

# RANTHONY A.C. EDMONDS

Department of Mathematics  
The Ohio State University  
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## EDUCATION

### Degrees:

**Ph.D. Mathematics:** University of Iowa, Iowa City, IA  
Thesis: *Factorization in Polynomial Rings with Zero Divisors*  
Advisor: Dr. Daniel D. Anderson  
Completion Date: August 2018

**M.S. Mathematics:** University of Iowa, Iowa City, IA  
Completion Date: May 2015

**M.S. Mathematical Sciences:** Eastern Kentucky University, Richmond, KY  
Thesis: *Amicable Pairs in the Gaussian Integers*  
Advisor: Dr. Patrick Costello  
Completion Date: May 2013

**B.S. Mathematics:** University of Kentucky, Lexington, KY  
Completion Date: May 2011

**B.A. English:** University of Kentucky, Lexington, KY  
Minor: African-American Studies  
Completion Date: May 2011

### Certifications:

**Graduate Certificate in College Teaching:** University of Iowa, Iowa City, IA  
Office of Graduate Teaching Excellence  
Completion Date: December 2017

**Graduate Certificate in Online Teaching:** University of Iowa, Iowa City, IA  
Department of Psychological & Quantitative Foundations  
Completion Date: December 2017

## EMPLOYMENT

**Ross Assistant Professor:** The Ohio State University, Columbus, OH  
August 2018 – present

## RESEARCH INTERESTS

- Commutative Ring Theory: Factorization Theory
- Mathematics Education: Online Teaching; Diversity, Equity, and Inclusion in Mathematics

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## AWARDS AND HONORS

- Project NExT (peach '18 dot), Mathematical Association of America – 2018 to present  
Accepted into national program for new mathematics teaching faculty.
- Outstanding Teaching Assistant Award, University of Iowa Council on Teaching – 2017  
Selected as 1 of 31 from approximately 1400 teaching assistants across all disciplines.
- Graduate Teaching Fellowship, University of Iowa Center for Teaching – 2016 to 2017  
Selected as 1 of 4 graduate students campus-wide for the inaugural cohort.
- CIRTl Ambassador, CIRTl at UIOWA – 2016 to 2017
- Iowa Section NeXT Fellow – 2016, 2017
- Selected for the EDGE Program, New College – Summer 2013

## GRANTS AND FELLOWSHIPS

### Awards Supporting Teaching

- PI: 2019 Arts and Sciences Service-Learning Course Proposal Grant, The Ohio State University Arts and Sciences Curriculum Committee  
\$2000 stipend plus course release to develop course *Intersection of Mathematics and Society: Hidden Figures*
- PI: 2019 Service-Learning Course Grant, The Ohio State University Office of Service-Learning  
\$4000 award (+\$4000 matching funds from Math Department) to implement course *Intersection of Mathematics and Society: Hidden Figures*
- Teaching as Research (TAR) Fellow, CIRTl at UIOWA, University of Iowa – 2017  
\$1000 award to support the implementation of a partially flipped classroom using iPad
- Sloan Mini-Grant Recipient – Fall 2016  
\$500 towards an iPad Pro

### Awards Supporting Research

- May 2020 35<sup>th</sup> OSU-Denison Math Conference Funding Proposal  
\$5000 award from Mathematical Research Institute (MRI) at The Ohio State University
- Sloan Mini-Grant Recipient – Spring 2018  
\$500 award for Commutative Algebra textbooks
- Sloan Mini-Grant Recipient – Summer 2017  
\$500 Travel funding to Eastern Kentucky University to work on paper: *Gaussian Amicable Pairs with Dr. Patrick Costello*.

