

Gregg J. Musiker

gmusiker@math.ucsd.edu
(858) 452-1972
<http://www.math.ucsd.edu/~gmusiker>

UCSD Mathematics Department
9500 Gilman Drive, Dept 0112
La Jolla, CA 92093-0112 USA

Education

Ph.D. Mathematics, University of California, San Diego, expected in Spring 2007
Advisor: Adriano Garsia

M.A. Mathematics, University of California, San Diego, Spring 2004

A.B. Mathematics, Harvard University, Spring 2002, *Magna Cum Laude*

Awards and Honors

Achievement Rewards for College Scientists Scholar, San Diego Chapter, 2003–Present
David Loring Scholarship, 2000–2002
Harvard College Scholarship, 1998–2000

Research Interests

Algebraic and Geometric Combinatorics: Chip-Firing Games, Cluster Algebras, Combinatorial Reciprocity, Cyclic Languages, Invariant Theory, Root Systems and Reflection Groups, Symmetric Functions

Number Theory: Diophantine Systems, Elliptic Curves, Zeta Functions

Research and Teaching Experience

Associate Instructor, University of California, San Diego, 2006–Present (Precalculus)

Research Assistant, University of California, San Diego, Summers 2003–2006

Teaching Assistant, University of California, San Diego, 2002–2006 (Combinatorics, Cryptography, Linear Algebra, Mathematical Reasoning, and Number Theory)

Participant, Institute for Advanced Study/Park City Mathematics Institute, Graduate Summer School in Geometric Combinatorics, July 2004

Research Assistant, NSF REACH group, 2001–2002 <http://www.math.harvard.edu/~propp/reach/>

Course Assistant, Harvard University, 2000–2002 (Abstract Algebra, Calculus, and Linear Algebra)

Research Assistant, NSF Research Experience for Undergraduates at Mt. Holyoke College, June–July 2001 <http://www.mtholyoke.edu/acad/math/reu/>

Volunteer Teacher, Harvard Chinatown ESL (English as a Second Language), 2000–2002

Resident/Teaching Assistant, Summer Institute for the Gifted, Summers 1999–2002
<http://www.giftedstudy.com>

Publications

G. Musiker and J. Propp. Combinatorial Interpretations for Rank-Two Cluster Algebras of Affine Type. *Electronic Journal of Combinatorics*. (to appear 2007) [arXiv:math.CO/0602408](https://arxiv.org/abs/math.CO/0602408)

A. Garsia and G. Musiker. *Basics on Hyperelliptic Curves over Finite Fields*. *Mongraphies du LaCIM*. (to appear 2007)

J. Bandlow and G. Musiker. Quasi-invariants of S_3 . *J. Combin. Theory Ser. A* **109** (2005), no 2, 281–298. [arXiv:math.CO/0603482](https://arxiv.org/abs/math.CO/0603482)

Cluster Algebras, Somos Sequences, and Exchange Graphs. Senior Honors Thesis, Harvard University. 2002

Advisor: Richard Stanley (MIT)

<http://www.math.ucsd.edu/~gmusiker/uthesis.pdf>

Publications Submitted

G. Musiker. Combinatorial Aspects of Elliptic Curves

Presentations

Recent Progress in Combinatorics on Words, Centre de Recherches Mathématiques, Université du Québec à Montréal, March. 2007 (Upcoming)

Elliptic Curves and Chip Firing Games. UC Berkeley Combinatorics Seminar. Berkeley, Dec. 2006

Harvey Mudd College Conference on Enumerative Combinatorics. Claremont, Oct. 2006 (Poster)

Chip-Firing Games. UCSD Food for Thought Seminar. San Diego, Oct. 2006

Combinatorial Aspects of Elliptic Curves. 18th International Conference on Formal Power Series and Algebraic Combinatorics, San Diego, June 2006

From *Alphas* to *Zetas* and Two Kinds of Fields. UCSD Food for Thought Seminar. San Diego, Mar. 2006

Combinatorial Aspects of Elliptic Curves. Université du Québec à Montréal, Dec. 2005

Combinatorial Aspects of Hyperelliptic Curves. University of California, San Diego, Oct. 2005

Quasi-invariants of S_3 . Joint Meetings of the AMS and MAA. Phoenix, Jan. 2004 (Contributed Paper)

Finite Projective Planes: A Mathematical Definition of 'Nice'. Harvard Math Table, Cambridge, Feb. 2002

University Service

Vice President of Financial Affairs, Graduate Student Association of UCSD, 2005–2006

Mathematics Department Representative for the Graduate Student Association of UCSD, 2004–2006