

VITA

Diane Meuser
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Areas of Specialization: Number Theory, Algebraic Geometry

Degrees:

B.A., Mathematics, May 1975
Summa Cum Laude
State University of New York at Albany

M.A., Mathematics, October 1976
Johns Hopkins University

Ph.D., Mathematics, May 1980
Johns Hopkins University

Dissertation: "On the Rationality of Certain Generating Functions and Related Local Zeta Functions"

Advisor: Jun-Ichi Igusa

Current Position: Associate Professor of Mathematics at Boston University

Previous Positions:

Boston University Mathematics Department.
September 1980 - present.

National Science Foundation Mathematical Sciences Postdoctoral
Research Fellow at Harvard University.
July 1984 - August 1986.

Member of The Institute for Advanced Study.
September 1988 - August 1989.

Johns Hopkins University, Invited Visiting Professor.
September 1992 - April 1993.

Harvard University, Visiting Professor.
September 1996 - June 1997.

Honors, Fellowships and Grants

Phi Beta Kappa, 1975.

Gilman Fellowship for graduate study at Johns Hopkins University
1975-1980.

Boston University Seed Grant, Summer 1981.

National Science Foundation Mathematical Sciences Postdoctoral
Research Fellowship.
July 1984-August 1986.

Institute for Advanced Study at Princeton.
Membership and Grant awarded for September 1988 - May 1989.

National Science Foundation Research Grants.
July 1987-June 1989, July 1990-June 1992.

National Science Foundation Career Advancement Award.
July 1992-June 1993.

National Science Foundation Visiting Professor for Women Award.
September 1996-June 1997.

Professional Societies:

American Mathematical Society
Association for Women in Mathematics

Invited Lectures:

United States Naval Academy, February 1980.

State University of New York at Albany, April 1981.

Harvard University, May 1981.

Dartmouth College, May 1982.

Harvard University, May 1982.

San Jose State University, July 1982.

University of California at Berkeley, August 1982.

Clark University, February 1983.

United States Naval Academy, October 1983.

Massachusetts Institute of Technology, November 1983.

Northwestern University, November 1983.

American Mathematical Society Summer Research Conference on
Diophantine Problems, July 1984.

Brigham Young University, October 1984.

Massachusetts Institute of Technology, November 1984.

Boston University, December 1984.

Harvard University, December 1984.

University of Kentucky, April 1985.

Brigham Young University, October 1985.

University of California at Irvine, October 1985.

University of Minnesota, March 1986.

Johns Hopkins University, May 1986.

Ohio State University-Denison University Conference, May 1986.

State University of New York at Albany, February 1987.

Université de Bordeaux I, France, June 1987.

Brigham Young University, March 1988.

p-Adic Analysis Conference - Trento, Italy; June 1989.

AMS Special Session on Algebraic Geometry, p-Adic aspects, October '89

AMS Special Session on Number Theory and Algebraic Geometry, October '89

Algebraic Geometry and Group Theory Conference, February '90

University of Oklahoma, Karcher lecturer, March '90

Boston College, April '90

AMS Research Conference on Logic, local fields, and subanalytic sets, July '90

Brown University, November '90

George Washington University / National Science Foundation Colloquium, April '91

AMS Special Session on Modular Forms and Algebraic Geometry, October '91

AMS Special Session on Algebraic Geometry, October '91

Five College Number Theory Seminar, November '91

University of Maryland, September '92

Johns Hopkins University Colloquium, September '92

AMS Special Session on Topology of affine hypersurfaces
and related number theory, October '92

Zeta Functions in Number Theory Conference, April '93
U.S. Naval Academy, April '93
Five College Number Theory and Geometry Seminar, November '95
Model Theory, Algebra, and Arithmetic Conference at MSRI, Berkeley, June '98.
Brown University, October '98.
Northeastern University, May '99.
Connecticut Valley Mathematics Colloquium, September '99.
AMS Special Session on Elliptic Curves and Modular Forms, January '00.
Brown University, March '02.
Brigham Young University. (Several seminar talks). Fall '03.
Utah Valley State College, March '03.
Brigham Young University, February '12.
University of Arizona, March '12.

Other Invitations and Presentations:

American Mathematical Society Summer Research Institute on
Automorphic Forms, Representations, and L-functions.
Oregon State University; Corvallis, Oregon; July 1977.
Received funding from National Science Foundation to attend.

The Institute for Advanced Study at Princeton.
Invited to be a fully supported member for the year 1980-81.

Annual Meeting of the American Mathematical Society in
San Francisco; January 1981.
Invited to chair Number Theory session, presented paper.

Modern Trends in Number Theory Related to Fermat's Last Theorem.
M.I.T.; September 1981; Invited participant.

American Mathematical Society meeting in Albany; August 1983.
Invited to chair Number Theory session, presented paper.

American Mathematical Society Summer Research Conference on
Diophantine Problems, July 1984.
Invited participant (all expenses paid).

Symposium on Modular Functions, Number Theory and
Algebraic Geometry, Johns Hopkins University; March 1985.
Invited participant (all expenses paid).

Conference on the Occasion of John Tate's 60th Birthday.
Harvard University, April 1985.
Invited participant.

American Mathematical Society Summer Institute in Algebraic Geometry.
July 1985.

Invited participant.

Annual Meeting of the American Mathematical Society.

New Orleans; January 1986.

Presented paper

University of Minnesota, March 1986.

Invited visiting mathematician (all expenses paid).

Université de Bordeaux I, France, June 1987.

