mathowight Dwight Anderson Williams II, PhD

Updated: Sepember 2023(*I)

Info	Morgan State University Department of Mathematics 1700 E. Cold Spring Lane Baltimore, MD 21251	dwight@mathdwight.com T-443-885-3964 D1-704-771-HERE mathdwight.com
Госі	Blackness as Community $ ightarrow$ peop	le over mathematics
	Blackness as Love \rightarrow restoration	& resistance both necessitate r-e-s-t
	Super representation theory to st	udy superalgebras and physical phenomena
Projects	Reduction superalgebras and solutions to equations arising from physics Combinatorics of generalized parking functions Decomposition and bases of	Historical context of Black (Baltimorean) liberation strategies interconnecting with present-day learning of mathematics Student development through professional/research communities The topology of Black research
	infinite-dimensional representations of Lie superalgebras	mathematicians in the Americas
Education	The University of Texas at Arling Ph.D., Mathematics, May 2020 Bases of infinite-dimensional representation Advisor: Dimitar Grantcharov	t <mark>ton,</mark> Arlington, TX esentations of orthosymplectic Lie superalgebras
	The Florida State University , Tall M.S., Pure Mathematics, May 2014	ahassee, FL
	Florida A&M University, Tallahas B.S., Mathematics, April 2012	see, FL
	K-12 Schools (local education a	gency code)
	Minnesota: Nokomis Montes	sori (622), Skyview (625), Woodbury (833)
	North Carolina: Myers Park (500)
Appointments	Tenure-track Assistant Professor Department of Mathematics Morgan State University, Balt	2023 – present imore, MD

DISTINCTIONS

Sepember 2023

Visiting Assistant Professor Mathematics & Statistics Department	2022 – 2023
Pomona College, Claremont, CA	
Facilitator Math Leaders 4 Racial Justice (online) within Mathematics Leaders Exploring Racial Equity Charles A. Dana Center at The University of Texas at Austin, Austin, TX Director: David Kung	2022
Postdoc Research Associate NSF ECR-EHR Core Research Grant Studying Successful Doctoral Students in Mathematics from Underrepresented Groups Iowa State University, Ames, IA Supervisor: Michael Young Research Mentor: Jonas T. Hartwig	2020 – 2021
Postdoctoral Research Advisor Mathematical Sciences Research Institute Undergraduate Program (MSRI-UP) (online) Mathematical Sciences Research Institute, Berkeley, CA Lead Organizer: Rebecca Garcia Research Director: Pamela E. Harris	2021
Graduate Teaching Assistant Department of Mathematics The University of Texas at Arlington, Teaching Preparation: Minerva Cordero	2016 – 2020
Other Positions Held: • Actuarial Intern, New York Life Insurance Company (Slepy H • Adjunct Instructor, Florida A&M University • Florida IT Career Alliance Coordinator, The Florida State Un • Graduate Teaching Assistant, The Florida State University • Owner, MathDwight • Undergraduate Researcher, Florida A&M University • Undergraduate Researcher, University of Iowa	ollow, NY) iversity
Funding/Grants \$7,455	
Pomona College Faculty Travel Grant: \$1,555	2023
American Mathematical Society (*II)Joint Mathematics Meetings Travel Grant: \$2,100	2023

