedings**

**President, Israel Mathematical Union. 1994 – 1996**

**2013 Fellow of the American Mathematical Society.**

## LIST OF PUBLICATIONS

1. (Ed., with J. Marsden and T. Lance), *Choquet's Lectures on Analysis*, 3 vol., W.A. Benjamin, Inc., New York, 1969.
2. Fourier Analysis on  $GL(n, R)$ , *Proceedings of the National Academy of Sciences*, U.S.A., 65 (1970), 14-18.
3. Fourier Analysis on Matrix Space, *Memoirs of the American Mathematical Society*, Number 108, 1971.
4. Harmonics on Stiefel Manifolds and Generalized Hankel Transforms, *Bull. A.M.S.* 78 (1972), 451-455.
5. Holomorphic discrete series for the real symplectic group, *Inventiones Mathematicae*, 19 (1973), 49-58.
6. A theory of Stiefel harmonics, *Transactions of the American Mathematical Society*, 192 (1974), 29-50.
7. Automorphic Forms and Representations of Adele Groups, Mimeo-graphed Notes, Cornell University, Spring 1972; redistributed, in revised form, in the *University of Chicago Lecture Note Series in Representation Theory*, Fall 1974.
8. Bessel Functions, Representation Theory, and Automorphic Functions, in *Proceedings of Symposia in Pure Mathematics*, Vol. 26, American Mathematical Society, Providence, R.I., 1973, 343-345.
9. An Example in the Theory of Automorphic Forms, in *Proceedings of Symposia in Pure Mathematics*, Vol. 26, American Mathematical Society, Providence, R.I., 1973, 437-439.
10. Introduction to the Theory of Group Representations, in *Seminaire Choquet: Initiation a l'analyse*, 11e-12e annees 1971-1973, no4; Paris, France.
11. The Spectral Decomposition of  $L^2(T \backslash G)$ , in *Seminaire Choquet: Initiation a l'analyse*, 11e-12e annees 1971-1973, no4; Paris, France.
12. *Automorphic Forms on Adele Groups*, *Annals of Mathematics Studies*, Number 83, Princeton University Press, 1975.
13. (with P.J. Sally), Intertwining Operators and Automorphic Forms for the Metaplectic Groups, *Proceedings of the National Academy of Sciences*, U.S.A., Vol. 72, No.4 (1975), 1406-1410.
14. Weil's Representation and the Spectrum of the Metaplectic Group, *Lecture Notes in Mathematics*, No. 530, Springer-Verlag, Berlin, 1976.
15. Elliptic Curves and Automorphic Representations, *Advances in Mathematics*, Vol. 21, No.3, (1976), 235-292.

