Curriculum Vitae

Michael P. Knapp

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Born: December 4, 1971
Citizenship: U.S.

Education

- Ph.D. University of Michigan, 2000.
  - Doctor of Philosophy in Mathematics
  - Area of Specialization: Analytic Number Theory/Diophantine Equations
  - Thesis: *Forms in Many Variables over* $\mathfrak{p}$*-adic Fields*
  - Advisor: Professor Trevor D. Wooley

- B.A. in Mathematics, Northwestern University, 1994.

Positions Held

- 2003-present Loyola College
  - Assistant Professor (tenure-track)

- 2000-2003 University of Rochester
  - Assistant Professor (3-year postdoctoral position)

- 1995-2000 University of Michigan
  - Graduate Student Instructor
  - Had full responsibility for lecturing, determining final course grades, writing and grading quizzes and assigning and grading homework.

Honors and Awards

- Principal Investigator for NSF 3-year research grant (August 2002 - August 2006): *"Forms in Many Variables over Local Fields."*

- Loyola College summer research grant (summer 2005)

- Regents' Fellowship, University of Michigan (1994-1997).

Full-Time Teaching Experience

- Loyola College
  - Business Calculus – Fall 2003, Fall 2006.
  - Calculus I – Fall 2004, Fall 2005.

  - Calculus II – Spring 2004, Spring 2005, Spring 2006.
  - Linear Algebra – Spring 2005, Spring 2007 (anticipated).
  - Discrete Methods – Fall 2003, Fall 2005, Fall 2006.
  - Number Theory – Spring 2004, Spring 2006.
  - Graph Theory – Fall 2004.
  - Special Topics: Topology – Fall 2005.
  - Special Topics: Fibonacci Numbers and Related Topics – Spring 2007 (anticipated).
    * (These special topics courses cover material not typically taught at Loyola. Both of these courses were created and designed by me.)

- University of Rochester.
  - Calculus IA – Fall 2000, Fall 2001, Fall 2002.
  - Calculus IIA – Fall 2000, Spring 2001, Fall 2001, Spring 2002, Spring 2003.
    * During the Fall 2001 semester was the overall coordinator for this multi-section course.
  - Quest Calculus IIA – Fall 2002.
    * This is an "enriched" version of the standard Calculus IIA course.
  - Linear Algebra – Spring 2001.
  - Transition to Higher Math – Spring 2002.
  - Number Theory – Spring 2003.

Publications

- **Accepted for Publication / In Print**

[1] *Diagonal equations of different degrees over* $\mathfrak{p}$*-adic fields,* Acta Arith. (to appear).
[2] *On systems of diagonal forms,* J. Aust. Math. Soc. (to appear).
[3] *Two by two matrices with both eigenvalues in* $\mathbb{Z}/p\mathbb{Z}$*,* Math. Mag. 79 (2006), pp. 145-147.
[4] *Artin's conjecture for forms of degree* 7 *and* 11, J. London Math Soc. (2) 63 (2001), pp. 268-274.
[5] *Systems of diagonal equations over* $\mathfrak{p}$*-adic fields,* J. London Math Soc. (2) 63 (2001), pp. 257-267.
[6] (with P. Isihara) *Basic* $\mathbb{Z}_{12}$ *analysis of musical chords,* UMAP J. 14 (1993) pp. 319-348.

- **Submitted / In Preparation**

[7] *Pairs of homogeneous additive equations,* 17pp. (submitted).
[8] (with C. Xenophontos) *Numerical analysis meets number theory: using rootfinding methods to calculate inverses mod* p^n*,* 12pp. (submitted).
[9] *On systems of diagonal forms, II,* (in preparation).
[10] (with R. Auer) *How good is baseball's wild card team?* (in preparation).
[11] *Diagonal forms of large odd degrees,* (in preparation).

