

BENJAMIN A. HUTZ

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Positions Held

Visiting Assistant Professor **Amherst College** Department of Mathematics and Computer Science, Amherst, MA 2007-present

Program Manager **Microsoft Corporation**, Windows Security Group, Redmond, WA 2000-2002

Education

Brown University Providence, RI, MS 2004, PhD 2007
Thesis: *Arithmetic Dynamics on Varieties of Dimension Greater Than One*
Advisor: Joseph Silverman

Duke University Durham, NC, BS Mathematics 2000 cum laude
Minors: Computer Science, French Language
Independent Project: Fall 1999 Elliptic Curves and Applications

Denis-Diderot Paris, France, Fall 1998, Spring 1999
Université de Paris VII Course work: mathematics, linguistics, theater, art history, mythology

New College Oxford, England, Summer 1999
Oxford University Course work: Law and Liability

Research Interests: Arithmetic Dynamics, Arithmetic Algebraic Geometry, Number Theory, Computational Algebraic Geometry, Computational Number Theory.

Publications

1. Faber, Hutz, Ingram, Jones, Manes, Tucker, Zieve, *Uniform Bounds on Pre-Images on Quadratic Dynamical Systems*. *Mathematical Research Letters* 16 (2009), no. 1, 87-101.
2. Hutz, *Rational Periodic Points for Degree Two Polynomial Maps on Projective Space*, *Acta Arithmetica* forthcoming.
3. Hutz, *Good Reduction of Periodic Points*, *Illinois Journal of Mathematics* forthcoming.

Submitted for Publication

1. Faber, Hutz, *Pre-images of the Origin: On the Number of Rational Iterated Pre-images of the Origin Under Quadratic Dynamical Systems*, arXiv:0810.1715.
2. Hutz, *Computational Investigation of Wehler's K3 surfaces*, arXiv:0801.3648.
3. Hutz, *Dynatomic Cycles for Morphisms of Projective Varieties*, arXiv:0801.3643.
4. Hutz, Ingram, *Numerical Evidence for a Conjecture of Poonen*, arXiv:0909.5050.

Supervised Student Research

1. Hyde, *On the Number of Pre-images of -1 Under Quadratic Dynamical Systems*, in progress.

Grant Proposals

NSF: DMS. "Arithmetic dynamics on projective space and K3 surfaces", submitted.
NSA Young Investigator. "Arithmetic dynamics on projective space and K3 surfaces", submitted.

Teaching Experience

Functions and Equations for Calculus	Brown University	Summer 2005, 2006, 2007
Summer Science	Amherst College	Summer 2008
Introduction to the Calculus	Brown University	Fall 2003
	Amherst College	Fall 2007
Intermediate Calculus	Brown University	Fall 2004, Fall 2005, Fall 2006
	Amherst College	Spring 2009, Fall 2009
Multivariable Calculus	Wheaton College	Spring 2006
	Amherst College	Fall 2007, Spring 2008, Fall 2009
Introduction to Number Theory	Amherst College	Fall 2008
Introduction to Real Analysis	Amherst College	Spring 2008, Spring 2009
Topics: Research in Number Theory	Amherst College	Fall 2009

Other Academic Experience

Substitute Teacher **The Wheeler School**, Providence, RI 2005-2006. Substitute teacher for high school calculus.

Teaching Consultant **The Sheridan Center for Teaching and Learning**, Brown University, Providence, RI 2005-2007. Upon request, observe, video tape, and evaluate the effectiveness of classroom teaching techniques. Prepare a written report and discuss conclusions with the observee.

Consultant **Division of Engineering, Brown University**, Providence, RI, summer 2006. Assisted in one week program for graduate students and post-doctoral students on facilitating effective research, focusing on including undergraduates in their research.

Tutor **The Wheeler School**, Providence, RI Spring 2005. Tutored an advanced high school student on aspects of linear algebra and Diophantine equations.

