Curriculum Vita - Stephen Lichtenbaum

1. Stephen Lichtenbaum, Professor, Department of Mathematics

2. Home address: 201 Freeman Parkway, Providence, RI 02906

3. Education 1964 Ph. D. in mathematics, Harvard University. Dissertation topic: Curves over discrete valuation rings. 1961 A. M in mathematics, Harvard University 1960 A. B. Harvard University (summa cum laude in mathematics).

4. Professional Appointments Spring 2010 Visitor, Tata Institute for Fundamental Research, Mumbai Spring 2007 Member, Institute for Advanced Study Spring 2003 Professor Associe, University of Paris (Chevaleret) Fall 2002 Member, Newton Institute Spring 1998 Member, Newton Institute, Cambridge University Spring 1998 Quatercentenary Visiting Fellow, Emmanuel College, Cambridge University Fall 1997 Member, Institut des Hautes Etudes Scientifiques Fall 1997 Visiting Professor, University of Paris XIII 1994-1997 Chairman of Department of Mathematics, Brown University 1990- Full Professor, Brown University 1989-1990 Distinguished Visiting Professor, Brown University 1987-1988 Member, Institut des Hautes Etudes Scientifiques Fall 1987 Visiting Professor, University of Paris VII Jan. - Feb. 1987 Member, Mathematical Sciences Research Institute Jan. - Feb. 1984 Member, Institute for Advanced Study 1982-1983 Member, Institute des Hautes Etudes Scientifiques Fall 1982 Visiting Professor, University of Paris XI (Orsay) 1979-1982 Chairman, Department of Mathematics, Cornell University Fall 1977 Member, Institut des Hautes Etudes Scientifiques Fall 1977 Visiting Professor, University of Paris VI 1974 Member, Institut des Hautes Etudes Scientifiques Fall 1973 Member, Institute for Advanced Study 1973-1990 Full Professor, Cornell University 1969-1973 Associate Professor, Cornell University 1967-1969 Assistant Professor, Cornell University 1964-1967 Lecturer, Princeton University

5. Completed Research and Scholarship

b) chapters in books

1. Values of Zeta-Functions, Etale Cohomology, and Algebraic K-Theory. in Springer Lecture Notes in Mathematics (342) 1973

2. Values of L-functions of Jacobi-Sum Hecke Characters of Abelian Fields, in Number

Theory Related to Fermat's Last Theorem. Birkhauser, 1982.

3. Zeta-functions of Varieties over Finite Fields at s = 1, Arithmetic and Geometry: Papers Dedicated to I. R. Shafarevitch on the Occasion of his Sixtieth Birthday Volume I, Birkhauser 1983

4. Values of Zeta-Functions at Non-Negative Integers. Springer Lecture Notes in Mathematics (1068) 1984

5 .New Results on Weight-Two Motivic Cohomology, in The Grothendieck Festschrift: A Collection of Articles Written in Honor of the 60th Birthday of Alexander Grothendieck, Volume III. 1990 Birkhauser Boston

6. Behavior of the Zeta-function of Open Surfaces at s= 1, Advanced Studies in Pure Mathematics 17, 1989 Algebraic Number Theory- in honor of K. Iwasawa

7. Suslin Homology and Deligne 1-Motives, Algebraic K-Theory and Algebraic Topology, pp. 189-196 1993 Kluwer - the Netherlands

8.Motivic Complexes, Motives, pp. 303-315 1994 American Mathematical Society, Providence

9. Euler Characteristics and Special Values of Zeta-Functions, Proceedings of Fields Institute conference on algebraic cycles in honor of Spencer Bloch, Fields Institute communications, volume 56, 2009

10. Comparison of Algebraic K-theory and Etale Cohomology, chapter in a book entitled The Bloch-Kato Conjecture for the Riemann Zeta- Function, London Mathematical Society Lecture Notes 2015

!!. Regulators, chapter in the book mentioned just above.

c) refereed journal articles

1. On The Vanishing of Tor in Regular Local Rings, Ill. J. Math. (10) 1966, pp. 220-266.

2. (with M. Schlessinger) The Cotangent Complex of a Morphism, Trans. Amer. Math. Soc., (128) 1967, pp. 41-70

3. Curves over Discrete Valuation Rings, Amer. J. Math. (90) 1968, pp. 360-405

4. The Period-Index Problem for Elliptic Curves, Amer. J. Math. (90) 1968, pp. 1209-

1223

5. Duality Theorems for Curves over p-adic Fields, Inv., Math. (7) 1969, pp. 120-136

6. (with M. Sweedler) A Nullstellensatz for Higher Derivations, J. of Algebra (17) 1971, pp. 19-24

7. On the Values of Zeta and L-functions. Ann. of Math. (96) 1972. pp. 338-360

8.(with J. Coates) On l-adic Zeta Functions. Ann. of Math. (98) 1973. pp. 498-550

