

Curriculum Vitae for David B. Massey

BIRTH: August 24, 1959; Jacksonville, Florida, USA

EDUCATION:

B.S. with Distinction, mathematics, *summa cum laude*, Duke University, 1981

M.A., mathematics, Duke University, 1982

Ph.D. May 1986, mathematics, Duke University: "Families of Hypersurfaces with One-dimensional Singular Sets", directed by William L. Pardon

HONORS AND AWARDS:

Outstanding teacher of first-year engineering students award, College of Engineering, Northeastern University, 2002

Excellence in Teaching Award, Northeastern University, 2001

Member of the General Electric Master Teacher Project (\$419,944. grant 1999-2003)

N.S.F. grant (jointly with T. Gaffney and Lê D. T., \$220,100.), 1990-1993

N.S.F. Post-Doctoral Research Fellowship, (\$66,000.) 1988-1991

N.S.F. Fellowship, Princeton University, 1984-1985

L. P. Smith Award for Excellence in Teaching, Duke University, 1984

E. Bayard Halsted Fellowship, Duke University, 1981-1984

Julia Dale Memorial Prize in Mathematics, Duke University, 1981

Phi Beta Kappa, Duke University, 1981

EMPLOYMENT:

Professor, Northeastern University, 2004-present

Associate Professor, Northeastern University, 1996-2004

Assistant Professor, Northeastern University, 1991-1996

National Science Foundation Post-Doctoral Research Fellow and Visiting Assistant Professor, Northeastern University, 1988-1991

Visiting Assistant Professor, Notre Dame University, 1986-1988

Instructor, Talent Identification Program, Duke University, Summer 1985, 1986

Part - time Instructor, Duke University, 1982-1984, 1985-1986

INVITED LECTURES AND COLLABORATIONS:

Singularities conference, Istanbul, Turkey, May 2016

Singularities conference, Liverpool, U.K., March-April 2016

AMS meeting, special session, Washington, D.C., March 2015

Singularities conference, series of four lectures, São Carlos, Brazil, August 2014

Conference on Algebra, Geometry and Topology of Singularities, Madrid, Spain, September 2013

Special Session on Singularities in Geometry and Topology, PRIMA 2013, Shanghai, China, June 2013

Singularities seminar, Aix-Marseille Université, Marseille, France, February 2013

Algebra, Topology and Geometry seminar, Université de Nice Sophia Antipolis, Nice, France, January 2013

Graduate Student seminar, Université de Nice Sophia Antipolis, Nice, France, January 2013

Geometry and Applications of 3-Manifolds Special Session of AMS meeting, College of the Holy Cross, April 2011

Topology Seminar, University of Wisconsin, Madison, Wisconsin, March 2011

Singularities in Algebraic Geometry Special Session of AMS meeting, Notre Dame University, November 2010

Singularities Special Session of the Joint Meeting of the AMS and SMM, UC Berkeley, CA, June 2010

Singularities in the Midwest, University of Wisconsin, Madison, Wisconsin, March 2010.

Plenary Address, The 10th São Carlos Workshop on Real and Complex Singularities, São Carlos, Brazil, July 2008

School and Workshop on The Geometry and Topology of Singularities, Cuernavaca, Mexico, January 2007

Geometry Seminar, Hokkaido University, Sapporo, Japan, July 2006

Colloquium, Hokkaido University, Sapporo, Japan, July 2006

Colloquium, Tokyo Science University, Tokyo, Japan, July 2006

Colloquium, Tsukuba University, Tsukuba, Japan, July 2006

Advanced School and Workshop on Singularities in Geometry and Topology, 3 lectures, ICTP, Trieste, Italy, August 2005

Topology Seminar, Yale University, April 2005

Fully-funded 2-week visit to the International Center for Theoretical Physics, Trieste, Italy, November 2004

Representation Theory Seminar, Northeastern University, September 2004

Plenary Address, The VIII São Carlos Workshop on Real and Complex Singularities, CIRM, Marseille, France, July 2004

Special Session on Singularities, Latin American Congress of Mathematicians, Cancun, Mexico, June 2004

Algebraic Geometry Seminar, The Ohio State University, Columbus, OH, May 2004

Special Session at AMS meeting, Florida State Univ., Tallahassee, FL, March 2004

Representation Theory Seminar, Northeastern University, March 2004

Representation Theory Seminar, Northeastern University, Jan. 2004

Representation Theory Seminar, Northeastern University, Nov. 2003

University of Münster, Münster, Germany, September 2003

Institute of Theoretical Physics, Trieste, Italy, two-month funded research collaboration, July-August 2003

Special Session at AMS meeting, NYU, New York, NY, April 2003

Basic Notions Seminar, Northeastern University, March-April 2003

Workshop on Singularities, Lille, France, March, 2003

Real and Complex Singularities, Sao Carlos, Brazil, July, 2002

2001 Annapolis Algebraic Geometry Conference, Oct., 2001

Resolution of Singularities and Noncommutative Geometry, Centre International de Rencontres Mathematiques (CIRM) in Marseille, July, 2001

