Mohamed Moakher

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Civil status

Born on the 1st of June 1996 in New Brunswick, New Jersey, USA.

Nationality : Tunisian and American.

Professional Experience

Oct. 2026- **Research Associate**, *University of Sheffield.*
Mentor : Prof. Tobias Berger.

Aug. 2024- Sep. 2026 **Postdoctoral Associate**, *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**, *École 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.*

Papers and Preprints

Jun. 2026 *The trianguline variety for reductive groups* [arXiv:2607.02215].
With Andrea Conti and Julian Quast.

Oct. 2025 *On Modified Diagonal Cycles and the Beauville Decomposition of the Ceresa Cycle* [arXiv:2510.07416].
With L. Lagarde, M. Porzio, J. Rawson, F. Trejos Suárez.
Status : To appear in **EPIGA**.

Aug. 2024 *Quantitative level lowering for weight two Hilbert Modular Forms* [arXiv:2408.15410].
Status : To appear in **Trans. AMS**.

Oct. 2023 *Symplectic Determinant Laws and Invariant Theory* [DOI].
With J. Quast.
J. Inst. Math. Jussieu 25, No. 5, 2853–2918 (2026).

Research Visits

Jun. 2025 **University of Heidelberg**, *invited by Andrea Conti.*

Jan.-Apr. 2023 **University of Oxford**, *invited by James Newton.*

Mar. 2022 **Sapienza Università di Roma**, *invited by Claudio Procesi.*

Internships

Feb.-May 2021 **Symmetric power functoriality for modular forms**, *King's College London.*
Supervisor : Prof. James Newton.

May-Aug. 2020 **The "Taylor-Wiles-Kisin" method**, *University Paris 13.*
Supervisor : Prof. Stefano Morra.

May-Jul. 2019 **Perfectoïd Spaces**, *University of Milan.*
Supervisor : Prof. Fabrizio Andreatta.

Jun-Jul. 2018 **Hyperbolic geometry and Riemann surfaces,** *University of Lorraine.*
Supervisor : Prof. Bruno Duchesne.

Invited talks

Sep. 2026 **Philadelphia Area Number Theory Seminar**, Temple University.

Sep. 2026 **Boston University Number Theory Seminar,** Boston University.

Oct. 2025 **Algebra and Number Theory Seminar,** Penn State University.

Jun. 2025 **GAUS-Seminar**, Heidelberg University.

Apr. 2025 **Philadelphia Area Number Theory Seminar**, Temple University.

Sep. 2024 **Algebra, Combinatorics, and Geometry Seminar**, University of Pittsburgh.

Apr. 2024 **Tassili Sunday Maths Seminar (TSMS)**.

Jan. 2024 **Séminaire de mathématiques**, Institut des Hautes Études Scientifiques - IHES.

Dec. 2023 **Algebra Seminar of Camille Jordan Institute (ICJ)**, *Claude Bernard University Lyon 1.*

May 2023 **Mathjeunes Seminar**, *Parisian graduate students seminar.*

Feb. 2023 **Junior Number Theory Seminar**, *Oxford University.*

Oct. 2022 **Journée de rentrée de l'École Parisienne de l'Arithmétique et de la Géométrie (EPAG).**

Sep. 2021 **Jeunes en Arithmétique et Variétés Algébriques (JAVA)**, *Conference on algebraic curves, their moduli, and tropical geometry.*

Activities

May 2026 **Conference on The Eisenstein Ideal and Galois Representations,** Simons Foundation

Aug. 2025 **Arithmetic cycles, Modular forms, and L-functions**, *CRM Montréal.*

Jul. 2025 **LMS Research School - The Theta Correspondence**, *University of East Anglia.*

Jun. 2025 **Iwasawa Theory and Representations of p-adic Groups**, *Lille.*

Mar. 2025 **The Legacy of John Tate, and Beyond**, *Harvard University.*

Mar. 2024 **Arizona Winter School 2024 : Abelian varieties.**

Oct. 2023 **A Conference in Arithmetic Algebraic Geometry in Memory of Jan Nekovář**, *IHES, Bures-sur-Yvette.*

Sept. 2023 **Arithmétique des formes automorphes**, *Paris-Saclay University, Orsay.*

Jul. 2022 **Summer school on the Langlands program** *IHES, Bures-sur-Yvette, France.*

Jun. 2022 **Franco-Asian Summer School on Arithmetic Geometry**, *CIRM, Luminy, France.*

Dec. 2020 **Recent developments around p-adic modular forms**, *ICTS, Bengaluru, India.*

Jun. 2019 **Arithmetic Geometry in Carthage**,*Carthage, Tunisia.*

Jan. 2019 **Groupes et Géométries**, *CIRM, Luminy, France.*

Teaching

Spring 2026 **Galois Theory** for senior Math majors at the University of Pittsburgh.

Spring 2025 **Introduction to Mathematical Cryptography** for senior Math majors at the University of Pittsburgh.

Fall 2024/Fall 2025 **Applied Discrete Mathematics** for Engineering majors at the University of Pittsburgh.

Spring 2024 **Linear algebra I** 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 2026 Leonardo Finzi (with C. Wang-Erickson) : The Ceresa cycle for modular curves.

Summer 2025 Leonardo Finzi (with C. Wang-Erickson) : The Galois correspondence for covering spaces and the analogy to Galois theory.

Organization

2025-2026 Co-organizer of the Pittsburgh Number theory Day.

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

Languages

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