Contact The University of Texas at Arlington Office: 817.272.3261 Department of Mathematics dwight.willams@uta.edu 411 South Nedderman Drive mathdwight.com Box 19408 Arlington, TX 76019-0408 Research Lie (super)algebras, representation theory, history of Black mathematicians EDUCATION The University of Texas at Arlington, Arlington, TX Ph.D., Mathematics, Expected: May 2020 Thesis Topic: Infinite-dimensional tensor product representations of  $\mathfrak{osp}(1|2n)$ Advisor: Dimitar Grantcharov The Florida State University, Tallahassee, FL M.S., Pure Mathematics, May 2014 Florida A&M University, Tallahassee, FL B.S., Mathematics, April 2012 DISTINCTIONS International Congress of Mathematicians Travel Grant 2018 American Mathematical Society Peer Mentor Award 2018 The University of Texas at Arlington Department of Mathematics Graduate Assistance in Areas of National Need (GAANN) Fellow 2017 - present The University of Texas at Arlington 2020 Talks 1. "Basis of an infinite-dimensional tensor product representation Jan of  $\mathfrak{osp}(1|2n)$ ", The Joint Mathematics Meetings 2020, Denver, Colorado 2019 2. "Infinite-dimensional tensor product representations Dec of  $\mathfrak{osp}(1|2n)$  and  $\mathfrak{gl}(2n)$ ", Algebra and Geometry Seminar, Iowa State University 3. "Bases of infinite-dimensional tensor product representations Nov of  $\mathfrak{osp}(1|2n)$ ", Representation Theory Seminar, Baylor University 4. "Incompleteness theorem: a graduating graduate student's Oct hard-knocks lessons", Discussions in Algebra (DinA), The University of Texas at Arlington Oct 5. "Basis of an infinite-dimensional tensor product representation of  $\mathfrak{osp}(1|2n)$ ",

Algebra Seminar, University of North Texas

Updated: October 2019

6.	"Super Black Magic", Graduate Algebra Symposium, Texas A&M University	Oct
7.	"Infinite-dimensional tensor product representations of orthosymplectic Lie superalgebras", Comprehensive Exam, The University of Texas at Arlington	Aug
8.	"Keeping up with the signs: examples of Lie superalgebras and their representations", Colloquium, Sam Houston State University	Mar
9.	"a Noether one: the lives of Malone-Mayes, Mirzakhani, & Noether", AMS UTA Graduate Seminar, The University of Texas at Arlington	Mar
10.	"Infinite-dimensional representations of $\mathfrak{osp}(1 2n)$ ", Southwest Local Algebra Meeting, The University of Texas at El Paso	Feb
2018		
11.	"Infinite-dimensional representations of $\mathfrak{osp}(1 2n)$ ", Blackwell-Tapia Conference, ICERM	Nov
12.	"Tensor product representations of $\mathfrak{osp}(1 2n)$ ", Discussions in Algebra (DinA), The University of Texas at Arlington	Nov
13.	"Angles of Andy simple roots", Discussions in Algebra (DinA), The University of Texas at Arlington	Apr
14.	"Gelfand-Tsetlin subalgebras", Discussions in Algebra (DinA), The University of Texas at Arlington	Mar
2017		
15.	"Supermathematics", UNT UTA OU Algebra Symposium, University of Oklahoma	Oct
16.	"Superalgebras" Discussions in Algebra (DinA), The University of Texas at Arlington	Oct
17.	"Magmas, loops, and other not-quite groups", UNT UTA OU Algebra Symposium, The University of Texas at Arlington	Apr
18.	"Solutions to Hungerford exercises on <i>Hom and Duality</i> " Discussions in Algebra (DinA), The University of Texas at Arlington	Feb
2016		
19.	"Survey of algebraic objects" Discussions in Algebra (DinA), The University of Texas at Arlington	Oct
2013		
20.	"A complex investigation of Pythagorean triples", Complex Analysis Seminar, The Florida State University	Nov
2011		
21.	"Cyclotomy and representation Theory", Iowa Summer Research Symposium, University of Iowa	Jul

#### ACTIVITIES

## Conferences, Seminars, Symposiums

Graduate Algebra Symposium XIV Texas A&M University (October 2019)

NAM Undergraduate MATHFest XXIX Southern University of New Orleans (September 2019)

Southwest Local Algebra Meeting
The University of Texas at El Paso (February 2019)

Blackwell-Tapia Conference 2018 ICERM (November 2018)

UNT UTA OU Algebra Symposium XII

The University of Texas at Arlington (October 2018)

NAM Undergraduate MATHFest XXVIII Spelman College (September 2018)

Lie and Jordan Algebras, their Representations and Applications VIII Satellite Conference ICM Cusco, Peru (August 2018)

International Congress of Mathematicians Rio de Janeiro, Brazil (August 2018)

Texas-Oklahoma Representations and Automorphic Forms (TORA) IX University of Oklahoma (April 2018)

UNT UTA OU Algebra Symposium X University of Oklahoma (October 2017)

Lie Algebras, Superalgebras, and Applications AMS Fall Central Sectional Meeting University of North Texas (September 2017)

UNT UTA OU Algebra Symposium IX
The University of Texas at Arlington (April 2017)

