

## Ogül Arslan Duncan

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### EDUCATION

- Ph.D., Mathematics, University of Florida, Gainesville, FL, 2009
- M.A., Mathematics, Wayne State University, Detroit, MI, 2004
- B.S., Mathematics Education, Middle East Technical University, Ankara, Turkey, 1997

### WORK EXPERIENCE

#### August 2011-Present, Coastal Carolina University, Conway, SC

- Taught Trigonometry, Contemporary Mathematics, Calculus I, Calculus II, Calculus for Business and Social Sciences, Mathematical Proofs and Problem Solving, Geometry for Middle School Teachers, Foundations of Geometry, Coding Theory, Linear Algebra, Abstract Algebra
- Served as Math department student advisor, 2014-present
- Served on department Promotion and Tenure Committee, 2016-present
- Pi Mu Epsilon Chapter Advisor, 2016-present
- Department Curriculum Committee member, 2016-present
- Course coordinator – Math 131 Trigonometry, 2016-2019
- Co-coordinator of Putnam Exam practice, registration, and administration 2011-2018
- Co-coordinator of Coastal Carolina's College Quiz Bowl team 2013-2016
- Served on Faculty Senate 2013-2016
- Served on Lecturer Search Committee, 2011-12
- Served on College Assessment Committee, 2011-13

#### August 2009-August 2011, Coastal Carolina University, Conway, SC

Visiting Assistant Professor

- *Taught Foundation of Geometry (for high school teachers), Geometry for Middle School Teachers, Trigonometry, Calculus for Business and Social Sciences, Calculus 1*

#### August 2004 –August 2009, University of Florida, Gainesville, FL

Graduate Assistant: Instructor

- *Taught Basic College Algebra, Survey of Calculus-1, Calculus-2*

Graduate Assistant: Lecturer

- *Taught lecture hall classes of over 100 students for the Mathematics for Elementary School Teachers and Survey of Calculus courses.*

Graduate Assistant: Discussion Leader

- *Conducted discussion groups for Pre-Calculus, Mathematics for Liberal Arts Majors, Calculus-1, Survey of Calculus-1, Calculus-2 for Advanced Placement Students*

**August 2002 - August 2004, Wayne State University, Detroit, MI**

Graduate Assistant: Discussion Leader

- *Conducted discussion groups for Beginning Algebra, and Algebra with Trigonometry for Emerging Scholars Program*

Graduate Assistant: Instructor

- *Taught Beginning Algebra, College Algebra for the Social and Management Sciences, Mathematics for Elementary School Teachers*

**September 1998 - December 2001, BEK Private High School, Ankara, Turkey**

Mathematics Group Coordinator

- *Designed course outlines, selected text books, prepared group exams*
- *Lead weekly instructor meetings*

Mathematics Teacher

- *Taught Geometry, Analytic Geometry, Algebra, Pre-Calculus, and Calculus for grades ranging from 6 to 11, conducted student-parent meetings*
- *Taught special sessions in weekends for students who need extra help in mathematics*

**September 1997-September 1998, Yukselis Private Schools, Ankara Turkey**

Mathematics Teacher

- *Taught Geometry, Analytic Geometry, Algebra, Pre-Calculus, and Calculus for grades ranging from 9 to 11*

**September 1996 – September 1997, TED Private Schools, Ankara Turkey**

Undergraduate Research Assistant for Mathematics Education Project (MATEP)

*Funded by TED Private Schools and the Scientific and Technological Research Council of Turkey*

- *Prepared tests in mathematics for grades 1 to 6 targeting the common pitfalls*
- *Developed lectures and activities to overcome misconceptions about and fear of mathematics*

*The work was published as the book Renkli Matematik, in Turkey, and used by elementary school teachers.*

**RESEARCH INTERESTS**

- Finite Geometries
- Representation Theory
- Combinatorics
- Incidence Structures
- Coding Theory

**Undergraduate Research Interests:**

- Voronoi Diagrams
- Integer Sequences

## RESEARCH PAPERS

- Generalizing Random Fibonacci Sequences, Preprint *D Duncan, O.Duncan, A.Foster, P.Sansgiry*
- A remark on Grassman and Veronese embeddings of quadrangles in characteristic 2, *Innovations on Incidence Geometry*, 2015, *O. Arslan, P. Sin*
- Some simple modules for classical groups and p-ranks of orthogonal and Hermitian geometries, *Journal of Algebra*, 2010, *O. Arslan, P.Sin*
- Dimensions of  $LU(3,q)$  Codes, *Jour. of Comb. Theo. – Series A*, 2009, *O. Arslan*
- Constructing Mathieu Groups by Steiner Systems, *Expository Paper*, *O. Arslan*

## DISSERTATION

- **Topic:** Some Algebraic Problems from Coding Theory
- **Supervisor:** Peter Sin, *Professor, University of Florida*