16. (with H. Jacquet), A Relation between Automorphic Forms on  $GL(2)$  and  $GL(3)$ , *Proceedings of the National Academy of Sciences, U.S.A.*, Vol. 73, No. 10 (1976), 3348-3350.
17. Automorphic Forms and Artin's Conjecture, in *Modular Functions of One Variable VI*, Lecture Notes in Mathematics, Springer-Verlag, Vol. 627 (1977), 241-276.
18. (with H. Jacquet), A Relation Between Automorphic Representations of  $GL(2)$  and  $L(3)$ , *Ann. Ec. Norm. Sup.*, 4<sup>e</sup> serie, t.11 (1978),471-542.
19. (with H. Jacquet), Forms of  $GL(2)$  from the analytic point of view, in *Proceedings of Symposia in Pure Mathematics (Automorphic Forms, Representations, and L-functions)*, A.M.S., Providence, R.I. 1979, Part I, 213-251.
20. (with I.I. Piatetski-Shapiro), Automorphic L-functions of half integral weight, *Proc. Nat. Acad. Sciences, U.S.A.*, Vol. 75, No.4 (1978), 1620-1625
21. Examples of dual reductive pairs, in *Proceedings of Symposia in Pure Mathematics*, Vol. 33, A.M.S., Providence, R.I., 1979, Part 1, 287-296.
22. (with R. Howe and I.I. Piatetski-Shapiro), Existence and uniqueness of Whittaker models for the metaplectic group, *Israel J. Math.*, Vol. 34, Nos. 1-2 (1979), 97-126.
23. (with I.I. Piatetski-Shapiro), On Shimura's Correspondence for Modular Forms of Half-Integral Weight, *Proceedings of the Colloquium on Automorphic Forms, Representation Theory, and Arithmetic*, Bombay 1979, Tata Institute of Fundamental Research Studies in Mathematics, No.10, Springer-Verlag, Berlin (1981), 1-39.
24. (with I.I. Piatetski-Shapiro), Distinguished representations and modular forms on half-integral weight, *Inventiones Mathematicae*, 59 (1980), 145- 188.
25. (with A. W. Knapp), "Irreducible Constituents of Principal Series of  $SL_n(k)$ ", *Duke Math. J.*, Vol. 48, No. 2 (1981), 313-326.
26. (with A.W. Knapp), "L-indistinguishability and R-groups for the special linear group", *Advances in Mathematics*, Vol. 43, No. 2 (1982), 101-121.
27. "L-packets for  $SL_n$ ", in *Proceedings of the 1980 Canadian Mathematical Society Summer Seminar on Harmonic Analysis and its Applications to Number Theory*, C.M.S. A.M.S., Vol. 1, Providence, R.I., 1981, 69-77.
28. (with I.I. Piatetski-Shapiro), "Some Remarks on Metaplectic Cusp Forms and the Correspondence of Shimura and Walspurger", *Israel Journal of Mathematics*, Vol. 44, No.2 (1983), 97-126.
29. (with I.I. Piatetski-Shapiro), "Automorphic Forms and L-Functions for the Unitary Group", in *Lie Group Representations II, Proceedings, University of Maryland, 1982-83*, Lecture Notes in Mathematics, Vol. 1041, Springer-Verlag, 1984, 141-184.

30. "An Elementary Introduction to the Langlands Program", *Bulletin A.M.S.*, Vol. 10, No. 2 (1984), 177-220.
31. (with I.I. Piatetski-Shapiro), "L-functions for  $G \times GL(n)$ ", pages 53-136 of *Explicit Constructions of Automorphic L-functions*, Lecture Notes in Mathematics, Vol. 1254, Springer-Verlag, New York, 1987.
32. (with I.I. Piatetski-Shapiro and S. Rallis), *Appendix to "L-functions for  $G \times GL(n)$ "*, Lecture Notes in Mathematics, Vol. 1254, Springer-Verlag, New York, 1987.
33. (with D. Soudry), "On Whittaker models and the vanishing of Fourier coefficients of cusp forms", in *Proceedings of the Indian Academy of Sciences (Math. Sci.)*, Vol. 97 (Ramanujan Birth Centenary Volume), Nos.1-3, Dec. 1987, 67-74.
34. (with F. Shahidi), *Analytic Properties of Automorphic L-functions*, Perspectives in Mathematics, Vol. 6, Academic Press, Inc., Boston, 1988.
35. "Recent Results on Automorphic L-functions", in: *Number Theory, Trace Formula and Discrete Groups*, Proceedings of the Symposium in honor of A. Selberg, Oslo 1987, Academic Press, 1989, 265-280.
36. (with J. Arthur), "Lectures on Automorphic L-functions", in: *L-Functions and arithmetic*, Proceedings of the 1989 Durham Symposium, Cambridge University Press, 1991, 1-59.
37. (with J. Rogawski), "Exceptional Representations and Shimura's Integral for the Local Unitary Group  $U(3)$ ", *Israel Mathematical Conference Proceedings*, Vol. 2, 1990, 19-75.
38. (with J. Rogawski), "L-functions and Fourier-Jacobi coefficients for the unitary group  $U(3)$ ", *Inventiones Mathematicae*, 105 (1991), 445-472.
39. "Automorphic Forms and Artin's Conjecture, II", *Mitteilungen der Mathematischen Gesellschaft in Hamburg*, 1992.
40. "Arithmetic, Zeta-functions and Automorphic Forms", *La Gazette des Sciences Mathematiques du Quebec*, Vol. XV, N.1, Nov. 1992.
41. "On Theta-Series Liftings for Unitary Groups", *Theta-Functions: From the Classical to the Modern*, Lectures presented at the CRM special year in Automorphic Forms, Montreal, 1991-1992, *Amer. Math. Soc.* Providence 1993.
42. (with J. Rogawski and D. Soudry), "On Periods of Cusp Forms and Algebraic Cycles for  $U(3)$ ", *Israel J. of Mathematics*, 83 (1993), 213-252.
43. (with J. Rogawski and D. Soudry), "On the Genericity of Endoscopic L-packets on  $U(3)$ ", preprint, 1992.

