Joseph M. Stahl

Personal Data

Place/Date of Birth:	United States of America | 02 December 1992
Work email:	josephmichaelstahl@berkeley.edu
Personal email:	josephmichaelstahl@gmail.com

Education

Began Studies: Aug 2016	PhD Candidate in Mathematics at **UC Berkeley**, Berkeley, CA
Passed Quals: 23 Aug 2018	Advisor: Martin Olsson
Aug 2015 - Jul 2016	Fulbright Scholar at **University of Bonn**, Germany
Graduated: May 2015	B.A. in Mathematics, **Boston University**, Boston, MA
	Major: Mathematics | Minor: German
	Thesis: The Néron-Ogg-Shafarevich Criterion | Advisor: Robert Pollack
	Gpa: 3.91/4.0 | Detailed List of Courses
Graduated: June 2011	High School Diploma, **Oley Valley High School**, Oley, PA
	Gpa: 4.0/4.0 | *Salutatorian*

Research

Publications

Nov 2014	**"Newman's Conjecture in Function Fields"**
	Publication | *Journal of Number Theory 157, 2015; arXiv submission available here*
	Joint with Alan Chang, David Mehrle, Steven Miller, Tomer Reiter, and Dylan Yott during the SMALL REU

Nov 2014	**"Elliptic Curves of Moderate Rank over Number Fields"**
	Publication | *Minnesota Journal Of Undergraduate Mathematics, 2(1), 2017; arXiv submission available here*
	Joint with David Mehrle, Steven Miller, Tomer Reiter, and Dylan Yott during the SMALL REU

Presentations

Mar 2023	**"What is Hochschild homology?"**
	Berkeley Student Arithmetic Geometry Theory Seminar
Feb 2022	**"A stacky perspective on de Rham cohomology"**
	Berkeley Student Arithmetic Geometry Theory Seminar
Oct 2021	**"Moduli of vector bundles"**
	Berkeley Student Arithmetic Geometry Theory Seminar
Nov 2020	**"Hochschild and Cyclic Cohomology of Schemes"**
	Berkeley Student Arithmetic Geometry Theory Seminar
Fall 2019 Spring 2020	**"Seminar on Prisms and Prismatic Cohomology"**
	UC Berkeley student run seminar
Spring 2020	**"Counterexamples to HKR"**
	Berkeley Student Arithmetic Geometry Theory Seminar

Nov 2019	**"The Hochschild-Kostant-Rosenberg Theorem in Characteristic p"** Berkeley Student Arithmetic Geometry Theory Seminar
Apr 2019	**"Thom spectra and topological Hochschild homology"** Berkeley Number Theory Seminar
Mar 2019	**"Topological Hochschild homology of $\mathbb{Z}$ and $\mathcal{O}_K$ as Thom spectra"** Arizona Winter School project presentation
Nov 2018	**"Extracting a sheaf of Dieudonné Algebras from $A\Omega$"** Berkeley Number Theory Seminar
Nov 2018	**"Basics of Derived Algebraic Geometry"** Seminar on Topological Hochschild Homology
Nov 2018	**"Derived Algebraic Geometry Motivation: Intersection Theory and Stacks"** Seminar on Topological Hochschild Homology
Oct 2018	**"Calculation of the Saturated de Rham-Witt Complex in the Case of a Cusp"** Berkeley Number Theory Seminar
Oct 2018	**"Construction of the Saturated de Rham-Witt Complex and Comparison with Witt Vectors and the de Rham Complex"** Berkeley Number Theory Seminar
April 2018	**"Topological Hochschild Homology and p-adic Hodge Theory"** Berkeley Student Arithmetic Geometry Theory Seminar
Jan 2018	**"Deformation Theory of Galois Representations"** Berkeley Number Theory Seminar
Oct 2017	**"Homotopy Theory in Arithmetic Geometry: Cyclic Presheaves"** Berkeley Student Arithmetic Geometry Theory Seminar
May 2017	**"Algebraic Solutions to Differential Equations"** Berkeley Student Arithmetic Geometry Theory Seminar
Apr 2017	**"The de Rham specialization of $R\Gamma_{A_{\inf}}(X)$"** Berkeley Number Theory Seminar
Mar 2017	**"The Functor $L\eta$"** Berkeley Number Theory Seminar
Oct 2016	**"Adic Spaces"** Berkeley Number Theory Seminar
Sep 2016	**"Adelic Automorphic Forms"** Berkeley Student Number Theory Seminar
Mar 2016	**"Riemann-Roch for Curves"** Bonn University Seminar on Stable Reduction of Curves
Jan 2015	**"Newman's Conjecture in Function Fields"** Joint Math Meetings