Algebra Seminar

University of North Texas (2017 - present)

UNT UTA OU Algebra Symposium VIII University of North Texas (November 2016)

Discussions in Algebra (DinA)

The University of Texas at Arlington (2016 - present)

# Schools, Trainings, Workshops

Southeastern Lie Theory Workshop XI:

"Geometric and Categorial Representation Theory"
Louisiana State University (May 2019)

Representation Theory, Combinatorics, and Geometry University of Virginia (October 2018) Common Misconceptions in Undergraduate Mathematics Classrooms Center for the Integration of Research, Teaching, and Learning The University of Texas at Arlington (Fall 2018)

Mathematics Education: Teaching Tips for Graduate Students Center for the Integration of Research, Teaching, and Learning The University of Texas at Arlington (Fall 2018)

2018 RTG Summer School "Lie Theory" University of Georgia (June 2018)

"Introduction to Git and GitHub"

The University of Texas at Arlington (April 2018)

"ABCs of DMPs: Introduction to creating effective data management plans", The University of Texas at Arlington (March 2018)

"Introduction to Python",

The University of Texas at Arlington (March 2018)

"Intro to Pivot - Funding",

The University of Texas at Arlington (February 2018)

"Publishing Your First Article",

The University of Texas at Arlington (February 2018)

"Shaping Your Academic Digital Identity",

The University of Texas at Arlington (February 2018)

### TEACHING

### Instructor

 $Fall\ 2018-Fall\ 2019$ 

Business Calculus - The University of Texas at Arlington Calculus III - The University of Texas at Arlington Linear Algebra (2 sections) - The University of Texas at Arlington

Summer 2017 - Fall 2017

College Algebra (Pilot) - The University of Texas at Arlington Preparation for Calculus - The University of Texas at Arlington

Fall 2015 - Spring 2016

Business Calculus (4 sections) - Florida A&M University Intermediate Algebra (2 sections) - Florida A&M University

### **Guest Lecturer**

Fall 2018

Number Theory - The University of Texas at Arlington

Fall 2017 - Spring 2018

Abstract Algebra (Graduate) - The University of Texas at Arlington Contemporary Mathematics - The University of Texas at Arlington Number Theory - The University of Texas at Arlington

## Teaching Assistant

Spring 2018

Preparation for Calculus (2 sections) - The University of Texas at Arlington

Fall 2016 - Spring 2017

Preparation for Calculus (4 sections) - The University of Texas at Arlington

Fall 2012 - Spring 2014

Analytic Trigonometry (11 sections) - The Florida State University Calculus for Business (8 sections) - The Florida State University College Algebra (11 sections) - The Florida State University Precalculus Algebra (5 sections) - The Florida State University

### Grader

Spring 2019

Linear Algebra - The University of Texas at Arlington

Spring 2018

Linear Algebra - The University of Texas at Arlington

#### SERVICE

### **Professional**

### Organizer

American Mathematical Society UTA Graduate Chapter

- Founding president and website creator
- Graduate Student Seminar

Visitors/Speakers

- Edray Goins, Professor, Purdue University (Currently: Pomona College)
- Mark Jackson, Mathematician, Raytheon
- Craig J. Sutton, Associate Professor, Dartmouth College

UNT UTA OU Algebra Symposium XII

 $\bullet$  Co-organizer with organizers Rebekah Aduddell (primary) & Ian Lim

Discussions in Algebra (DinA)

- Scheduler of talks for DinA at The University of Texas at Arlington
- Coordinator of a peer-to-peer studying collaborative for linear algebra and analysis

## Panelist/Moderator

Grad2Grad

National Association of Mathematicians

- NAM Undergraduate MATHFest XXIX, Southern University of New Orleans
- NAM Undergraduate MATHFest XXVIII, Spelman College

The University of Texas at Arlington Department of Mathematics

- GAANN Day 2018
- Gulf States Math Alliance Conference
- GAANN Day 2016

National Alliance for Doctoral Studies in the Mathematical Sciences

• Fifth Annual Mathematical Field of Dreams Conference, Arizona State University

### Committee Member

Mathematics Faculty Search Committee

 Represented students in evaluating candidates for faculty positions in the Department of Mathematics at Florida A&M University

## Community

### K-12 Mentor

Mid- $Cities Math Circle <math>(MC)^2$ 

- Promoter of problem solving and mathematical fun amongst youth
- R. Frank Nims Middle School
- Created STEM lesson plans and taught 15 eighth graders on Saturday mornings

### **Local Volunteer**

Dallas-Fort Worth Metroplex

- UT Arlington Calculus Bowl set-up crew member and pizza server
- Forth Worth Regional Science Fair safety inspector

### Advisor and Undergraduate Mentor

Florida-Georgia Louis Stokes Alliance for Minority Participation

- Adapted program as a recognized student organization (RSO) at The Florida State University
- Mentored 30 undergraduates from underrepresented backgrounds in scientific fields

#### Memberships

American Mathematical Society (National and Graduate Student Chapters)

Association for Women in Mathematics

Benjamin Banneker Association, Inc.

College of Science Black Graduate Student Association

National Association of Mathematicians

Skills Computer software/languages

Past Projects: MATLAB, Maple, LATEX, Excel, Access, APL, C

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