

RANTHONY A.C. EDMONDS

Department of Mathematics | The Ohio State University
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EDUCATION

PhD in Mathematics: University of Iowa, Iowa City, IA – August 2018

Dissertation: *Factorization in Polynomial Rings with Zero Divisors*

Advisor: Professor Daniel D. Anderson

M.S. in Mathematics: University of Iowa, Iowa City, IA – May 2015

M.S. in Mathematical Sciences: Eastern Kentucky University, Richmond, KY – May 2013

Thesis: *Amicable Pairs in the Gaussian Integers*

Advisor: Professor Patrick Costello

B.S. in Mathematics: University of Kentucky, Lexington, KY – May 2011

B.A. in English: University of Kentucky, Lexington, KY – May 2011

Minor: African-American Studies

Certifications:

Graduate Certificate in College Teaching: University of Iowa, Iowa City, IA – December 2017

Office of Graduate Teaching Excellence, 12 credit hours

Graduate Certificate in Online Teaching: University of Iowa, Iowa City, IA – December 2017

Department of Psychological & Quantitative Foundations, 12 credit hours

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

AWARDS AND HONORS

- Project NEXt (peach '18 dot), Mathematical Association of America – 2018 to 2019
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.

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- 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 – April 2019
\$2000 stipend plus course release to develop course *Intersections of Mathematics and Society: Hidden Figures*
- PI: 2019 Service-Learning Course Grant, The Ohio State University Office of Service-Learning – March 2019
\$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

- Co-PI: May 2020 35th OSU-Denison Math Conference Funding Proposal – April 2019
\$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
- 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

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- 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

D.D. Anderson and Ranthony A.C. Edmonds. *Unique Factorization in Polynomial Rings with Zero Divisors*, 2020. [to appear in Journal of Algebra and its Applications]

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

Ranthony A.C. Edmonds, Bethany Kubik, Christopher O'Neill, and Shannon Talbott. *Atomic Density in Numerical Semigroup Algebras*, 2020. [arXiv: arxiv.org/abs/2003.01710]

Ranthony A.C. Edmonds, Jason Juett, and Rhys Roberts. *Associates, Irreducibility, and Factorization Length in Monoid Rings with Zero Divisors*, 2020. [preprint]

Ranthony A.C. Edmonds, John H. Johnson, Jr. *Pedagogical Implications of the Hidden Figures Story*. [To appear in Feb. 2021 edition of Notices of the American Mathematical Society]

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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TEACHING EXPERIENCE

The Ohio State University

- Intersections of Mathematics and Society: Hidden Figures (Course Designer and Instructor) – Spring 2020
 - Developed new service-learning course for department that focuses on the mathematics of the Space Race and diversity and inclusion in mathematical communities. Established community partnerships for service-learning with Columbus Metropolitan Library and Center of Science and Industry (COSI). Obtained local ‘Hidden Figure’ mentors for the students from JP Morgan & Chase, Honda, and Franklin County Coroner’s Office.
- Abstract Algebra 2, qualifying level graduate course (Recitation Leader) – Spring 2020
- Abstract Algebra 1, qualifying level graduate course (Recitation Leader) – Autumn 2019
- Calculus 1 Lecturer (Instructor) – Spring 2019
- Calculus 1 Flipped and Flexible (Recitation Leader) – Autumn 2018, Spring 2019

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

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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

Title to be Determined

- AMS Special Session on Commutative Algebra, AMS Sectional Meeting, University of Tennessee at Chattanooga, Chattanooga, TN – October 10, 2020

“Highlighting the Hidden Legacy of Eunice Gray Smith”

- MAA Invited Paper Session on African American Women and the Mathematics of Flight, MAA MathFest, Philadelphia, PA – July 31, 2020

“Let’s Break it Down: Atoms in Commutative Rings”

- Closing Keynote for WimSoCal: Symposium for Women in Mathematics in Southern California, University of California at Irvine, Irvine, CA – March 7, 2020

“On Their Shoulders: Hidden Figures and my Journey in Mathematics”

- Women in Mathematical Sciences, The Ohio State University, Columbus, OH – October 22, 2019

“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”