	D. A. Williams II	Sepember 2023
	American Mathematical Society Joint Mathematics Meetings Travel Grant: \$500	2019
	American Mathematical Society International Congress of Mathematicians Travel Grant: \$3,	300 2018
	Awards/Fellowships	
	The University of Texas at Arlington GAANN Fellow	2017 – 2020
	The University of Texas at Arlington Outstanding GAANN Student, Department of Mathematics	2020
	The University of Texas at Arlington Peer Mentor Award, Department of Mathematics	2018
	Media	
	$M\Sigma\Sigma T$ a Mathematician Selected interviewee	2022
	American Mathematical Society The Next Generation of Mathematicians	2020
Communication	{ * = Invited Graduate/ Undergraduate student at time of submission (full	l name used)
	Refereed Works in Mathematics as D. A. Williams II	
	Published/Accepted (3)	
Pub	lished (Joint with Yasmin Aguillon, Dylan Alvarenga, P. E. Harris J. Carlos Martínez Mori, Casandra D. Monroe, Zia Saylor, On parking functions and the Tower of Hanoi. The American Mathematical Monthly. doi:10.1080/00029890.2023.2206311 arXiv:2206.00541 Précis: Lah numbers; bijection between certain game-win of the Tower of Hanoi game and parking functions of disp	s, Surya Kotapati, , Camelle Tieu) nning configurations placement one
Pub	lished (Joint with J.T. Hartwig) Ghost center and representations reduction algebra of $\mathfrak{ssp}(1 2)$. Journal of Geometry and Physics, 2023, 104788. ISSN: 0. doi:10.1016/j.geomphys.2023.104788 arXiv:2203.08068	of the diagonal 393-0440.

Précis: Full characterization of ghost center = center + anti-center; classification of all finite-dimensional irreducible representations; infinitedimensional irreducible representations; Verma modules and Shapovalov forms; infinite-dimensional orthosymplectic Clebsch-Gordan recovery Published (Joint with J.T. Hartwig) Diagonal reduction algebra for $\mathfrak{osp}(1|2)$. Theoretical and Mathematical Physics 210.2 (Feb. 2022), pp. 155–171. ISSN: 0040-5779, 1573-9333. doi:10.1134/S0040577922020015 arXiv:2106.04380

Précis: Complete superalgebra presentation of generators and relations under \diamond product; extremal projector application; PBW-type basis; infinite subgroup of automorphisms; Scasimir/Casimir; dynamical central element

Refereed Works in Education as D. A. Williams II

- Proceedings (C. Westine, S. Sword, M. Young, *Maya Bartel*, D. A. Williams II, P. E. Harris) Informing Change: Stories of Graduate Students from Underrepresented Groups in Mathematics Doctoral Programs Association for the Study of Higher Education 46th General Conference.
- Proceedings (S. Sword, M. Young, C. Westine, A. Winger, *Maya Bartel*, D. A. Williams II, *Christian McRoberts*, S. Sisneros-Thiry, M. Gates, P. E. Harris) Studying Successful Doctoral Students in Mathematics from Underrepresented Groups Transforming Institutions 2021 Virtual Conference.

Additional Contributions

Writings

- (R. Garcia, P. E. Harris, D. A. Williams II, Casandra Monroe, J. Carlos Martínez Mori, Tomás Aguilar-Fraga, Yasmin Aguillon, Daniel Alofamoni Quiñonez, Dylan Alvarenga, Aalliyah Celestine, Parneet Gill, Imhotep B. Hogan, Jakeyl Johnson, Kobe Lawson-Chavanu, Lina Liu, Aaron Ortiz, Lauren Quesada, Cynthia Marie Rivera Sánchez, Christopher Soto, Camelle Tieu, Dirk Tolson III, Jacob van der Leeuw, Pamela Vargas) People Over Math: A Co-created Principle for Successful Research Communities. MAA Focus 42.3 (2022), pp. 26–31. Digital edition. PDF.
- 2. (*III) * The International Congress of Mathematicians: A Math Conference for Everybody. (2018, Winter). NAM Newsletter. Retrieved from https://www.nam-math.org/include/pages/files/ newsletters/2018 Winter.pdf

Presentations on Community within Mathematics

	2022
 3. ★ The Joint Mathematics Meetings 2022 Seattle, Washington "The ABCs of Pandemic Postdoc-ing" (online) 	Apr
4. ★ Williams College OURSTEM+ The Math Graduate School Experience panelist	Mar