44. (with J. Rogawski and D. Soudry), "Periods of Cusp Forms and L-packets", *Comptes Rendus Acad. Sci. Paris*, t. 317, Série I, p.717-722, 1993.
45. "Lectures on the Arthur-Selberg trace formula", MSRI Preprint No.. 041- 95, 1995, later University Lecture Series, Vol. 9, American Mathematical Society, 1996.
46. The Schur Lectures 1992, edited by I.I. Piatetski-Shapiro and S. Gelbart, *Israel Math. Conf. Proceedings*, No.8, distributed by the AMS, Providence, 1995, 236.
47. "On the modularity of  $\bar{\rho}_{E, 3}$  and the Langlands Reciprocity Conjecture", in *Fermat's Last Theorem*, Boston Univ. Conference 1995, Springer-Verlag, 1997.
48. (with J. Rogawski and D. Soudry), "Endoscopy and theta-liftings for the unitary group in three variables", *Annals of Math.*, Vol. 145, 419-476, 1997.
49. (with S. Friedberg, H. Jacquet and J. Rogawski), "Représentations génériques du groupe unitaire à trois variables", *C.R. Acad. Sci. Paris*, t. 329, Série 1, 255-260, 1999.
50. Selected Works of I.I. Piatetski-Shapiro, edited by J. Cogdell, S. Gindikin P. Sarnak, P. Deligne, S. Gelbart, R. Howe and S. Rallis, AMS, Providence RI, 821.
51. (with F Shahidi), "Boundedness of automorphic L-functions in vertical strips", *J. of the AMS*, 14 (2001), No.1, 79-107.
52. (with H. Jacquet and J. Rogawski), "Generic representations for the unitary group in three variables" *Israel J. of Math.*, Vol. 126, 2001, 173-238.
53. "Selberg Conjecture", in *Encyclopaedia of Mathematics*, Supplement III, Kluwer Academic Publishers, 351-353, 2002.
54. "Letter of Appreciation; Joe Shalika and the Fine Hall days, 1968-1971", *Shalika Fest, Amer. J. of Math.*, 2004.
55. (with J. Bernstein), Editors, "An Introduction of the Langlands Program", Birkhauser, Boston, 281 pages, 2003.
56. (with S. Miller), "Riemann's Zeta Function and Beyond", *Bulletin of the Amer. Math. Soc.*, 41(2004), No. 1, 59-112.
57. (with E. Lapid and P. Sarnak), A new method for lower bounds of functions, *Comptes Rendues Acad. Sci. Paris*, Ser. I. 339 (2004) 91-94.
58. Review of Advanced Analytic Number Theory: L-Functions, by Carlos Moreno, pp. 169-175, *Bulletin of the AMS*, Vol. 45, Number 1, 2008.
59. (with E. Lapid) , Lower Bounds for L- functions at the Edge of the Critical Strip, *Amer. J of Math*, 128 (June, 2006), No. 3, 619-638.

