Curriculum Vitae

Rebecca M. Steiner

Contact Information:

Department of Mathematics
Virginia Tech
College of Science
Blacksburg, VA 24061-0123
mobile phone: 917.951.2968
email: rmsteiner@vt.edu

Education:

- Ph.D., Mathematics, Graduate Center of the City University of New York (CUNY), May 2012.
  Dissertation: Reducibility, Degree Spectra, and Lowness in Algebraic Structures
  Advisor: Russell G. Miller
- B.A., Mathematics, *summa cum laude*, Macaulay Honors College at Queens College, CUNY, June 2005.

Employment:

- Visiting Assistant Professor, Department of Mathematics, Virginia Tech, August 2017 - present.
- Instructor, Department of Mathematics & Applied Mathematics, Virginia Commonwealth University, August 2015 - May 2017.
- Assistant Professor (NTT), Department of Mathematics, Vanderbilt University, August 2012 - May 2015.
- Adjunct Instructor, Department of Mathematics, Queens College of the City University of New York, August 2005 - May 2012.

Research Interests:

Mathematical logic, specifically computability theory and computable structure theory

Professional Memberships:

- Association for Symbolic Logic
- Computability in Europe
- American Mathematical Society

Honors & Awards:

- Best Student Paper Award, awarded annually since 2010 by Computability in Europe, for the best paper submitted by a student to the proceedings volume of the yearly conference, 2010.
- Eva and Jacob Paulson Memorial Award for Outstanding Work in Mathematics, awarded annually by Queens College, CUNY, to the top graduating senior in mathematics, 2005.

Publications:

- Research Articles:
  - Computable Fields and the Bounded Turing Reduction, *Annals of Pure and Applied Logic*, **163** (2012), 730-742.
  - Effective Algebraicity, *Archive for Mathematical Logic*, **52** (2013), 91-112.
  - Effective Classification of Computable Structures, with K. Lange and R. Miller, *Notre Dame Journal of Formal Logic*, **59** (2018), 35-59.
- Proceedings Chapters & Peer-Reviewed Extended Research Abstracts:
  - Computable Fields and Weak Truth-Table Reducibility, *Programs, Proofs, Processes: Sixth Conference on Computability in Europe, CiE 2010*, eds. F. Ferreira, B. Löwe, E. Mayordomo, & L. M. Gomes, *Lecture Notes in Computer Science* **6158** (Berlin: Springer-Verlag, 2010), 394-405.
  - Low_n Boolean Subalgebras, *How the World Computes: Eighth Conference on Computability in Europe, CiE 2012*, eds. S. B. Cooper, A. Dawar, & B. Löwe, *Lecture Notes in Computer Science* **7318** (Springer-Verlag, 2012), 696-702.
  - On the Effectiveness of Symmetry Breaking, with R. Miller and R. Solomon, *Language, Life, Limits: Tenth Conference on Computability in Europe, CiE 2014*, eds. A. Beckmann, E. Csuhaj-Varju, and K. Meer, *Lecture Notes in Computer Science* **8493** (Berlin: Springer-Verlag, 2014), 314-323.

Ongoing work:

- Breaking Symmetries Effectively, with R. Miller and R. Solomon, in preparation.
- Size n Automorphism Spectra, in preparation.
- Coarse Computability for Linear Orderings, with J. Franklin, in preparation.

Conference Talks:

- "Automorphism Spectra of Size $2^n - 1$," invited talk at the Special Session on Computable Structure Theory, *Spring Eastern Sectional Meeting of the American Mathematical Society*, Georgetown University, Washington, D.C., March 2015.
- "Effective Symmetry Breaking," *Tenth Conference on Computability in Europe: CiE 2014*, Budapest, Hungary, June 2014.
- "Effective Symmetry Breaking," invited talk at the Special Session on Computability in Geometry and Topology, *Joint Mathematics Meetings*, Baltimore, Maryland, January 2014.
- "Effective Symmetry Breaking," invited talk in the Special Session on Computability Across Mathematics, *Fall Central Sectional Meeting of the American Mathematical Society*, Washington University, St. Louis, Missouri, October 2013.
- "Low_n Boolean Subalgebras," *Eighth Conference on Computability in Europe: CiE 2012*, University of Cambridge, England, United Kingdom, June 2012.
- "Low_n Boolean Subalgebras," invited talk at the Special Session on The Life and Legacy of Alan Turing, *Joint Mathematics Meetings*, Boston, Massachusetts, January 2012.
- "Orbit Relation and Isomorphism Type for Computable Trees Under Predecessor," *Seventh Conference on Computability in Europe: CiE 2011*, Sofia University, Sofia, Bulgaria, June 2011.