### Awards Supporting Travel

- Graduate Student Senate Travel Fund Recipient – Spring 2018  
\$750 Travel funding for 2018 Joint Mathematics in San Diego, CA

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- Sloan Mini-Grant Recipient – Fall 2017  
\$500 Travel funding for 2018 Joint Mathematics Meetings in San Diego, CA
- Sloan Mini-Grant Recipient – Spring 2017  
\$500 Travel funding for 2017 MAA MathFest in Chicago, IL
- Sloan Mini-Grant Recipient – Spring 2016  
\$500 Travel funding for 2016 MAA MathFest in Columbus, Ohio

## Fellowships and Scholarships

- Professional Advancement Initiative (PAI) Fellow – Fall 2018 to present  
NSF program for underrepresented postdoctoral fellows in STEM at Big Ten schools
- Dean's Graduate Research Fellowship, University of Iowa – 2013 to 2018
- GAANN Fellowship, University of Iowa – 2014 to 2015
- Presidential Scholar, University of Kentucky – 2006-2010
- William C. Parker Scholar, University of Kentucky – 2006-2010

## PUBLICATIONS

Patrick Costello and Ranthony A.C. Edmonds. *Gaussian Amicable Pairs*. Missouri J. Math. Sci. 30 (2018), 107-116.

Ranthony A.C. Edmonds. *Factorization in Polynomial Rings with Zero Divisors*. Dissertation. University of Iowa, 2018.

Ranthony A. Clark. *Gaussian Amicable Pairs*. Master's Thesis. Eastern Kentucky University, 2013.

## WORKS IN PROGRESS

D.D. Anderson and Ranthony A.C. Edmonds. *Unique Factorization in Polynomial Rings with Zero Divisors*, 2019. [submitted]

Ranthony A.C. Edmonds, Jason Juett, and Michael Rhys. *Factorization in Monoid Rings with Zero Divisors*, 2019. [preprint]

## TEACHING EXPERIENCE

### The Ohio State University

- Intersections of Mathematics and Society: Hidden Figures (Course Designer and Instructor) – Autumn 2019
- Math 6111, qualifying level graduate algebra (Recitation Leader) – Autumn 2019
- Calculus 1 Lecture (Instructor) – Spring 2019
- Calculus 1 Flipped and Flexible (Recitation Leader) – Autumn 2018, Spring 2019

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## University of Iowa

- Trigonometry, partially flipped classroom (Instructor) – Spring 2017
- Basic Algebra (Instructor) – Fall 2016
- Math for Business (Head Teaching Assistant) – Spring 2016
- Calculus and Matrix Algebra for Business (Head Teaching Assistant) – Fall 2015
- Discrete Mathematics, IBL classroom (Teaching Practicum) – Fall 2017
- Educational Psychology (Teaching Practicum) – Summer 2016
- Mathematics Tutorial Lab (Tutor) – Fall 2015 to May 2017
- Geometry, Algebra 2, AP Calculus BC (Private High School Tutor) – Fall 2015 to Dec 2017

## Bluegrass Community and Technical College

- Developmental Math (Adjunct Faculty) – Summer 2013, Spring 2013

## Eastern Kentucky University

- Developmental Algebra 1 (Instructor) – Spring 2013
- Developmental Algebra 1 (Recitation Leader) – Fall 2011, Fall 2012
- College Algebra (Recitation Leader) – Fall 2011, Spring 2012
- Mathematics and Statistics Tutoring Center (Tutor) – Fall 2011 to May 2013

## University of Kentucky

- Center for Academic Resources and Enrichment Services Tutor – August 2007 to May 2011
- The Study at Academic Enhancement (Statistics Tutor) – August 2010 to May 2011
- Freshman Summer Program (College Algebra Tutor) – June, July 2008

## The Academy for Scholastic and Personal Success – Cedar Rapids, IA

- Algebra 2, Geometry, Physics (Instructor) – June to July 2016
- Trigonometry, Algebra 1, Physics (Instructor) – June to July 2015

## Upward Bound – Bluegrass Community and Technical College

- Algebra 1 (two sections), Pre-Calculus (Instructor) – June 2011
- Algebra 1, Pre-Calculus (Tutor-Counselor) – June to July 2010; June to July 2011

## PRESENTATIONS

### Invited Talks

“On Flavors of Factorization in Commutative Rings with Zero Divisors”

- AMS Invited Paper Session on Commutative Algebra, MAA MathFest, Cincinnati, OH – August 3, 2019

“Factorization in Polynomial Rings with Zero Divisors”

- 7<sup>th</sup> Midwest Women in Mathematics Symposium – April 13, 2019

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“Amicable Pairs: Real and Imaginary Friendly Numbers”

