

INFO	Morgan State University Department of Mathematics 1700 E. Cold Spring Lane Baltimore, MD 21251	dwight@mathdwight.com dwight.williamsii@morgan.edu 📞 1-704-771-HERE mathdwight.com
Foci	Building & maintaining communities Blackness beyond skin in mathematics Baltimore learning	
PROJECTS	Reduction superalgebras and solutions to equations arising from physics Combinatorics of generalized parking functions Decomposition and bases of infinite-dimensional representations of Lie superalgebras	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 mathematicians in the Americas
EDUCATION	The University of Texas at Arlington , Arlington, TX Ph.D., Mathematics , May 2020 <i>Bases of infinite-dimensional representations of orthosymplectic Lie superalgebras</i> 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 K-12 Schools (local education agency code) Minnesota: Nokomis Montessori (622), Skyview (625), Woodbury (833) North Carolina: Myers Park (600)	
APPOINTMENTS	Tenure-track Assistant Professor Department of Mathematics Morgan State University , Baltimore, MD	2023 – present

Visiting Assistant Professor 2022 – 2023
Mathematics & Statistics Department
Pomona College, Claremont, CA

Facilitator 2022
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**

Postdoc Research Associate 2020 – 2021
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**

Postdoctoral Research Advisor 2021
Mathematical Sciences Research Institute
Undergraduate Program (MSRI-UP) (online)
Mathematical Sciences Research Institute, Berkeley, CA
 Lead Organizer: **Rebecca Garcia**
 Research Director: **Pamela E. Harris**

Graduate Teaching Assistant 2016 – 2020
Department of Mathematics
The University of Texas at Arlington,
 Teaching Preparation: **Minerva Cordero**

Other Positions Held:

- Actuarial Intern, New York Life Insurance Company (Slepy Hollow, NY)
- Adjunct Instructor, Florida A&M University
- Florida IT Career Alliance Coordinator, The Florida State University
- Graduate Teaching Assistant, The Florida State University
- Owner, MathDwight
- Undergraduate Researcher, Florida A&M University
- Undergraduate Researcher, University of Iowa

DISTINCTIONS

Funding/Grants \$7,455

Pomona College
 Faculty Travel Grant: \$1,555 2023

American Mathematical Society
 (*II) Joint Mathematics Meetings Travel Grant: \$2,100 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 Σ Σ T a Mathematician
Selected interviewee 2022

American Mathematical Society
The Next Generation of Mathematicians 2020

COMMUNICATION { \star = *Invited*
Non-student researcher (initialized given name/s)
Pre-doctoral researcher (full name used)
Pre-baccalaureate researcher (full name used)

Refereed Works in Mathematics as D. A. Williams II

Published/Accepted (3) Submitted for Review (1)

2023 Submitted (Joint with *Tomás Aguilar-Fraga*, *J. Elder*, *R. E. Garcia*, *Kimberly P. Hadaway*, *P. E. Harris*, *Kimberly J. Harry*, *Imhotep B. Hogan*, *Jakeyl Johnson*, *Jan Kretschmann*, *Kobe Lawson-Chavanu*, *J. C. Martínez Mori*, *Casandra D. Monroe*, *Daniel Quiñonez*, *Dirk Tolson III*) Interval and ℓ -interval rational parking functions.

~~arXiv~~:2311.14055

Précis: Enumeration of ℓ -interval rational parking functions; generalized Fibonacci numbers; Fubini rankings

2023 Published (Joint with *Yasmin Aguillon*, *Dylan Alvarenga*, *P. E. Harris*, *Surya Kotapati*, *J. Carlos Martínez Mori*, *Casandra D. Monroe*, *Zia Saylor*, *Camelle Tieu*) 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-winning configurations of the Tower of Hanoi game and parking functions of displacement one

2023 Published (Joint with J.T. Hartwig) Ghost center and representations of the diagonal reduction algebra of $\mathfrak{osp}(1|2)$.