Selected Presentations and Conference Contributions

- External Conferences and Seminars
  - July 12, 2006 – Canadian Number Theory Association Conference (Vancouver, Canada) – "Homogeneous additive equations in finite fields".
  - April 9, 2006 – AMS Central Sectional Meeting (Notre Dame, IN) – "Systems of many diagonal forms of different degrees over p-adic fields" (Invited Address).
  - January 12, 2006 – AMS National Meeting (San Antonio, TX) – "Homogeneous additive equations in finite fields".
  - September 29, 2005 – Towson University Colloquium – "Artin's conjecture on forms in many variables" (Invited Address).
  - April 16, 2005 – South East Regional Meeting On Numbers (Columbia, SC) – "Homogeneous additive equations in finite fields".
  - August 22, 2004 – XVIII Brazilian Algebra Meeting (Campinas, Brazil) – "Additive equations over finite fields".
  - April 1, 2003 – Carleton University Number Theory Seminar – "Pairs of homogeneous equations over p-adic fields" (Invited Address).
  - January 15, 2003 – AMS National Meeting (Baltimore, MD) – "Pairs of homogeneous forms over p-adic fields".
  - October 8, 2002 – Rochester Institute of Technology Colloquium – "Artin's Conjecture on Homogeneous Polynomials in Many Variables" (Invited Address).
  - August 15, 2002 – Universidade de Brasília – "Pairs of homogeneous equations over p-adic fields" (Invited Address).
  - August 5, 2002 – XVII Brazilian Algebra Meeting (Cabo Frio, Brazil) – "Systems of additive equations over p-adic fields."
  - May 23, 2002 – Canadian Number Theory Association Conference (Montreal, Quebec, Canada) – "Systems of additive equations over p-adic fields."
  - November 15, 2001 – Penn State University Number Theory Seminar – "Artin's Conjecture on Forms in Many Variables" (Invited Address).

- Talks Primarily for Students
  - October 9, 2003 – Loyola College Math Club – "Fast times for finding primes."
  - April 17, 2003 – SUNY Geneseo Colloquium – "A Trip to the Fun House: the World of p-Adic Numbers." (Invited Address).
  - September 25, 2002 – Society of Undergraduate Mathematics Students (University of Rochester) – "SUMS of squares, cubes and other powers – an introduction to Waring's problem."
  - March 27, 2002 – Drama House (University of Rochester theme dorm) Fireside Chat series – "Graph Theory – A different kind of math." (Invited Address).
  - April 12, 2001 – Society of Undergraduate Mathematics Students (University of Rochester) – "A Trip to the Fun House – the World of p-adic Numbers."

Professional Memberships

- American Mathematical Society (1994 - present).
- Mathematical Association of America (2000 - present).

Professional Service

- **Service to Loyola College Mathematical Sciences Department**
  - September 2003 - Present — Supervisor for Loyola College's Putnam exam and Virginia Tech Regional Math Contest teams.
  - August 2004 - Present — Mathematical Sciences department Assessment Committee.
  - September 2003 - Present — Mathematical Sciences department Calculus Committee.
  - August 2004 - Present — Major advisor for the Mathematical Sciences department.
  - August 2004 - Present — Computer science Concentration Advisor for the Mathematical Sciences department.
  - September 2004 - Present — Participated in departmental peer teaching evaluation program.
  - February 2004 — Represented department at the Loyola College Majors Exploration Fair.

- **Service to Loyola College**
  - July 2004 - Present — Loyola College Academic Standards Committee.
  - Fall 2005 - Present — Core advisor.
  - Fall 2005 - Present — Loyola College Library Committee.
  - April 2006 — Phase II judge for the Loyola College Undergraduate Student Research and Scholarship Colloquium.
  - December 2004 - September 2005 — Loyola College Common Text Committee.
  - April 2005 — Phase II judge for the Loyola College Undergraduate Student Research and Scholarship Colloquium.
  - February 2004 — Phase I judge for the Loyola College Undergraduate Student Research and Scholarship Colloquium.

- **Pre-Loyola**
  - September 2002 - May 2003 — Co-organizer of University of Rochester Number Theory Seminar.
  - September 2001 - May 2003 — Organizer of University of Rochester Colloquium.
  - Math concentration advisor for one student at the University of Rochester.
  - January 2002 - May 2003 — Maintained the web page for the Society of Undergraduate Mathematics Students at the University of Rochester.
  - September 2000 - May 2001 — Co-organizer of University of Rochester Automorphic Forms Seminar.
  - September 1999 - May 2000 — Organizer of University of Michigan Student Number Theory Seminar.

References

- Prof. Hemar Godinho
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- Prof. Trevor Wooley
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