- Bates College: Lewiston, ME – March 8, 2019

“Factorization in Polynomial Rings with Zero Divisors”

- Haynes-Granville-Brown Session, Joint Mathematics Meetings: Baltimore, MD – January 18, 2019

“Mathematical Atoms: An Introduction to Factorization Theory”

- Colloquium: Centre College, Danville, KY – October 29, 2018

“Unique Factorization in Polynomial Rings with Zero Divisors”

- AMS Sectional Meeting: University of Michigan, Ann Arbor, MI – October 21, 2018

“Executing Your TAR Project: Considerations for Implementation”

- CIRTl Summer Series: University of Iowa, Iowa City, IA – July 11, 2018

“Atoms in Mathematics: A Brief Introduction to Factorization Theory”

- Colloquium: Reed College, Portland, OR – April 26, 2018

“Factorization in Polynomial Rings with Zero Divisors”

- Ring Theory Seminar: The Ohio State University, Columbus, OH – April 16, 2018

“Some Remarks on Uniqueness: Polynomial Rings and My Journey in Pure Mathematics”

- Seminar: William Penn University, Oskaloosa, IA – November 30, 2017

“Gaussian Amicable Pairs: Friendly Imaginary Numbers”

- Colloquium: Eastern Kentucky University, Richmond, KY – April 29, 2013

## Contributed Talks

“Beyond Leaky Pipes: Fostering Pathways and Persistence in the Mathematical Sciences”

- MAA Contributed Paper Session, MAA MathFest, Cincinnati, OH – August 2, 2019

“Inquiry Based Learning in Discrete Mathematics”

- MAA Contributed Paper Session, MAA MathFest: Denver, CO – August 2, 2018

“Unique Factorization in Polynomial Rings with Zero Divisors”

- Joint Mathematics Meetings: San Diego, CA – January 12, 2018

“A Case for a Partial Flip: A Blended Model for a College Trigonometry Course”

- Joint Mathematics Meetings: San Diego, CA – January 10, 2018
- MAA Iowa Section Meeting: Loras College, Dubuque, IA – October 21, 2017

“A Partially Flipped Model for a College Trigonometry Course”

- MAA Contributed Paper Session, MathFest: Chicago, IL – July 28, 2017
- CIRTl at UIOWA TAR Presentation: University of Iowa, Iowa City, IA – June 28, 2017

“Enhancing a Partially Flipped Trigonometry Classroom with Inquiry Based Learning”

- Constructing the Future of IBL Poster Session: Chicago, IL – July 28, 2017

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“Graduate Teaching Fellows: Transforming Teaching at the University of Iowa”

- Graduate Teaching Fellows Showcase: Center for Teaching, University of Iowa, Iowa City, IA – April 14, 2017
- 19<sup>th</sup> Annual Jakobsen Conference: University of Iowa, Iowa City, IA – March 25, 2017

“Gaussian Amicable Pairs: Friendly Imaginary Numbers”

- AMS Sectional Meeting: Transylvania University, Lexington, KY – April 6, 2013
- 26<sup>th</sup> Annual EKV Symposium in the Mathematical, Statistical, and Computer Sciences: Eastern Kentucky University, Richmond, KY – March 29, 2013

## Seminar Talks

“Let’s Break it Down: Factorization in Commutative Rings with Zero Divisors”

- Welcome Seminar, The Ohio State University: Columbus, OH – February 7, 2019

“The Hilbert Series of the Stanley Reisner Ring”

- Commutative Ring Theory Seminar: University of Iowa, Iowa City, IA – October 18, 2017

“Characterizing Stanley Reisner Ideals using Simplicial Complexes”

- Commutative Ring Theory Seminar: University of Iowa, Iowa City, IA – October 11, 2017

“Factorization in Commutative Rings with Zero Divisors”

- Commutative Ring Theory Seminar: University of Iowa, Iowa City, IA – October 19, 2016

