Lam Laurent Pham

Brandeis University
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(website)

Citizenship: French and U.S. citizen.   *Last updated: February 21, 2024*

Academic Positions

Brandeis University   2019–present
   Instructor in Mathematics

Einstein Institute of Mathematics, the Hebrew University of Jerusalem   2020–2021
   Zuckerman Postdoctoral Scholar (Sponsor: Prof. Elon Lindenstrauss)

Education

Yale University
   Ph.D., *Mathematics*   2019
     Advisors: Gregory Margulis (Yale) & Emmanuel Breuillard (Cambridge)

Stanford University
   M.S., *Computational and Mathematical Engineering (iCME)*   2013

École Centrale Paris
   Diplôme d'Ingénieur des Arts et Manufactures   2011
   M.S., *Energy and Aerospace Engineering*, Honors   2010

Research Interests

Arithmetic and algebraic groups, geometry and topology of locally symmetric spaces, number theory, dynamics on semisimple groups and homogeneous spaces, geometric group theory.

Preprints & Publications

Accepted & Published Papers.

1. M. Fraczyk and L. Pham [**2023**]. "Bottom of the length spectrum of arithmetic orbifolds". *Trans. Amer. Math. Soc.* 376.7, pp. 4745–4764. MR4608431

2. L. Pham and F. Thilmany [**2021**]. "Arithmetic groups and the Lehmer conjecture". *Israel J. Math.* 245.2, pp. 839–868. MR4358265

3. L. Pham and X. Zhang [**2022**]. "Logarithmic diameter bounds for some Cayley graphs". *J. Group Theory* 25.2, pp. 327–342. MR4388361

4. L. L. Pham [**2022**]. "Uniform Kazhdan constants and paradoxes of the affine plane". *Transform. Groups* 27.1, pp. 239–269. MR4400723

Translations.

1. A. Borel [**2019**]. *Introduction to arithmetic groups*. Vol. 73. University Lecture Series. Translated from the 1969 French original [MR0244260] by Lam Laurent Pham, Edited and with a preface by Dave Witte Morris. American Mathematical Society, Providence, RI, pp. xii+118. MR3970984

Invited Conference and Workshop Talks

2023.

A Dynamical Weekend at Wesleyan   Mar 4–5

2021.

Oberwolfach Arbeitsgemeinschaft 2021   Oct 11–16
  Thin Groups and Super-approximation
NCNGT 2021 (Near Carbon Neutral Geometric Topology) conference   Jun 14–25
  Symmetric spaces and their generalizations

2020.

2020 CMS Winter meeting (online)   Dec 7–8
  Equidistribution on Arithmetic Manifolds
UNC Ergodic Theory Workshop (postponed)   Apr 23–26

Invited Seminar Talks

2023.

Brandeis University, Geometry Topology Seminar   Apr 25
Brown University, Algebra Seminar   Feb 13
Yale University, Group Actions and Dynamics Seminar   Feb 6
University of North Carolina Chapel Hill, Ergodic Theory Seminar   Nov 7

2022.

New England Dynamics and Number Theory Seminar   Oct 20
Boston College Geometry, Topology And Dynamics Seminar   Oct 13

2021.

University of Massachusetts at Lowell, Mathematical sciences Colloquium talk   Apr 27

2020.

University of Chicago, Geometry and Topology Seminar (postponed)   April 13

2019.

MIT, Lie Groups Seminar   Nov 27
Brandeis University, Dynamics and Number Theory Seminar   Sep 19
Yale University, Group Actions and Dynamics Seminar   Apr 8
Wesleyan University, Topology et al. seminar   Apr 3

2018.

Cambridge University, Discrete Analysis Seminar   Nov 21
Rutgers University Number Theory Seminar   Oct 30
New York Group Theory Seminar (CUNY Magnus Seminar)   Oct 26

2016.

