CURRICULUM VITAE

Helen G. Grundman

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Education

University of California, Berkeley, California, 1983–89,
Ph.D. in Mathematics, 1989.

Wayne State University, Detroit, Michigan, (part-time) 1981–82.

University of Michigan, Ann Arbor, Michigan, 1975–79,
B.S. with High Distinction in Mathematics and Psychology, 1979;
Michigan Secondary Teaching Credentials, 1979.

Academic Employment

Bryn Mawr College, Department of Mathematics,
Professor of Mathematics, Sept. 2002 – present,
Professor & Chair of Mathematics, Sept. 2002 – Aug. 2005,
Associate Professor of Mathematics, Sept. 1996 – Aug. 2002,
Assistant Professor of Mathematics, Sept. 1991 – Aug. 1996,
on the Rosalyn R. Schwartz Lectureship, Sept. 1993 – Aug. 1996;
Research Affiliate, July 1991 – Aug. 1991.

National Science Foundation, Division of Mathematical Sciences,
Program Director, Sept. 2001 – Aug. 2002.

Bunting Institute of Radcliffe College,
Science Fellow, Sept. 1998 – Aug. 1999.

Mathematical Sciences Research Institute,
Postdoctoral Research Fellow, Sept. 1994 – June 1995.

Massachusetts Institute of Technology, Department of Mathematics,
C. L. E. Moore Instructor, July 1989 – June 1991.

Supported Research

Bryn Mawr College Faculty Research Grants:
"Solutions to a Parametrized System of Equations," 2011–13 & 2014–15.

Institute for Advanced Study/Park City Mathematics Institute,
Full Support: Summer Session, 2009.

Banff International Research Station for Mathematical Innovation and Research,
Invitation and Full Grant: Women in Numbers, 2008.

Association for Women in Mathematics Collaborative Research Grant:
Galois Realizability of Groups of Order 32, 2006–07.

American Mathematical Society Travel Grant,
International Congress of Mathematicians, 2006.

Bryn Mawr College Faculty Research Grant:
"Hilbert Modular Varieties of Higher Dimensions," 2003–05.

Maine-Quebec Number Theory Conference: Invitation & Full Grant, 2003.

Association for Women in Mathematics: National Science Foundation Travel Grant,
Conference in Number Theory in Honour of Professor H.C. Williams, 2003.

Bryn Mawr College Faculty Research Grant:
"Hilbert Modular Threefolds of Arithmetic Genus One," 2000–01.

Bryn Mawr College Faculty Research Grant:
"Admissibility of Groups Over Number Fields," 1998–00.

Bunting Institute of Radcliffe College:
Science Scholar Fellowship & Research Grant, 1998–99.

National Science Foundation Travel Grant, Conference to Celebrate Women
Mathematicians in Number Theory and Analysis, 1997.

Boston University, NSF, & the Vaughn Foundation Travel Grant,
Conference on Fermat's Last Theorem, 1995.

Mathematical Sciences Research Institute:
Postdoctoral Research Fellowship, 1994–95.

American Mathematical Society Travel Grant,
International Congress of Mathematicians, 1994.

Bryn Mawr College Faculty Research Grant:
"Problems in Algebraic Number Theory," 1992–94.

National Academy of Sciences: Invitation & Full Grant,
Fifth Annual Symposium on Frontiers of Science, 1993.

National Science Foundation, Mathematical Sciences, Research Grant:
"The Classification of Hilbert Modular Threefolds," 1991–93.

Additional Honors and Awards

Christian R. and Mary F. Lindback Foundation Award for Distinguished Teaching, Bryn Mawr College, 2014.

Rosalyn R. Schwartz Lectureship, Bryn Mawr College, 1993–96.

Dana Foundation Faculty Fellow, Bryn Mawr College, 1992–93.

Nikki Kose Teaching Prize, University of California, Berkeley, 1989.

Additional Grant Involvement

National Science Foundation:
"Research Experiences for Undergraduate Faculty (REUF)," 2012–2016, submitted by the American Institute of Mathematics.

Howard Hughes Medical Institute, Undergraduate Science Education Program:
"A Comprehensive Program to Enhance Education and Preparation for Careers in Biology and the Related Sciences," 2004–08.

National Science Foundation, Math and Science Partnership Program:
"The Mathematics and Science Partnership of Greater Philadelphia," 2003–08.

Course Design

Math 206: Transition to Higher Mathematics.
Created and first taught the course; later wrote a textbook for the course, which was successfully used by other instructors.