## PROFESSIONAL DEVELOPMENT

### Certificates

- Course Design Institute, Service Learning  
University Institute for Teaching and Learning  
The Ohio State University, Columbus, OH – May 2019
- CIRTl Scholar  
Center for the Integration of Research, Teaching and Learning at Iowa  
University of Iowa, Iowa City, IA – Anticipated June 2019
- CIRTl Practitioner  
Center for the Integration of Research, Teaching and Learning at Iowa  
University of Iowa, Iowa City, IA – Anticipated June 2019
- CIRTl Associate  
Center for the Integration of Research, Teaching and Learning at Iowa  
University of Iowa, Iowa City, IA – June 2016

### Workshops Facilitated

- Universal Design for Learning (UDL) in the College Classroom: Center for Teaching, University of Iowa, Iowa City, IA – March 2017

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## Workshops Attended

- PAI Postdoc Workshop  
Rosemont, IL – June 2019
- Early Career Faculty Workshop  
USTARS, Iowa State University, Ames, IA – April 2019
- Planning and Writing Successful Proposals Seminar  
AtKisson Training Group, LLC, Columbus, OH – September 2018
- MAA Project NExT  
MathFest 2018, JMM 2019, MathFest 2019
- Iowa Section NExT Workshop  
MAA Iowa Section Meeting, Loras College, Dubuque, IA – October 2016, 2017
- Effective Teaching Institute  
Center for Teaching, University of Iowa – January 2016
- Teaching Linear Algebra: Learning Concepts Often Difficult to Understand  
Mini-Course MAA MathFest, Columbus, OH – August 2016
- Alternatives to Traditional Grading to Enhance Student Learning  
Mini-Course MAA MathFest, Lexington, KY – August 2011

## Reading Groups

- Text: Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses by L. Fink  
Summer 2019, The Ohio State University Department of Mathematics
- Text: MAA Instructional Practices Guide  
Fall 2018, The Ohio State University Department of Mathematics

## Graduate Education Courses:

- Web Based Learning – Fall 2017
- ePortfolio in College Teaching – Fall 2017
- Practicum in College Teaching – Fall 2017, Summer 2016
- Tools and Utilities for Online Teaching – Fall 2016
- Seminar in College Teaching – Spring 2016
- Universal Design & Accessibility Online – Spring 2016
- Design of Instruction – Fall 2015

## PEDAGOGICAL SKILLS

- Online Teaching: Universal Design for Learning
- Active Learning Techniques: Flipped Instruction, Inquiry Based Learning
- Experiential Learning Techniques: Service Learning

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## SERVICE

### Institutional Service

- Co-organizer: “A Seat at the Table: a Dialogue on Equity and Inclusion in STEM” Spring 2019 Dialogue and Discussion Series with Department of Mathematics, Office of Diversity and Inclusion, and Department of African and African-American Studies at The Ohio State University – March 21, 2019
- CIRTl Steering Committee  
University of Iowa – 2016-2017

### Events/Workshops

- Sonia Kovalevsky Day Event Organizer, Theme: Math Girls R.O.C.K.  
University of Iowa – 2016-2017
- Networking Reception Participant  
Iowa STEM Pre-Service Teacher Conference, Kirwood at University of Iowa – March 3, 2017
- TA Troubleshooting Case Studies Facilitator  
New TA Orientation: situations that can arise in the classroom – August 19, 2016
- Sonia Kovalevsky Day Event Volunteer  
University of Kentucky – October 2011

### Panels

- Panelist: “Fields of Success”  
Field of Dreams Conference, St. Louis, MO – November 2, 2018
- Panelist: “New TA Seminar”  
New TA Seminar, University of Iowa Department of Mathematics – December 4, 2017
- Panelist: “What to do Post Qual/Pre-Comp”  
University of Iowa Department of Mathematics, Iowa City, IA – November 16, 2017
- Panelist: Hidden Figures Revealed  
Adler Planetarium and DuSable Museum of African American History, Chicago, IL – March 23, 2017
- Panelist: “Graduate College Experiences”  
Graduate College Orientation, University of Iowa – August 16, 2017
- Panelist: “Teaching as a Transferrable Skill for Your Career”  
Graduate College Orientation (CIRTl) at UIOWA – August 16, 2017
- Panelist: “University of Iowa Black Math PhDs”  
Academy for Scholastic and Personal Success, Cedar Rapids, IA – June 23, 2017