Aug 2014	**"Newman's Conjecture in Function Fields"** Young Mathematician's Conference
Sep 2014	**"Newman's Conjecture in Function Fields"** Québec/Maine Number Theory Conference
June 2014	**"Abelian Categories and Derived Functors"** Boston University Étale Cohomology Student Seminar
Sep 2014	**"p-Divisible Groups"** Boston University p-adic Hodge Theory Learning Seminar
Aug 2014	**"A First Glimpse of Cohomology"** Boston University PROMYS Student Minicourse
Aug 2014	**"$\mathbb{F}_1$-Geometry and a Nonabelian Freyd-Mitchell Embedding Theorem"** Boston University PROMYS Counselor Lecture
July 2014	**"Categories for the Working Counselor"** Boston University PROMYS Counselor Lecture
July 2013	**"A Crash Course in Modular Forms"** Boston University PROMYS Counselor Lecture
July 2013	**"Tropical Geometry"** Boston University PROMYS Student Minicourse
July 2012	**"Algebraic Music Theory"** Boston University PROMYS Student Minicourse

Attended Conferences/Events

Jan 2021	**Berkeley-Tokyo Lectures on Number Theory** Lecture series and workshop | *Online Workshop*
Fall 2019 Spring 2020	**Seminar on Prisms and Prismatic Cohomology** (Organizer) Seminar | *UC Berkeley*
May 2019	**RTG Research Workshop** Workshop | *UC Berkeley*
Mar 2019	**Arizona Winter School 2019: Topology and Arithmetic** Conference | *University of Arizona*
July 2018	**Witt Vectors, Deformations, and Absolute Geometry** Conference | *University of Vermont*
Apr 2018	**RTG Research Workshop** (Organizer) Workshop | *UC Berkeley*
Apr 2018	**Arbeitsgemeinschaft: Topological Cyclic Homology** Arbeitsgemeinschaft | *Mathematisches Forschungsinstitüt Oberwolfach*

Mar 2018	**Arizona Winter School 2018: Iwasawa Theory** Conference | *University of Arizona*
Mar 2017	**Arizona Winter School 2017: Perfectoid Spaces** Conference | *University of Arizona*
Feb/Mar 2016	**HCM Workshop: Recent developments in integral p-adic cohomology theories** Workshop | *Universität Bonn*
January 2015	**Joint Mathematics Meetings** Conference | *San Antonio*
May 2013	**Motivic Invariants and Singularities Thematic Program** Conference | *Notre Dame*

Teaching Credentials

Work Experience

Dec 2016 - Present	**Instructor for Art of Problem Solving** Taught classes, released and graded homework, helped students with questions on message boards.
Aug 2016 - Present	**Graduate Student Instructor at UC Berkeley** Graded, wrote quizzes, held office hours, and conducted discussion sections for various courses, including single variable and multivariable calculus and linear algebra.
Sep 2021 - Present	**Private Tutor** Tutored students in a wide variety of topics, from calculus to number theory to knot theory.
May 2020 - Jan 2023	**Instructor for Momentum Learning** Taught online lessons for students interested in mathematics competitions.
Jun 2012 - Aug 2015	**PROMYS Student Counselor** Helped high school students learn basic number theory from an axiomatic point of view through personal interaction and grading of daily problem sets; gave introductory lectures on mathematical topics to students and lectures on more advanced material to other counselors.
Sep 2012 - May 2015	**Course Grader for the Boston University Math Dept.** Graded for courses including calculus, number theory, complex variables, and real analysis.
Sep 2013 - May 2015	**Math Helper at Boston University** Tutored and assisted students with coursework for various mathematics courses, including calculus, differential equations, and abstract algebra.
Feb - May 2012	**Tutor with Tutors-for-All**, Boston Tutored middle school students after school in Cambridge on basic mathematics, including arithmetic and elementary algebra.

Teaching Experience

DEC 2016 - PRESENT	**Art of Problem Solving** Introduction to Number Theory, Intermediate Number Theory, Introduction to Counting & Probability, MATHCOUNTS/AMC 8 Basics, Prealgebra 1, Introduction to Algebra A, Intermediate algebra
FALL 2023	**MPS 375 UC Berkeley** Teaching workshop Pedagogy course for graduate student instructors in various departmentst
SPRING 2022	**Math 375 UC Berkeley** Teaching workshop Pedagogy course for graduate student instructors in the math department
FALL 2021	**Math 375 UC Berkeley** Teaching workshop Pedagogy course for graduate student instructors in the math department
SPRING 2021	**UC Berkeley Quantitative Sciences Discipline Cluster Leader** Led workshop for first-time GSIs teaching in quantitative sciences
FALL 2020	**Math 110 UC Berkeley** Linear algebra
FALL 2020	**UC Berkeley Quantitative Sciences Discipline Cluster Leader** Led workshop for first-time GSIs teaching in quantitative sciences
FALL 2016 - SPRING 2020	**Directed Reading Program Organizer and Mentor** Organized the Berkeley DRP (2017-2020), Mentored projects in p-adic numbers, number theory, algebraic and arithmetic geometry, and commutative algebra
FALL 2019	**Math 53 UC Berkeley** Multivariable calculus
FALL 2019	**UC Berkeley Quantitative Sciences Discipline Cluster Leader** Led workshop for first-time GSIs teaching in quantitative sciences
SPRING 2019	**UC Berkeley Quantitative Sciences Discipline Cluster Leader** Led workshop for first-time GSIs teaching in quantitative sciences
FALL 2018	**Math 53 UC Berkeley** Multivariable calculus
FALL 2018	**UC Berkeley Quantitative Sciences Discipline Cluster Leader** Led workshop for first-time GSIs teaching in quantitative sciences
FALL 2017	**Math 54 UC Berkeley** Linear algebra and differential equations
SUMMER 2017	**Math 53 UC Berkeley** Multivariable calculus
SPRING 2017	**Math 53 UC Berkeley** Multivariable calculus
FALL 2016	**Math 1A UC Berkeley** Single variable calculus

