

# Curriculum Vitae

Daniel A. Daly

## Contact

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## Education

- In Progress: Ph.D.: Mathematics and Computer Science, University of Denver, advisor: Petr Vojtěchovský  
Expected Date of Graduation: June 2009
- M.S. (2005): Mathematics - University of Denver
- B.S. (2002) (Magna Cum Laude): Major: Computer Science; Minors: Mathematics and French - University of Denver

## Experience

- 2006-2007: Bill Dorn Lecturer, Dept. of Mathematics, University of Denver.  
Courses Taught: Calculus I, Calculus II
- 2002-Present: Graduate Teaching Assistant, Dept. of Mathematics, University of Denver.  
Assisted in: Calculus I, Calculus III, Business Calculus, Discrete Structures for Computer Science, Symbolic Logic, Introduction to Discrete Structures, Elements of Linear Algebra, Introduction to Abstract Algebra, Introduction to Probability

## Research Interests

- Enumerative and Algebraic Combinatorics (specifically Permutation Patterns)
- Coxeter Group Theory
- Nonassociative Algebra

## Professional Memberships

- American Mathematical Society
- Mathematical Association of America

## Awards and Honors

- Bill Dorn Lectureship in Mathematics 2006-2007
- Phi Beta Kappa (member since 2002)

## Publications

1. *Fibonacci Numbers, Reduced Decompositions and 321/3412 Pattern Classes*, submitted to *Annals of Combinatorics* (submitted November 2008).
2. *Enumeration of Nilpotent Loops via Cohomology*, with Petr Vojtěchovský, submitted to *Journal of Algebra* (submitted August 2008).
3. *Reduced Decompositions with One Repetition and Permutation Pattern Avoidance*, submitted to *Order* (submitted March 2008).

4. *How Permutations Displace Points and Stretch Intervals*, with Petr Vojtěchovský, to appear in *Ars Combinatoria* (2009).

#### **Conference/Seminar Invited Talks**

- *Reduced Decompositions with Few Repetitions and Permutation Patterns* Algebraic Lie Theory Seminar, University of Colorado-Boulder, Boulder, CO, USA (April 29, 2008).

#### **Conference/Seminar Contributed Talks**

- *Permutation Patterns* Kempner Colloquium, University of Colorado-Boulder, Boulder, CO, USA (December 1, 2008).
- *Reduced Decompositions with Few Repetitions and Permutation Patterns* 11th Annual Rocky Mountain Discrete Mathematics Days, University of Wyoming, Laramie, WY, USA (September 12-13, 2008).
- *Bruhat Intervals and Permutation Patterns* BLAST Conference, University of Denver, Denver, CO, USA (August 6-10, 2008).
- *Reduced Decompositions with Few Repetitions and Permutation Patterns* Permutation Patterns 2008 Conference, University of Otago, Dunedin, New Zealand (June 16-20, 2008).
- *Connections Between Reduced Decompositions and Permutation Patterns* MAA 2008 Rocky Mountain Section Meeting, Black Hills State University, Spearfish, SD, USA (April 25-26, 2008).
- *How Permutations Displace Points and Stretch Intervals*, 10th Rocky Mountain Discrete Mathematics Days, Colorado State University, Fort Collins, CO, USA (August 2-3, 2007).

#### **Service Activities**

- Local Organizer: 2nd Mile High Conference on Nonassociative Mathematics, University of Denver, Denver, CO, USA (June 21-June 27, 2009)
- Organizer: University of Denver Dept of Mathematics Student Seminar (Fall 2006-Spring 2008).
- Local Organizer: BLAST Conference, University of Denver, Denver, CO, USA (August 6-10, 2008)
- Local Organizer: Mile High Conference on Loops, Quasigroups and Nonassociative Systems, University of Denver, Denver, CO, USA (July 2-9, 2005).
- Local Organizer: Quantum Structures 2004, University of Denver, Denver, CO, USA (July 17-22, 2004).

#### **Travel Grants**

- Grant to travel to Permutation Patterns 2008, Dunedin, New Zealand (June 2008).
- Grant to travel to Permutation Patterns 2007, St. Andrews, Scotland (June 2007).

#### **Talks Given at the University of Denver**

- *Reduced Decompositions, Repetitions and Permutation Patterns*, Mathematics Graduate Colloquium, September 19, 2008.
- *Reduced Decompositions with Few Repetitions and Permutation Patterns*, Mathematics Graduate Colloquium, May 9, 2008.
- *Epimorphisms and Surjections in Groups*, Algebra and Logic Seminar, April 18, 2008.
- *Connections Between Reduced Decompositions and Permutation Patterns*, Mathematics Graduate Colloquium, February 29, 2008.
- *A Nice Result on Generating Functions II*, Mathematics Student Seminar, February 18, 2008.
- *A Nice Result on Generating Functions I*, Mathematics Student Seminar, February 11, 2008.
- *Stack-Sortable Permutations*, Mathematics Student Seminar, October 1, 2007.
- *Permutation Pattern Avoidance*, Mathematics Graduate Colloquium, June 1, 2007.

- Permutations, Bruhat Order and Coxeter Groups II, Mathematics Student Seminar, April 10, 2007.
- Permutations, Bruhat Order and Coxeter Groups I, Mathematics Student Seminar, April 3, 2007.
- Permutations and Young Tableaux, Mathematics Student Seminar, October 12, 2006.
- Pattern Avoidance, Mathematics Student Seminar, February 6, 2006.
- Designs and Projective Planes, Mathematics Graduate Colloquium, January 14, 2005.
- Average Permutations, Mathematics Graduate Colloquium, September 19, 2003.
- Displacement of Permutations, Mathematics Graduate Colloquium, September 12, 2003.
- Combinatorial Games, Mathematics Graduate Colloquium, May 16, 2003.

### **Other Conferences and Meetings Attended**

- AMS/MAA 2008 Joint Mathematics Meetings, San Diego, CA, USA (January 6-9, 2008).
- AMS 2007 Fall Central Section Meeting, Chicago, IL, USA (October 5-6, 2007).
- Permutation Patterns 2007, St. Andrews, Scotland (June 11-15, 2007).
- MAA Rocky Mountain Section Meeting, Pueblo, CO, USA (April 13-14, 2007).
- AMS/MAA 2007 Joint Mathematics Meetings, New Orleans, LA, USA (January 5-8, 2007).
- 9th Rocky Mountain Discrete Mathematics Days, University of Wyoming, Laramie, WY, USA (August 1-2, 2005).
- Mile High Conference on Quasigroups, Loops and Nonassociative Systems, University of Denver, Denver, CO, USA (July 2-9, 2005).
- Graph Theory with Altitude, University of Colorado at Denver, Denver, CO, USA. (May 17-20, 2005).
- 8th Rocky Mountain Discrete Mathematics Days, Colorado College, Colorado Springs, CO, USA (August 1-2, 2004).
- Quantum Structures 2004, University of Denver, Denver, CO, USA. (July 17-22, 2004).

### **Computer Skills**

- C/C++ Programming, Latex, Scientific Notebook, GAP, Mathematica, HTML

### **References**

- Prof. Petr Vojtěchovský, University of Denver, Denver, CO; petr@math.du.edu, 303.871.3314.
- Prof. Richard N. Ball, University of Denver, Denver, CO; rball@math.du.edu, 303.871.3294.
- Prof. Michael K. Kinyon, University of Denver, Denver, CO; mkinyon@math.du.edu, 303.871.3288.
- Prof. Bryan L. Shader, University of Wyoming, Laramie, WY; bshader@uwyo.edu, 307.766.6826.

(updated December 2, 2008)