Pablo S. Ocal

Curriculum Vitae

Texas A&M University
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Employment

2021–present **Assistant Adjunct Professor**, *University of California, Los Angeles*, CA.
Mentor: Paul Balmer

Visiting Positions

Spring 2020 **Program Associate**, *Quantum Symmetries*, Mathematical Sciences Research Institute.
- Mentors: Cris Negron and Chelsea Walton

Education

2016–2021 **Ph.D., Mathematics**, *Texas A&M University*, TX.
Advisor: Sarah Witherspoon

2015–2016 **M.Sc., Mathematics**, *Universite Pierre-et-Marie-Curie (Paris VI)*, France.
Advisor: Bruno Kahn

2010–2015 **B.Sc., Mathematics**, *Universitat Autonoma de Barcelona*, Spain.
Advisor: Jaume Aguade Bover

2010–2015 **B.Sc., Physics**, *Universitat Autonoma de Barcelona*, Spain.
Advisor: Anna Laromaine

Publications and Preprints

2 ***Homotopy liftings and Hochschild cohomology of some twisted tensor products***, with T. Oke and S. Witherspoon, *J. Algebra Appl.*, 2021.
- arXiv:2005.06660

1 ***Gerstenhaber brackets on Hochschild cohomology of general twisted tensor products***, with T. Karadag, D. McPhate, T. Oke, and S. Witherspoon, *J. Pure Appl. Algebra*, 2021.
- arXiv:1909.02181

Scholarships and Awards

2021 **Travel Grant**, American Mathematical Society.
Mathematical Congress of the Americas

2021 **Virtual Graduate Student Travel Grant**, American Mathematical Society.
Joint Mathematics Meetings

2016–2018 **E. R. Keown Fellow in Mathematics**, Texas A&M University.

2016–2021 **Fulbright Scholarship**, Fulbright Program, Spain.

2015–2016 **X Becas de Postgrado**, Fundacion Mutua Madrileña, Spain.

2012 **JAE Intro**, Instituto de Ciencias Matematicas, Spain.
- Program: Introduction to Ramsey Theory

2010 **VII Concurs EIDEA**, Escola Hamelin-Internacional Laie, Spain.

2010 **Matricula de Honor en Bachillerato**, Universitat Autonoma de Barcelona, Spain.

2010 **Joves i Ciencia**, Imperial College London, United Kingdom.
- Program: London International Youth Science Forum (LIYSF)

2010 **Premio Excelencia UIC**, Universitat Internacional de Catalunya, Spain.

2009 **Joves i Ciencia**, Institut de Ciencies Fotoniques, Spain.
- Program: Classic and Quantum Cryptography

2008 **Joves i Ciencia**, Planes de Son, Spain.
- Program: Mathematics in Unlikely Places

Conference Talks

2022

Jan ***The relative Künneth theorem in relative Hochschild cohomology***, *Joint Mathematics Meetings*, Seattle, WA.

2021

†Nov ***The Relative Künneth Theorem***, *AMS Fall Southeastern Sectional Meeting*, University of South Alabama.

†Oct ***The Relative Künneth Theorem***, *AMS Fall Western Sectional Meeting*, University of New Mexico.

†Jan ***The Gerstenhaber bracket in relative Hochschild cohomology***, *Joint Mathematics Meetings*, Washington, District of Columbia.

2020

Aug ***Homotopy liftings and Hochschild cohomology of some twisted tensor products***, *Encuentro Virtual de Algebra Homologica*, Universidad de Buenos Aires, Universidad Nacional de Mar del Plata, Universidad Nacional del Sur, Argentina.

†May ***On the Gerstenhaber bracket in relative Hochschild cohomology of associative algebras***, *A Zoom Special Session on DG Methods in Commutative Algebra and Representation Theory*, University of Utah.

†May ***On the Gerstenhaber bracket in relative Hochschild cohomology of associative algebras***, *AMS Spring Western Sectional Meeting*, California State University, Fresno.

†Apr ***Hochschild cohomology of twisted tensor product algebras***, *Graduate Student Topology and Geometry Conference*, Indiana University Bloomington.

†Apr ***Hochschild cohomology of twisted tensor products***, *Underrepresented Students in Topology and Algebra Research Symposium*, University of Iowa.

Mar ***The Gerstenhaber bracket on relative Hochschild cohomology***, *Southwest Local Algebra Meeting*, Tulane University.

Feb ***On the Hochschild cohomology ring of some twisted tensor products of algebras***, *Seattle Noncommutative Algebra Day*, University of Washington.