60. Class Field Theory, the Langlands Program, and Its Application to Number Theory, in *Automorphic Forms and the Langlands Program*, Editors L. Ji, K. Liu, S-T. Yau, Z-J. Zheng, Advanced Lectures in Mathematics, Higher Education Press, pp. 21-67, 2009.
61. Shahidi's work "On certain L-functions" a short history of Langlands-Shahidi Theory, On certain L-functions; 1-18, Clay Mathematical Proceedings Volume 13, AMS and Clay Mathematics Institute, 2011
62. Recollections of Ilya, in Ilya Piatetski-Shapiro, in Memoriam, Jim Cogdell, Steve Gelbart, and Peter Sarnak, Coordinating Editors, Notices of the AMS, November 2010, Volume 57, Number 10, pp. 1267-1269.
63. (with S. Miller), "A p-Adic Integral for the Reciprocal of L-functions" , in I.I.Piatetski-Shapiro: A Legacy, Memorial Volume, pp. 53-68, Contemporary Mathematics, AMS, Volume 614, 2014.
64. (with Ralph Greenberg, Stephen D. Miller, and Freydoon Shahidi), "Estimates on Eisenstein distributions for reciprocals of p-adic L-functions: the case of irregular primes", in Representation Theory, Number Theory, and Invariant Theory, pp. 193-208, Progress in Mathematics Volume 323, Birkhauser 2017.

## **Selected Invited Talks (Partial listings)**

Colloquium, Yale University, 1972.  
Analysis Seminar, Princeton, 1975.  
Colloquium, Brandeis-Harvard-MIT, 1975.  
U.S.-Japan Conference on Modular Forms, Ann Arbor, 1975.  
Bonn Conference on Modular Forms, 1976.  
Colloquium, Columbia University, 1977.  
Principal Lecture Series at AMS Summer Institute on Automorphic Forms, 1977.  
Algebra Seminar, Princeton, 1978.  
International Conference on Automorphic Forms, Representation Theory and Arithmetic, Tata Institute, Bombay, 1979.  
MIT-Harvard-Brandeis Colloquium, 1979.  
Lecture Series, University of Maryland Special Year on Lie Group Representations, 1982,  
Conference on Automorphic Forms and L-Functions, Purdue, 1985.  
Conference in Number Theory in honor of A. Selberg, Oslo, June, 1987.  
Hecke Symposium, Hamburg, Sept. 1987.  
Durham Number Theory Conference, July 1989.  
300th Anniversary of the Mathematischen Gesellschaft in Hamburg, March 1990.  
Universite de Paris VII, June 1990.  
Lecture Series (on Theta-functions), CRM, Montreal, Fall 1991.  
Universite de Paris VII,  
1993 Princeton University, 1993  
Workshop on New Vistas in Automorphic Forms, MSRI, 1995  
Conference on Fermat's Last Theorem, Boston Univ., 1995  
Colloquium, Berkeley, 1997  
Colloquium, University of Beijing and Fudan University of Shanghai, China Colloquium,  
University of Hong Kong, 1999  
Colloquium, Cornell University, 1999  
Colloquium, University of Toronto, 2000  
Lecture Series, University of Hong Kong, 2000  
Lecture, University of Paris, 2000  
Lecture, Hangchou Symposium, 2001

Lecture Series, Singapore December 2002 - January 2003

Lecture, Fields Institute, March 2003

Lecture, University of Paris at Orsay, April 2003

Lecture, Max-Planck Institute - Bonn, December 2003

Lecture, Lie Group Seminar, Yale, September 2004

Lecture Number Theory Seminar, UCLA, October 2004

Special Lecture, Princeton Math. Dept., December 2004

Lecture, Purdue University, 2005

Lecture, Howe 60<sup>th</sup> Birthday Conference, Singapore, January 2006

Colloquium Lecture, University of British Columbia, September 2006

Lecture, Shahidi 60<sup>th</sup> Birthday Conference, Purdue, 2007

Number Theory Seminar, University of Pennsylvania, 2009

Conference on Riemann Zeta-functions, Seoul, 2009

Lie Lectures, Cornell University, 2010

Lecture at the Columbia-Graduate Center of NY Number Theory Seminar 2013

CalTech Number Theory Seminar 2013

Lecture, Vietnamese Institute For Advanced Study in Mathematics, September 2014