

# CHRISTOPHER J. RASMUSSEN

CURRICULUM VITAE

AUGUST 19, 2015

Department of Mathematics &  
Computer Science

Wesleyan University  
265 Church Street  
Middletown, CT 06459

TEL: (860) 685–2315

FAX: (860) 685–2571

EMAIL: crasmussen@wesleyan.edu

## EDUCATION

- 2004 PhD, Mathematics, The University of Arizona.
- 1998 MS, Mathematics, The University of Virginia.
- 1997 BA, Mathematics, The University of Virginia.

## PROFESSIONAL APPOINTMENTS

- 2008– Assistant Professor of Mathematics, Wesleyan University
- 2007–2008 Guest Research Associate, Research Institute for Mathematical Sciences  
Japan Society for the Promotion of Science Postdoctoral Fellow
- 2004–2007 G. C. Evans Instructor, Rice University

## PUBLICATIONS

### Refereed Manuscripts.

1. Rasmussen, C. and Tamagawa, A., Arithmetic of abelian varieties with constrained torsion, *Trans. Amer. Math. Soc.* (accepted for publication).
2. Moody, D. and Rasmussen, C., Character sums determined by low degree isogenies of elliptic curves, *Rocky Mountain J. Math.*, **45** (2015), no. 1 (in press). [arXiv:1210.2743](https://arxiv.org/abs/1210.2743).
3. McLeman, C. and Rasmussen, C., Class number formulas via 2-isogenies of elliptic curves, *Bull. Lond. Math. Soc.*, **44** (2012), no. 6, 1221–1236. [arXiv:1008.4766v2](https://arxiv.org/abs/1008.4766v2).
4. Rasmussen, C., An abelian surface with constrained 3-power torsion, *Galois-Teichmüller theory and arithmetic geometry*, H. Nakamura, F. Pop, L. Schneps, A. Tamagawa, eds., Adv. Stud. Pure Math. **63**, *Math. Soc. Japan* (2012), 449–456.
5. Rasmussen, C., On elliptic curves of conductor  $11^2$  and an open question of Ihara, *Algebraic number theory and related topics 2007*, RIMS Kôkyûroku Bessatsu, B12, *Res. Inst. Math. Sci.* (2009), 101–113.
6. Rasmussen, C., and Tamagawa, A., A finiteness conjecture on abelian varieties with constrained prime power torsion, *Math. Res. Lett.* **15** (2008), no. 6, 1223–1231.
7. Papanikolas, M., and Rasmussen, C., On the torsion of Jacobians of principal modular curves of level  $3^n$ , *Arch. Math. (Basel)* **88** (2007), no. 1, 19–28. [arxiv.org:math/0510023](https://arxiv.org/abs/math/0510023).
8. Rasmussen, C., On the fields of 2-power torsion of certain elliptic curves, *Math. Res. Lett.* **11** (2004), no. 4, 529–538.

**Manuscripts under Review.**

1. Rasmussen, C. and Tamagawa, A., Abelian surfaces good away from 2 (under review). [arXiv:1504.03047](#).
2. Malmskog, B. and Rasmussen, C., Picard curves over  $\mathbb{Q}$  with good reduction away from 3 (under review). [arXiv:1407.7892](#).

**Manuscripts in Preparation.**

1. Rasmussen, C. and Tamagawa, A., Cyclic covers and Ihara's question (in preparation).

## GRANTS, FELLOWSHIPS, AND OTHER FUNDING

**Research Grant.**

2007–2008 KAKEN-HI Grant 19-07028, Grant-in-aid for JSPS Fellows  
Japan Society for the Promotion of Science (1,100,000¥).

**Fellowships.**

2000–2004 VIGRE Graduate Fellowship, University of Arizona

1997–1998 Pratt-Bequest Mathematics Fellowship, University of Virginia

**Other Funding.**

- 2012 Intel Math Program Instructor Training, Travel grant and stipend  
Area Cooperative Educational Services, CT State Department of Education.
- 2008 Project Assistant, Arithmetic of values of  $E$ - and  $G$ -functions  
Arizona Winter School, Southwest Center for Arithmetic Geometry.

## INVITED TALKS

- 2014 Constrained pro-2 torsion in low dimensions  
RIMS Number Theory/Arithmetic Geometry Seminar, December 18.  
Picard curves with good reduction away from 3  
Kyoto University Number Theory Joint Seminar, December 12.  
Picard curves with good reduction away from 3  
Special Session on Galois Theory and Interactions with Algebra and Number Theory, Southeastern Sectional Meeting of the AMS, November 8.  
Picard curves over  $\mathbb{Q}$  with good reduction away from 3  
University of Rochester Number Theory Seminar, October 21.  
Picard curves with good reduction away from 3  
Upstate New York Number Theory Conference, SUNY-Buffalo, April 26.
- 2013 Finiteness results for abelian varieties with constrained arithmetic  
Algebra Seminar, University of Connecticut, October 23.  
Elimination Theory and Implicitization – some flavors of algebraic geometry  
Undergraduate Mathematics Seminar, Connecticut College, October 1.  
Elimination Theory and Implicitization  
University of Connecticut Undergraduate Math Club, September 18.