Conferences/Workshops attended

Oct 2019 | **How Students Learn**
Workshop | *UC Berkeley*

Oct 2019 | **Working with Student Writing**
Workshop | *UC Berkeley*

Oct 2019 | **Creating Inclusive Classrooms: Microaggressions and the Learning Environment**
Workshop | *UC Berkeley*

Sep 2019 | **Syllabus and Course Design**
Workshop | *UC Berkeley*

Scholarships and Awards

2018	UC Berkeley Outstanding Graduate Instructor ($250)
Aug 2015 - Jul 2016	Fulbright Scholar at the University of Bonn, Germany
2013	Outstanding Student in Mathematics Award, Boston University Chapter of Phi Beta Kappa ($100)
Fall 2011 - Fall 2014	Boston University Dean's List
Spring 2014	Boston University UROP Undergraduate Student Research Award

Other Skills

Computers and Programming

Proficient with LaTeX, Excel/Google Sheets, Word/Google Docs, PowerPoint
Prior experience with Java, Sage

Languages

English: Fluent (Native Speaker)
German: Proficient

Interests and Activities

Active user on math.stackexchange.com and mathoverflow.net (username: Stahl)
Classically trained pianist/jazz pianist, composer, singer, trombonist

Bachelor of Arts in Mathematics

Grades

Course	Grade	Credit Hrs
CAS LG211 Third Semester German	A	4
CAS MA129 Honors Calculus	A	4
CAS PH100 Introduction to Philosophy	A-	4
KHC EN101 Literature and Hunger	A-	4
KHC ST111 Writing Studio I	A-	2
CAS LG212 Fourth Semester German	A	4
CAS MA230 Honors Multivariable Calculus	A	4
CAS MA412 Complex Variables	A	4
CAS MA492 Directed Study in Elliptic Curves and Modular Forms	A	1
CFA MU199 Symphonic Chorus	A-	1
KHC MA101 Investigations in Number Theory	A	4
KHC ST112 Writing Studio II	A	2
CAS LG303 German Composition and Conversation I	A	4
CAS MA491 Directed Study in Elliptic Curves and Modular Forms	A	2
CAS MA511 Introduction to Real Analysis I	A	4
CAS MA541 Modern Algebra I	A	4
CAS MA563 Introduction to Differential Geometry	A	4
KHC HC301 The Disciplined Mind	A-	4
CAS LG304 German Composition and Conversation II	A	4
CAS MA442 Honors Linear Algebra	A	4
CAS MA492 Directed Study in Topology	A	2
CAS MA512 Introduction to Real Analysis II	A	4
CAS MA542 Modern Algebra II	A	4
GRS MA926 Directed Study in Riemann Surfaces	A	2
CAS LG350 Introduction to German Literature	A-	4
CAS MA573 Qualitative Differential Equations	A	4
GRS MA727 Algebraic Topology I	A	4
GRS MA731 Lie Groups and Lie Algebras	A	4
CAS CS111 Introduction to Computer Science	B+	4
CAS LG325 German History and Culture through Film	A-	4
GRS MA822 Topics in Geometry	A	4
GRS MA844 Algebraic Number Theory	A	4
CAS EC101 Introductory Microeconomics	A-	4
CAS LG456 German Culture since 1945	A-	4
GRS MA725 Differential Geometry I	A-	4
GRS MA841 Euler Systems Seminar	A	4
GRS MA745 Algebraic Geometry	A	4
CAS LG315 German Linguistics	A	4
GRS MA842 Algebra Seminar	A	4
	Total	140
	Gpa	**3.91**
(At Bonn)[1] Selected Topics in Algebra	1.3	5
(At Bonn) Selected Topics in Algebraic Geometry - p-adic Hodge Theory	1.3	5