Curriculum Vitae

Patrick X. Rault
Office Phone: (208) 282-4234
patrickrault@isu.edu

Physical Science Building, Office 318B
Idaho State University
921 S. 8th Ave., Stop 8085; Pocatello, ID 83209

Education

UNIVERSITY OF WISCONSIN, Madison, WI
Ph.D. Mathematics, 2008. "On uniform bounds for rational points on rational curves and thin sets"
Delta/CIRTL Graduate Certificate in Research, Teaching, and Learning, 2008

COLLEGE OF WILLIAM AND MARY, Williamsburg, VA
B.S. Mathematics, 2003; **Minor in Physics**, 2003

STUDY ABROAD & EXTENDED-DURATION PROGRAMS
Math in Moscow (MIM), Independent University of Moscow, Russia, 2003 Spring
Budapest Semesters in Mathematics (BSM), Hungary, 2002 Fall
Mathematics Advanced Studies Semesters (MASS), Penn State, 2001 Fall

Employment History

IDAHO STATE UNIVERSITY, Pocatello, ID
Department Chair, 2022-present
Professor, 2022-present

UNIVERSITY OF NEBRASKA AT OMAHA, Omaha, NE
Dr. George M. Haddix Community Chair of Mathematics, August 2018-22
Assistant Director, UNO STEM TRAIL Center, May 2019-22
Associate Professor, August 2018-22; Professor, 2022

UNIVERSITY OF ARIZONA, Tucson, AZ
Program Director of Mathematics for UA South (distance program), October 2016-August 2018
Associate Professor, August 2016-18

STATE UNIVERSITY OF NEW YORK, Geneseo, NY
Associate Professor of Mathematics with Tenure, August 2014-16
Assistant Professor of Mathematics, August 2008-14

UNIVERSITY OF WISCONSIN, Madison, WI
Teaching Assistant, 2003-08
Research Assistant (VIGRE Fellow), 2004-05

THE PENNSYLVANIA STATE UNIVERSITY, State College, PA
Research Experience for Undergraduates (REU), 2001

Awards and Elections

2020	UNeMed 2020 Research Innovation Award, for IBL Communities (renamed COMMIT).
2018	**Special Interest Group of the Mathematical Association of America (MAA) on Undergraduate Research (SIGMAA UR) Chair, 2018-20.**
2014, 17	National elections to position on governing council, Council on Undergraduate Research (CUR). Two three-year terms. **2018-19 Division of the Year Award** **2017-19 Math-Computer Science division chair**
2015	**Henry L. Alder Award for Distinguished Teaching by a Beginning College or**

University Mathematics Faculty Member. National award, MAA.

2014 SUNY College at Geneseo's Hurrell/McNaron Award for scholarly presentation. *One award given per year to pre-tenure faculty.*

2013 **CUR Mathematics and Computer Sciences Division Faculty Mentoring (National) Award** for Outstanding Mentoring of Undergraduate Students in Research. One of three inaugural awardees.

2013 "Honoring Teachers" Award, by the Teaching & Learning Center and the SA Academic Affairs Committee, for "positively impacting students' experience." Includes a personal exhibit of my teaching in the library for one year. One of four annual awardees.

2008 National Project NExT (New Experiences in Teaching) Fellow of the MAA

2003 NSF VIGRE Fellow

2002 Barry M. Goldwater Scholar

Scholarly and Creative Activity

My research areas within mathematics include Matrix Analysis, Number Theory, and Communities of Practice. My undergraduate co-authors are underlined and my textbook is in bold.

Peer-Reviewed Publications

Camenga, Kristin; Rault, Patrick X; Spitkovsky, Ilya; Yates, Rebekah. The Gau-Wu Number for 4-by-4 and Select Arrowhead Matrices. *Linear Algebra and its Applications.* 644, 1 July 2022, 192-218. DOI: 10.1016/j.laa.2022.02.026

Camenga, Kristin; Collins, Brandon; Hoefer, Gage; Rault, Patrick X; Quezada, Jonny; Willson, James; Yates, Rebekah B. Johnson. On the Geometry of Numerical Ranges over Finite Fields. *Linear Algebra and its Applications.* 628, November 2021, 182-201. DOI: 10.1016/j.laa.2021.07.008.

Gantner, Ryan; Gomez Johnson, Kelly; Jakopovic, Paula; Ksir, Amy E; Rault, Patrick X. The COMmunities for Mathematics Inquiry In Teaching (COMMIT) Network. *MAA Focus.* 40 (6), 2020, 25-27. http://digitaleditions.walsworthprintgroup.com/display_article.php?id=3840598&view=687574

Camenga, Kristin; Deaett, Louis; Rault, Patrick X; Sendova, Tsvetanka; Spitkovsky, Ilya; Yates, Rebekah. Singularities of Base Polynomials and Gau-Wu Numbers Linear Algebra and Its Applications. *Linear Algebra and Its Applications.* 581, November 2019, 112-127. DOI: 10.1016/j.laa.2019.07.005.

Cushman, Jane R; Gantner, Ryan; George, C. Yousuf; Morrow, Margaret L; Rault, Patrick X. A Model for Expanding Active Learning Regionally: The Greater Upstate New York Inquiry-Based Learning Consortium, *PRIMUS,* July 2018, Volume 28, Issue 8, 754-771. DOI: 10.1080/10511970.2018.1424743.