Journal of Geometry and Physics, 2023, 104788. ISSN: 0393-0440.

doi:[10.1016/j.geomphys.2023.104788](https://doi.org/10.1016/j.geomphys.2023.104788)

[arXiv:2203.08068](https://arxiv.org/abs/2203.08068)

Précis: Full characterization of ghost center = center + anti-center; classification of all finite-dimensional irreducible representations; infinite-dimensional irreducible representations; Verma modules and Shapovalov forms; infinite-dimensional orthosymplectic Clebsch-Gordan recovery

2022 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](https://doi.org/10.1134/S0040577922020015)

[arXiv:2106.04380](https://arxiv.org/abs/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

1. (R. Garcia, P. E. Harris, D. A. Williams II, *Cassandra 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](https://www.nam-math.org/include/pages/files/newsletters/2018%20Winter.pdf)

Presentations on Community within Mathematics

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| | 2022 |
| 3. ★ The Joint Mathematics Meetings 2022
Seattle, Washington
“The ABCs of Pandemic Postdoc-ing” (online) | Apr |
| 4. ★ Williams College
OURSTEM+
<i>The Math Graduate School Experience</i> panelist | Mar |
| 5. ★ Tulane University
Math For All 2022 Conference
<i>Creating a new math world out of the shell of the old one</i> panelist (online) | Feb |
| | 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
<i>Advocating for Students of Color: There’s More You Can Do</i> (online)
Joint with Pamela E. Harris, Vanessa Rivera Quiñones, Aris Winger, Michael Young | Oct – Dec |
| 8. ★ Institute for Mathematical and Statistical Innovation
<i>Student-led Initiatives</i> panelist
paraDIGMS Fall Conference (online) | Nov |
| 9. ★ State of Iowa
Governor’s STEM Advisory Council
<i>Fostering Equity in the STEM Classroom</i> (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
Kemeti Mathematical Society
<i>Research and Graduate Programs</i> (online) | Feb |

2019

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| 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 |
| 15. National Association of Mathematicians
Undergraduate MATHFest XXIX
Southern University of New Orleans
<i>The Graduate School Experience</i> moderator | Sep |
| 2018 | |
| 16. ★ National Association of Mathematicians
Undergraduate MATHFest XXVIII
Spelman College
<i>Applying to Graduate School</i> panelist | Sep |
| 17. The University of Texas at Arlington
Department of Mathematics
GAANN Day panelist | Apr |
| 2017 | |
| 18. ★ The University of Texas at Arlington
Gulf States Math Alliance Conference
<i>Facilitated Graduate Applications Process (F-GAP)</i> panelist | Feb |
| 2016 | |
| 19. ★ The University of Texas at Arlington
Department of Mathematics
GAANN Day panelist | Apr |
| Presentations on Theory of Mathematics | |
| 2023 | |
| 20. "Extremal equations & algebraic methods"
Early Career Math Colloquium (Online) | Nov |
| 21. ★ "Title may not apply"
Alternatively: "The semi-differential reduction algebra of $\mathfrak{sp}(4)$ "
Representation Theory, Geometry and Mathematical Physics
Spring Central Sectional Meeting (AMS), University of Cincinnati | Apr |
| 2022 | |

