

CURRICULUM VITAE

March 2006

NAME: James Mc Laughlin

ADDRESS: Math. Dept., 124 Anderson Hall, West Chester University,
West Chester, PA 19383

TELEPHONE: (610) 738-0585 (work)

E-MAIL: jmclaughl@wcupa.edu

WEB PAGE: <http://math.wcupa.edu/~mclaughlin/>

CITIZENSHIP: Republic of Ireland

PRESENT RANK: Assistant Professor

DEPARTMENT: Mathematics, West Chester University, West Chester, PA 19383.

EDUCATION:

University of Illinois at Urbana-Champaign, IL (UIUC)	2002	PhD
University College, Dublin, Ireland	1996	MSc
Queen's University, Belfast, N.Ireland	1982	PGCE
University of Ulster, N.Ireland	1979	BSc

WORK EXPERIENCE:

West Chester University, PA.	Assistant Professor	2005 –
Trinity College, Hartford, CT.	Visiting Assistant Professor	2002 – 2005
UIUC	Teaching Assistant	1996 – 2002
University College, Dublin, Ireland	Teaching Assistant	1994 – 1996
Various high schools, Dublin, Ireland	Mathematics Teacher	1992 – 1994

RESEARCH:

A. Published:

- [1] Polynomial Continued Fractions (With D. Bowman) - Acta Arith. **103** (2002), no. 4, 329–342.
- [2] On the Divergence of the Rogers-Ramanujan Continued Fraction on the Unit Circle (With D. Bowman) - The Transactions of the American Mathematical Society **356** (2004), no. 8, 3325–3347.
- [3] Polynomial Solutions to Pell's Equation and Fundamental Units in Real Quadratic Fields - J. London Math. Soc. (2) **67** (2003), no. 1, 16–28.
- [4] Multi-variable Polynomial Solutions to Pell's Equation and Fundamental Units in Real Quadratic Fields - Pacific J. Math. **210** (2003), no. 2, 335–349.
- [5] On The Divergence in the General Sense of q -Continued Fractions on the Unit Circle (With D. Bowman) - Communications in the Analytic Theory of Continued Fractions **11** (2003), 25–49.
- [6] A Theorem on Divergence in the General Sense for Continued Fractions (With D. Bowman) - The Journal of Computational and Applied Mathematics **172**, no. 2, pp 363–373.
- [7] Combinatorial Identities Deriving from the n -th Power of a 2×2 Matrix - Integers **4** (2004), A19, 14 pp. (electronic).
- [8] Real Numbers with Polynomial Continued Fraction Expansions (with Nancy Wyshinski) - Acta Arith. **116** (2005), no. 1, 63–79.
- [9] A Convergence Theorem for Continued Fractions of the Form $K_{n=1}^{\infty} a_n/1$ (with Nancy Wyshinski) - The Journal of Computational and Applied Mathematics, Volume **179**, Issues 1–2, 1 July 2005, Pages 255-262, containing the proceedings from the Conference on Orthogonal Functions and Related Topics, Roros, Norway, August 2003
- [10] Ramanujan and the Regular Continued Fraction Expansion of Real Numbers (with Nancy Wyshinski) - The Mathematical Proceedings of the Cambridge Philosophical Society, Volume **138** - Issue 03 - May 2005, pp 367 - 381.
- [11] Powers of a matrix and combinatorial identities (with B. Sury) - INTEGERS: The Electronic Journal of Combinatorial Number Theory **5** (2005), A13, 9 pp.

B. Accepted papers:

- [1] The Convergence and Divergence of q -Continued Fractions outside the Unit Circle (With D. Bowman) - To appear in The Rocky Mountain Journal of Mathematics.
- [2] The Convergence behavior of q -Continued Fractions on the Unit Circle (With D. Bowman) - To appear in The Ramanujan Journal.
- [3] Ramanujan and Extensions and Contractions of Continued Fractions (with Nancy Wyshinski) - To appear in The Ramanujan Journal.
- [4] Further Combinatorial Identities Deriving from the n -th Power of a 2×2 Matrix (with Nancy Wyshinski) - To appear in Discrete Applied Mathematics.