International Symposium on Singularity Theory and its Applications, Beijing, P.R. China, July, 2001

Special Session at AMS meeting, San Francisco, CA, Oct., 2000

Real and Complex Singularities, Sao Carlos, Brazil, July, 2000

GASC seminar, Northeastern University, Feb., 2000

Special Session at AMS meeting, Washington, D.C., January, 2000

Real and Complex Singularities, Sao Carlos, Brazil, July, 1998

Singularities Seminar, University of Sydney, Sydney, Australia, October, 1997

CIRM, Luminy, France, July, 1996

University of Provence, France, June, 1996

University of Geneva, Switzerland, June, 1996

AMS/MMS Joint meeting, Guanajuato, Mexico, Nov., 1995

CIRM Conference on Hyperplane Arrangements, Luminy, France, July, 1994

Duke University, November 1993

International Geometric Colloquium, Moscow, May 1993

Massachusetts Institute of Technology, April 1993

Valley Geometry Seminar, Amherst College, March 1993

College on Singularity Theory, Trieste, August -September 1991

Université Paris - VII , June 1991

University of Warwick, May 1991

Massachusetts Institute of Technology, March 1991

University of Georgia, March 1991

University of Utrecht, February 1990

Université Paris - VII , January 1990

Duke University, November 1989

Massachusetts Institute of Technology, April 1989

PUBLICATIONS:

1. “The Lê-Ramanujam Problem for Hypersurfaces with One-dimensional Singular Sets” , Math. Ann. 282, 33 - 49 (1988)
2. “A Reduction Theorem for the Zariski Multiplicity Conjecture” , Proc. AMS 106, no. 2, 379-383 (1989)
3. “The Lê Varieties, I” , Invent. Math. 99, 357-376 (1990)
4. “The Thom Condition along a Line”, Duke Math. Journal, vol. 60, no. 3, 631-642 (1990)
5. “The Lê Varieties, II” , Invent. Math. 104, 113-148 (1991)
6. “Deformation of Polar Methods” with D. Siersma, Ann. Inst. Fourier, tome 42, fasc.4, 737-778 (1992)
7. “Numerical Invariants of Perverse Sheaves”, Duke Math. Journal, vol. 73, no. 2, 307-370, (1994)
8. “A General Calculation of the Number of Vanishing Cycles”, Top.and its Appl., vol. 62, 21–43, (1995)
9. “Introduction to Perverse Sheaves and Vanishing Cycles”, in Singularity Theory, edited by D.T. Lê, K. Saito, and B. Teissier, World Scientific, 487–508, (1995)
10. “An Introduction to the Lê Cycles of a Hypersurface Singularity”, in Singularity Theory, edited by D.T. Lê, K. Saito, and B. Teissier, World Scientific, 468–486, (1995)
11. “Milnor Fibres of Non-isolated Hypersurface Singularities”, in Singularity Theory, edited by D.T. Lê, K. Saito, and B. Teissier, World Scientific, 458–467, (1995)
12. Lê Cycles and Hypersurface Singularities, Lecture Notes in Mathematics, vol. 1615, Springer-Verlag, 130 pages, (1995)
13. “Prepolar Deformations and a new Lê-Iomdine Formula”, Pacific J. Math., vol. 174, no. 2, 459-469, (1996)
14. “Hypercohomology of Milnor Fibres”, Topology, vol. 35, no. 4, 969-1003, (1996)