9, Values of Zeta and L-functions at Zero. Asterisque (24-25) 1975, pp. 133-138

10. On p-adic L-functions Associated to Elliptic Curves. Inv., Math. (56) 1980, pp. 19-55.

11. (with D. Kubert) Jacobi-Sum Hecke Characters and Gauss-sum Identities, Compositio Mathematica (48) 1983, pp. 55-87

12. (with G. Brattstrom) Jacobi-Sum Hecke Characters of Imaginary Quadratic Fields, Compositio Mathematica (53) 1984, pp. 277-302

13. The Construction of Weight-Two Arithmetic Cohomology. Inv. Math. (88) 1987 pp. 183-215.

14. Groups related to scissors-congruence groups, Contemporary Mathematics (83) 1989 pp. 151-159

15. (with T. Goodwillie) A cohomological bound for the h-topology Amer. Jour. of Math. (123) 2001, pp. 425-443

16. The Weil-etale topology on schemes over finite fields, Compositio Math. 141 (2005) 689-702

17. The Weil-etale topology for number rings, Ann. of Math. (170) 2009, pp. 657-683

g) invited lectures (since 1995)

1. University of Chicago, March, 1995

2. University of Pennsylvania, April 1995

3. Conference on Arithmetic Algebraic Geometry at the Fields Institute, Toronto, October, 1995

4. Conference on Homotopy Theory and Algebraic K-Theory, Oberwolfach, November,

1995

5. Great Lakes Algebraic K-theory conference, Toronto, March, 1996

6. Cambridge University, July 1996

7. M. I. T. , February 1997

8. Yale (the Abraham Robinson Memorial Lectures), April 1997

9. American Mathematical Society Conference on Algebraic K-Theory, Seattle, July 1997
(plenary lecture)

10. Conference on Algebraic K-Theory, Trieste (Sept. 1997) (plenary lecture)

11. Algebraic K-Theory Seminar, Paris (October 1997)

12. Max Planck Institute, Bonn, November 1997

13. University of Rennes, December 1997

14. University of Munster, January 1998

15.. University of Strasbourg, March 1998

16. University College, Dublin, April 1998

17. Conference on Regulators, Oberwolfach, May 1998

18. Number Theory Seminar, Johns Hopkins University, March 1999

19. Conference on Algebraic K-theory, Oberwolfach, September 1999

20. Distinguished Lecture Series at the University of Waterloo, March 2000

21. Conference on Arithmetic Algebraic Geometry, St. Petersburg, Russia, June 2000

22. Conference on Arithmetic Algebraic Geometry, Oberwolfach, July 2000

23. Conference on Arithmetic Algebraic Geometry, Obernai, France, September 2000

24. Kuwait Lecture at Cambridge University, October 2000

25. Algebraic Geometry Seminar, M. I. T. , October 2000

26. Colloquium, Cornell University, November 2000

27. Number Theory Seminar, Columbia University, April 2001

28. Algebra Seminar, Cambridge University, June 2001

29. Number Theory Seminar, University of London, June 2001

30. Algebra Seminar, Kyoto University January 2002

31.University of Tokyo algebra seminar (January 2002)

32. CUNY algebra seminar (March 2002)

33. University of Chicago algebra seminar (April 2002)

34.Invited talk at a conference on p-adic L-functions in Caen (June 2002)

35. Invited talk at a conference on algebraic K-theory in Trieste (July 2002)

36. Invited talk at a conference on L-functions in Muenster (September 2002)

37. Talk at a workshop (of which I was co-organizer) on "K-theory and arithmetic" at the Newton Institute in Cambridge, England. (September 2002)

38. Talk at the algebra seminar of Queen Mary College, University of London (November 2002)

39. Newton Institute Seminar (special lecture for a general mathematical audience) (November 2002)

40. Johns Hopkins algebra seminar (December 2002)

41. University of Bordeaux Algebra Seminar (May 2003)

42. University of Besancon Colloquium (May 2003)

43. University of Paris Colloquium (June 2003)

44. University of Paris (Villetaneuse) Algebra Seminar (June 2003)

45. Oberwolfach (Algebraic Number Theory)(June 2003)

46. Joint AMS Indian Math Society meeting in Banglaore (December 2003)

47. TIFR (Bombay) (December 2003)

48. Cambridge University Algebra Seminar (June 2004)

49. Algebra and topology conference in honor of Eric Friedlander Northwestern University (September 2004)

50. Conference in honor of John Coates Cambridge University (January 2005)

51. University of Southern California Algebra Seminar (February 2005)

52. University of Poznan (Poland) Algebra Seminar (June 2005)

53. Oberwolfach (Germany) Conference on Algebraic K-Theory (July 2006)

54. Institute for Advanced Study, Seminar on motivic cohomology (February 2007)

55. University of Pennsylvania Algebra Seminar, (March 2007)

56. Princeton University Algebra Seminar (March 2007)

57. Fields Institute, Conference on Algebraic Cycles in honor of Spencer Bloch (March 2007)

58. University of Minnesota Algebra Seminar (April 2007)

59. ICTP (Trieste) Conference on Algebraic K-theory (May 2007)

60 . University of Tokyo Conference on Motives (July 2007)