Yale University Junior Colloquium pre-talk   Apr 22
University of Münster Logic seminar   Jan 21

Awards and Honors

Zuckerman Postdoctoral Scholar Program Fellowship (Hebrew University)	2020–2021
Lady Davis Fellowship (Hebrew University), declined	2019
McKenna Fellowship (Yale University)	2018–2019
Berthe Corr and James Corr Memorial Fellowship (Yale University)	2014–2015
Yale University Graduate Fellowship	2013–2018

References

Available upon request (in alphabetical order)

– EMMANUEL BREUILLARD
   Professor of Mathematics, University of Oxford
– DMITRY KLEINBOCK
   Professor of Mathematics, Brandeis University
– ELON LINDENSTRAUSS
   Professor of Mathematics, The Hebrew University
– ALEXANDER LUBOTZKY
   Professor of Mathematics, The Hebrew University
– KEITH MERRILL
   Associate Professor of Mathematics, Brandeis University (Teaching)
– ANDREI RAPINCHUK
   McConnell-Bernard Professor of Mathematics, University of Virginia
– ALAN REID
   Edgar Odell Lovett Professor of Mathematics, Rice University

Teaching

Brandeis University.

Introduction to Topology (MATH 104a)	Spring 2024
Introduction to Proofs (MATH 23b)	Spring 2024
Introduction to Linear Algebra (MATH 15a – two sections)	Fall 2023
Topics in Algebra (MATH 251a, Graduate)	Spring 2023
Introduction to Differential Geometry (MATH 102a)	Spring 2023
Introduction to Algebra, Part I (MATH 100a)	Fall 2022
Introduction to Linear Algebra (MATH 15a)	Spring 2022
Introduction to Real Analysis, Part I (MATH 110a)	Fall 2021
Lie Groups (MATH 224b, Graduate)	Spring 2020
Introduction to Real Analysis, Part II (MATH 110b)	Spring 2020
Introduction to Real Analysis, Part I (MATH 110a)	Fall 2019
Introduction to Combinatorics (MATH 39a)	Fall 2019

Yale University.

Section Instructor

Calculus of Functions of Several Variables (MATH 120)	Fall 2018
Calculus of Functions of One Variable II (MATH 115)	Fall 2016 & 2017

Lead Instructor

Calculus of Functions of One Variable II (MATH S115)	Summer 2016 & 2018

Graduate Mentor, Directed Reading Program

Lie groups and Lie algebras (with Thomas Hille)	Spring 2016
Undergraduate student mentored: Max Weinreich	
Expansion in finite simple groups of Lie type	Spring 2016
Undergraduate student mentored: Alex Atanasov	

Coach

Calculus of Functions of One Variable II (MATH 115)	Fall 2015

Teaching Fellow

Vector Calculus and Linear Algebra (MATH 231), Giulio Tiozzi	Spring 2015
Calculus of Functions of One Variable II (MATH 115), Asher Auel	Fall 2013

Stanford University.

Teaching Assistant

Numerical Methods (CME 206, Graduate), Gianluca Iaccarino	Spring 2012
ODEs for Engineers (CME 102, Undergraduate), Eric Darve	Winter 2012
Vector Calculus for Engineers (CME 100, Undergraduate), Eric Darve	Fall 2011

Visits and Conference Participation

2023.

ICERM	May 15–19
Dynamics, Rigidity and Arithmetic in Hyperbolic Geometry	

2022.

University of Chicago	Jun 12–15
Ergodic geometry, number theory and Margulis legacy: the next generation	

2020.

Banff	Sep 8–9
Arithmetic Aspects of Algebraic Groups (20w5133)	
Universität Paderborn	Jun 29–Jul 1
Reductive Groups 2020	
ICERM	Jun 22–26
Lattice Point Distribution and Homogeneous Dynamics	
TIFR	April 6–17
Zariski-dense subgroups and number-theoretic techniques in Lie Groups and Geometry	
University of Cambridge, UK	March 16–20
Interactions between group theory, number theory, combinatorics and geometry	

2019.

Banff International Research Station	Dec 8–13
Discrete Subgroups of Lie Groups	
ICERM, Brown University	Nov 11–15
Illustrating Dynamics and Probability	
ICERM, Brown University	Oct 21–25
Illustrating Algebra and Number Theory	
IHES Summer School	Jul 8–19
Aspects of Geometric Group Theory	

MSRI Berkeley Summer Graduate School — Jun 10–21
Random and arithmetic structures in topology
Bowdoin College — Jun 4–6
Boundaries of Random Walks and Applications
Cretaro, Italy — May 27–31
Dynamique d'actions de groupes, une conférence en l'honneur d'Yves Benoist
Israel Institute for Advanved Studies, Jerusalem — May 19–24
The 22nd Midrasha Mathematicae. A tribute to the legacy of Marina Ratner
University of Cambridge — Mar 25–29
Number Theory and Dynamics Conference 2019
The Hebrew University of Jerusalem — Feb 17–21
Super Strong Approximation in Groups workshop

2018.

