

# Patrick Vincent O'Melveny

Department of Mathematics · University of Washington · Seattle, WA

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pvomelveny.com  
Google Scholar · GitHub

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## EDUCATION

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| 2023 – present | <b>PhD in Mathematics</b> , University of Washington<br>Advisor: Thomas Rothvoss   |
| 2021 – 2023    | <b>M.A. in Mathematics</b> , San Francisco State University<br>Advisor: Dustin Ross<br>Thesis: <i>A Volumetric Proof of the Log-Concavity of the Characteristic Polynomial of Matroids</i> |
| 2014           | <b>B.A. in Music</b> , Sonoma State University   |

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## RESEARCH INTERESTS

Combinatorics · Optimization · Boolean functions · Integer programming

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## RESEARCH

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| 2024 | <i>Mixed volumes of normal complexes</i><br>Patrick Vincent O'Melveny, Lauren Nowak, Dustin Ross<br>Discrete and Computational Geometry, vol. 74, pp. 135–176 <a href="#">journal</a> · <a href="#">arXiv</a> |
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## TALKS

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| Mar. 2023 | <i>Log-Concave Sequences, Mixed Volumes, and the Normal Complex of a Fan</i><br>Algebra, Geometry, and Combinatorics Seminar, San Francisco State University |
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## TEACHING

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| Spring 2026 | <b>Math 208 – Linear Algebra</b><br>TA · University of Washington                          |
| Winter 2026 | <b>Math 125 – Calculus with Analytic Geometry II</b><br>TA · University of Washington      |
| Autumn 2025 | <b>Math 124 – Calculus with Analytic Geometry I</b><br>TA · University of Washington       |
| Summer 2025 | <b>Math 224 – Advanced Multivariable Calculus</b><br>Instructor · University of Washington |
| Spring 2025 | <b>Math 208 – Linear Algebra</b><br>TA · University of Washington                          |
| Winter 2025 | <b>Math 125 – Calculus with Analytic Geometry II</b><br>TA · University of Washington      |
| Autumn 2024 | <b>Math 126 – Calculus with Analytic Geometry III</b><br>TA · University of Washington     |
| Summer 2024 | <b>Math 124 – Calculus with Analytic Geometry I</b><br>TA · University of Washington       |
| Spring 2024 | <b>Math 126 – Calculus with Analytic Geometry III</b><br>TA · University of Washington     |
| Winter 2024 | <b>Math 124 – Calculus with Analytic Geometry I</b><br>TA · University of Washington       |
| Autumn 2023 | <b>Math 124 – Calculus with Analytic Geometry I</b><br>TA · University of Washington       |

Spring 2023	<b>Math 228 — Calculus I</b> TA · San Francisco State University
Autumn 2022	<b>Math 123 — Mathematics for Elementary Statistics</b> Instructor · San Francisco State University
Spring 2022	<b>Math 198 — Prelude to Calculus II</b> Instructor · San Francisco State University
Autumn 2021	<b>Math 197 — Prelude to Calculus I</b> Instructor · San Francisco State University
Spring 2021	<b>Math 228 — Calculus I</b> TA · San Francisco State University

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#### SERVICE

2025 – 2026	<b>Graduate Student Representative</b> Department of Mathematics, University of Washington <i>Advocate for graduate students in faculty and graduate committee meetings; organize the Current Topics seminar and incoming and prospective student panels; run annual GSR elections.</i>
2020 – 2022	<b>Facilitation Team Member</b> Mathematistas, San Francisco State University <i>A community supporting gender equity in higher mathematics.</i>
2019 – 2022	<b>Volunteer</b> Learning Home Volunteers <i>A non-profit supporting kindergarten readiness in underserved communities.</i>

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#### PAST WORK

2022 – 2023	<b>Technical Consultant &amp; Developer</b> YouCubed at Stanford University <i>Consulted on and built code supporting a data science curriculum for high school students.</i>
2017 – 2021	<b>Software Engineer</b> Posit Science Corporation <i>Developed software for neuroplasticity research studies, maintained clinical data pipelines, and built back-end distributed computing systems.</i>
2015 – 2017	<b>Research Associate &amp; Data Analyst</b> Posit Science Corporation <i>Built internal analytics and reporting tools, performed exploratory data analysis for research publications, and coordinated a multi-site FDA Phase II clinical trial.</i>
2014 – 2015	<b>Research Associate II</b> Northern California Institute for Research and Education <i>Coordinated fMRI experiments on neurotransmitters and social cognition in schizophrenia, and developed analysis pipelines for fMRI and MEG data.</i>