Taylor, Ron; Rault, Patrick X. A TeXas Style Introduction to Proof. *Mathematical Association of America (MAA) Textbook Series.* 2017. ISBN: 9781939512130. https://www.maa.org/press/books/a-texas-style-introduction-to-proof

Rault, Patrick X. Teaching proofs via Inquiry-Based Learning. *Mathematical Association of America (MAA) Notes volume on "Beyond Lecture: Techniques to Improve Student Proof-Writing Across the Curriculum."* 2016, 177-184. ISBN: 9780883851951. https://www.maa.org/press/ebooks/beyond-lecture

Coons, Jane I; Knowles, Doug; Jenkins, Jack; Luke, Rayanne; Rault, Patrick X. Numerical Ranges over Finite Fields. *Linear Algebra and its Applications.* 501, July 2016, 37-47. DOI: 10.1016/j.laa.2016.03.024.

Camenga, Kristin; Rault, Patrick X; Sendova, Tsvetanka; Spitkovsky, Ilya. On the Gau–Wu number for some classes of matrices. *Linear Algebra and its Applications.* 444, March 2014, 254-262. DOI: 10.1016/j.laa.2013.11.045.

Camenga, Kristin; Rault, Patrick X; Rossi, Dan; Sendova, Tsvetanka; Spitkovsky, Ilya. Numerical range of some doubly stochastic matrices. *Applied Mathematics and Computation.* 221, September 2013, 40-47. DOI: 10.1016/j.amc.2013.06.011.

Rault, Patrick X. On uniform bounds for rational points on rational curves and thin sets of arbitrary

degree. *Journal of Number Theory.* 133 (9), 2013, 3112-3118. DOI: 10.1016/j.jnt.2013.03.008.

Rault, Patrick X; Sendova, Tsvetanka; Spitkovsky, Ilya M. 3-by-3 matrices with elliptical numerical range revisited. *Electronic Journal of Linear Algebra.* 26, 2013, 158-167. DOI: 10.13001/1081-3810.1646.

Bennett, Mike; Lazebnik, Kirill Y; Rault, Patrick X; Singer, Jeffrey A. On invariant area formulas and lattice point bounds for the intersection of hyperbolic and elliptic regions. *Journal of Combinatorics and Number Theory.* 4 (3), 2012, 161-175.

Cheung, Wilson; Rault, Patrick X. On uniform bounds for rational points on quadratic rational curves and thin sets. *Journal for Algebra and Number Theory Academia*. August 2012, 37-62.

Rault, Patrick X. On uniform bounds for rational points on rational curves and thin sets. *JP Journal of Algebra, Number Theory and Applications*. 23 (2), 2011, 171-185.

Rault, Patrick X. On uniform bounds for lattice points in intersections of hyperbolic plane regions. *Journal of Combinatorics and Number Theory*. 2 (3), 2010, 209-215. ISSN 1942-5600.

Johnson, Charles R.; Harel, Yonatan; Hillar, Christopher J.; Groves, Jonathan M.; Rault, Patrick X. Absolutely flat idempotents. *Electronic Journal of Linear Algebra.* 10, 2003, 190-200. DOI: 10.13001/1081-3810.1106.

Tentatively Accepted (multi-stage process)

Gomez Johnson, Kelly; Jakopovic, Paula; Ksir, Amy; Rault, Patrick X; von Renesse, Christine; White, Nina. A National Network of Regional Communities of Practice: The COMmunities for Mathematics Inquiry in Teaching (COMMIT) Network. Book Chapter in *Faculty Learning Communities: Communities of Practice that Support, Inspire, Engage and Transform Higher Education Classrooms.* Rainville, Title, & Desrochers, Information Age Publishers.

In Preparation

Rault, Patrick X; Xiao, Xiao. Number Theory textbook, to submit to the peer-reviewed *Journal of Inquiry-Based Learning (IBL) in Mathematics,* starting with a module on quadratic reciprocity.

Selected Teaching Activities

I have taught a variety of courses and I specialize in Inquiry-Based Math Education (IBME) and taste-of-research experiences. Directed studies and theses can be found in the section titled Student Mentoring.

Courses with a deep Inquiry-Based Mathematics Education emphasis

- Theory of Graphs and Networks, Math 443 at UA: 2016 Fall. *See also online courses, 2018 Spring.*
- Oral Presentation & Research Seminar, Math 498 at UA; Math 348 at SUNY Geneseo: 2018 Spring (mostly remote), 2016 Spring (22 student capstone).
- Abstract Algebra 2, Math 415B at UA: 2018 Spring (mostly remote/online). *Based on Algebraic Number Theory special topics course below.*
- Abstract Algebra, Math 415A at UA; Math 330 at SUNY Geneseo: 2017 Fall (half remote), 2016 Spring, 2014 Spring, 2013 Fall, 2012 Spring.
- Number Theory & Cryptography, Math/Csci 4560/8566 at UNO; Theory of Numbers, Math 446 at UA; Math 319 at SUNY Geneseo: 2020 Spring, 2017 Fall (half remote), 2015 Spring, 2013 Spring, 2011 Spring (2 sections), 2009 Spring.
- Combinatorics, Math 315 at SUNY Geneseo: 2014 Fall.
- Honors Mathematics 3 / Enriched Linear Algebra, Math 288 at SUNY Geneseo: 2012 Fall. Combined Linear Algebra 1, Math 233, and Introduction to Mathematical Proof, Math 239, for our most talented new students.
- Introduction to Abstract Mathematics, Math 2230 at UNO; Mathematical Reasoning and Writing, Math 323 at UA; Introduction to Mathematical Proof, Math 239 at SUNY Geneseo: 2021 Spring (remote), 2020 Fall (remote), 2020 Spring, 2019 Fall, 2017 Fall (half remote), 2016 Fall, 2014 Spring, 2013 Fall, 2012 Fall, 2012 Spring, 2011 Fall, 2010 Fall, 2010 Spring, 2009 Fall, 2008 Fall.
- Applied Linear Algebra, Math 2050 at UNO: 2021 Spring (remote), 2019 Fall.
- Honors Mathematics 2 / Enriched Multivariable Calculus, Math 226 at SUNY Geneseo: 2012 Spring. Combined Calculus 3 and Introduction to Mathematical Proof for our most talented new students.

