

# Joshua Ducey

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## EDUCATION

University of Florida, 2007-present. Gainesville, FL  
Ph.D. in Mathematics anticipated, May 2011.  
Specialized in Group Representation Theory.  
Cummulative GPA: 3.8/4.0

University of Florida, 2005-2007. Gainesville, FL  
M.S. in Mathematics, May 2007.

University of Richmond, 2001-2005. Richmond, VA  
B.A. in Mathematics, May 2005.

## POSITIONS

University of Florida, Gainesville, FL  
August 2005 - present.  
Graduate Teaching Assistant

Docks, Inc., May 2005 - August 2005. St. Petersburg, FL  
Dock Builder

Rain Room, Inc., August 1997 - May 2005. Potomac, MD  
Technician

## RESEARCH

### **Research Interests:**

- Algebra, Combinatorics
- Permutation Modules, Diagonal Forms of Incidence Matrices, Designs, Codes
- Applications of Representation Theory to Geometry and Combinatorics

**Ph.D. Advisor:** Dr. Peter Sin.

**Dissertation Title:** Problems in Algebraic Combinatorics.

**Publications:**

- The Elementary Divisors of the Incidence Matrices of Skew Lines in  $PG(3, p)$ . (*with P. Sin.*) Available at <http://arxiv.org/abs/1001.2551>
- The Elementary Divisors of the Incidence Matrix of Skew Lines in  $PG(3, q)$ . (*with A. E. Brouwer and P. Sin.*) Submitted.

**Talks and Workshops:**

- Joint Mathematics Meetings, January 2011, New Orleans, LA.  
Talk on invariants of incidence matrices in the session on Combinatorics and Graph Theory.
- Conference on Designs, Codes, and Geometries, March 2010, University of Delaware.  
Talk on integer invariants of skew lines in  $PG(3, q)$ .
- Student Workshop on Quadratic Forms, Sums of Squares, Theta Functions and Integral Lattices, March 2009, University of Florida.
- Conference on Group Representations and Combinatorics, September 2007, University of Florida.
- Regularly attend and present in the Algebra Seminar, University of Florida.

TEACHING

*Previous/Current Courses (University of Florida):*

- MAC2313 Analytic Geometry and Calculus 3
- MAC2312 Analytic Geometry and Calculus 2 (*Lecture*)
- MAC2311 Analytic Geometry and Calculus 1 (*Lecture*)
- MAC2233 Survey of Calculus
- MAC1147 Precalculus: Algebra and Trigonometry (*Lecture*)
- MAC1140 Precalculus: Algebra (*Large lecture of approx. 300 students*)
- MAC1105 Basic College Algebra (AIM Program) (*Lecture*)

HONORS AND AWARDS

- **Keene Dissertation Fellowship, University of Florida, Spring 2011.** One of 12 dissertation fellowships awarded by the College of Liberal Arts and Sciences (approx. 30 departments). Given to graduate students whose dissertation projects are deemed by a selection committee to be highly meritorious. Carries a 5,000 dollar stipend and tuition waiver.
- **Chat Yin Ho Memorial Scholarship, University of Florida, Fall 2010.** Established in 2005 by colleagues and friends in memory of the late Dr. Chat Yin Ho. Includes a 2,000 dollar cash award, and is given to a graduate student demonstrating excellence in pure mathematics.

- **Teaching Award: Certificate of Excellence, Department of Mathematics, University of Florida, March 2010.**
- **Teaching Award: Certificate of Merit, Department of Mathematics, University of Florida, March 2008.**
- **Graduate Travel Award, College of Liberal Arts and Sciences, University of Florida, January 2011.**
- **Graduate Travel Award, College of Liberal Arts and Sciences, University of Florida, April 2010.**

### ACTIVITIES

- **Volunteer Teacher, Gainesville Correctional Institution, Gainesville, FL, August 2010-present.** Individual tutoring for inmates preparing for the G.E.D. (high school equivalency) examination.
- **President, Club Wrestling Team, University of Richmond, Sept. 2004-May 2005.**
- **Member, Club Wrestling Team, University of Richmond, Sept. 2001-May 2005.**
- **Member, Club Lacrosse Team, University of Richmond, Sept. 2001-May 2005.**

### SKILLS

- **Computer skills:** Experienced with SAGE, MATLAB, Python, C++, Java, LinBox, L<sup>A</sup>T<sub>E</sub>X, and Linux.

### REFERENCES

- **Dr. Miklós Bóna.** Professor, Department of Mathematics, University of Florida. bona@ufl.edu
- **Dr. James Davis.** Professor, Department of Math and Computer Science, University of Richmond. jdavis@richmond.edu
- **Dr. Paul Robinson.** Professor, Department of Mathematics, University of Florida. paulr@ufl.edu
- **Dr. Peter Sin.** Professor, Department of Mathematics, University of Florida. sin@ufl.edu
- **Dr. Rick Smith.** Associate Chairman/Undergraduate Coordinator, Department of Mathematics, University of Florida. rs@ufl.edu