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- Panelist: “Balancing Teaching and Research”  
New TA Seminar, University of Iowa Department of Mathematics – December 5, 2016
- Moderator: “Doctoral Experiences”  
Field of Dreams Conference, St. Louis, MO – November 6, 2016
- Organizer/Moderator: “University of Iowa Black Math PhDs”  
The Academy for Scholastic and Personal Success, Cedar Rapids, IA – June 15, 2016
- Co-Organizer/Moderator: “Career Panel”  
Sonia Kovalevsky Day, University of Iowa – April 2015
- Panelist: “Being a Teaching Assistant”  
Prospective Student Weekend, University of Iowa Department of Mathematics– April 2016

## **Mentoring**

- Unofficial Mentoring to Women and Underrepresented Students  
1-3 hours per week
- F-GAP Program Faculty Facilitator  
National Alliance for Doctoral Studies in the Mathematical Sciences – 2019 to present
- Pre-doctoral Mentor  
National Alliance for Doctoral Studies in the Mathematical Sciences – 2019 to present
- Invite a Professor to Lunch  
College of Arts and Sciences Program, The Ohio State University – Spring 2019
- Invite a Professor to Lunch  
College of Arts and Sciences Program, The Ohio State University – Autumn 2018
- First Year Buddy  
Mentoring Program for First Year Graduate Students, University of Iowa – 2016

## **Community Service**

- MLK Day of Service Organizer  
Ronald McDonald House, Iowa City, IA – January 2016  
Tau Psi Omega Chapter: Alpha Kappa Alpha Sorority, Incorporated
- ACT Workshop Leader  
YMCA Black Achievers, Lexington, KY – January 21, January 28, February 4 2012
- College Readiness Session Leader  
Black Males Working (BMW) Academy, Lexington, KY – Fall 2011

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## CONFERENCE ACTIVITIES

### Organized Conferences

- [upcoming] Columbus Coordinator: May 2020 35<sup>th</sup> OSU-Denison Math Conference

### Organized Conference Sessions

- [proposal submitted] Co-organizer: Preparing a Successful Summer Research Application in the Mathematical Sciences – SACNAS 2019
- [proposal submitted] Co-organizer: Navigating Academia as an Early Career Mathematician of Color – SACNAS 2019
- Co-organizer: Equity, Diversity, and Inclusion in Mathematics – MathFest 2019
- Co-organizer: Maximizing Student Outcomes in Flipped Classrooms – Joint Mathematics Meetings 2019

### Conferences Attended

- [to attend] MAA MathFest, Cincinnati, OH – July 2019
- USTARS: *Underrepresented Students in Algebra and Topology Research Symposium*, Iowa State University, Ames, IA – April 2019
- 7<sup>th</sup> Midwest Women in Mathematics Symposium, University of Iowa, Iowa City, IA – April 2019
- Joint Mathematics Meetings, Baltimore, MD – January 2019
- Field of Dreams, St. Louis, MO – November 2018
- AMS Sectional Meeting, University of Michigan, Ann Arbor, MI – October 2018
- MAA MathFest, Denver, CO – July 2018
- Joint Mathematics Meetings, San Diego, CA – January 2018
- Field of Dreams, St. Louis, MO – November 2017
- MAA Iowa Section Meeting, Loras College, Dubuque, IA – October 2017
- MAA MathFest, Chicago, IL – July 2017
- Constructing the Future of IBL, Chicago, IL – July 2017
- 19<sup>th</sup> Annual Jakobsen Conference, Iowa City, IA – March 2017
- Field of Dreams, St. Louis, MO – November 2016
- MAA Iowa Section Meeting, Grandview University, Des Moines, IA – October 2016
- MAA MathFest, Columbus, OH – August 2016
- USTARS: *Underrepresented Students in Algebra and Topology Research Symposium*, Berkeley, CA – April 2014
- Field of Dreams, Phoenix, AZ – November 2014
- AMS Sectional Meeting, Transylvania University, Lexington, KY – April 2013
- Joint Mathematics Meetings, Boston, MA – January 2012
- MAA MathFest, Lexington, KY – August 2011

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## PROFESSIONAL MEMBERSHIPS

- Association for Women in Mathematics
- Mathematical Association of America
- American Mathematical Society

## REFERENCES

Available upon request.