

Peter M. McDonald

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Education

- 2018–present **Ph.D. Mathematics**, *University of Utah*, Salt Lake City, UT, USA.
Advisors: Srikanth Iyengar and Karl Schwede
- 2012–2016 **B.A. Mathematics (Highest Honors)**, *Williams College*,
Williamstown, MA, USA.
Phi Beta Kappa, Magna Cum Laude, Sigma Xi

Employment

- Aug. 2018–present **Graduate Teaching Assistant**, *University of Utah*, Salt Lake City,
UT, USA.
- Summer 2019 **Graduate Teaching Assistant**, *Summer Mathematics Program for
High School Students*, University of Utah, Salt Lake City, UT, USA.
- Sep. 2016–May 2018 **Associate**, *EY-Parthenon*, Boston, MA, USA.

Awards

- Summer 2021 **Departmental Summer Research Fellowship**, *University of Utah*.
- Summer 2020 **NSF-RTG Fellowship (DMS-1840190)**, *University of Utah*.
- Spring 2020 **NSF-RTG Fellowship (DMS-1840190)**, *University of Utah*.
- 2016 **Robert F. Rosenberg Prize in Mathematics**, *Williams College*.
- 2014–2016 **Robert F. Rosenberg Scholarship in Mathematics**, *Williams
College*.
- 2014 **Erastus C. Benedict, Class of 1821, Prize in Mathematics, First
Prize**, *Williams College*.

Publications

- [3] Sarah M. Fleming, Lena Ji, S. Loepp, *Peter M. McDonald*, Nina Pande,
and David Schwein. Completely controlling the dimensions of formal fiber
rings at prime ideals of small height. *J. Commut. Algebra*, 11(3):363–388,
2019.
- [2] Sarah M. Fleming, Lena Ji, S. Loepp, *Peter M. McDonald*, Nina Pande,
and David Schwein. Controlling the dimensions of formal fibers of a
unique factorization domain at the height one prime ideals. *J. Commut.
Algebra*, 10(4):475–498, 2018.

- [1] Thomas Garrity and *Peter McDonald*. Generalizing the Minkowski question mark function to a family of multidimensional continued fractions. *Int. J. Number Theory*, 14(9):2473–2516, 2018.

Teaching

Instructor of Record

- Fall 2021 **Math 1220: Calculus II**, *University of Utah*.
Spring 2021 **Math 2210: Calculus III**, *University of Utah*.
Fall 2020 **Math 2210: Calculus III**, *University of Utah*.
Fall 2019 **Math 1320: Engineering Calculus II**, *University of Utah*.

Teaching Assistant

- Summer 2019 **Summer Math Program for High School Students**, *University of Utah*.
Fall 2018 **Math 1321: Accelerated Engineering Calculus II**, *University of Utah*.
Spring 2016 **Math 478: On Expressing Numbers**, *Williams College*.
Fall 2015 **Math 372: Complex Analysis**, *Williams College*.
Spring 2015 **Math 351: Applied Real Analysis**, *Williams College*.
Fall 2014 **Math 355: Abstract Algebra**, *Williams College*.
Spring 2014 **Math 351: Applied Real Analysis**, *Williams College*.
Fall 2013 **Math 150: Multivariable Calculus**, *Williams College*.

Invited Talks

- Aug. 2015 **The relationship between a local ring and its completion**, *MAA MathFest*, Washington D.C., USA, with Sarah Fleming and Lena Ji.

Seminar Talks

- Mar. 2019 **The king chicken theorems**, *NMH Math Club*, Northfield Mount Herman High School.
Apr. 2016 **A two-dimensional (x, y)** , *Senior Thesis Defense*, Williams College.
Utah Student Commutative Algebra Seminar (BIKES)
Feb. 2021 **Complete and torsion modules**.
Nov. 2020 **Rational homotopy theory in commutative algebra: the homotopy Lie algebra**.
May 2020 **Computing $R\pi_*\mathcal{F}$ for coherent sheaves on projective space**.
Apr. 2020 **Asymptotic stability of associated primes**.
Oct. 2019 **Injective modules and Matlis duality**.
Feb. 2019 **An introduction to positive characteristic methods: tight closure**.

- Nov. 2018 **The Cohen structure theorem.**
 Utah Student Algebraic Geometry Seminar (BAGELS)
- Oct. 2020 **Derived splinters in positive characteristic.**
 Utah Graduate Student Colloquium
- Apr. 2020 **Phylogenetic algebraic geometry.**
- Dec. 2019 **Scissors congruence and hidden motives.**
- Oct. 2018 **Continued fractions and the Minkowski question-mark function.**

Outreach and Service

- Spring 2022 **Chair, BRIDGES Workshop Organizing Committee**, University of Utah.
- Spring 2021 **BRIDGES Workshop Organizing Committee**, University of Utah.
- 2020-2021 **Co-Organizer**, University of Utah Student Commutative Algebra Seminar.
- 2020-2021 **Co-Chair**, University of Utah Graduate Student Advisory Committee.
- 2019–2021 **Treasurer**, University of Utah Association of Women in Mathematics.
- Spring 2019–Present **Graduate Student Mentor**, University of Utah Directed Reading Program in Mathematics.
- Fall 2018–Present **Graduate Student Mentor**, University of Utah Association of Women in Mathematics.
- Spring 2019, 2020 **Recruitment Committee**, University of Utah Graduate Student Advisory Committee.