TOLULOPE OKE

Department of Mathematics & Statistics, Wake Forest University, Winston-Salem
Office: Manchester 383 ⋄ Email: *oket@wfu.edu*

EDUCATION

Texas A&M University,   *August 2021*
PhD, Mathematics
Advisor: Dr. Sarah Witherspoon

University of Ibadan, Nigeria   *March 2015*
MSc. Mathematics
Advisor: Dr. Michael Enioluwafe

University of Ibadan, Nigeria   *September 2011*
BSc. Mathematics *(First Class Honors)*

TEACHING EXPERIENCE

Wake Forest University   Fall 2021 -
Teacher Scholar Postdoctoral Fellow: Instructor of Record

· Calculus With Analytical Geometry (MST 111)

Texas A&M University   Fall 2015 - Spring 2021
Graduate Teaching Assistant: Instructor of Record, Recitation & Lab TA, Grader, Help session TA

· Finite Mathematics (Math 141)
· Engineering Mathematics I & II (Math 151, 152)
· Methods of Applied Mathematics (Math 601)
· Functions Trigonometry & Linear Systems (Math 150)
· Mathematical Probability (Math 411)

University of Ibadan, Nigeria   2013 - 2015
University Tutorial Assistant: Instructor, Grader

· Introduction to measure and probability (MAT 412)
· Introduction to real analysis (MAT 221)

RESEARCH INTERESTS

Homological algebra, Hochschild cohomology of associative algebras and its graded Lie structure.
Noncommutative algebra, Invariant theory and Representation theory.

PUBLICATIONS AND PREPRINTS

- **Homotopy liftings and Hochschild cohomology of some twisted tensor products** (with P.S. Ocal, S. Witherspoon), *accepted for publication, Journal of Algebra and Its Applications.*

- **Gerstenhaber brackets on Hochschild cohomology of general twisted tensor products,**(with T. Karadag, D. McPhate, P.S. Ocal and S. Witherspoon), *Journal of Pure and Applied Algebra, Vol. 225(6), 2021.*

- **Analysis of month-of-the-year effect in an emerging market via stochastic dominance approach,**(with I. Adinya, S.O. Edeki), *Academy. of Ent. Journal, Vol. 25(2), 2019.*

- **Bracket structure on Hochschild cohomology of Koszul quiver algebras using homotopy liftings**, ArXiv:2103.12331.

- **Cup product on Hochschild cohomology of a family of quiver algebras,** ArXiv:2004.00780.

INVITED TALKS

- January 5-8, 2022. Joint Mathematical Meetings, special session on "Noncommutative algebra and noncommutative invariant theory".

- November 20-21, 2021. AMS Sectional Meeting, special session on Geometric and algebraic aspects of quantum groups and related topics, University of South Alabama, Mobile Alabama.

- October 9-10, 2021. AMS Sectional Meeting, special session on Quiver representations: Bridging theory and applications, Creighton University, Omaha.

- March 31, 2021. **On the Hochschild cohomology of a family of quiver algebras,** Algebra and Number theory seminar, Texas Tech University.

- March 20-21, 2021. **On the Hochschild cohomology of a family of quiver algebras,** AMS Sectional Meetings, special session on Hopf algebras, tensor categories and related homological methods.

- January 9, 2021. **Gerstenhaber bracket on Hochschild cohomology of Koszul algebras using homotopy liftings,** Joint Mathematical Meetings, special session on interactions between non-commutative algebra and non-commutative algebraic geometry.

- January 7, 2021. **Homotopy liftings and Hochschild cohomology of some twisted tensor products,** Joint Mathematical Meetings, special session on commutative algebra meets representation theory.

- October 10, 2020. **What are DG algebras and DG coalgebras?,** AMS Gathering in Graduate Expository Mathematics (GIG'EM) Conference, Texas A&M University.

- June 27, 2020. **Lie algebra structure on Hochschild cohomology of associative algebras,** Early Commutative Algebra Researchers (eCARs) conference, Zoom online meeting.

- *April 25-26, 2020. **Lie structure on Hochschild cohomology of a family of quiver algebras,** URiCA KUMUNUjr Conference, University of Nebraska-Lincoln. [1]

- November 2, 2019. **Cup products on Hochschild cohomology of a family of quiver algebras,** AMS Fall Sectional Meeting, special session on homological algebra, University of Florida, Gainesville.

OTHER TALKS

- March 9, 2021. **Actions of Hochschild cohomology**, Spring 2021 Learning Seminar - Hochschild cohomology towards deformation theory. Organized by Chelsea Walton.

- October 30, 2020. **Deformation of algebras and Hochschild cohomology**, Guest lecture, Computational Algebraic Geometry class, Fall 2020.

- October 24, 2020. **Deformation of algebras and Hochschild cohomology**, Graduate Algebra Symposium, held at Texas A&M University.

- February 19, 2020. **How contracting homotopy helps determine the Lie structure on Hochschild cohomology**, Graduate Student Organization Seminar Texas A&M University.

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[1]Items marked (*) were cancelled or postponed   updated 2021/08/24

- October 19, 2019. **Derivation operators for a family of quiver algebras**, Graduate Algebra Symposium, held at Texas A&M University.

- October 18, 2019. **Cup products on Hochschild cohomology for a family of quiver algebras**, Algebra and Combinatorics Seminar Texas A&M University.