5.	★ Tulane University Math For All 2022 Conference	Feb
	Creating a new math world out of the shell of the old one pane	list (online)
		2021
6.	★ West Virginia University Student Chapter of the Association of Women in Mathematics "Generations of Black Mathematicians" (online)	Feb
		2020
7.	★ American Mathematical Society Advocating for Students of Color: There's More You Can Do (online) Joint with Pamela E. Harris, Vanessa Rivera Quiñones, Aris Winger, Michael Young	Oct – Dec
8.	★ Institute for Mathematical and Statistical Innovation Student-led Initiatives panelist paraDIGMS Fall Conference (online)	Nov
9.	★ State of Iowa Governor's STEM Advisory Council Fostering Equity in the STEM Classroom (online) Joint with Pamela E. Harris, Aris Winger	Jun – Nov
10.	★ Math SWAGGER Colloquium "Defining your function" (online)	Oct
11.	★ Pomona College <i>Black in STEM</i> keynote	Mar
12.	★ Florida A&M University Kemetic Mathematical Society <i>Research and Graduate Programs</i> (online)	Feb
		2019
13.	The University of Texas at Arlington Discussions in Algebra (DinA) "Incompleteness theorem: a graduating graduate student's hard-knocks lessons"	Oct
14.	The University of Texas at Arlington Graduate Chapter of The American Mathematical Society "A Noether one: the lives of Malone-Mayes, Mirzakhani, and Noether"	Mar

Sepember 2023

15.	National Association of Mathematicians Undergraduate MATHFest XXIX	Sep
	Southern University of New Orleans The Graduate School Experience moderator	
		2018
16.	★ National Association of Mathematicians Undergraduate MATHFest XXVIII Spelman College Applying to Graduate School panelist	Sep
17.	The University of Texas at Arlington Department of Mathematics GAANN Day panelist	Apr
		2017
18.	★ The University of Texas at Arlington	Feb
	Facilitated Graduate Applications Process (F-GAP) panelist	
		2016
19.	★ The University of Texas at Arlington Department of Mathematics GAANN Day panelist	Apr
Pres	entations on Theory of Mathematics	
		2023
20.	"Algebras that answer questions" Early Career Math Colloquium (Online)	Nov
21.	 ★ "Title may not apply" Alernatively: "The semi-differential reduction algebra of \$p(4)" Representation Theory, Geometry and Mathematical Physics Spring Central Sectional Meeting (AMS), University of Cincinatti 	Apr
		2022
22.	"A tale of two worlds: parking functions & reduction algebras Algebra/Number Theory/Combinatorics Seminar, Claremont Colle	Nov
		2021
23.	 * "Diagonal reduction algebra of psp(1 2)" Categorical and Combinatorial Methods in Representation Theory and Related Topics Spring Western Sectional Meeting (AMS), San Francisco State United Sectional Meeting (AMS) 	May ,
	(online)	

24.	"Reduction algebras and $\mathfrak{osp}(1 2)$ " I-II Algebra and Geometry Seminar, Iowa State University (online	Apr
25.	★ "Relations, parity, and super representation theory" The Joint Mathematics Meetings 2021, Washington, D.C. (online)	Jan
		2020
26.	"From Lie algebras to Lie superalgebras" I-II Algebra and Geometry Seminar, Iowa State University (online)	Oct
27.	"Bases of infinite-dimensional representations of orthosymplectic Lie superalgebras" Dissertation Defense, The University of Texas at Arlington	Apr
28.	 ★ "It looks like calculus: Lie superalgebras acting on polynomials in commuting and anti-commuting variables" Colloquium, California State Polytechnic University, Pomona 	Mar
29.	★ "Finding bases of new infinite dimensional representations of $\mathfrak{osp}(1 2n)$ " Algebra/Number Theory/Combinatorics Seminar, Claremont College	Mar ges
30.	★ "Basis of an infinite-dimensional tensor product representation of $\mathfrak{gsp}(1 2n)$ " The Joint Mathematics Meetings 2020, Denver, Colorado	Jan
		2019
31.	★ "Infinite-dimensional tensor product representations of $\mathfrak{gsp}(1 2n)$ and $\mathfrak{gl}(2n)$ " Algebra and Geometry Seminar, Iowa State University	Dec
32.	★ "Bases of infinite-dimensional tensor product representations of $\mathfrak{osp}(1 2n)$ " Representation Theory Seminar, Baylor University	Nov
33.	★ "Basis of an infinite-dimensional tensor product representation of $\mathfrak{osp}(1 2n)$ " Algebra Seminar, University of North Texas	Oct
34.	"Super Black Magic" Graduate Algebra Symposium, Texas A&M University	Oct
35.	★ "Keeping up with the signs: examples of Lie superalgebras and their representations" Colloquium, Sam Houston State University	Mar
36.	"Infinite-dimensional representations of $\mathfrak{ssp}(1 2n)$ " Southwest Local Algebra Meeting, The University of Texas at El Pa	Feb so