Professional Training

Teaching Certificate I Program	The Sheridan Teaching Seminar, Sheridan Center for Teaching and Learning, Providence, RI, 2003
Teaching Certificate II Program	The Classroom Tools Seminar, Sheridan Center for Teaching and Learning, Providence, RI, 2004
Teaching Certificate III Program	The Professional Developmental Seminar for Advanced Graduate Students, Sheridan Center for Teaching and Learning, Providence, RI, 2005

Awards and Honors

Department of Mathematics Outstanding Teaching Award 2006-2007	Brown University
Brown University Dissertation Fellowship 2007	Brown University
Brown\Wheaton Faculty Fellow 2006	Brown University
VIGRE Fellow 2002-2005	Brown University
Lord Rothermere Scholar 1999	Oxford University
Angier B. Duke Memorial Scholarship 1996-2000	Duke University

Patents

US Patent No. 20050091213 – Schutz et al. “Interoperable credential gathering and access modularity”
US Patent No. 20060242427 – Ruzyski et al. “Credential interface”

Service and Memberships

AMS Member	2002 – present
MAA Member	2002 – present
Five College Number Theory Seminar, Sheridan Center Mathematics Department Liaison	2007 – present
Brown Graduate Student Seminar	2006-2007
Duke Admissions Alumni Advisory Committee	2002-2007
Duke University Mathematics Union	2004-2007
	1996-2000

Lectures

AMS/MAA Joint Meetings – Special Session: Arithmetic and Nonarchimedean Dynamics,
January 2010. “To be determined”

Maine/Quebec Number Theory Conference, “Uniform Boundedness of periodic points”, October 2009

AMS Central Sectional Meeting – Special Session on the Interface Between Number Theory and
Dynamical Systems, March 2009, “Rational Preimages of the Origin”

Five College Number Theory Seminar, February 2009
“Rational Preimages of the Origin Under Quadratic Dynamical Systems”

Five College Number Theory Seminar, October 2007,
“Dynatomic Cycles for Morphisms of Projective Varieties”

Midwest Number Theory Conference for Graduate Students IV, Fall 2006,
“Arithmetic Dynamics on a class of K3 surfaces”

Brown Graduate Student Seminar, Speaker, Fall 2006, “What is a Groebner Basis?”

MAA Northeastern Section Meeting, Speaker, Spring 2006,
“Arithmetic Dynamics on a class of K3 surfaces”

Wheaton College, Speaker, Spring 2006, “Arithmetic Dynamics on a class of K3 surfaces”

Arizona Winter School, Spring 2006
“Cohomological dimensions of the Normal Bundle for certain classes of Monomial Ideals”

Brown Graduate Student Seminar, Spring 2005, “Mazur’s Theorem”

Brown Graduate Student Seminar, Spring 2004, “Gauss Sums”

Brown Graduate Student Seminar, Fall 2004, “Gödel’s Proof”

Conferences

Bellairs Workshop: Moduli Spaces and the Arithmetic of Dynamical Systems, May 2010

AMS/MAA Joint Meetings, January 2010

Maine/Quebec Number Theory Conference, October 2009

AMS Central Sectional Meeting, March 2009

Banff International Research Station: Arithmetic of K3 Surfaces, December 2009

American Institute of Mathematics: Workshop in Arithmetic Dynamics, January 2008

Arizona Winter School: p-adic Geometry, March 2007

AMS/MAA Joint Meetings, January 2007

Midwest Number Theory Conference for Graduate Students IV, Fall 2006

MAA Northeastern Section Meeting Spring 2006

Arizona Winter School: Computational and Algorithmic Aspects of Algebra and Arithmetic, March 2006
Project with Prof. Michael Stillman: “Computing cohomology in algebraic geometry”

Workshop in p-adic Dynamics, Wesleyan University, Middletown, CT, May 2005

AMS/MAA Joint Meetings, January 2003

Computer Skills

Pari/gp, C/C++, Magma, Mathematica, Macaulay 2, Singular, Topcom, Maple, basic web design