- Calculus 2, Math 1960 at UNO: 2022 Spring, 2019 Spring.
- Calculus 1, Math 1950 at UNO: 2018 Fall.

Interactive Lecture-Based Courses, with Flipped Active Learning Components

- Linear Algebra 2, Math 413 at UA; Math 333 at SUNY Geneseo: 2017 Spring (hybrid / interactive television), 2009 Fall.
- Linear Algebra I (formerly Elementary Linear Algebra), Math 233 at SUNY Geneseo: 2016 Spring, 2014 Fall, 2013 Spring, 2011 Fall, 2009 Spring (2 sections), 2008 Fall (2 sections).
- Honors Mathematics 1 / Enriched Multivariable Calculus, Math 225 at SUNY Geneseo: 2011 Fall. Combined Calculus 2, Math 222, and Introduction to Mathematical Proof, Math 239, for the most talented new students.
- Calculus 2, Math 222 at SUNY Geneseo. 2015 Spring (2 sections), 2014 Spring.
- Calculus 1, Math 221 at SUNY Geneseo. 2010 Fall, 2010 Spring, 2009 Fall.
- Business Calculus, Math 1370 at UN0; Math 213 at SUNY Geneseo. 2021 Fall; 2013 Spring (substitute for 1 month).
- Mathematical Concepts for Elementary Education I, Math 140 at SUNY Geneseo: 2010 Fall.

Fully Online (asynchronous) and Remote (synchronous) Courses

- Theory of Graphs and Networks, Math 443 at UA: 2018 Spring.
- Mathematics for Applied Technologies, RNCV/BASV 376 at UA: 2017 Spring, 2016 Fall. This course includes a mix of statistics, probability, discrete math, coding theory, and cryptography.
- Applied Linear Algebra, Math 2050 at UNO: 2021 Spring
- Introduction to Abstract Mathematics, Math 2230 at UNO: 2021 Spring, 2020 Fall.
- In addition, Math 323, 415A, and 446 (UA) were each taught as half-remote courses in Fall 2017, and 415B was taught mostly remote in Spring 2018.

Special Topics Courses

- Problem Solving Seminar, Math 388 at SUNY Geneseo: 2013 Spring. This course synthesized topics from across the mathematics curriculum in preparation for the GRE and competitive mathematics exams. Students also worked on projects and prepared university research day presentations. I collaborated in designing the course to fulfill a "taste of research" requirement in the new Bachelor of Science in Mathematics degree.
- Algebraic Number Theory, Math 380 at SUNY Geneseo: 2010 Spring. Designed while in the Park City Mathematics Institute Undergraduate Faculty Program three-week workshop in Summer 2009, funded by the Institute for Advanced Study. Designed as sample Algebra 2 option; re-offered as Math 415B at UA.

Workshop Facilitation

2021	UNO Center for Faculty Excellence. New faculty workshop on "Inquiry-Based Learning." July 20, 2021. Invited. 30-minute (offered twice); 100 participants total.
2021	Center for Undergraduate Research in Mathematics (CURM) Faculty Summer (online) Workshop. Co-facilitator, May 19-20, 2021. 17 participants.
2021	COMMIT Network Winter Meeting: sharing successes and challenges between communities. 33 participants. February 6, 2021.
2020	UNO Center for Faculty Excellence. Workshop as part of new faculty orientation, on "How will your students learn." Co-facilitated with Christine Cutucache. July 28, 2020. Invited. 30 minute session, repeated twice; 50 participants total.
2020	CURM Faculty Summer (online) Workshop. 10-minute presentation about CUR & UR-SIGMAA, May 20, 2020.

2016-20 **PROfessional Development and Uptake through Collaborative Teams (PRODUCT) Supporting Inquiry-Based Learning (IBL) in Undergraduate Mathematics.**
Workshop on Inquiry-Based Learning in Mathematics, sponsored by: Academy of IBL, UNO STEM TRAIL Center, UNO Center for Faculty Excellence, & SINE COMMIT. Full-day workshop. May 13, 2020. 13 participants.
"Starting Regional IBL Communities," National IBL Conference, Denver, CO, June 8, 2019 (1 hour workshop). 4-20 participants.
DePaul University, Chicago, IL, June 19-22, 2018. 26 participants.
ArizMATYC/MAA-SW conference/Southern AZ IBL Community, Tucson, AZ, April 5, 2018 (full day workshop). 18 participants.
Nazareth College, Rochester, NY, July 18-21, 2017. 26 participants.
Cal Poly, San Luis Obispo, CA, June 20-25, 2016. 32 participants.

2019 **"Building Local Communities" (invited to lead joint plenary interactive session, with support of conference co-chairs B. Katz & C. von Renesse). National IBL & Teaching (NIBLT) conference. 1 hour. June 7, 2019.**

2018 "A Micro-IBL Workshop." Idaho State University. November 10, 2018, 90 minutes. 15 participants.