22. "A tale of two worlds: parking functions & reduction algebras" Nov
Algebra/Number Theory/Combinatorics Seminar, Claremont Colleges
2021
23. ★ "Diagonal reduction algebra of $\mathfrak{osp}(1|2)$ " May
Categorical and Combinatorial Methods in Representation Theory,
and Related Topics
Spring Western Sectional Meeting (AMS), San Francisco State University
(online)
24. "Reduction algebras and $\mathfrak{osp}(1|2)$ " I-II Apr
Algebra and Geometry Seminar, Iowa State University (online)
25. ★ "Relations, parity, and super representation theory" Jan
The Joint Mathematics Meetings 2021, Washington, D.C. (online)
2020
26. "From Lie algebras to Lie superalgebras" I-II Oct
Algebra and Geometry Seminar, Iowa State University (online)
27. "Bases of infinite-dimensional representations
of orthosymplectic Lie superalgebras" Apr
Dissertation Defense, The University of Texas at Arlington
28. ★ "It looks like calculus: Lie superalgebras acting on polynomials
in commuting and anti-commuting variables" Mar
Colloquium, California State Polytechnic University, Pomona
29. ★ "Finding bases of new infinite dimensional representations of
 $\mathfrak{osp}(1|2n)$ " Mar
Algebra/Number Theory/Combinatorics Seminar, Claremont Colleges
30. ★ "Basis of an infinite-dimensional tensor product representation
of $\mathfrak{osp}(1|2n)$ " Jan
The Joint Mathematics Meetings 2020, Denver, Colorado
2019
31. ★ "Infinite-dimensional tensor product representations
of $\mathfrak{osp}(1|2n)$ and $\mathfrak{gl}(2n)$ " Dec
Algebra and Geometry Seminar, Iowa State University
32. ★ "Bases of infinite-dimensional tensor product representations
of $\mathfrak{osp}(1|2n)$ " Nov
Representation Theory Seminar, Baylor University
33. ★ "Basis of an infinite-dimensional tensor product representation
of $\mathfrak{osp}(1|2n)$ " Oct
Algebra Seminar, University of North Texas
34. "Super Black Magic" Oct
Graduate Algebra Symposium, Texas A&M University

35. ★ “Keeping up with the signs:
examples of Lie superalgebras and their representations” Mar
Colloquium, Sam Houston State University
36. “Infinite-dimensional representations of $\mathfrak{osp}(1|2n)$ ” Feb
Southwest Local Algebra Meeting, The University of Texas at El Paso
2018
37. “Infinite-dimensional representations of $\mathfrak{osp}(1|2n)$ ” Nov
Blackwell-Tapia Conference, ICERM
38. “Tensor product representations of $\mathfrak{osp}(1|2n)$ ”, Nov
Discussions in Algebra (DinA), The University of Texas at Arlington
39. “Angles of Andy... simple roots” Apr
Discussions in Algebra (DinA), The University of Texas at Arlington
40. “Gelfand-Tsetlin subalgebras” Mar
Discussions in Algebra (DinA), The University of Texas at Arlington
2017
41. “Supermathematics...” Oct
UNT UTA OU Algebra Symposium, University of Oklahoma
42. “Superalgebras” Oct
Discussions in Algebra (DinA), The University of Texas at Arlington
43. “Magmas, loops, and other not-quite groups” Apr
UNT UTA OU Algebra Symposium, The University of Texas at Arlington
44. “Solutions to Hungerford exercises on Hom and Duality” Feb
Discussions in Algebra (DinA), The University of Texas at Arlington
2016
45. “Survey of algebraic objects” Oct
Discussions in Algebra (DinA), The University of Texas at Arlington
2013
46. “A complex investigation of Pythagorean triples” Nov
Complex Analysis Seminar, The Florida State University
2011
47. “Cyclotomy and representation Theory” Jul
Iowa Summer Research Symposium, University of Iowa

TEACHING

Morgan State University (2023–)

Instructor: Algebraic Structures I, Graduate Abstract Algebra I, Graduate Abstract Algebra II, Mathematical Theory of Statistics I, Mathematical Theory of Statistics II

Pomona College (2022–2023)

Instructor: Abstract Algebra, Calculus III (2 sections), Intro to Analysis, Intro to Manim via Combinatorics (directed study)

Course/Seminar designer: Intro to Manim via Combinatorics

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)

Graduate Assistant: 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)

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 Centered

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

External Committee Member

Mathematical Association of America

- Committee on the Inclusivity Prize, 2024–2027

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](#)
- [journal referee](#)

MEMBERSHIPS

(*IV)

American Mathematical Society

Mathematical Association of America

National Association of Mathematicians

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 *not* 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 a member of most professional societies:

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.