Mohamed Moakher

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⬑ *https://sites.pitt.edu/ mom224/index.html*

Civil status

Born on the 1st of June 1996 in New Brunswick, New Jersey, USA.
Nationality : Tunisian and American.

Professional Experience

August 2024-December 2026	**Postdoctoral Researcher**, *University of Pittsburgh (Mentor : Prof. Carl Wang-Erickson).*

Education

2021-2024	**PhD in mathematics**, *University of Paris 8 (Advisor : Prof. Stefano Morra). Defense date : June 2024.*
2019-2020	**Master 2 in fundamental mathematics**, *Sorbonne Université.*
2018-2019	**Master 1 in advanced mathematics**, *Ecole Normale Supérieure (ENS) de Lyon.*
2017-2018	**Bachelor in mathematics**, *École Normale Supérieure (ENS) de Lyon.*
2015-2017	**Classes Préparatoires**, *Training in mathematics and physics for France's top engineering schools entrance exam at l'Institut Préparatoire aux Études Scientifiques et Techniques (IPEST), Tunisia.*

Preprints

2025	*On Modified diagonal Cycles and the Beauville decomposition of the Ceresa Cycle* (joint with L. Lagarde, M. Porzio, J. Rawson, F. Trejos Suárez) [draft].
2024	*Quantitative Level Lowering for weight two Hilbert modular forms* [arxiv]. *Status* : Submitted to Tran AMS on 08/30/24, received two positive quick opinions.
2023	*Symplectic determinant laws and invariant theory* (joint with J.Quast) [arxiv]. *Status :* Submitted to JIMJ, reviewer recommended publication on 09/24/25.

Research Visits

June 2025	**University of Heidelberg**, *invited by Andrea Conti.*
January-April 2023	**University of Oxford**, *invited by James Newton.*
March 2022	**Sapienza Università di Roma**, *invited by Claudio Procesi.*

Internships

February-May 2021	**Symmetric power functoriality for modular forms**, *King's College London (supervisor : Prof. James Newton).*
May-August 2020	**The "Taylor-Wiles-Kisin" method**, *University Paris 13 (Supervisor : Prof. Stefano Morra).*
May-July 2019	**Perfectoïd Spaces**, *University of Milan (Supervisor : Prof. Fabrizio Andreatta).*
June-July 2018	**Hyperbolic geometry and Riemann surfaces** *at Elie Cartan Institute, University of Lorraine (Supervisor : Prof. Bruno Duchesne).*

INVITED TALKS

October 2025	**Algebra and Number Theory Seminar** , Penn State University.
June 2025	**GAUS-Seminar**, Heidelberg University.
April 2025	**Philadelphia Area Number Theory Seminar**, Temple University.
September 2024	**Algebra, Combinatorics, and Geometry Seminar**, University of Pittsburgh
April 2024	**Tassili Sunday Maths Seminar (TSMS)**.
January 2024	**Séminaire de mathématiques**, Institut des Hautes Études Scientifiques - IHES.
December 2023	**Algebra Seminar of Camille Jordan Institute (ICJ)**, *Claude Bernard University Lyon 1.*
May 2023	**Mathjeunes Seminar**, *Parisian graduate students seminar.*
February 2023	**Junior Number Theory Seminar**, *Oxford University.*
October 2022	**Journée de rentrée de l'École Parisienne de l'Arithmétique et de la Géométrie (EPAG).**
September 2021	**Jeunes en Arithmétique et Variétés Algébriques (JAVA)**, *Conference on algebraic curves, their moduli, and tropical geometry.*

ACTIVITIES

August 2025	**Arithmetic cycles, Modular forms, and L-functions**, *CRM Montréal.*
July 2025	**LMS Research School - The Theta Correspondence**, *University of East Anglia.*
June 2025	**Iwasawa Theory and Representations of p-adic Groups**, *Lille.*
March 2025	**The Legacy of John Tate, and Beyond**, *Harvard University.*
March 2024	**Arizona Winter School 2024 : Abelian varieties.**
October 2023	**A Conference in Arithmetic Algebraic Geometry in Memory of Jan Nekovář**, *IHES, Bures-sur-Yvette.*
September 2023	**Arithmétique des formes automorphes**, *Paris-Saclay University, Orsay.*
July 2022	**Summer school on the Langlands program** *IHES, Bures-sur-Yvette, France.*
June 2022	**Franco-Asian Summer School on Arithmetic Geometry**, *CIRM, Luminy, France.*
December 2020	**Recent developments around p-adic modular forms**, *ICTS, Bengaluru, India.*
June 2019	**Arithmetic Geometry in Carthage**, *Carthage, Tunisia.*
January 2019	**Groupes et Géométries**, *CIRM, Luminy, France.*

TEACHING

Spring 2024-2025	**Introduction to Mathematical Cryptography** for senior Math majors at the University of Pittsburgh.
Fall 2024-2025	**Applied Discrete Mathematics** for Engineering majors at the University of Pittsburgh.
Spring 2024	**Linear algebra** Teaching Assistant for 1st year undergraduates at University Paris 8.
Fall 2021-2023	**Introduction to Number theory** for 2nd year undergraduates at University Paris 8
Fall 2021-2023	**Introduction to Algebraic Geometry** for 1st year master students at University Paris 8 (together with Prof. Stefano Morra)

SUPERVISION

Summer 2025	Leonardo Finzi (The Galois correspondence for covering spaces and the analogy to Galois theory).

ORGANIZATION

2025-2026	Primary organizer of the Pitt Number theory seminar.
2024-2025	Primary organizer of the Pitt Number theory seminar.

Languages

Arabic (native), French (fluent), English (fluent).