CHRISTOPHER JOSEPH DECKER (CJ) DOWD

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EDUCATION

University of California, Berkeley *2022*-present
Mathematics PhD Student
Advisor: Sug Woo Shin

University of Cambridge *2021-2022*
Part III of the Mathematical Tripos
Master of Advanced Studies in Mathematics (Graduated with Distinction)

Harvard University *2017 - 2021*
Bachelor of Arts Overall GPA: 3.96
Concentration: Mathematics
Secondary: Music
Magna cum Laude with Highest Honors in Field
Thesis: *On parameterizations of cyclic N-isogenies and strict K-curves lying above points on $Y_0(N)$*
Thesis advisor: Prof. Noam D. Elkies

RESEARCH INTERESTS

Number theory, especially in the p-adic setting, including Galois deformation theory, p-adic representation theory, categorical p-adic local Langlands, p-adic Hodge theory, mod p reductions of crystalline representations, and overconvergent modular forms

AWARDS

NSF Research Training Group Grant in Number Theory and Arithmetic Geometry *2023, 2024, 2026*
Herchel Smith Fellowship (Full scholarship for Cambridge Part III) *2021-2022*
Director's Summer Program at the National Security Agency *Summer 2021*
Research Experience for Undergraduates at the University of Minnesota Twin Cities *Summer 2019*

PUBLICATIONS

1. *Arborescences of Covering Graphs.* Algebraic Combinatorics, Volume 5 (2022) no. 2, pp. 319-346. With Sunita Chepuri, Andy Hardt, Gregory Michel, Sylvester W. Zhang, and Valerie Zhang.
   - Poster presentation: University of Illinois Chicago Undergraduate Mathematics Symposium, November 2, 2019.

PREPRINTS

1. *The 3-adic Steinberg block and a categorical 3-adic Langlands correspondence for* $\mathrm{GL}_2(\mathbb{Q}_3)$. 2026. arXiv: 2610.25055 [math.NT].

TEACHING EXPERIENCE

UC Berkeley Department of Mathematics

Graduate Student Instructor (Teaching assistant) at UC Berkeley *2022-2026*

- Math 53: Multivariable Calculus
- Math 54: Linear Algebra
- Math 10A: Methods of Mathematics: Calculus, Statistics and Combinatorics
- Math 110: Abstract Linear Algebra
- Math 52: Calculus II (Head GSI role)
- Math 16B: Analytic Geometry and Calculus

Reader (Grader) *Spring 2024*

- Number Theory (Abelian Varieties with Complex Multiplication)
- Complex Manifolds

Harvard Department of Mathematics

Course assistant at Harvard University *2019-2021*

- Abstract algebra, commutative algebra, algebraic geometry, combinatorics, number theory
- Two-time recipient of a Certificate in Distinction in Teaching

SEMINARS AND SERVICE

UC Berkeley Department of Mathematics

Organizer and speaker: SHIPP Seminar on prismatic cohomology and F-gauges (Syntomic, Habiro, and Inevitably Prismatic Perfectoid) *Fall 2025*

Organizer and speaker: Seminar on the cohomology of locally symmetric spaces *Fall 2024*

Organizer: UC Berkeley Undergraduate Number Theory Symposium *April 2023*

Mentor: UC Berkeley Directed Reading Program *Spring 2023, Fall 2023, Fall 2024, Fall 2025*

- Student topics include analytic number theory, arithmetic geometry, Drinfeld modules, and p-adic Hodge theory

Harvard Undergraduate Mathematics Association *Summer 2020*

Volunteer Mentor: Math Online Reading Program for High Schoolers (MORPH)

- Student-run mentorship program targeted to advanced high school students interested in higher math
- Group mentor for number theory and ring theory

Harvard Visitas Program *Spring 2020, 2021*

- Volunteer panelist for prospective freshmen

Organizer/Speaker: Harvard Undergraduate Mathematics Colloquium (Math Table) *2018-2019*

CONFERENCES ATTENDED

MPS Conference on The Eisenstein Ideal and Galois Representations: Looking Forward after 50 Years — *May 2026*

Simons Foundation, New York

Arizona Winter School — *March 2023-2026*

University of Arizona

Summer school on Galois Representations and Reciprocity — *July 2024*

Vietnam Institute for Advanced Studies in Mathematics

ISM Discovery School: Langlands Correspondence for Spherical Varieties — *October 2023*

McGill University

University of Illinois Chicago Undergraduate Mathematics Symposium — *November 2, 2019*

University of Illinois Chicago