2018 Online Live Classroom: IBL in an Introduction to Proofs Class, National Inquiry-Based Learning & Teaching conference, A teaching demonstration with follow-up discussion for a synchronous online class. June 1, 2018, 2 hours. 15 participants.

2017 "Inquiry-Based Learning in College Mathematics." Mathematics Instruction Colloquium, University of Arizona. Nov. 6, 2017, 60 minutes. About 25 participants.

2017 "A Micro-IBL Workshop." The College of New Jersey. October 27, 2017, 90 minutes. 20 participants.

2017 CirculoSoAZ Borderlands Math Teacher Circle workshop, Sierra Vista, AZ. Workshop on induction and IBL for in-service and pre-service secondary school math teachers in Southern Arizona and Sonora Mexico. October 17, 2017, 90 minutes. 25 participants.

2015 The Pennsylvania State University, Joint session of the Math Department's Teaching Seminar and Center for Excellence in Science Education Working Group. Workshop on Inquiry-Based Learning in College Mathematics. October 8, 2015, 60 minutes plus lunch discussion. 20 participants.

2011-12 WeBWork training.
MAA Seaway Section meeting, Oct. 2012.
Association of Math Teachers of New York State (AMTNYS) conference, Oct. 2011.

2010-11 Texas Instruments training.
MAA Seaway Section meeting, Apr. 2011.
SUNY College at Geneseo, Sep. 2010.

Selected Conference Speaking

Invited and Refereed Sessions

2021 Jan. "Starting and Running a Community for Mathematics Inquiry in Teaching" (joint talk with J. R. Cushman, A. Ksir, C. von Renesse, N. White). MAA Contributed Paper Session on Inquiry-Based Learning and Teaching, JMM.
"Developing a Network of Regional Inquiry-Based Learning (IBL) Communities: Preliminary Findings & Key Learnings on a Grassroots Initiative." (joint talk with K. Gomez Johnson, P. Jakopovic). MAA Contributed Paper Session on Inquiry-Based Learning and Teaching, JMM.
"Grassroots Community Organizing: You can do it!" (joint talk with V. Ecke, C. von Renesse). MAA Contributed Paper Session on Inquiry-Based Learning and Teaching, JMM.

2020 Jan. "The Inquiry-Based Learning Communities Project: Transforming Undergraduate Mathematics." Invited MAA Poster Session: Projects Supported by the NSF Division of Undergraduate Education, Joint Mathematics Meetings.

2019 Nov. "Network of Inquiry-Based Learning Communities." Boulder Summit on STEM Discipline-Based Professional Development. Poster session, conference by invitation only.

2019 June "Undergraduate Research and Classroom-Based Inquiry-Based Learning in Mathematics." Undergraduate Research Programs Conference.
"Programmatic Undergraduate Research across the National Mathematics Community" (joint poster with A. Henrich and D. Van Huynh). Undergraduate Research Programs Conference, refereed poster session.
"Build your IBL Community" (joint poster with R. Gantner, A. Ksir, R. Taylor, C. von Renesse, & N. White). NIBLT.
"The Emergence of a STEM Center: Lessons Learned and Still to Learn" (joint talk with C. Cutucache and N. Grandgenett). Network of STEM Education Centers conference.

2018 Nov. "A Mathematical Story: A Discrete Analogue of a Complex Problem." Idaho State University.

2018 **"Math Mindset," High School Curriculum Day (Omaha Public Schools) at the Federal Reserve Bank of Kansas City, Omaha Branch.** ***Keynote speaker.***

2018 Apr. **"Numerical Ranges over Finite Fields: A Discrete Analogue of a Complex Problem." MAA OK-AR Section Meeting. NA Court Lecture, Plenary speaker.**

2018 Jan. "Numerical Ranges over Finite Fields: A Discrete Analogue of a Complex Problem." University of Toronto, Math Union.
"IBL Quadratic Reciprocity." MAA Session on Innovative Teaching Practices in Number Theory, Joint Mathematics Meetings.

2017 July "Hybrid IBL." Inquiry-Based Teaching and Learning session, MathFest.
"A Model Regional IBL Network: The Upstate New York IBL Consortium." Constructing the Future of IBL Conference, refereed poster session. Chicago, IL.
"Numerical Ranges over Finite Fields." International Linear Algebra Society conference, Iowa State University.

2017 June "Bringing efficiency, synergy and innovation to undergraduate research program administration." Council on Undergraduate Research URPD conference. 75-minute talk.

2017 Mar. "The Numerical Range of a Matrix." Algebra and Number Theory Seminar, University of Arizona.

2016 Nov. "Inquiry-Based Learning and Undergraduate Research." Mathematics Instruction Colloquium, University of Arizona.

2016 Oct. **"Numerical Ranges over Finite Fields: A Discrete Analogue of a Complex Problem." MAA Seaway Section meeting. Plenary speaker.**

2016 Jun. "A Model for Providing Taste-of-Research Experiences within Mathematics Courses." Council of Undergraduate Research biennial conference, Refereed Poster Session.

2016 Apr. **"Inquiry-Based Learning in College Mathematics." MAA New Jersey Section meeting. Keynote speaker.**

2016 Mar. "The Greater Upstate New York Inquiry-Based Learning Consortium." AMS Spring Eastern Meeting, special session on Mathematicians in Mathematics Education. *Invited speaker.*

2016 Feb. "Numerical Ranges of Finite Sets." Ithaca College Mathematics Department Colloquium.

2016 Jan. "A Model for Expanding Active Learning Regionally: The Greater Upstate New York Inquiry-Based Learning Consortium" (joint talk with R. Gantner and C. Y. George). MAA session on Inquiry-Based Teaching and Learning, Joint Mathematics Meetings.

