Patrick Wynne

Department of Algebra
Charles University Prague

patrickwynne.com
wynnepm@gmail.com

Education

University of Colorado Boulder August 2024
Doctorate of Philosophy in Mathematics *Boulder, CO, USA*

University of Colorado Boulder May 2020
Masters of Arts in Mathematics *Boulder, CO, USA*

Temple University May 2016
Bachelor of Science in Mathematics *Philadelphia, PA, USA*

Employment

Postdoctoral Researcher
Charles University Prague *2025 - present*

Lecturer
University of Colorado Boulder *2024 - 2025*

Graduate Student
University of Colorado Boulder *2017 - 2024*

Research

My research is in universal algebra, with a focus on clones, clonoids, and nilpotence of finite algebraic structures, with particular emphasis on Mal'cev algebras.

The Subpower Membership Problem for Algebras with Cube Term 2025 – present
PRIMUS Grant supervised by Dr. Michael Kompatscher *Charles University Prague*

PhD Dissertation – "Clonoids and Nilpotent Mal'cev Algebras" 2020 – 2024
Under the supervision of Dr. Peter Mayr *University of Colorado Boulder*

Publications, Preprints, etc.

Patrick Wynne – Clonoids with Mal'cev Target 2026.
In Preparation

Patrick Wynne – Structure and Complexity of 2-Nilpotent Mal'cev Algebras 2026.
Submitted

Patrick Wynne – Clonoids and Nilpotent Mal'cev Algebras 2024.
PhD Dissertation

Peter Mayr and Patrick Wynne – Clonoids between modules. 2024.
International Journal of Algebra and Computation

Talks

* Indicates invited talk

***Clonoids and Central Extensions** — September 2026
Algebra Week — *University of Siena, Italy*

Clones and Clonoids — March 2026
Algebra Colloquium — *Charles University Prague, Czech Republic*

Subpower Membership Problem via Clonoids — February 2026
AAA 108 — *TU Wein, Austria*

SMP for Clonoids from Cyclic Groups — January 2026
Constraint Satisfaction Problem Seminar — *Charles University Prague, Czech Republic*

On the Number of 2-Nilpotent Mal'cev Algebras — October 2025
Constraint Satisfaction Problem Seminar — *Charles University Prague, Czech Republic*

Clonoids and Uniform Generation — September 2025
Summer School on Algebra and Ordered Sets — *Blansko, Czech Republic*

The Subpower Membership Problem for 2-Nilpotent Algebras — May 2025
BLAST 2025 — *University of Colorado Boulder, USA*

***Subpower Membership Problem for Nilpotent Mal'cev Algebras** — May 2024
Invited Talk, Association for Symbolic Logic North America Meeting — *Iowa State University, Ames, USA*

The Finite Basis Problem for Nilpotent Mal'cev Algebras — April 2024
BLAST 2024 — *University of North Texas, Denton, USA*

Clonoids and Nilpotent Algebras — October 2023
Panglobal Algebra and Logic Seminar — *University of Colorado Boulder, USA*

Clonoids Between Abelian Groups — May 2023
BLAST 2023 — *University of North Carolina Charlotte, USA*

On the Number of Clonoids Between Finite Modules — August 2022
BLAST 2022 — *Chapman University, California USA*

Nilpotent Extensions of Mal'cev Algebras — June 2022
Equations in Universal Algebra Research Seminar — *Johannes Kepler University, Linz Austria*

Clonoids Between Finite Modules — June 2022
Workshop on General Algebra, AAA 102 — *University of Szeged, Hungary*

On Clonoids Between Abelian Groups of Coprime Order — June 2021
Workshop on General Algebra, AAA 101 — *University of Novi Sad, Serbia*

Some Finiteness Results in Universal Algebraic Geometry — April 2021
Ulam Seminar — *University of Colorado Boulder, USA*

Post's Correspondence Problem November 2020
Graduate Student Seminar *University of Colorado Boulder, USA*

Teaching

Mathematical Analysis in Business Instructor Fall 2024, Spring 2025
Department of Mathematics *University of Colorado Boulder*
- Primary instructor for multiple sections of a 4 credit course on mathematical concepts in business with emphasis on computational methods in Microsoft Excel.

Linear Algebra Instructor Spring 2023
Department of Mathematics *University of Colorado Boulder*
- Primary instructor for a 3 credit course on systems of linear equations, matrices, vector spaces, and linear transformations.

Calculus 2 Assistant Coordinator Spring 2021, Fall 2021, Spring 2022
Department of Mathematics *University of Colorado Boulder*
- Assisted in the coordination of around 20 calculus sections.
- Created projects and activities for in-class use.
- Created guides to help Instructors and Teaching Assistants teach certain topics.
- Worked with the course coordinator to write exams.
- Ran meeting for Teaching Assistants and undergraduate Learning Assistants to prepare them for teaching recitations.

Calculus 1 Instructor Spring 2019, Fall 2019, Fall 2023
Department of Mathematics *University of Colorado Boulder*
- Primary instructor for a 5 credit calculus course on continuity, differentiation, and integration.

Calculus 2 Instructor Summer 2019, Spring 2020, Fall 2020, Fall 2022, Spring 2024
Department of Mathematics *University of Colorado Boulder*
- Primary instructor for a 5 credit calculus course on integration, sequences, and series.

Calculus 1 Teaching Assistant Spring 2018, Fall 2019
Department of Mathematics *University of Colorado Boulder*
- Lead recitations for a calculus course on continuity, differentiation, and integration.

Calculus 2 Teaching Assistant Fall 2017, Fall 2018
Department of Mathematics *University of Colorado Boulder*
- Lead recitations for a calculus course on integration, sequences, and series.

Undergraduate Research Projects

I have participated in the following undergraduate research projects, both as an undergraduate and as a graduate student on a team of undergraduates.

REU: Graphs, Quadratic Forms, and Period Maps 2018
Under the supervision of Dr. Sebastian Casalaina-Martin *University of Colorado Boulder*

REU: Links for Fiber Enforced Elastic Composites 2014 – 2015
Under the supervision of Dr. Yury Grabovsky *Temple University*

Awards, Scholarships, & Fellowships

William N. Reinhardt Summer Fellowship
University of Colorado Boulder *2023*

Richard Laver Summer Fellowship
University of Colorado Boulder *2022*

Burton W. Jones Teaching Excellence Award
University of Colorado Boulder *2021*

Frances C. Stribic Summer Fellowship
University of Colorado Boulder *2021*

Sieglinde Talbott Haller Summer Fellowship
University of Colorado Boulder *2020*

W.E. Briggs Teaching Excellence Award
University of Colorado Boulder *2018*

Service

Spring School in Nature Co-organizer
Department of Algebra, Charles University Prague *April 2026*

Math Department Peer Mentorship Program Mentor
University of Colorado Boulder *2023 – 2024*

Graduate Representative to the Graduate Committee
University of Colorado Boulder *2020 – 2022*

Referee

Forty-First Annual Symposium on Logic in Computer Science
July 2026

Bachelor Thesis
Charles University Prague *August 2026*