- 2012 Finiteness of constrained abelian varieties  
Algebra Seminar, University of Virginia, April 25.  
Symmetry in Arithmetic and Geometry  
Gordon Keller Mathematics Major Dinner, University of Virginia, April 25.  
Class number formulas from isogenies  
Five Colleges Number Theory Seminar, Amherst College, April 3.
- 2011 2-Isogenies and weighted character sums  
Kyoto University Number Theory Joint Seminar, January 14.
- 2010 Finiteness results on abelian varieties with constrained torsion  
University of Rochester Number Theory Seminar, November 17.  
Finiteness results on abelian varieties with constrained torsion  
Galois-Theoretic Arithmetic Geometry Satellite Meeting of Joint MSJ-RIMS  
Conference, Kyoto, Japan, October 21.  
Finiteness results on abelian varieties with constrained torsion  
Algebra/Number Theory Seminar, Brown University, March 1.
- 2009 Finiteness results on abelian varieties with constrained torsion  
Algebraic Geometry Seminar, SUNY-Stonybrook, March 31.  
Shapely Numbers  
Undergraduate Mathematics Seminar, University of Portland, January 16.
- 2008 Finiteness results for abelian varieties with constrained torsion  
Five Colleges Number Theory Seminar, Amherst College, November 18.  
Finiteness results for abelian varieties with constrained torsion  
Special Session on Number Theory, AMS Eastern Section, October 12.  
Finiteness results of abelian varieties with constrained torsion  
7th Annual Number Theory Workshop, Hiroshima University, July 24.  
Shapely Numbers, "Science Dialogue"  
Akashi National College of Technology, July 2.  
Finiteness results for abelian varieties with constrained torsion  
Mathematics Seminar, Kagawa University, May 10.  
Abelian varieties with constrained torsion  
Number Theory Workshop, Waseda University, March 10.
- 2007 A finiteness result for abelian varieties with constrained prime power torsion  
Conference on Algebraic Number Theory and Related Topics, Research In-  
stitute for Mathematical Sciences, Kyoto, December 11.  
Abelian varieties with constrained torsion  
Number Theory Seminar, University of Tokyo, November 21.  
The arithmetic of branched covers  
Colloquium, Wesleyan University, March 28.  
The arithmetic of branched covers  
Colloquium, United States Naval Academy, January 30.
- 2006 A finiteness conjecture for abelian varieties with constrained torsion.  
Algebra and Number Theory Seminar, University of Arizona, October 31.  
Career advice for graduate students in mathematics  
Graduate Student Colloquium, University of Arizona, October 30.

- On the arithmetic of Jacobians of modular curves  
Front Range Number Theory Colloquium, Colorado State University,  
September 14.
- Arithmetic from geometry on elliptic curves  
Arithmetic Algebraic Geometry Seminar, RIMS, Kyoto, June 2.
- A finiteness conjecture for abelian varieties over number fields  
Special Session on Galois Theory in Arithmetic and Geometry, Eastern Sec-  
tional Meeting of the AMS, April 22.
- A finiteness conjecture for abelian varieties over number fields  
Special Session on Arithmetic Geometry and Modular Forms, AMS National  
Meeting, San Antonio, TX, January 14.
- 2005 On the torsion of Jacobian varieties of  $X(p^n)$ ,  $p = 2, 3$   
Okayama Workshop on Arithmetic and Geometry, May 19.
- On the torsion of Jacobian varieties of  $X(p^n)$   
ArithmeTexas, Texas A&M University, April 2.
- 2004 Galois representations on fundamental groups  
Number Theory Seminar, Texas A&M University, October 21.
- 2003 Evidence of Ihara's Conjecture  
Number Theory Seminar, University of Texas-Austin, February 27.
- 2002 Galois actions on fundamental groups  
Korea Institute for Advanced Study, Seminar, January 29.

#### DEPARTMENTAL AND CAMPUS TALKS

- 2014 Constrained torsion over  $\mathbb{Q}$ . The case  $g = p = 2$   
Algebra Seminar, October 10.
- 2013 Trigonal curves good away from 3  
Algebra Seminar, September 13.
- 2011 Algebraic Geometry and Figurate Numbers  
Undergraduate Math Club, November 1.
- Class number formulae for isogenies of elliptic curves  
Algebra Seminar, September 23.
- 2009 New conditional finiteness results on abelian varieties, I and II  
Algebra Seminar, October.
- Detecting rational points through Galois action  
Natural Sciences and Mathematics Seminar, February 27.
- 2008 Arithmetic of fundamental groups  
Algebra Seminar, October 10.
- 2006 The Congruent Number Problem  
Undergraduate Conference (Rice University), February 12.
- 2005 On the torsion of Jacobian varieties of  $X(p^n)$   
Algebraic Geometry Seminar (Rice University), May.
- 2004 Analysis and Number Theory Seminar (Rice University), September.