- October 16, 2019. **Cup products on Hochschild cohomology for a family of quiver algebras**, Graduate Student Organization Seminar Texas A&M University.

- May 9, 2016. **Monomial resolution**, Seminar in Algebra Class, Spring 2016.

- January 12, 2015. **Finite p-groups all of whose cyclic subgroups A,B with $A \cap B = 1$ generate an abelian group**, Mathematics Frontiers and Perspectives, University of Ibadan.

- December 12, 2014. Masters thesis oral defense on **"Some properties of Finite p-groups"**.

POSTER PRESENTATION

- March 7-8, 2020. **Gerstenhaber bracket on Hochschild cohomology of twisted tensor product algebras,** South West Local Algebra Meeting, Tulane University, New Orleans, LA.

- *July 13-17, 2020. **Gerstenhaber bracket on Hochschild cohomology of twisted tensor product algebras,** Recent Advances and Interplay in Noncommutative algebra and Geometry, University of Washington.

PROFESSIONAL DEVELOPMENT IN TEACHING

MAA Project NExT   Gold 2021/2022
professional development of mathematicians, statisticians, and mathematics educators post PhD.

Basic Professional Development Certificate   April 2021
Presented by Texas A& M Graduate and Professional School

CIRTL Associate Certificate   July-August 2020
An Introduction to Evidence-Based Undergraduate STEM Teaching Course

MATH Communication Technology   Summer 2016

SCHOLARSHIPS, AWARDS & PRIZES

- **2021 Joint Mathematics Meeting Travel Grant**, Awarded Fall 2020.

- **AMS Sectional Meeting Travel Award**, Fall 2019 ($250).

- **Alpha Kappa Alpha Educational Advancement Graduate Award**, November 2016 ($2000).

- University of Ibadan **Postgraduate Scholarship**, 2013 - 2015 academic sessions.

- **Gold Medalist**, Third National Mathematics Competition for University Students (NAMCUS 2011) held at the National Mathematical Center, Abuja, Nigeria. February 6-12, 2011.

- **Best Graduating Maths student**, Department of Mathematics, Class of 2011.

- Convocation prize: **The Adekunle Kukoyi Annual prize in Mathematics** for best performance at the final honors degree exams, September 2011.

- Convocation prize: **Chief Michael Okunola Akinyele Memorial prize** for the best Mathematics graduating student, September 2011.

- **Dean's Honor Award (Three times recipient)** Annual Faculty of Science Dean's Award for outstanding students who maintain a CGPA greater than or equal to 6.0/7.0. 2007/08, 2008/09 and 2009/10 academic sessions.

- **Academically outstanding finalist**, Unibadan Mathematics Student's Association, 2011 academic session.

COMPUTING SKILLS

Typesetting	Latex/Beamer, Microsoft Word, Powerpoint, Excel
Software & programming:	MATLAB, Html
	Verified Certificate of Achievement from IBM
	Analyzing Data With Python, December 2020.

SERVICE & VOLUNTEER ACTIVITIES

Mentoring & Teaching

- Directed Reading Program: Fall 2020

- *Solid Geometry*, Summer Educational Enrichment Program (SEE-Math): Summer 2020

Professional Services

- Reviewer: zbMATH - Since Spring 2020.

- Happy hour host: DG methods in commutative algebra and representation theory, Zoom online meeting May 2-3, 2020.

Volunteer Activities   Since 2011

- Thursday July 16, 2020: Volunteer Instructor, Summer Educational Enrichment Program in Mathematics (SEE-Math), Texas A & M University (TAMU) Mathematics department.

- Saturday January 25, 2020: Volunteer, Texas A & M University (TAMU) Maths Circle.

- Tuesday March 26, 2019: Volunteer, TAMU mathematics department Annual Integral Bee.

- Saturday April 7, 2018: Volunteered as a demonstrator at the TAMU mathematics department booth at the annual Physics festival.

- Thursday, August 24, 2017: Volunteered at the new students orientation program organized by the TAMU International Students Services (ISS).

- Saturday, October 2, 2016: Volunteered as a grader at the 25th high school maths contest held in the Blocker building of TAMU.

- Thursday, August 25, 2016: Volunteered at the new students orientation program organized by the TAMU International Students Services (ISS).

- Saturday April 9, 2016: Volunteered as a demonstrator at the TAMU Mathematics Department booth at the TAMU Annual Physics Festival.

- Saturday, October 24, 2015: Volunteered as a grader at the 24th high school maths contest held in the Blocker building of TAMU.

- May 8, 2015: Co-organizer: *Mathematics Interactive Seminar for High School Students*, Global Excellence Comprehensive College, Abesan Estate, Lagos State.

- January 21, 2015: Co-organizer: *Enjoying Mathematics Seminar*, at Merry Stars College, Ikola Odunsi, Ipaja, Lagos State.

- January 31, 2015: Organizer: *How to make mathematical presentations using the beamer package on Latex*. Presentation to mathematics senior undergraduate students, University of Ibadan.

- November 16, 2013: Co-organizer with Ayomikun Adeniran: *Mathematics Interactive Seminar for High School Students*, Redeemers High School, Redemption Camp, RCCG, Lagos State.

- December 2011: Speaker: *The Infinite Application Of Mathematics And The Role Of Students In Nation Building.* Maiden Edition of the Mathematics Colloquium organized for high school students in Abule-Egba, Lagos state, Nigeria.