2015 Nov. "Inquiry-Based Learning in College Mathematics." Gateway to Mathematical Sciences: Lectures on Instruction seminar series, Michigan State University.

2015 Oct. "A New Matrix Invariant." Math Department Seminar series, The College of New Jersey.
"Inquiry-Based Learning in College Mathematics." Joint session of the Math Department's Teaching Seminar and Center for Excellence in Science Education Working Group, The Pennsylvania State University.

2015 Sep. "The Numerical Range of a Matrix: a Map from Matrices to Shapes." Mathematics and Statistics Colloquium, James Madison University.
"Numerical Ranges: from Matrices to Pretty Pictures." Math Colloquium, Kutztown U.
2015 Aug. **"A Taste of Research." MathFest, *Alder Award session*.**
2015 Apr. "A Taste of Research via Inquiry-Based Learning in Mathematics." Faculty Colloquium, SUNY College at Geneseo.
2015 Jan. "The Numerical Range of a Matrix." AMS special session on Graphs, Matrices, and Other Related Problems, Joint Mathematics Meetings. *Invited Speaker.*
2014 Dec. "Using Inquiry-Based Learning to Teach Proofs." special session on Teaching Introduction to Proofs Courses, Canadian Mathematical Society (CMS) Winter Meeting. *Invited Speaker.*
2013 Dec. "Arithmetic Counting Functions." Number Theory Seminar, University of Rochester.
2013 Jun. "Daily E-Feedback on Informal E-Homework." session on Presentation Days and other modified Moore Method techniques, Legacy of R. L. Moore Conference.
2013 Feb. "Numerical Ranges: from Matrices to Pretty Pictures." Science & Math Colloquium, Houghton College.
2013 Jan. "On Uniform Bounds for Lattice Points in Plane Regions and for Rational Points on Rational Curves of Arbitrary Degree." AMS special session on Number Theory and Geometry, Joint Mathematics Meetings.
2012 Oct. "Offering Research Problems with Minimal Commitment." Trends in Undergraduate Research in Mathematical Sciences Conference.
2012 Aug. "Co-Teaching a Credit-Enriched Section of Abstract Algebra" (joint talk with O. Nicodemi). MAA special session on Inquiry-Based Learning Best Practices, MathFest.
2012 Jul. "On Uniform Bounds for Lattice Points in Plane Regions and for Rational Points on Rational Curves of Arbitrary Degree." Philadelphia Area Number Theory Seminar, Bryn Mawr.
2011 Aug. "From Doodles to Induction: Recreational Research in Office Hours." special session on Recreational Mathematics, MathFest.
2011 Jun. "What I Wish I Knew Two Years Ago: Practical Tips For The Beginning Moore Method Practitioner." Legacy of R. L. Moore Conference.
2011 May "On Uniform Bounds for Lattice Points in Intersections of Hyperbolic Plane Regions." Upstate Number Theory Conference, Cornell University.
2011 Feb. "On Uniform Bounds For Lattice Points In Intersections Of Hyperbolic Plane Regions." Mathematics Faculty Colloquium, Lamar University.
"Pythagorean Triples and Generalized Fractions." Undergraduate Math Club, Lamar U.
2010 Oct. "Pythagorean Triples and Generalized Fractions." Math Colloquium, Augusta State U.
"Pythagorean Triples and Generalized Fractions." Science & Mathematics Colloquium, Berry College.
2010 Aug. "Learning from My Students: a Personal Experience with the Moore Method." MAA special session on Getting Students to Write Proofs, MathFest.
2010 Jun. "Learning from My Students: A Novice's Experience with the Moore Method." Legacy of R. L. Moore Conference.
2010 Apr. "On Uniform Bounds For Rational Points on Rational Curves and Thin Sets." Number Theory Seminar, University of Rochester.
"Pythagorean Triples and Generalized Fractions." Math Colloquium, SUNY Fredonia.
2009 Oct. "On Uniform Bounds for Lattice Points in Intersections of Hyperbolic Plane Regions." Special session in Analytic Number Theory, AMS Fall Eastern Meeting
"On Uniform Bounds for Rational Points on Rational Curves and Thin Sets." Maine-Quebec Number Theory conference.
2009 Apr. "Pythagorean Triples and Generalized Fractions." Mathematics Colloquium, Alfred University.
2008 Dec. "On Uniform Bounds for Rational Points on Rational Curves and Thin Sets II." Western Number Theory Conference.

2007 Dec. "Mathematical Game Theory." Mathematics Department Colloquium, SUNY Geneseo.
"On Uniform Bounds for Rational Points on Rational Curves and Thin Sets." West Coast Number Theory Conference.

2007 Nov. "On Uniform Bounds for Rational Points on Rational Curves and Thin Sets." Midwest Number Theory Conference for Graduate Students.