## CONFERENCE ORGANIZED

- 2006 Algebraic Geometry: A Conference for Undergraduate Mathematics Majors  
Rice University, February 10–12.

## TEACHING EXPERIENCE

### Recognition/Honors.

- 2009 Honored by the creation of a scholarship by the Weinrott family to recognize  
“extraordinary teaching.”

### Theses Supervised.

- 2015 Nathaniel Josephs, MA Mathematics, May  
Thesis: *Finding rational solutions on a nonsingular cubic surface in  $\mathbb{P}^3$*
- 2014 Abbey Bourdon, PhD Mathematics, May  
Thesis: *A uniform version of a finiteness conjecture for elliptic curves with complex multiplication*  
Postdoctoral Teaching and Research Associate, University of Georgia

### Graduate Courses.

Algebra (2010, 2010, 2014)  
Topics in Algebra: Affine Group Schemes (2013)  
Topics in Algebra: Algebraic Geometry (2009)  
Topics in Algebra: Elliptic Curves (2006 [Rice University], 2011)  
Topology (2012)

### Undergraduate Mentoring.

- 2013 Honors Advisor, Jeremy Fehr  
2011 Honors Advisor, Qianqian Lin

### Undergraduate Courses.

Abstract Algebra (2009, 2013, 2013, 2015)  
Algebraic Geometry (2011)  
Calculus I (2011)  
Complex Analysis (2008, 2010)  
Discrete Mathematics (2013, 2014)  
Linear Algebra (2014, 2015)  
Multivariable Calculus (2008, 2009, 2010, 2011, 2014)

### Professional Development Courses.

Intel Math Program (2012, 2013, 2014, 2015)

### Tutorials.

Algebraic Geometry (2011, 2014, 2015)  
Commutative Algebra (2008)  
Differential Geometry (2009)  
Elliptic Curves (2013)

## SERVICE TO PROFESSION

### Service as Referee.

International Journal of Number Theory  
 Journal of Number Theory  
 London Mathematical Society Lecture Note Series  
 Proceedings of the American Mathematical Society  
 Proceedings of the Japan Academy, Series A

### Professional Memberships.

American Mathematical Society  
 Mathematics Association of America  
 JSPS Alumni Association

## CAMPUS SERVICE

### University Service.

2014–2015 University Major Subcommittee of Educational Policy Committee.  
 2010–2012 Tenure-Track Representative to Academic Council.

### Department Service.

2015–2016 Undergraduate Prizes and Examination Committee  
 2014–2016 Department Recorder  
 2008–2015 Co-organizer, Algebra Seminar  
 2013–2014 Graduate Education Committee  
 2010–2013 Undergraduate Prizes and Examination Committee  
 2010–2012 Web Site Committee  
 2010–2012 Creator and Maintainer of Department Weblog  
 2008–2010 Department Advisory Committee

### Graduate Examinations.

2015      Reader, PhD Defense, Gabriel Valenzuela  
             Reader, MA Defense, John Bergan  
 2014      Preliminary Examination, Alicia Marino  
             Reader, PhD Defense, James Ricci  
             Reader, PhD Defense, Bonita Graham  
 2013      Reader, PhD Defense, Anna Haensch  
 2012      Preliminary Examination, Jingbo Liu  
             Preliminary Examination, Bonita Graham  
             Preliminary Examination, James Ricci  
             Preliminary Examination, Abbey Bourdon  
 2011      Reader, MA Defense, Juan Pablo Francisco  
 2010      Preliminary Examination, Anna Haensch

- 2009 Preliminary Examination, Indika Gamage  
Reader, PhD Defense, Becky Hall  
Reader, MA Defense, Anna Radlowski
- 2008 Preliminary Examination, Glenn Henshaw
- 2007 Preliminary Examination, Shuijing Li (Rice University)  
Preliminary Examination, Bradley Duesler (Rice University)

**Undergraduate Examinations.**

- 2015 Honors Reader, Sangsan Warakkagun
- 2013 Honors Reader, Brenna Sansom  
Honors Reader, Randy Linder  
Honors Reader, Grace Collins-Hovey
- 2011 Honors Reader, Bethany Berkowitz  
Honors Reader, Michael Chou  
Honors Reader, Jonas Mishara-Blomberger  
Honors Reader, David Puelz  
Honors Reader, Joel Specter