2018

Sepember 2023

	37. "Infinite-dimensional representations of $\mathfrak{osp}(1 2n)$ " Blackwell-Tapia Conference, ICERM	Nov
	38. "Tensor product representations of $\mathfrak{osp}(1 2n)$ ", Discussions in Algebra (DinA), The University of Texas at Arlington	Nov
	39. "Angles of Andy simple roots" Discussions in Algebra (DinA), The University of Texas at Arlington	Apr
	40. "Gelfand-Tsetlin subalgebras" Discussions in Algebra (DinA), The University of Texas at Arlington	Mar
		2017
	41. "Supermathematics" UNT UTA OU Algebra Symposium, University of Oklahoma	Oct
	42. "Superalgebras" Discussions in Algebra (DinA), The University of Texas at Arlington	Oct
	43. "Magmas, loops, and other not-quite groups" UNT UTA OU Algebra Symposium, The University of Texas at Arling	Apr ton
	44. "Solutions to Hungerford exercises on Hom and Duality" Discussions in Algebra (DinA), The University of Texas at Arlington	Feb
		2016
	45. "Survey of algebraic objects" Discussions in Algebra (DinA), The University of Texas at Arlington	Oct
		2013
	46. "A complex investigation of Pythagorean triples" Complex Analysis Seminar, The Florida State University	Nov
		2011
	47. "Cyclotomy and representation Theory" Iowa Summer Research Symposium, University of Iowa	Jul
Teaching	Morgan State University (2023–) Instructor: Algebraic Strucutres I, Graduate Abstract Algebra I, Mathema Theory of Statistics I	atical
	Pomona College (2022–2023) Instructor: Abstract Algebra, Calculus III (2 sections), Intro to Analysis, Int Manim via Combinatorics (directed study) Course/Seminar designer: Intro to Manim via Combinatorics	tro to
	Iowa State University (2020–2021)	

Course/Seminar designer: The Reunion (graduate algebra & qualifying exams), PB Party (post-baccalaureate professional development & Advising)

The University of Texas at Arlington (2016–2020)

Instructor: Business Calculus, Calculus III (2 sections), College Algebra (Pilot), Linear Algebra (2 sections), Preparation for Calculus Course/Seminar designer: College Algebra Guest Lecturer: Contemporary Mathematics, Graduate Abstract Algebra, Graduate Lie Algebra, Number Theory Graduate Assistant: Preparation for Calculus (6 sections) Grader: Linear Algebra

Florida A&M University (2015-2016)

Instructor: Business Calculus (4 sections), Intermediate Algebra (2 sections) Tutor: Math Lab

The Florida State University (2012–2014)

GraduateAssistant: Analytic Trigonometry (11 sections), Calculus for Business (8 sections), College Algebra (11 sections), Precalculus Algebra (5 sections)

Advising

Undergraduate Research

Pomona College (2022 – 2023)

Advisee: Gisele Umutoni (2023) Independent Study: Manim video creation

Advisee: Irmak Bukey (2022–2023) Senior Thesis: Reduction Algebras: Verifying Solutions to Laplace's Equation Independent Study: Manim video creation

Advisee: Andrew Shannon (2022–2023) Senior Thesis: The Diffie-Hellman Problem in Lie Algebras Revisited

MSRI-UP 2021 (2021)

Black Centered

Advisees: Aaron Ortiz, Lauren J. Quesada, Cynthia Marie Rivera Sánchez Research report: The defective parking space

Advisees: Tomás Aguilar-Fraga, Kobe Lawson-Chavanu, Dirk Tolson III Research report: *l*-Interval parking functions

Service (Since 2013)