- "The Art of Galois Theory in Computable Field Theory," invited talk at the *Spring Eastern Sectional Meeting of the American Mathematical Society*, College of the Holy Cross, Worcester, Massachusetts, April 2011.
- "Effective Algebraicity," invited talk at the *Workshop on Computability Theory*, University of San Francisco, March 2011.
- "Computable Fields and the Weak Truth-Table Reduction," *Sixth Conference on Computability in Europe: CiE 2010*, Universidade dos Açores, Ponta Delgada, Açores, Portugal, July 2010.
- "Computable Fields and the Weak Truth-Table Reduction," *New York Graduate Student Logic Conference*, CUNY Graduate Center, May 2010.
- "The Complexity of Infinite-Time Decidability and Computability," *New York Tutorial on Infinitary Computation*, CUNY Graduate Center, January 2007.

Seminar and Colloquium Talks:

- "Automorphism Spectra of Size $2^n - 1$," invited talk at the *Southeastern Logic Symposium*, University of Florida at Gainesville, March 2015.
- "Effective Symmetry Breaking," *Algebra and Logic Seminar*, Vanderbilt University, November 2013.
- "Is it harder to factor a polynomial or find a root? part II," *Algebra and Logic Seminar*, Vanderbilt University, February 2013.
- "Is it harder to factor a polynomial or find a root?," invited talk at the *Mathematics Colloquium*, Southern Illinois University at Carbondale, October 2012.
- "Is it harder to factor a polynomial or find a root?," *Algebra and Logic Seminar*, Vanderbilt University, October 2012.
- "Orbit Relation and the Isomorphism Problem for Computable Trees Under Predecessor," invited talk at the *Ohio State Logic Seminar*, Ohio State University, January 2012.
- "Fields, Graphs, and Isomorphism Trees," *Mathematics Department Colloquium*, Queens College, CUNY, February 2011.
- "Effective Algebraicity," invited talk at the *Notre Dame Logic Seminar*, University of Notre Dame, February 2011.
- "Computable Fields and the Bounded Turing Reduction," invited talk at the *Midwest Computability Seminar*, University of Chicago, February 2011.
- "Effective Algebraicity," *Model Theory Seminar*, CUNY Graduate Center, February 2011.
- "Computable Fields and the Bounded Turing Reduction," invited talk at the *Connecticut Logic Seminar*, Wesleyan University, Middletown, Connecticut, October 2010.
- "An Infinite Computable Linear Ordering with No Infinite Computable Ascending or Descending Sequence," Parts I and II, *Model Theory Seminar*, CUNY Graduate Center, December 2009.
- "Linear Orderings and Computable Presentability," oral exam talk, CUNY Graduate Center, December 2009.
- "Models Definable in Models of Peano Arithmetic," Parts I and II, *Model Theory Seminar*, CUNY Graduate Center, September 2008.

- "Quantifier Elimination for Real Closed Fields," Parts I and II, *Model Theory Seminar*, CUNY Graduate Center, November 2007.
- "Gaifman's Splitting Theorem," *Model Theory Seminar*, CUNY Graduate Center, May 2007.

Service Activities:

- faculty advisor to the Women in Mathematics Club at Virginia Commonwealth University, August 2016 - May 2017
- member of the Course Substitution Committee at Virginia Commonwealth University, October 2015 - May 2017
- ad hoc referee for *Computability* (2013) and *Lecture Notes in Computer Science* (2015 & 2006)
- member of the organizing committee of the Spring 2012 Mid-Atlantic Mathematical Logic Seminar (March 9-10, 2012)
- served as "Portfolio Advisor" for students in the undergraduate mathematics education program at Queens College, 2006 - 2008
- starred in an informational video for the Richmond Times-Dispatch about Pi Day

Principal Research Visits:

- University of Florida, Gainesville, FL, March 2-4, 2015, by invitation of Prof. Douglas Cenzer.
- University of Connecticut, Storrs, CT, June 16-19, 2014, by invitation of Prof. Reed Solomon.
- Invited participant in the workshop *Computable Model Theory*, Banff International Research Station, Banff, AB, Canada, November 3-8, 2013.

Teaching Experience:

Courses taught at Virginia Tech:

Math 2204 - Multivariable Calculus
Math 2114 - Introduction to Linear Algebra

Courses taught at Virginia Tech:

Math 2204 - Multivariable Calculus
Math 2114 - Introduction to Linear Algebra

Courses taught at Virginia Commonwealth University:

Math 141 - College Algebra with Applications & Modeling
Math 200 - Calculus I with Analytic Geometry
Math 201 - Calculus II with Analytic Geometry
Math 492.1 - an independent study in computability theory

Courses taught at Vanderbilt University:

Math 175 - Multivariable Calculus
Math 194 - Linear Algebra

Courses taught at Queens College, City University of New York:

Math 115 - College Algebra
Math 120 - Discrete Mathematics for Computer Science
Math 131 - Calculus with Applications to the Social Sciences
Math 141 - Calculus I: Differentiation
Math 142 - Calculus II: Integration
Math 220 - Discrete Mathematics