2019

Jul ***Hochschild cohomology of twisted tensor product algebras***, *Ragnar's Ramifications in Algebra and Geometry Emerging Workshop*, Fields Institute for Research in Mathematical Sciences, Canada.

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†Canceled or hosted online due to COVID-19.

Jul **Hochschild cohomology of twisted tensor product algebras**, *Research School on Quantum Symmetries*, Universidad de los Andes, Colombia.

Jun **Hochschild cohomology of twisted tensor product algebras (and brackets for certain quantum complete intersections)**, *Graduate Student Conference in Algebra, Geometry, and Topology*, Temple University.

Apr **Hochschild cohomology of twisted tensor product algebras**, *Texas-Oklahoma Representations and Automorphic Forms*, University of North Texas.

Mar **Hochschild cohomology of twisted tensor product algebras**, *Graduate Student Conference in Geometry and Topology*, University of Illinois at Urbana-Champaign.

Mar **Twisted tensor product algebras and compatibility of the bar resolution**, *Graduate Algebra Symposium*, University of Oklahoma.

Feb **An algebraist's view of the multinomial coefficients**, *Gathering in Graduate Expository Mathematics*, Texas A&M University.

2018

Oct **Relative Hochschild cohomology and its Gerstenhaber product**, *Graduate Algebra Symposium*, University of Texas at Arlington.

Apr **Using relative homological algebra in Hochschild cohomology**, *Graduate Algebra Symposium*, University of North Texas.

Mar **Using relative homological algebra in Hochschild cohomology**, *Gathering in Graduate Expository Mathematics*, Texas A&M University.

Selected Seminar Talks

2021

Jul **The relative Künneth theorem**, *Building Relationships for an Inclusive and Diverse Group of Emerging Students*, University of Utah.

May **Hochschild cohomology of general twisted tensor products**, *Seminario Moduli, Algebre, Anelli*, University of Padua, University of Verona.

Mar **Hochschild cohomology of general twisted tensor products**, *Topology Seminar*, Bilkent University.

2020

Nov **Hochschild cohomology of general twisted tensor products**, *Algebra and Combinatorics Seminar*, Texas A&M University.

Nov **Hochschild cohomology of general twisted tensor products**, *Algebra and Algebraic Geometry Seminar*, University of Washington.

Nov **Hochschild cohomology of general twisted tensor products**, *Algebra Seminar*, University of Texas at Arlington.

Nov **Hochschild cohomology of general twisted tensor products**, *Algebra and Geometry Seminar*, Iowa State University.

Nov **Hochschild cohomology of general twisted tensor products**, *Algebra Seminar*, Indiana University Bloomington.

Oct **Hochschild cohomology of general twisted tensor products**, *Representation Theory and Related Topics Seminar*, Northeastern University.

Oct **Hochschild cohomology of general twisted tensor products**, *Lie Theory Seminar*, University of California, Riverside.

Oct	**_Hochschild cohomology of general twisted tensor products_**, _Seminario de Algebra Homologica y Hierbas Afines_, Universidad de Buenos Aires, Argentina.
Oct	**_Hochschild cohomology of general twisted tensor products_**, _Algebra Seminar_, University of Oregon.
Oct	**_Summary on Lie algebras and their representations_**, _Learning Seminar on Topological Quantum Field Theories and Invariants of Low-dimensional Manifolds_, Rice University.
Sep	**_Hochschild cohomology of general twisted tensor products_**, _Algebra and Number Theory Seminar_, Louisiana State University.
Sep	**_Hochschild cohomology of general twisted tensor products_**, _Algebra and Number Theory Seminar_, Texas Tech University.
Aug	**_The vector space structure of the quantized enveloping algebra_**, _Quantum Symmetries Seminar_, Texas A&M University.
Aug	**_Representations of the special linear Lie algebra of order two_**, _Quantum Symmetries Seminar_, Texas A&M University.
Apr	**_Structures in Hochschild cohomology_**, _MSRI Online Seminar_, Mathematical Sciences Research Institute.
[†]Apr	**_Inner workings of the Hochschild cohomology of some twisted tensor products_**, _Algebra and Geometry Seminar_, Iowa State University.
2019	
Sep	**_Functors and multi-functors between semisimple categories_**, _Quantum Symmetries Seminar_, Texas A&M University.
2016	
Jul	**_A reading on "Algebraic coherent sheaves" by J.-P. Serre_**, _M.Sc. defense_, Universite Pierre-et-Marie-Curie, France.
2015	
Jul	**_Triality: a particularity of Spin(8)_**, _B.Sc. defense_, Universitat Autonoma de Barcelona, Spain.

