

Jackson Van Dyke

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Education

University of Texas, Austin Ph.D. in Mathematics (in progress)	Fall 2019 - Spring 2024
University of California, Berkeley B.A. in Mathematics Honors thesis title: Non-sectorial gluing of Fukaya categories	Fall 2015 - Spring 2019

Positions and appointments

Technical University of Munich , Postdoctoral Researcher	Fall 2024 - Spring 2027
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Publications

1. Jackson Van Dyke. Projective symmetries of three-dimensional TQFTs, 2023. arXiv: 2311.01637 [math.QA]
2. Jackson Van Dyke. Symmetries of quantization of finite groupoids, 2023. arXiv: 2312.00117 [math.QA]
3. David Ben-Zvi and Jackson Van Dyke. **Book:** *Between electric-magnetic duality and the Langlands program*. In preparation, 2023. Available online at utexas.edu/users/vandyke/notes/langlands_sp21/langlands.pdf
4. Antonio Alfieri and Jackson Van Dyke. An introduction to knot Floer homology and curved bordered algebras. *Periodica Mathematica Hungarica*, 80(2):211–236, 2020

Other publications:

1. A. Schmah, N. Buechel, S. Garrett, M. Lomnitz, X. Sun, J. Van Dyke, J. Xu, and J. Zhang. Radiation Hardness Test of Eljen EJ-500 Optical Cement. *ArXiv e-prints*, March 2017
2. J. Van Dyke, L.A. Bernstein, and R. Vogt. Parameter optimization and uncertainty analysis of FREYA for spontaneous fission. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 922:36 – 46, 2019

Invited Talks

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| 1. University of Lisbon, TQFT seminar (online)
Geometric quantization, fusion categories, and Rozansky–Witten theory | July 31, 2024 |
| 2. Technical University of Munich
Projective TQFTs | July 8, 2024 |
| 3. Perimeter Institute
An analogue of the spin extension for fusion categories | July 6, 2023 |

4. Simons Collaboration on Global Categorical Symmetries April 24, 2023
Topological symmetries and the Drinfeld center
5. Academia Sinica (Taipei, Taiwan) Representation Theory Seminar March 24, 2022
Projectivity, polarization, and a higher Weil representation
6. UC Davis Sr. Geometry/Topology Seminar April, 2022
Spin/Metaplectic extensions for finite 3-dimensional TFTs

Honors and Awards

- **John and Anne Crawford Scholarship** (UT Austin) Fall 2021-Spring 2022
- **Frank Gerth III teaching excellence awards** (UT Austin) Fall 2019-Spring 2020
- **NSF Graduate Research Fellowship Program - Honorable Mention** Spring 2020
- **Dean's Honors List - College of Letters and Science** (UC Berkeley) Spring 2018-2019
- **International Dean's Summer Scholarship** (University College London) Summer 2017

Teaching Experience

Graduate prelim course grader: Algebra I
 University of Texas, Austin Fall 2022, Fall 2023
 This preliminary course for graduate students covers group theory, as well as rings and modules. I held office hours, graded assignments, and prepared solutions for the students.

Assistant instructor (IBL format): Topology I
 University of Texas, Austin Fall 2020, Spring 2022
 This course implemented the **inquiry based learning (IBL)** method. This is a successful contemporary teaching technique which is particularly well-represented at UT. **My responsibilities included:** independently holding class over Zoom and in person, grading exams, and managing an IBL-style in-class discussion.

Teaching assistant: Multivariable Calculus, Series, Sequences
 University of Texas, Austin Fall 2019, Spring 2020
 My responsibilities included holding recitation, writing and administering quizzes, grading assignments and exams, and holding office hours.

Undergraduate Student Instructor: Calculus, ODEs, Linear Algebra
 University of California, Berkeley Fall 2018
 My responsibilities included holding recitation, writing and administering quizzes, grading assignments and exams, and holding office hours.

Summer Program in Nuclear Physics: May 2017
 University of Oslo, Oslo, Norway
 I helped developed the curriculum for, and teach a course concerning the physics of nuclear fission and our ability to model it.

Service

Jr. Geometry Seminar Organizer Spring 2021
 UT Austin

Jr. Geometry and String Theory Seminar Organizer Fall 2022
 UT Austin

Sunday Morning Math Group Coordinator:

UT Austin

Spring 2021-Fall 2021

The Sunday Morning Math Group (SMMG) is a UT sponsored outreach program aimed at junior high and high school students. I organized and hosted eight public “general sessions” for the community each semester, as well as the “American Math Contest” and “American Invitational Mathematics Examination” (over 600 total exams). I also spoke during a general session in Spring 2022.

Directed Reading Program:

UT Austin

Spring 2020-Fall 2021, Fall 2022