

## *Curriculum Vitae* for David B. Massey

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

### **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 and Chair of Mathematics, Northeastern University, 2007-present

Professor, Northeastern University, 2004-2007

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:**

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

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  $\mathbf{C}^3$ ”, *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 60<sup>th</sup> 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 60<sup>th</sup> 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  $\mu_f$  Condition”, *Bull. London Math. Soc.*, vol. 39 (4), 591-602, (2007)
34. “Enriched Relative Polar Curves and Discriminants”, to appear in *Proc. Geometry and Topology of Singularities*, Cuernavaca, Mexico, January 2007
35. “Intersection Cohomology, Monodromy, and the Milnor Fiber”, to appear in *The International Journal of Mathematics*

**PAPERS/MONOGRAPHS IN PREPRINT FORM:**

36. “Calculations with Characteristic Cycles”, in preparation.
37. “A Strong Lojasiewicz Inequality and Real Analytic Milnor Fibrations”, in preparation.