61. AIM (Palo Alto) Conference on the Tate Conjecture (July 2007)

62. Cal Tech Algebra Seminar (November 2007)

63. University of Southern California Algebra Seminar (November 2007)

64. Luminy (Marseille) Conference on cohomology of number fields (December 2007)

65. Ohio State Conference on Algebraic Cycles (March 2008)

66. Muenster Conference on L-functions in Arithmetic and Geometry (co-organizer- June 2008)

67. University of Chicago Algebra Seminar (November 2008)

68. CCR Algebra Seminar (La Jolla) (February 2009)

69. University of Leiden Conference on Rational Points on Algebraic Varieties (plenary speaker)(April 2009)

70. Oberwolfach (Germany) Conference on Algebraic K-theory (July 2009)

71. University of Maine Conference on Number Theory (October 2009)

72. Colloquium Talk at TIFR, Mumbai (February 2010)

73. Talk at Fudan University, Shanghai, China (April 2010)

74. Talk at Australian National University, Canberra (May 2010)

75. Cambridge University Number Theory Seminar (June 2010)

76. University of Bordeaux (France) Number Theory Seminar (May 2011)

77. Conference on K-Theory and Algebraic Geometry Mainz, Germany (July 2011)

78. Conference on Bloch-Kato conjecture Pune, India (July 2012)

79. Algebra Seminar Australian National University Canberra, Australia (August 2012)

80. Conference on Algebraic Geometry and Physics Bristol, England (September 2012)

81. Algebra Seminar - University of Maryland (April 2013)

82. Kepler Lecture at the University of Regensburg (May 2013)

83. Algebra Semianr University of Regensburg (May 2013)

84. Conference on Algebraic K-Theory - Oberwolfach, Germany (June 2013)

85. Algebra Seminar University of Nagoya (January 2014)

86. Algebra Seminar - University of Tokyo (January 2014)

87. Algebra Seminar University of Pennsylvania (April 2014)

88. Number Theory Seminar University of Bordeaux (February 2015)

89. Algebra Seminar National Taiwan University (May 2015)

90. Algebra Seminar Tsung Hua University - Taiwan (May 2015)

6. Research in progress 1. I have succeeded in producing a far-reaching conjecture that unifies, corrects, and extends previous major conjectures on special values of zeta-functions of algebraic varieties over number fields made by Bloch-Kato and Fontaine Perrin-Riou. I am working on proving the compatibility of this conjecture with the well-known conjectured functional equation for the zeta-function.

2. I am writing a book on formulas for special values of zeta-functions.

7. Service

(i) to the University: member, Vice-Chairman and Chairman of TPAC , member of the Committee on Admissions and Financial Aid,

(ii) to the Department: chairman of Graduate Admissions Committee, chairman, committee on promotions, Chairman, Department of Mathematics, member of Senior Search committee, Colloquium chairman, French language examiner

(iii) to the profession: member and chairman of the Editorial Boards Committee of the American Mathematical Society, refereeing for major journals, member of the Centennial Fellowship Committee of the American Mathematical Society, member of Colloquium Book Series Committee, American Mathematical Society

8. Academic honors, etc.

1 National Science Foundation research grants, 1964 -2002, 2005 2008

2 Guggenheim Fellowship, 1973-1974

3. Member of the Committee to visit the Ohio State Mathematics Department - 1988.

4. Editor, Documenta Mathematicae -(1995-)

5. Simons Foundation Grant (2011-2016)

9. Teaching Fall 2003 Math 271 (4 students, 4 faculty auditors) Spring 2004 Math 9 (57 students) Math 156 (6 students) Fall 2004 Math 205 (6 students) Spring 2005 Math 10 (32 students) Math 54 (11 students) Fall 2005 Math 205 (4 students) Spring 2006 Math 10 (36 students) Math 153 (14 students) Fall 2006 Math 54 (16 students) Math 156 (3 students) Fall 2007 Math 153 (17 students) Spring 2008 Math 101 (24 students) Math 252 (9 students) Fall 2008 Math 205 (5 students) Spring 2009 Math 0520 (24 students) Spring 2009 Math 2520 (7 students) Fall 2009 Math 0100 (37 students) Fall 2009 Math 2530 (4 students) Spring 2011 Math 2060 (3 students) Fall 2011 Math 2050 (3 students) Spring 2012 Math 2060 (3 students) Fall 2012 Math 0190 (32 students) Fall 2012 Math 2510 (11 students) Spring 2013 Math 2520 (7 students) Fall 2013 Math 2050 (2 students) Fall 2013 Math 2530 (5 students) Spring 2014 Math 2060 (3 students) Fall 2015 Math 1530 (19 students)

Undergraduate honors thesis: Spring 2004 (Will Shapiro):

Ph. D. theses (since 2002) Karen Acquista- Ph. D. 2005, Yongbin Jiang, Ph. D. 2006. Donghoon Park Ph. D. 2009 Igor Minevich, Ph. D. 2014 Minh-Hoang Tran, Ph. D. 2015

Current Ph.D. Students: Xiaoshuang Chen

10 Date of preparation: January 25, 2016