Mathematisches Forschungsintitut Oberwolfach, Oberwolfach — Oct 7–12
Arbeitsgemeinschaft: Rigidity of Stationary Measures
Stanford University — May 18–20
The Mathematical Legacy of Maryam Mirzakhani
ICERM, Brown University — Apr 23–27
Computational Challenges in the Theory of Lattices
Institut Henri Poincaré — Jan 29 - Feb 2
Workshop Model Theory and Combinatorics

2017.

Mathematisches Forschungsintitut Oberwolfach, Oberwolfach — Oct 8–13
Arbeitsgemeinschaft: Additive Combinatorics, Entropy, and Fractal Geometry
Isaac Newton Institute for Mathematical Sciences, Cambridge — May 8–12
Approximation, Deformation, Quasification
Northwestern University — Apr 3–7
Spring School on Analysis on Groups and Measured Group Theory
Mathematical Institute, Oxford — Mar 20–24
Young Geometric Group Theory Meeting VI

2016.

Israel Institute for Advanced Studies, Jerusalem — Nov 6–11
The 20th Midrasha Mathematicae, 60 Faces to Groups,
a conference in honor of Alexander Lubotzky's 60th birthday
Institut Henri Poincaré, Paris — Jun 13–17
Dynamics, Geometry and Number Theory,
a conference in honor of Gregory Margulis' 70th birthday
Institute for Advanced Study, Princeton — May 21–24
Analysis and Beyond: Celebrating Jean Bourgain's Work and Impact
Institute for Advanced Study, Princeton — Mar 28 - Apr 1
Thin Groups and Superapproximation in Geometry and Arithmetic
The Southwest Center for Arithmetic Geometry, University of Arizona — Mar 12–17, 2016
Arizona Winter School: Analytic Methods in Arithmetic Geometry
ICERM, Brown University — Feb 15–19
Ergodic, Algebraic and Combinatorial Methods in Dimension Theory
ICERM, Brown University, Mini-Course — Feb 11–12
Equidistribution and Dimension via Additive Combinatorics (Elon Lindenstrauss)

2015.

Texas A&M University	Nov 9–12
Geometric and Probabilistic Methods in Group Theory and Dynamical Systems	
École Normale Supérieure, Paris	Jun 1–5
Growth, Symbolic Dynamics and Combinatorics of Words in Groups	
University of Notre Dame, Mini-Courses	May 26–29
Thematic Program on Boundaries and Dynamics	
(Part of the International Conference on Boundaries and Ergodic Geometry)	
CUNY Graduate Center	May 19–22
Combinatorial and Additive Number Theory	
IMA Annual Program Year Workshop, University of Minnesota	Apr 27 - May 1, 2015
Analytic Tools in Probability, and Applications	
ICERM, Brown University	Apr 21–24
Mathematics of Lattices and Cryptography	

2014.

IMA Annual Program Year Workshop, University of Minnesota	Sep 29 - Oct 3
Additive and Analytic Combinatorics	
Cornell University	Jul 14–25
10th Cornell University Probability Summer School	
ICERM, Brown University	Apr 7–11
Electrical Flows, Graph Laplacians, and Algorithms: Spectral Graph Theory and Beyond	

Service

Brandeis University.

Dynamics and Number Theory Seminar (co-organizer, with Dmitry Kleinbock)	2023-present
New England Dynamics and Number Theory Online Seminar	2020–present
Co-organized with Dmitry Kleinbock, Han Li, Tariq Osman, Felipe Ramirez (online link)	
Dynamics and Number Theory Seminar (co-organizer, with Dmitry Kleinbock)	2019–2020

Yale University.

Directed Reading Program (co-organizer, with Thomas Hille)	Spring 2016
Graduate Student Seminar (organizer)	Spring 2015

Computer Skills

Python, Matlab, Mathematica.

Languages

Native: French, Vietnamese
Fluent: English (Cambridge CPE, TOEFL IBT 115/120).