Math 390: Number Theory.
Redesigned existing course to focus on *algebraic* number theory.

Math 399: Senior Conference.
Introduced three new versions of this course:
"Graph Theory"; wrote text for the course.
"Algebraic Geometry."
"Set Theory."

Math 670: Graduate Perspectives in Mathematics Pedagogy.
Secured external funding for designing and teaching the course.

Professional Memberships

American Mathematical Society.

Fibonacci Association.

Association for Women in Mathematics.

Selected Professional Service

American Institute of Mathematics's Research Experiences for Undergraduate Faculty Workshop: Mathematical Leader/Facilitator, 2014.

Project NExT (New Experiences in Teaching): Consultant/Mentor, 1999–present.

Association for Women in Mathematics Young Mathematician's Mentorship Programs: Mentor, 1999–present.

Proposal Review Panel for the National Science Foundation, 1997, 2013.

EDGE (Enhancing Diversity in Graduate Education) Mentoring Clusters: Leader, Mid-Atlantic Cluster, 2007–2010.

Association for Women in Mathematics Nominations Committee, 2005–2007.

American Mathematical Society Committee on Professional Ethics, 2004–2007.

Board of Directors of the Fibonacci Association, 1998–2006;

Council on Undergraduate Research: Councillor, 1999–02;

Selected College Service

Ad-hoc Committee to Review the Plan of Governance and the Faculty Bylaws, 2009–present.

Graduate Group in Science and Mathematics Steering Committee, 2008–2012, 2013–present.

Teacher Education Committee, 2004–06, 2011–12.

Selected Departmental Service

Mathematics Graduate Director (and pre-advancement advisor), 1992–97, 2005–06, 2007–2012, 2013–present.

Bi-Co Distressing Mathematics Collective (a weekly student colloquium), 1997–present.

Bryn Mawr/Temple Summer Number Theory Seminar, 1992–present.

Mathematics Administrative Assistant Search Committee, 2013.

Haverford Mathematics Faculty Search Committee, 2011–12.

Mathematics Faculty Search Committee, 2010–11.

BMC Mathematics Shakespeare Reading Group, 1993–2012.

Selected Talks and Conference Involvement

American Institute of Mathematics, REUF Workshop, Aug. 2014.
Presented: "Variations on Happy Numbers."

American Mathematics Society, 1093rd Meeting, Philadelphia, PA, Oct. 2013.
Co-organized: AMS Special Session on Modular Forms and Modular Integrals in Memory of Marvin Knopp.

MathILy Program for high-ability high school students, Aug. 2013 & Aug. 2014.
Presented: "Questions (and some answers) about Harshad Numbers."

Center for Women in Mathematics at Smith College, Mar. 2013.
Presented: "Digit Sums and Harshad Numbers."

Mathematics/Statistics Club, Mount Holyoke College, Mar. 2013.
Presented: "Digit Sums and Harshad Numbers."

West Coast Number Theory Conference, Pacific Grove, CA, Dec. 2012.
Presented: "Bounds for two Davenport-type Constants."

American Mathematics Society, 118th Annual Meeting, Washington, DC, Jan. 2012.
Presented: "Solutions to $xyz = 1$ and $x + y + z = k$ in Integers in Cubic Number Fields."

Bryn Mawr/Temple Modular Forms and Number Theory Seminar, Bryn Mawr College, July 2011.
Presented: "Diophantine Equations and Elliptic Curves."

American Mathematics Society, Spring Eastern Sectional Meeting, Worcester, MA, Apr. 2011.
Presented: "On Tetranomial Thue Equations."

Graduate Group in Science and Mathematics Speaker Series, Bryn Mawr College, Sept. 2009.
Presented: "How To Write A Teaching Statement."

Karcher Colloquium, University of Oklahoma, Department of Mathematics, Apr. 2009.
Presented: "The Arithmetic Genus of Hilbert Modular Varieties."

Department of Mathematics Graduate Student Seminar, University of Oklahoma, Apr. 2009.
Presented: "An Informal Workshop on Writing a Statement of Your Teaching Philosophy."

American Mathematics Society, 115th Annual Meeting, Washington, DC, Jan. 2009.
Presented: "Happy Numbers and Semihappy Numbers."

WIN: Women in Numbers, Banff International Research Station for Mathematical Innovation and Research, Nov. 2008.
Presented: "Computations on Hilbert Modular Varieties."

Promoting Diversity at the Graduate Level in Mathematics: a National Forum, Mathematical Sciences Research Institute, Berkeley, CA, Oct. 2008.