2006 Oct. "Counting Rational Points on Plane Curves." Midwest Number Theory Conference for Graduate Students.

2006 Jun. "Elliptic Curves and Abelian Varieties." Algebraic Geometry Seminar, University Of Innsbruck.

Panel Speaking

2021 Apr. "Reflections from engaging students during a pandemic." MAA Nebraska / Southeast South Dakota Section meeting. Refereed submission for a panel discussion. *Panelist.*

2020 Aug. "Panel on online teaching." Upstate New York IBL Consortium. Invited**.** *Panelist.*

2020 May "Online panel of community stakeholders." Initiative for Mathematics Learning by Inquiry. Invited**.** *Panelist.*

2013 Apr. "Roundtable panel discussion on Inquiry-Based Learning." MAA Seaway Section meeting. Invited**.** *Panelist.*

2010 Oct. "Classroom Technology." MAA Seaway Section meeting. Invited**.** *Panelist.*

Other Sessions

2022 Mar. "Building Community and Reducing Stress in a Mathematics Course for Business Majors." (Joint talk with L. Rau, M. Riley). MAA Nebraska / Southeast South Dakota section meeting.

2021 Oct. "The South (D)akota, Iowa, and NEbraska COMmunity for Mathematics Inquiry in Teaching (SINE COMMIT)." (Joint talk with S. Dorée, R. Gasper). AMS Special Session on Building Institutional Structures for Student Success, AMS Fall Central Section meeting, Online (moved from Creighton University, Omaha, NE, due to COVID).

2020 Jan. "A tale of two circles: math with urban middle school teachers and rural secondary school teachers" (Joint talk with J. Rech). MAA General Contributed Paper Session on Outreach, Joint Mathematics Meetings.

2019 Nov. "A Dozen National and Regional Mini-grant opportunities for Undergraduate Faculty." MAA Iowa conference.

2019 June "Singularities of Base Polynomials and Gau-Wu Numbers." 15th Workshop on Numerical Ranges and Numerical Radii (WONRA), Japan.

2019 Apr. "An invitation to a new regional faculty learning community: the Inquiry-Based Learning (greater) Iowa-Nebraska Community" (joint talk with M. Keller). MAA Nebraska / Southeast South Dakota

2018 Oct. "Regional Communities of Practice around Inquiry-Based Learning." MAA Iowa.

2018 Jan. "A Proof of a Generalized Lax Conjecture for Numerical Ranges" (joint talk with K. Camenga). Joint Mathematics Meetings.

2015 Mar. "Daily E-Feedback on Inquiry-Based E-Homework." MAA Intermountain Section meeting / Center for Undergraduate Research in Mathematics national conference.

2014 Apr. "IBL in the Seaway Section" (joint talk with J. Cushman, R. Gantner, and Y. George). MAA Seaway Section meeting.

2013 Oct. "Daily E-Feedback on Informal E-Homework." MAA Seaway Section meeting.

2013 Jul. "On Uniform Bounds for Lattice Points in Plane Regions and for Rational Points on Rational Curves of Arbitrary Degree." 28th Journées Arithmétiques.

2012 Apr. "Sharing Our Co-Teaching Experiences" (joint talk with O. Nicodemi). Mathematical Association of America (MAA) Seaway Section meeting.

2010 Oct. "Pythagorean Triples and Generalized Fractions." MAA Seaway Section meeting.

2009 Feb. "Arithmetic Geometry." Mathematics Department Colloquium, SUNY College at Geneseo.

2009 Jan. "On Uniform Bounds for Rational Points on Rational Curves and Thin Sets II." AMS

session, Joint Mathematics Meetings.

2008 Oct. "On Uniform Bounds for Rational Points on Rational Curves and Thin Sets." MAA Seaway Section meeting.

2008 Jan. "Large Lecture Techniques." MAA session. Joint Mathematics Meetings.
"On Uniform Bounds for Rational Points on Rational Curves and Thin Sets." AMS session. Joint Mathematics Meetings.

2007 Mar. "The Heegner Point Method." Arizona Winter School.

Media

2021 *AIMatters*, Autumn 2021 Newsletter of the American Institute of Mathematics. "From Undergrad Student to PhD, Doug Knowles and REUF" p. 10. Highlight of my student and me, and our collaboration while he was an undergraduate and now as PhDs. https://aimath.org/wp-content/uploads/newsletter2021.pdf

2021 MAA *DUE Point* blog. The COMmunities for Mathematics Inquiry in Teaching (COMMIT) Project. https://www.mathvalues.org/masterblog/the-communities-for-mathematics-inquiry-in-teaching-project

2020 "A Growing Movement of Mathematics Educators: the Network of Inquiry-Based Learning Communities." Press release. https://www.unomaha.edu/academic-affairs/stem-trail-center/impacts/news-releases/raults-grant-sept2020.php

2020 Video advertising the NoyceMath program. https://app.vidgrid.com/view/LW2wKMtop7L9?autoplay=1&t=1.75

2019 "STEM TRAIL Center Sets Focus on the Future of STEM." The Omaha News. https://www.youtube.com/watch?v=EiegJb-TDQ0&feature=youtu.be

2019 "UNO Faculty-Led Grant to Expand Math Education Opportunities." Press release. https://www.unomaha.edu/news/2019/10/uno-faculty-lead-grant-to-expand-math-education-opportunities.php

2019 "Westfield State professor's collaborative work to be funded by $299,999 NSF Grant." Press release. https://www.westfield.ma.edu/news/view/westfield-state-professors-collaborative-work-to-be-funded-by-299999-nsf-gr

2019 "Get to know Dr. Patrick Rault, Haddix Community Chair of Mathematics at UNO." Newsletter interview. https://newsroom.unl.edu/announce/csmce/9041/52189

2017-18 Academy of Inquiry Based learning. Four press releases, dated February 17, 2017; June 2, 2017; March 22, 2018; August 15, 2018. http://www.inquirybasedlearning.org/press-releases

2015 "Rault Receives Mathematics Award for Distinguished Undergraduate Teaching." Press release. https://www.geneseo.edu/news_events/rault-receives-mathematics-award-distinguished-undergraduate-teaching

Grants

Education grants

$59,998 Supplemental Funding Award, IBL Communities project (Phase 1b COMMIT Network project). NSF-DUE #1925188. 2020-22.