## CONFERENCES, SEMINAR TALKS, AND PRESENTATIONS

- Math Behind Chipkill, Student Presentation, *Cannon McIntosh* March 2019, MAA Southeastern Section Tennessee
- Generalizing Random Fibonacci Sequences, Student Presentation, *Alexander Foster* March 2019, MAA Southeastern Section Tennessee
- Generalized Fibonacci Numbers, Student Presentation, *Dominique Forbes, Tyler Sullivan* January 2018, Nebraska Conference for Women in Mathematics
- Generalized Fibonacci Numbers, Student Presentation, *Dominique Forbes, Tyler Sullivan* January 2018, JMM San Diego
- Some Variations of the Fibonacci Sequence- Student Poster Presentation, *Dominique Forbes, Tyler Sullivan* January 2017, Joint Mathematics Meeting, Atlanta, GA
- Voronoi Diagrams, November 2017, Coastal Carolina University
- How to Protect Gotham City Using Voronoi Diagrams- Student Presentation, *Damien Wright* April 2015, MAA Southeast Meetings, Wilmington NC
- A Remark on Grassmann and Veronese Embeddings April 2015, MAA Southeast Meetings, Wilmington NC *Funded By Coastal Carolina University*

- Bubbles, Giraffes, and Voronoi Diagrams  
Nov 2014, One Talk One Time, Coastal Carolina University,
- Voronoi Diagrams,  
Apr 2014, Coastal Carolina University, Celebration of Inquiry
- The Jeep Problem,  
Apr 2014, Coastal Carolina University, Celebration of Inquiry  
*Student Presentation, Samantha Glena*
- Joint Mathematics meeting, Baltimore, MD  
Mini Lecture-How to direct undergraduate research  
Mini Lecture-Technology in Classroom  
January 2014
- Bubbles, Giraffes, and Voronoi Diagrams  
Nov 2013, One Talk One Time, Coastal Carolina University
- MAA-SE Conference  
March 15<sup>th</sup>, 16<sup>th</sup> 2013, Winthrop University, Rockhill  
*Funded by Coastal Carolina University*  
*Served as a Judge for the Undergraduate Research Poster Competition*
- Designs, Codes & Geometries  
March 29<sup>th</sup>- April 1<sup>st</sup> 2010, Virden Center, University of Delaware  
*Funded by National Science Foundation and National Security Agency*
- Some Simple Modules for Classical Groups, *Invited Talk*  
Discrete Mathematics Seminar  
October 23<sup>rd</sup> 2010, University of Delaware, Newark, DE
- Invariants of Incidence Matrices Workshop  
March 29<sup>th</sup> - April 3<sup>rd</sup>, 2009, BIRS, Banff, AB, Canada, *Invited Talk*  
*Funded by Banff International Research Station (BIRS)*
- *Some Computations on Weyl Characters, Seminar Talk*  
November 2009, University of Florida, Gainesville, FL
- Conference on Combinatorics and Groups  
*Dimensions of  $LU(3,q)$  Codes*  
February 23<sup>rd</sup> - 25<sup>th</sup>, 2008, University of Florida, Gainesville, FL, *Invited Talk*
- Introductory Workshop on the Representation Theory of Finite Groups  
February 04<sup>th</sup> - 08<sup>th</sup>, 2008, MSRI, Berkeley, CA, *Participant, note-taker*  
*Funded by Mathematical Sciences Research Institute (MSRI) and University of Florida*
- Workshop: Connections for Women: Introduction to the Spring, 2008 Programs

*Dimensions of a Family of Binary LDPC Codes*  
January 16<sup>th</sup> - 18<sup>th</sup>, 2008, MSRI, Berkeley, CA, *Poster Presentation*  
*Funded by MSRI*

- Conference on Group Representations and Combinatorics  
September 10<sup>th</sup> -14<sup>th</sup>, 2007, University of Florida, Gainesville, FL, *Participant*
- *Stern's Probabilistic Algorithm for Finding Code Words of Low Weight, Seminar Talk*  
February 2007, University of Florida, Gainesville, FL
- *Notes on Binary Codes Related to the  $O(5,q)$  Generalized Quadrangle for Odd  $q$*   
B. Bagchi, A.E. Brouwer, and H.A. Wilbrink, Seminar Talk  
April 2006, University of Florida, Gainesville, FL
- *Construction of the Large Mathieu Groups, Seminar Talk*  
March 2005, University of Florida, Gainesville, FL
- *Steiner Systems, Seminar Talk*  
October 2004, University of Florida, Gainesville, FL
- *Constructing Mathieu Groups by Using Steiner Systems, Seminar Talk*  
March 2004, Wayne State University, Detroit, MI

## **AWARDS AND CERTIFICATES**

### **Teaching Awards:**

- Certificate of Merit for Outstanding Teaching, University of Florida, Department of Mathematics  
April 2006
- Certificate of Recognition for Exceptional Teaching, Wayne State University, Department of Mathematics  
April 2004

### **Academic Achievement Awards:**

- Chat Yin Ho Scholarship, University of Florida, Department of Mathematics  
*A research fund given to only one mathematics graduate student each year*  
April 2007 (for academic year 2008-2009)
- Certificate for Outstanding Achievement, University of Florida, International Center  
*Three times:* March 2007, March 2006, February 2005
- Katherine McDonald Award for Outstanding Achievement in a Master's program,  
Wayne State University, Department of Mathematics  
April 2004

### **Certificates:**

- Certificate of Completion: Graduate Assistant Teaching with Technology Program  
University of Florida, The Graduate School and Office of Academic Technology  
December 2004

- Certificate of Completion: Graduate Assistant Teaching Development Program  
University of Florida, The Graduate School and Office of Academic Technology  
December 2004
- Certificate of Teaching Development for Completion of Teaching Assistant  
Orientation  
Wayne State University, Department of Mathematics  
December 2002