Pi Mu Epsilon Induction Address, Villanova University, Apr. 2008.
Presented: "Niven Numbers and n-Niven Numbers."

Mathematics Department Spring Colloquium, Immaculata University, Apr. 2008.
Presented: "Numbers Divisible by the Sums of Their Digits: some explorations in elementary number theory."

West Coast Number Theory Conference, Pacific Grove, CA, Dec. 2007.
Presented: "Semihappy Numbers."
Chaired: Algebraic Number Theory Session.

Program for Women and Mathematics: Women in Science Seminar, Institute for Advanced Study and Princeton University, Princeton, NJ, May 2007.
Presented: "Identifying and Clarifying Your Personal Teaching Philosophy."

Algebra Seminar, University of Cincinatti, Jan. 2007.
Presented: "Solutions to $xyz = x + y + z = 1$ in Rings of Integers of Number Fields."

West Coast Number Theory Conference, Ensenada, Baja California, Mexico, Dec. 2006.
Presented: "Consecutive Zeckendorf-Niven Numbers."

International Congress of Mathematicians, Madrid, Spain, Aug. 2006
Presented: "Invariants based on Dedekind eta-functions."
Co-Chaired: Number Theory Session.

Twelfth International Conference on Fibonacci Numbers and Their Applications, San Francisco, CA, July 2006.
Presented: "Escalator Numbers."

Non-technical Publications

1. "Unity in a Field," *Mathematics Magazine*, **71** (1998), 359.
2. "Writing a Teaching Philosophy Statement," *Notices of the AMS*, **53** (2006), 1329–1333.
3. "Revisiting the Question of Diversity: Faculties and Ph.D. Programs," *Notices of the AMS*, **56** (2009), 1115–1118.

Publications

1. *The Arithmetic Genus of Hilbert Modular Threefolds*, Doctoral dissertation (under the direction of E. Thomas), University of California, 1989.

2. "The arithmetic genus of Hilbert modular varieties over non-Galois cubic fields," *The Journal of Number Theory*, **37** (1991), 343–365.

3. "On the classification of Hilbert modular threefolds," *Manuscripta Mathematica*, **72** (1991), 297–305.

4. "Defects of cusp singularities and the classification of Hilbert modular threefolds," *Mathematische Annalen*, **292** (1992), 1–12.

5. "Sequences of consecutive n-Niven numbers," *The Fibonacci Quarterly*, **32** (1994), 174–175.

6. "Defect series and nonrational Hilbert modular threefolds," *Mathematische Annalen*, **300** (1994), 77–88.

7. "Systems of fundamental units in cubic orders," *The Journal of Number Theory*, **50** (1995), 119–127.

8. "Groups of order 16 as Galois groups," with T. L. Smith and J. R. Swallow, *Expositiones Mathematicae*, **13** (1995), 289–319.

9. "Automatic realizability of Galois groups of order 16," with T. L. Smith, *The Proceedings of the American Mathematical Society*, **124** (1996), 2631–2640.

10. "Towards a classification of Hilbert modular threefolds," in *Number Theory: New York Seminar 1991–1995*, Chudnovsky, Chudnovsky, Nathanson, Eds, Springer, New York, 1996.

11. "Hilbert modular varieties of Galois quartic fields," *The Journal of Number Theory*, **63** (1997), 47–58.

12. "Explicit resolutions of cubic cusp singularities," *Mathematics of Computation*, **69** (2000), 815–825.

13. "Nonrational Hilbert modular threefolds," *The Journal of Number Theory*, **83** (2000), 50–58.

14. "An analysis of n-riven numbers," *The Fibonacci Quarterly*, **39** (2001), 253–255.

15. "Generalized happy numbers," with E. A. Teeple, *The Fibonacci Quarterly*, **39** (2001), 462–466.

16. "**Q**-adequate bicyclic bicubic fields," with T. L. Smith, *Valuation Theory and its Applications, Vol. I,* Fields Institute Communications, **32** (2002), 163–173.

17. "Hilbert modular threefolds of arithmetic genus one," with L. E. Lippincott, *The Journal of Number Theory*, **95** (2002), 72–76.

18. "**Q**-adequacy of Galois 2-extensions," with D. B. Leep and T. L. Smith, *The Israel Journal of Mathematics*, **130** (2002), 11–19.

19. "Heights of happy numbers and cubic happy numbers," with E. A. Teeple, *The Fibonacci Quarterly*, **41** (2003), 301–306.