Black Mathematicians Edit-A-Thon at JMM 2023 • Co-organizers: Edray Goins and John Weaver Black in Math Week ♥ • Co-organizers: Anna Gifty Opoku-Agyeman, Marissa Kawehi Loving, Omayra Ortega, Candice R. Price, Noelle Sawyer, Angela Tabiri, Michole Washington

Organizer

Hidden NORMS (Webinar): Navigating Obstructive Rules in the Mathematical Sciences

• Co-organizers: Kimberley P. Hadaway, Pamela E. Harris, Daniel Chenen Qin, Vanessa Rivera Quiñones

American Mathematical Society

- Special Session: Fresh Researchers in Algebra, Combinatorics, & Topology (FRACTals)
- Special Session: Superalgebras, Quantum Groups, and Related Topics
- Founding president of UTA Graduate Chapter and website creator
- Creator of Graduate Student Seminar

Discussions in Algebra (DinA)

• Scheduled speakers for DinA at The University of Texas at Arlington *Grad2Grad*

• Created and coordinated a peer-to-peer studying collaborative for graduate Linear Algebra and Analysis

K-12 Mentor

Mid-Cities Math Circle $(MC)^2$

- Promoted problem solving and mathematical fun amongst youth
- R. Frank Nims Middle School (Tallahassee, FL)
- Created STEM lesson plans and taught 15 eighth graders on Saturday mornings

Undergraduate Mentoring

MSRI-UP

• Mentor to 18 undergraduates in an intensive 6-week mathematical research program and commitment to personal, academic, and professional development National Association of Mathematicians (NAM)

• Served as NAM Undergraduate MATHFest oral presentation judge *Florida-Georgia Louis Stokes Alliance for Minority Participation (LSAMP)*

- Adapted program as a recognized student organization (RSO) at The Florida State University
- Mentor to 30 undergraduates in scientific fields where significant members of their respective disciplines othered them

Committee Member

Social Action Committee

• Responded to community issues and campus climate via the Black Faculty and Staff Association of Iowa State

Mathematics Faculty Search Committee

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

Community Volunteer

Dallas-Fort Worth Metroplex

	 UT Arlington Calculus Bowl set-up crew member and pizza server Forth Worth Regional Science Fair safety inspector
	More scholarly labor Referee & reviewer • article reviewer • book reviewer • iournal referee
	• journal referee
Memberships	(*IV) American Mathematical Society (sponsored)
	National Association of Mathematicians
Skills	Coding & Computing Active Sample: LATEX, MATLAB, HiddenNORMS website, MSRI-UP 2021 website Past Experiences: Access, APL, C, Excel, Python Networking & Team Building Active Sample: Co-organizing Black education research reading group Past Experiences: HCASC captain/champion Relating Active Sample: Mentoring undergraduates and graduate students (math and non-math majors) Past Experiences: Interviewer
Notes	
	(*I) Students, as best you can, please keep an updated record of your work, your service, your projects, etc. Store your vita on your website—email me if you want some help starting. I tracked down the CV template I use, which is one of several documents available at this site. Please note that I've added my sylizing and such to the current document—one reason why.
	(*II) Travel funding never received: Reimbursement ineligible after missing flight when car broke down on the way to an out-of-state airport. Let's end reimbursement culture!
	(*III) ICM is <i>not</i> for everyone: I set out in a theme to encourage the audience of the NAM Newsletter, thinking of HBCU students/alumni, like myself, or their mentors. Ultimately, I made a too subtle and wholly idealistic point that senior mathematicians and AMS leadership need to provide even more grants/support for access to ICM. I failed to discuss the history of ICM, as well, the socio-political discourse and responses to the issues (see here or here).
	(*IV) Perhaps James Baldwin's "The Negro child–his self-image" will both give some life to the contemplation I have and perhaps settle the matter (in some direction) of being an AMS member:

What societies really, ideally, want is a citizenry which will simply obey the rules of society. If a society succeeds in this, that society is about to perish. The obligation of anyone who thinks of himself as responsible is to examine society and try to change it and to fight it — at no matter what risk. This is the only hope society has. This is the only way societies change.