$299,999 Inquiry-Based Learning Communities project (Phase 1 COMMIT Network project). PI. NSF-DUE #1925188. 2019-22.

$1,177,299 NebraskaMATH Omaha Noyce Partnership: Phase 2, Track 1 Noyce Teacher Scholarship Program. CoPI (first year) & Senior Personnel. NSF-DUE #1852908. 2019-24

$1,387,600 Center for Undergraduate Research in Mathematics (CURM). Co-PI and CURM Co-Director. NSF-DMS #1722563. 2017-22.

Approx. $50,000 Council on Undergraduate Research Transformations Project, to study best practices in scaffolding undergraduate research into two science department curricula. Principal Investigator for University of Arizona; project includes 20 colleagues & administrators. Seed funding provided by Provost, College of Science, UA South, and Research, Discovery & Innovation. 2017-21. Subaward funding through NSF-DUE #1625354.

$102,210	The Upstate New York IBL Community. PI. Educational Advancement Foundation (EAF) grant, 2014-17.

Research grants

$4,000	American Institute of Mathematics (AIM) Research Experiences for Undergraduate Faculty Continuation Project. Weeklong research meeting for 5 participants, held offsite at Houghton College in NY. 2021.
$1,000	Two $500 Kerrigan Research Minigrants, to support work with undergraduate students on research projects. Spring 2022.
$1,000	Two $500 Kerrigan Research Minigrants, to support work with undergraduate students on research projects. Spring 2021.
Workshop	AIM Structured Quartet Research Ensembles (SQuaREs) Continuation Project. Weeklong research meeting for 5 participants. 2017.
$22,000	Arithmetic properties of numerical ranges. Mini-grant from the Center for Undergraduate Research in Mathematics (CURM), for a 2014-15 student research group of four students. CURM funding through NSF DMS award 148695.
Workshop	AIM SQuaRE. Weeklong research working meeting for 6 participants. 2013.

Curriculum grant

$25,000	Creation of Bachelor of Science degrees. Collaboration with three colleagues. SUNY College at Geneseo curriculum innovation grant, 2011-12 (degrees took effect 2015).

Service

University / Departmental Service

2022-23	Undergraduate Advisor for (core) Mathematics Major
2022-23	Mathematics & Statistics Department Hiring Committee
2022-23	Mathematics & Statistics Department Faculty Governance Exploration Committee
2022	ISU Mathematics & Statistics Department Core Program Committee
2020-22	College of Arts & Sciences Reappointment, Promotion, and Tenure Committee, elected representative for Natural Sciences Elected Committee Chair for 2022-23 (departed university before serving term)
2020-22	Math Club Faculty Advisor, UNO
2020-21	Search Committee: Director of Quantitative Research, UNO
2019-22	**STEM Teaching, Research, & Inquiry-based Learning (STEM TRAIL) Center, Assistant Director, UNO** Organizer for STEM TRAIL Teaching Practices Workshop Series, joint with the Center for Faculty Excellence
2019-22	Noyce Math Leadership Team, UNO
2018-22	STEM Leadership Team & STEM Council, UNO
2018-22	Mathematics Department Core Curriculum Committee, UNO 2018-19: Co-created calculus learning committee
2018-20	Math Teacher Circles, Co-organizer.
2018-19, 20-22	Colloquium Ad-Hoc Committee, UNO. Co-chair
2018-19	Calculus Faculty Community of Practice. Co-founder & co-chair.
2018-19	Math Department Socials. Co-founder & chair.
2018	Building Renovation Committee, representing mathematics
2017-18	Undergraduate Research ad hoc committee (co-founder), UA
2017-18	**CUR/NSF Transformations Project, PI for UA**
2016-18	CirculoSoAZ Borderlands Math Teacher Circle (professional development activity for in-service teachers), co-founder, faculty director, and workshop facilitator. Funding from NSF-Noyce grant.
2016-18	**Program Director, Mathematics, UA South.** Includes hiring and supervising adjuncts.
2016-18	Curriculum Committee, UA South

2017 Computer Science Search Committee, UA South
2016 Committee to rebrand and restructure UA South and UA distance education programs
2009-16 Pi Mu Epsilon (PME) national honor society representative, SUNY Geneseo Math Dept.
Created $200 annual Putnam Prize / Rochester Olympiad Prize for our students.
Secured travel funds for 8 students to attend MathFest, within 2011-15.
2014-15 Staffing Committee, SUNY Geneseo Math Dept.
2009-13, 15 Geneseo Recognizing Excellence, Achievement & Talent Day (GREAT Day) undergraduate research symposium, moderator of at least one session per year.
2009-11, 2013-15 College Senate, SUNY Geneseo
2014-15 Executive Committee Member
2013-15 Faculty Affairs Committee, **Chair 2014-15**
2009-11 Student Affairs Committee. STEM student focus-group organizer in 2011.
2014 Research Weekend planning Committee, SUNY Geneseo Math Dept.
2014 Department of Languages and Literatures, French Search Committee, SUNY Geneseo.
2014 Five-Year Review planning committee, SUNY Geneseo Math Dept.
2013-14 Research Committee, SUNY Geneseo Math Dept.
2012-13 Departmental (personnel) Committee, SUNY Geneseo Math Dept.
2011-12 Honors / Enriched mathematics committee, SUNY Geneseo Math Dept.
2010-12 Colloquium Committee, SUNY Geneseo Math Dept.