20. "Multipliers of a family of almost modular functions," with A. Schwartz, *The Ramanujan Journal*, **8** (2004), 47–56.

21. "Galois realizability of non-split group extensions of C_2 by $(C_2)^r \times (C_4)^s \times (D_4)^t$," with G. Stewart, *Journal of Algebra*, **272** (2004), 425–434.

22. "Hilbert modular fourfolds of arithmetic genus one," with L. E. Lippincott, *High Primes and Misdemeanours: Lectures in Honour of the 60th Birthday of Hugh Cowie Williams*, Fields Institute Communications Series, **41** (2004), 217–226.

23. "New solutions to $xyz = x + y + z = 1$ in quartic number fields," with L. L. Hall, *Acta Arithmetica*, **112** (2004), 405–409.

24. "Computing the arithmetic genus of Hilbert modular fourfolds," with L. E. Lippincott, *Mathematics of Computation*, **75** (2006), 1553–1560.

25. "Sequences of generalized happy numbers with small bases," with E. A. Teeple, *Journal of Integer Sequences*, **10** (2007), Article 07.1.8.

26. "On factorizations of escalator numbers," with Florian Luca, *Missouri Journal of Mathematical Sciences*, **19** (2007), 171–175.

27. "Sequences of consecutive happy numbers," with E. A. Teeple, *Rocky Mountain Journal of Mathematics*, **37** (2007), 1905–1916.

28. "Splitting classes in categories of groups," with D. Soltis, *Contributions to Algebra and Geometry*, **48** (2007), 435–442.

29. "Consecutive Zeckendorf-Niven and lazy-Fibonacci-Niven numbers", *The Fibonacci Quarterly,* **45** (2007), 272–276.

30. "Iterated sums of fifth powers of digits," with E. A. Teeple, *Rocky Mountain Journal of Mathematics*, **38** (2008), 1139–1146.

31. "Solutions to $xyz = x+y+z = 1$ in quintic number rings," with L. L. Hall-Seelig, *Congressus Numerantium: Proceedings of the Eleventh International Conference on Fibonacci Numbers and Their Applications*, **194** (2009), 129–135.

32. "Escalator number sequences," *The Fibonacci Quarterly,* **47** (2009), 98–102.

33. "Invariants of an augmentation of $\Gamma_0(n)$," with A. Schwartz, *The Ramanujan Journal,* **20** (2009), 25–39. (DOI: 10.1007/s11139-009-9187-8)

34. "Galois realizability of a central C_4-extension of D_8," with T. L. Smith, *Journal of Algebra,* **322** (2009), 3492–3498. (DOI:10.1016/j.jalgebra.2009.08.015)

35. "Semihappy numbers," *Journal of Integer Sequences*, **13** (2010), Article 10.4.8.

36. "Realizability and automatic realizability of Galois groups of order 32," with T. L. Smith, *Central European Journal of Mathematics,* **8** (2010), 244–260.

37. "Escalator numbers of Pedro Pizá," *Congressus Numerantium: Proceedings of the Twelfth International Conference on Fibonacci Numbers and Their Applications,* **200** (2010), 135–140.

38. "Galois realizability of groups of order 64," with T. L. Smith, *Central European Journal of Mathematics,* **8** (2010), 846–854.

39. "Hilbert Modular Variety Computations," *Fields Institute Communications: Proceedings of the WIN Workshop, Banff International Research Station, Banff Canada,* **60** (2011), 3–14.

40. "Igusa class polynomials, embeddings of quartic CM fields, and arithmetic intersection theory," with J. Johnson-Leung, K. Lauter, A. Salerno, B. Viray, and E. Wittenborn, *Fields Institute Communications: Proceedings of the WIN Workshop, Banff International Research Station, Banff Canada,* **60** (2011), 35–60.

41. "On Bounds for two Davenport-type Constants," with C. S. Owens, *INTEGERS: The Electronic J. of Combinatorial Number Theory,* **13** (2013), A7, 1–3.

42. "Tetranomial Thue equations," with D. P. Wisniewski, *The Journal of Number Theory*, **133** (2013), 4140–4174.

43. "Solutions to xyz = 1 and x + y + z = k in integers of small degree, I," with L. L. Hall-Seelig, *Acta Arithmetica*, **162** (2014), 381–392.

45. "On the Diophantine equation $NX^2 + 2^L 3^M = Y^N$," with E. G. Goedhart, *J. Number Theory*, **141** (2014), 214–224.

46. "Solutions to xyz = 1 and x + y + z = k in integers of small degree, II," with L. L. Hall-Seelig, preprint.