15. "Perversity, Duality, and Arrangements in \mathbb{C}^3 ", *Topology and Appl.*, vol. 73, 169-179 (1996)
16. "MacPherson-Chern Classes and Characteristic Polar Cycles", *J. Math. Sci.*, vol. 82 (Topology, 3), 3690-3695, (1996)
17. "Lê Numbers, Matroid Identities, and the Tutte Polynomial", with R. Simion, R. Stanley, D. Vertigan, D. Welsh, and G. Ziegler, *J. Combinatorial Theory*, vol. 70, 118-133, (1997)
18. "Trends in Equisingularity Theory", with T. Gaffney, in *Singularity Theory*, London Math. Soc. Lecture Note Series, vol. 263, 207-248 (1999)
19. "Critical Points of Functions on Singular Spaces", *Top. and its Appl.*, vol. 103, 55-93, (2000)
20. "The Sebastiani-Thom Isomorphism in the Derived Category", *Compos. Math.*, vol. 125, 353-362, (2001)
21. "A little microlocal Morse theory", *Math. Ann.*, vol. 321, 275-294, (2001)
22. "Perverse Cohomology and the Vanishing Index Theorem", *Top. and its Appl.*, vol. 125, 299-313, (2002)
23. Numerical Control over Complex Analytic Singularities, *Memoirs of the American Mathematical Society*, No. 778, AMS, 268 pages, (2003)
24. "Invariant Subspaces of the Monodromy", *Contemp. Math.*, vol. 324, Topics in Algebraic Noncommutative Geometry, Proc. in memory of Ruth Michler, AMS 173-183, (2003)
25. "Singularities and Enriched Cycles", *Pacific J. of Math.*, vol. 215, 35-84, (2004)
26. "Dear Jonas: What can I say?", chapter author and contributor to *Chalk Talk: E-advice from Jonas Chalk, Legendary College Teacher*, edited by D. Qualters and M. Diamond, New Forums Press, (2004)
27. "Euler Obstruction and Functions with Isolated Singularities", with J.-P. Brasselet, Parameswaram, and J. Seade, *J. London Math. Soc.* (2), vol. 70, 59-76, (2004)
28. "Lê Modules and Traces", *Proc. AMS*, vol. 134 (7), 2049-2060, (2006)
29. "Semi-simple Carrousel and the Monodromy", *Annales de l'Institut Fourier*, vol. 56 (1), 85-100, (2006)
30. "Hypersurface Singularities and Milnor Equisingularity", with Lê, D. T., *Pure and Applied Mathematics Quarterly*, vol. 2, no. 3, special issue in honor of Robert MacPherson's 60th birthday, 893-914, (2006)
31. "Stratified Morse Theory: Past and Present", *Pure and Applied Mathematics Quarterly*, vol. 2, no. 4, special issue in honor of Robert MacPherson's 60th birthday, 1053-1084, (2006)
32. "Notes on Real and Complex Analytic and Semianalytic Singularities", with Lê, D. T., in *Proceedings of the 2005 ICTP Summer School on Singularities*, Trieste, Italy, World Scientific, 81-126, (2007)
33. "Vanishing Cycles and Thom's μ_f Condition", *Bull. London Math. Soc.*, vol. 39 (4), 591-602, (2007)
34. "Enriched Relative Polar Curves and Discriminants" in *Contemporary Mathematics*, vol. 474, 107-144, "Singularities I: Algebraic and Analytic Aspects; International Conference in honor of the 60th birthday of Lê Dung Tráng, January 8-26, 2007, Cuernavaca, Mexico" (2008)
35. "Intersection Cohomology, Monodromy, and the Milnor Fiber", *International Jour. of Math.*, vol. 20 (4), 491-507, (2009)

36. “Real Analytic Milnor Fibrations and a Strong Lojasiewicz Inequality”, in 2008 Proc. of the 10th International Workshop on Real and Complex Singularities, São Carlos, Brazil, London Math. Soc. Lecture Note series, vol. 380, 268-292, (2010)
37. “Worldwide Differential Calculus”, published electronically by the Worldwide Center of Mathematics, LLC, <http://www.centerofmath.org> , 491 pages, (2009)
38. “Worldwide Integral Calculus, with infinite series”, published electronically by the Worldwide Center of Mathematics, LLC, <http://www.centerofmath.org> , 667 pages, (2010)
39. “A Remark on Vanishing Cycles with Two Strata”, with Lê D.T., Comptes Rendus Acad. Sci., vol. 350, issue 3, 217-220, (2012)
40. “Worldwide Multivariable Calculus”, published electronically by the Worldwide Center of Mathematics, LLC, <http://www.centerofmath.org> , 605 pages, (2012)
41. “Iterated Vanishing Cycles, Manuscripta Mathematica, published online 13 October 2012, DOI: <http://dx.doi.org/10.1007/s00229-012-0588-4>
42. “Milnor fibers and Links of Local Complete Intersections”, International Journal of Mathematics, vol. 25, no. 11, 18 pages, (2014) doi: 10.1142/S0129167X14501109
43. “Natural Commuting of Vanishing Cycles and the Verdier Dual”, Pacific J. of Math., volume 284-2, 431–437, (2016). DOI 10.2140/pjm.2016.284.431

PAPERS/MONOGRAPHS IN PREPRINT FORM:

44. “Non-isolated Hypersurface Singularities and Lê Cycles”, to appear in the proc. of the 2014 São Carlos singularities conference
45. “A New Conjecture, a New Invariant, and a New Non-splitting result”, to appear in proceedings of the conference "Singularities in geometry, topology, foliations and dynamics" held in Merida, Mexico, from December 8th to 19th, 2014
46. “Some Special Cases of Bobadilla’s Conjecture”, with Brian Hepler, submitted to Topology and its Appl., 11 pages, 2015
47. “Calculations with Characteristic Cycles”, 38 pages, submitted to Trans. of the AMS on Jan. 22, 2016
48. “A Note on Kernels, Images, and Cokernels in the Perverse Category”, 7 pages, submitted to Proceedings of the AMS on Feb. 24, 2016
49. “Perverse Results on Milnor Fibers inside Parameterized Hypersurfaces”, with Brian Hepler, <http://arxiv.org/abs/1602.08717> , to appear in Publications of the Research Institute for mathematical Sciences
50. “IPA-deformations of functions on affine space”, 13 pages, submitted to the Hokkaido Mathematical Journal, June 2016

EDITORIAL WORK:

Primary Managing Editor/Editor-in-Chief of the Journal of Singularities, an online-only, refereed journal at <http://www.journalofsing.org/> , January 2009-present

Ph.D. STUDENTS SUPERVISED:

Michael Green, June 1997, "Lê Cycles on Analytic Spaces"