C. Submitted Papers:

- [1] Symmetry and specializability in the continued fraction expansions of some infinite products - submitted.
- [2] Continued Fractions with Multiple Limits (With D. Bowman) - submitted.

- [3] Some elementary properties of the distribution of the numbers of points on elliptic curves over a finite prime field (with Saiying He) - submitted.
- [4] Some Observations on Khovanskii's Matrix Methods for extracting Roots of Polynomials (with B. Sury) - submitted. DVI PS PDF
- [5] A q -continued fraction (with Doug Bowman and Nancy Wyshinski) - submitted.

D. Papers in Progress:

- [1] Some Remarks on the Bauer-Muir Transform (with Doug Bowman).
- [2] A Remark on Equal Sums of Fourth Powers.
- [3] Some Further Results on Long Continued Fractions.
- [4] A Simplified Algorithm for Solving Non-Linear Systems of Algebraic Equations.
- [5] Some further identities of the Rogers-Ramanujan type (with Doug Bowman).
- [6] Limit sets for continued fractions, infinite matrix products, and recurrence relations (with Doug Bowman)

D. Invited Conference Talks:

1. "A q -Continued Fraction" - AMS Session on Continued Fractions, San Antonio, January 14, 2006
2. "Symmetry and Specializability in the Continued Fraction Expansions of some Infinite Products" - AMS Session on Number Theory, II, Atlanta, January 5, 2005
3. "Ramanujan and the Regular Continued Fraction Expansion of Real Numbers" - Illinois Number Theory Conference, May 21 - 22, 2004
4. "Continued Fractions with Multiple Limits" - Conference on Orthogonal Functions and Related Topics, Roros, Norway, August 12 - 16 2003
5. "On the Divergence of the Rogers-Ramanujan Continued Fraction on the Unit Circle, II" - 2001 West Coast Number Theory Conference, December 16th - 20, 2001
6. "On the Divergence of the Rogers-Ramanujan Continued Fraction on the Unit Circle" - Illinois Number Theory Conference, May 18 - 20, 2001
6. "Some Polynomial Solutions to Pell's Equation" - AMS Sectional Meeting at Urbana, March 18 - 21, 1999

TEACHING:

A. Courses Taught:

Fall 2002 - Math 132: Calculus II

- Math 231: Calculus III

Spring 2003 - Math 253: Number Theory

- Math 325: Special Topics in Continued Fractions (seminar)

Fall 2003 - Math 107: Elements of Statistics

- Math 131: Calculus I

Spring 2004 - Math 132: Calculus II

- Math 325: Special Topics in Continued Fractions (seminar)

Fall 2004 - Math 125: Functions and Limits

- Math 107: Elements of Statistics

- Math 205: Abstraction and Argument

Spring 2005 - Math 253: Number Theory

- Math 325: Special Topics in Continued Fractions (seminar)

Fall 2005 - Math 121: Statistics

- Math 151: Discrete Mathematics

- Math 414: Algebra I

Spring 2006 - Math 105: College Algebra

- Math 151: Discrete Mathematics

- Math 411: Number Theory

B. Undergraduate Research - Summer 2004, with Saiying He

FELLOWSHIPS AND AWARDS:

Bateman Prize in Number Theory (shared with Kevin O'Bryant) - Spring 2002
Trjitzinsky Fellowship - Spring 2002
Trjitzinsky Fellowship - Spring 2000
Incomplete Lists of Teachers Ranked as Excellent by Their Students - Fall 1999

MEMBERSHIPS:

The American Mathematical Society
The Mathematical Association of America

COMMITTEES:

Computer Steering Committee (2001-2002, UIUC)
Graduate Affairs Committee (2000-2001, UIUC)

ADDITIONAL INFORMATION:

Organizer of a current literature seminar in Spring 2006
Co-organizer (with Nancy Wyshinski) of a Special Session on Continued Fractions
at the 2006 Joint Meetings
Co-organizer (with Nancy Wyshinski) of a Special Session on Continued Fractions
at the 2004 Joint Meetings
Experience in using computer algebra systems like Magma, Mathematica and
PARI/GP