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# Andrew W. HERRING

## Education

Ph.D. in Math, *Western University*, 2021 (expected)  
London, ON, Canada.

M.S. in Math, *University of Wyoming* 2017  
Laramie, Wyoming, USA.

B.S. in Math, *University of New Mexico* 2013  
Albuquerque, New Mexico, USA.  
*summa cum laude in mathematics*

## Theses

(anticipated) Ph.D. title:  
“*Genus Bounds for Some  
Dynatomic Modular Curves*”  
Advisor: Chris Hall

M.S. Thesis:  
“*Groups and Covers of Graphs*”  
Advisor: Chris Hall

B.S. Honors Thesis:  
“*The Quaternion Algebra Unit Circle*”  
Advisor: Alexandru Buium

## Research

**interests:**  
arithmetic dynamics  
arithmetic geometry  
spectral graph theory

### Talks:

“*Dynamics of Rational Quadratic  
Polynomials: Uniform Boundedness, Hilbert  
Irreducibility, and Finite Exceptional Sets*” 25 Sept 2020  
Western University Algebra Seminar

“*Galois Groups of Dynatomic  
Polynomials I & II*” 27 May 2020 &  
1 June 2020  
Western Math Graduate Student Seminar

“*Arithmetic Dynamics: Uniform  
Boundedness and two  
Galois Representations*” 28 Feb 2020

Western Math Graduate Student Seminar

*“Ramanujan Graphs and Interlacing Families”* Apr 2019  
Western Math Part II Comprehensive  
Examination

*“Ramanujan Graphs and Interlacing Families”* Mar 2019  
Western Math Graduate Student Seminar

*“The Mapper Algorithm”* Jun 2018  
Western Topological Data  
Analysis Learning Seminar

*“Groups and Covers of Graphs”* Dec 2016  
Wyoming M.S. Thesis Public Defense

*“ $\mathbb{Q}$ -points on the Rational  
Quaternion Unit Circle”* Mar 2015  
Wyoming Algebra Seminar

### Preprints:

*“A New [Combinatorial] Proof of the  
Commutativity of Matching  
Polynomials for Cycles”* Oct 2018  
with G. Cochran, C. Groothuis,  
R. Rohatgi, and E. Stucky  
[arXiv:1810.05889](https://arxiv.org/abs/1810.05889)

## Teaching

### Western University:

TA-Intro to Abstract Algebra Fall 2020

Discussion leader-Intermediate Spring 2020  
*Linear Algebra,*  
TA-Group Theory

Instructor-First Year Calculus Fall 2019

Discussion leader-Linear Algebra I Fall 2020,  
Summer 2020,  
Spring 2019,  
Fall 2018

TA-Mathematical Structures Spring 2018

TA-*Calculus I for the Mathematical Sciences* Spring 2019

TA-*Elementary Number Theory I* Spring 2018

TA-*First Year Calculus* Fall 2017

### University of Wyoming:

Discussion leader-*Multi-variable Calculus* Fall 2016,  
2014-2015

Instructor-*College Algebra* Summer 2016

Instructor-*Calculus II* Spring 2016

Instructor-*Calculus I* Fall 2015

### University of New Mexico:

Instructor-*Trigonometry* Summer 2014

Instructor-*Survey of Mathematics* Spring 2014

Discussion leader-*Multi-variable Calculus* Fall 2013

## Conferences

[ADIOS](#) June 2020 - present  
*Arithmetic Dynamics International Online Seminar (weekly)*

[VaNTAGe](#) March 2020-present  
*weekly virtual conference on open problems in Number Theory and Arithmetic Geometry*

Midwest Arithmetic Geometry and Number Theory Series ([MAGNTS](#)) Oct 2019  
*Ohio State University*

[Recent Trends in the Study of Expanders and High Dimensional Expanders](#) February 2017  
*Weizmann Institute of Science*  
Rehovot, Israel

[Graduate Research Workshop in Combinatorics](#) Summer 2016

## Service

*University of Wyoming*

Graduate Research Workshop in Combinatorics Summer 2015  
*Iowa State University*

Mentoring an undergraduate math student Summer 2020  
in her independent study of -present  
post-quantum cryptography

[Directed Reading Program](#)-Mentor 2019-2020  
Mentoring an undergraduate math student  
in her independent study of cryptography  
and efficient attacks by quantum computers

Graduate student video panelist Summer 2018  
[Summer Academy for Math and Science](#)

Discussion with University of Wyoming Fall 2014  
Math Society students on graduate work  
in mathematics

Co-Organized with Monika Nitsche March 2013  
the 2013 [Southwest Undergraduate Mathe-](#)  
[matics Research Conference](#)