Professional Service

Conference Organization

AMS Sectional Meeting, United States.
- Spring Eastern 2021: _Hopf algebras, tensor categories, and related homological methods_

Graduate Algebra Symposium, Texas.
- Spring 2021: University of Oklahoma
- Fall 2020: University of Texas at Arlington
- Spring 2019: University of North Texas
- Fall 2019: Texas A&M University

Gathering in Graduate Expository Mathematics, Texas A&M University.
- Fall 2020
- Spring 2019

Committees

Equity, Diversity and Inclusion, University of California, Los Angeles.
- Member: 2021-2022

[†]Canceled or hosted online due to COVID-19.

Seminar Organization

Quantum Symmetries Seminar, Texas A&M University.

- Fall 2020
- Fall 2019

Student Working Seminar in Algebra and Geometry, Texas A&M University.

- Fall 2020
- Spring 2020
- Fall 2019
- Spring 2019
- Fall 2018

Directed Reading Programs

University of California, Berkeley.

- Spring 2020: Mentor

Texas A&M University.

- 2020–present: Organizer
- Fall 2019: Mentor
- Spring 2019: Mentor

Student Government

Math Grad Student Diversity Committee, Texas A&M University.

- 2020–present: Co-Founder

AMS Chapter, Texas A&M University.

- 2020–2021: Vice-President
- 2018–2019: Vice-President

AWM Chapter Peer Mentoring Program, Texas A&M University.

- 2018–present: Mentor

Fulbright Student Association, Texas A&M University.

- 2017–2018: IT officer and Webmaster

Teaching

University of California, Los Angeles

Instructor.

- Winter 2021: Math 33A (Linear Algebra and Applications)
- Fall 2021: Math 110AH (Algebra (Honors))
- Fall 2021: Math 31B (Integration and Infinite Series)

Texas A&M University

Instructor.

- Summer 2021: Summer Educational Enrichment in Math
- Summer 2020: Math 663 (Algebra Qualifying Exam Preparatory Course)
- Summer 2020: Summer Educational Enrichment in Math
- Fall 2019: Math 141 (Finite Mathematics)
- Summer 2019: Summer Educational Enrichment in Math

Graduate Teaching Assistant.

- Fall 2020: Math 152 (Engineering Mathematics II)
- Spring 2019: Math 654 (Algebra II)
- Fall 2018: Math 653 (Algebra I)

Universitat Autonoma de Barcelona

Undergraduate Teaching Assistant.

- Fall 2014: Foundations of Mathematics

<u>Private Tutor</u>

Undegraduate algebra and calculus, high school mathematics and physics.
- 2008–2015

▬ Outreach and Service

<u>Year-long Programs</u>

Matching Mathematicians with Classrooms Nationwide, American Institute of Mathematics.
- 2021-2022: MATCH Fellow

<u>Panel Discussions and Committees</u>

Equity, Diversity and Inclusion Committee, University of California, Los Angeles.
- Fall 2021: Faculty member

First Year Graduate Student Seminar, Texas A&M University.
- Fall 2020: Outreach Opportunities
- Spring 2019: Choosing an Advisor
- Fall 2017: Adjusting to Graduate School

<u>Math Circles</u>

Bridges to Science (Katy, TX).
- Summer 2020: Speaker

University of California, Berkeley.
- Spring 2020: Speaker

San Francisco State University.
- Spring 2020: Volunteer

Texas A&M University.
- Fall 2020: Speaker
- Fall 2019: Speaker
- Spring 2019: Speaker
- 2016–present: Volunteer

<u>Science Contests</u>

Texas Science Olympiad, Texas A&M University.
- Spring 2019: Volunteer

Regional Science Bowl, Texas A&M University.
- Spring 2019: Moderator
- Spring 2018: Scientific Judge
- Spring 2017: Scientific Judge

Junior Science Bowl, Texas A&M University.
- Spring 2018: Moderator

Integral Bee, Texas A&M University.
- Spring 2020: Volunteer
- Spring 2018: Volunteer

Derivative Bee, Texas A&M University.
- Fall 2019: Volunteer
- Fall 2018: Volunteer
- Fall 2017: Volunteer

High School Math Contest, Texas A&M University.
- Fall 2018: Grader
- Fall 2017: Grader
- Fall 2016: Grader

Science Fairs

Math and Stat Fair, Texas A&M University.
- Spring 2017: Volunteer

1a Semana de la Ciencia de Paris, Colegio de España (Paris, France).
- Spring 2016: Volunteer

Dissabtes de les Matematiques, Universitat Autonoma de Barcelona.
- 2011–2015: Volunteer

Student Government

Graduate and Professional Student Government, Texas A&M University.
- 2019: Senator
- Spring 2017: Participant