- 7th Midwest Women in Mathematics Symposium – April 13, 2019

“Amicable Pairs: Real and Imaginary Friendly Numbers”

- Radical Pi Math Club, The Ohio State University, Columbus, OH – November 6, 2019
- 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

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“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

“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
- 19th 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
- 26th Annual Eku 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

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“The Hilbert Series of the Stanley Reisner Ring”

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

“Characterizing Stanley Reisner Ideals using Simplicial Complexes”

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

“Factorization in Commutative Rings with Zero Divisors”

- Commutative Rings 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 Associate
Center for the Integration of Research, Teaching and Learning at Iowa
University of Iowa, Iowa City, IA – June 2016

Workshops Facilitated

- “Executing Your Teaching As Research (TAR) Project: Considerations for Implementation”
CIRTL Summer Series: University of Iowa, Iowa City, IA – July 11, 2018
- “Universal Design for Learning (UDL) in the College Classroom”
Center for Teaching, University of Iowa, Iowa City, IA – March 2017

Workshops Attended

- Faculty Success Program
12 Week Online Research and Writing Productivity Program
National Center for Faculty Development and Diversity – May 17 to August 8, 2020
- MSRI Modern Math Workshop
SACNAS, Honolulu, HI – October 2019
- 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

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- 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 2011
- Alternatives to Traditional Grading to Enhance Student Learning
Mini-Course MAA MathFest, Lexington, KY – August 2011

Reading Groups

- 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

SERVICE

Institutional Service

- STEAM Factory: The Ohio State University
Accepted as member for grass-roots network with OSU community focused on outreach and interdisciplinary collaboration in the arts and sciences
- 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

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- 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: Mentoring Panel [cancelled due to COVID-19]
USTARS 2020: Underrepresented Students in Algebra and Topology Research Symposium, University of Iowa, Iowa City, IA – April 4, 2020
- Panelist: “Hidden Figures: eSTEAMed Women” [cancelled due to COVID-19]
11th Annual Gathering of Women, Society of Sisters, The Ohio State University, Columbus, OH – March 25, 2020
- Panelist: “How Do You Know When You Know Math?”
Field of Dreams Conference, St. Louis, MO – November 16, 2019
- Panelist: “Educating Black Girls and Women in STEM Fields”
African American & African Studies Community Extension Center, Columbus, OH – September 28, 2019
- Panelist: “Fields of Success”
Field of Dreams Conference, St. Louis, MO – November 2, 2018
- Panelist: “New TA Seminar”
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 Activities

- 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, 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

- Columbus Coordinator: May 2020 35th OSU-Denison Math Conference [postponed COVID-19]

Organized Conference Sessions

- [upcoming] Co-organizer : Workshop - “Navigating Academia as an Underrepresented Early Career Mathematician” – MAA MathFest 2020
- [upcoming] Co-organizer: Contributed Paper Session - Equity, Diversity, and Inclusion in Mathematics – MAA MathFest 2020
- Co-organizer: Contributed Paper Session - Equity, Diversity, and Inclusion in Mathematics -- MAA MathFest 2019
- Co-organizer: Workshop- Maximing Student Outcomes in Flipped Classrooms – Joint Mathematics Meetings 2019

Conferences Attended

- [upcoming] MAA MathFest, Philadelphia, PA – July 2020
- 35th OSU-Denison Math Conference [postponed COVID-19] – May 2020
- CAZoom, Virtual Commutative Algebra Conference – April 2020
- USTARS: Underrepresented Students in Algebra and Topology Research Symposium University of Iowa, Iowa City, IA [cancelled COVID-19] – April 2019
- WimSoCal 2020: Symposium for Women in Mathematics in Southern California, University of California at Irvine, Irvine, CA – March 2020
- Field of Dreams, St. Louis, MO – November 2019
- SACNAS 2019, Honolulu, HI – October 2019
- Congressional Black Caucus, Washington D.C. – September 2019
- MAA MathFest, Cincinnati, OH – July 2019
- USTARS: Underrepresented Students in Algebra and Topology Research Symposium, Iowa State University, Ames, IA – April 2019
- 7th 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

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- Constructing the Future of IBL, Chicago, IL – July 2017
- 19th 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, Berkley, 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

REFERENCES

Available upon request.