Invited one month special visiting mathematician (all expenses paid).

Presented a series of lectures on my research.

Japan - U.S. Mathematics Institute at Johns Hopkins University, May 1988.

Inaugural Conference Invited Participant (all expenses paid).

The Institute for Advanced Study at Princeton.

Invited to be a supported member for the year 1988-89.

Johns Hopkins University.

Invited to be a Visiting Professor for the year 1992-93.

Zeta Functions in Number Theory and Geometric Analysis Conference.

Johns Hopkins University; April 1993; Organizer of Conference.

Refereeing:

I have refereed publications for the following journals:

Acta Arithmetica, American Journal of Mathematics, Compositio Mathematica,
Israel Journal of Mathematics, Inventiones Mathematicae, Journal of Number Theory,
Nagoya Mathematics Journal, Transactions of the American Mathematical Society.

I have refereed proposals for the following agencies:

National Security Agency, National Science Foundation.

Other Research Items to Note:

Some of my research results are described in the book:

“An Introduction to the Theory of Local Zeta Functions”, by J.-I. Igusa
American Mathematical Society/IP Studies in Advanced Mathematics, Volume 14, (2000).

In particular see the last chapter of the book entitled “Theorems of Denef and Meuser”.

Also some of this research is described in the book review of the above book:

Bulletin of the American Mathematical Society, April, 2001.

Publications:

1. "On the rationality of certain generating functions,"
Mathematische Annalen, 256, 303-310 (1981).
2. "On the poles of a local zeta function for curves."
Inventiones Mathematicae, 73, 445-465 (1983).
3. "Poles of a local zeta function and Newton polygons."
(with B. Lichtin). Compositio Mathematica, 55, 313-332 (1985).
4. "The meromorphic continuation of a zeta function of Weil and Igusa type."
Inventiones Mathematicae, 85, 493-514 (1986).
5. "On the degree of a local zeta function."
Compositio Mathematica, 62, 17-29 (1987).
6. "Non-Archimedean Complex Powers and Eigenvalues of Monodromy."
Séminaire de Théorie des Nombres, (1987).
7. "On a Functional Equation of Igusa's Local Zeta Function."
p-adic Analysis, Proceedings, Trento 1989.
Springer-Verlag Lecture Notes in Mathematics 1454, (1990).
8. "A Functional Equation of Igusa's Local Zeta Function."
(with J. Denef). American Journal of Mathematics, 113 (1991), 1135 - 1152.
9. "The Igusa Local Zeta Functions of Elliptic Curves."
(with M. Robinson). Mathematics of Computation, 71 (2001), 815 - 823.
10. "The Natural Boundary of Euler Products of Certain Igusa Zeta Functions."
Preprint.
11. "A Survey of Igusa's Local Zeta Function."
Accepted for publication in the American Journal of Mathematics.

Significant Departmental Service:

I am a Mathematics Advisor in the department and have done this more than twenty years. I am the advisor for, on average, approximately twenty mathematics majors at any given time. I also advise many more students who are simply seeking advice on mathematics courses to take.

Significant University Service:

I have been a member of the University Council Committee on Student Life Policies since 2005. We have made some very notable changes to Student Life Policies, in particular:

- a) New Guest Policy for residence halls. Approved by President Brown in 2007. This replaced an outdated policy that had been in effect for 19 years. The new policy gives students much more freedom in having guests. We had extensive discussions on this policy for two years before it was approved.

- b) New FERPA Policy - Family Educational Rights and Privacy Act. Approved by President Brown in 2009. This established a uniform policy on such issues of what information is disclosed to parents and guardians. We had extensive discussions on the policy for a year before it was approved.

I am often a member of various committees that deal with student life issues. In particular I am a member of Dean of Students Ken Elmore's Community Builders committee.

Significant Teaching Related Activities and Awards:

- 1) Faculty Resident in the Boston University Undergraduate Dormitories:

The goal of this position is to promote interaction between faculty and students outside of the classroom. I have been in this position since '81. In this capacity I do a variety of items, including

- a) Evening Math Help Sessions open to students in any class.
- b) Monthly informal student events in my apartment.
- c) Lead hiking trips.

- 2) Outstanding Service Award, May 2000.

Presented by the Office of Residence Life for my service to the Faculty Resident Program and my "remarkable ability to engage students on both academic and personal levels".

- 3) Award for "Outstanding Scholarship, Leadership, and Service". April 2001.

Presented by the National Society of Collegiate Scholars, a National Honor Society. I was the only College of Arts and Sciences Faculty Member from Boston University selected.

- 4) Outstanding Professor Award. October 2001.

Selected by women on the Boston University Women's Soccer Team.

- 5) Research Experiences for Undergraduates Program, Mt. Holyoke College.

I have been an advisor to the program in Number Theory during the summers. In particular I have suggested research topics for the program, and given several lectures on these topics. In particular undergraduates in this program assisted with some of the computations in paper 9) above. I continue to advise Prof. Margaret Robinson on projects suitable for undergraduates in REU projects she leads.

- 6) Neu Family Award for Excellence in Teaching, May 2003.

Presented by Boston University. All faculty members at Boston University are eligible and there is only one award each year.

- 7) Scarlet Key Award, May 2013.

Awarded to alumni, faculty, staff, trustees, and members of the community-at-large who have especially influenced the intellectual and personal development of students during their time at Boston University.

- 8) Directed Independent Study in Number Theory and Cryptography, Spring 2013 and 2014.

I've led several directed studies with undergraduates who are interested in learning about Cryptography and Number Theory.