Service to the Discipline / Profession

2021-23 **MAA Committee on the Teaching of Undergraduate Mathematics, chair**
2021-23 MAA Council On Teaching and Learning, ex officio member
2016-current **COMmunities for Mathematics Inquiry in Teaching (COMMIT) Network (formerly the Network of IBL Communities), Founding Director.** Over 800 members, with 12 regional communities, covering 50% (by population) of the United States. Host quarterly meetings/workshops for regional COMMIT leaders, coordinate strategic planning, finances, voting, workshops, national conference sessions, etc.
2019-22 **South (D)akota, Iowa, and NEbraska (SINE) COMMIT, coleader & cofounder**. Organizing events at regional meetings (MAA, AMS, etc) and at UNO, and facilitating independent online events; liaison to COMMIT Network. Over 70 members.
2019-22 **Special Interest Group of the Mathematical Association of America on Undergraduate Research.** Over 350 members of the SIGMAA.
Chair, 2018-2020
Chair of nominations committee, 2021
Past-chair, 2021-22
2017-22 Editorial Board, Journal of Inquiry-Based Learning in Mathematics
2017-20 **Academy of IBL, Special Projects Coordinator for IBL Communities. Co-founder of Upstate New York IBL Consortium and Arizona IBL Consortium.** Aiding in formation of other consortia: MD-DC-VA, Upper Midwest, Michigan, New England, Eastern Texas, Oklahoma-Arkansas, Ontario.
2017-22 **Center for Undergraduate Research in Mathematics, co-director**
2017-20 MAA Committee on the James R. C. Leitzel Lecture
2017-18 Southern Arizona IBL Community, co-founder, co-leader, co-organizer
2014-20 Council of Undergraduate Research (CUR), nationally elected member of the governing council (two 3-year terms).
2017-2019 Mathematics and Computer Science Division Chair, elected
2018-19 Division of the Year Award
2015-18 Mathematics and Computer Science Division Newsletter co-Editor/Writer (with D. Mimbs).
2014-17 Mathematics and Computer Science Division Program Review liaison (2016-17 with G. Elder).
2014-17 Greater Upstate New York Inquiry-Based Learning Consortium

	2015-17	Associate director
	2014-15	Head director
	2014	Co-founder & Lead PI
2016	Reader, Inaugural AP Research Exam	
2009-16	Judge	
	Student poster sessions. Joint Mathematics Meetings, 2016, 2015, 2013, 2009.	
	Student paper session. MathFest, 2011, 2010, 2009.	
	Student poster session. MAA Seaway Section meeting, 2010 Fall.	
2010-14	MAA Seaway Section student programs committee.	
2008-12	Young Mathematicians' Network (YMN) editor.	

Conference and Panel Organization

2021 Oct. AMS Fall Central Session co-organizer for invited paper session "Building Institutional Structures for Student Success," on behalf of SINE COMMIT. Conference originally scheduled to be held at Creighton University (Omaha, NE), moved to online due to COVID, October 9-10, 2021.

2021 Aug. MAA MathFest Themed Contributed Paper Session co-organizer for "Using Inquiry and Collaboration in Faculty Professional Development during the Pandemic and Beyond." Co-sponsored by COMMIT and MAA Committee on Professional Development. August 4-7, 2021 (conference moved online due to COVID).

2020 Sep. SINE COMMIT panel on online teaching, co-organizer

2019 June 22nd Inquiry-Based Learning national Conference, moderator for multiple sessions

2019 Apr. Moderator and organizer for panel on "Inquiry-Based Learning," with panelists M. Keller, D. Matache, & C. Schumacher. MAA Nebraska / Southeast South Dakota conference.

2018 July Organizer for Panel on "Sharing and reflecting on the institutional models which support UR." Council on Undergraduate Research Biennial Conference 2018.

2018 May **21st Inquiry-Based Learning national conference. Co-chair. Over 150 participants.**

2018 Jan. Co-organizer for accepted session on Innovative Teaching Practices in Number Theory. Joint Mathematics Meetings.

2017 July **20th Inquiry-Based Learning national conference. Co-chair.**

2017 July Co-organizer for accepted Mini-Symposium on Numerical Ranges. International Linear Algebra Society conference, Iowa State University.

2016 Sep. Organizer for invited special session on Inquiry-Based Learning. MAA Seaway section.

2015 Aug. Co-organizer for panel on "Congratulations on Getting Tenure! Now What?" MathFest.

2014 Oct. Organizer for special session on Inquiry-Based Learning. MAA Seaway section meeting.

2009 Aug. Co-organizer for panel on "Reflecting on our own teaching." MathFest.

2009 Jan. Co-organizer for panel on "Advising student projects." Joint Mathematics Meetings.

Reviewing

2021, 17 *Electronic Journal of Linear Algebra (ELA)*

2020 *National Science Foundation, review panel*

2020 *CRC Press*

2018 **Academic Program Review for a department in the Midwest**

2016, 18 *Linear Algebra and its Applications (LAA)*

2016 *Pearson textbooks*

2015 *Posters on the Hill*

2015 *Problems, Resources, and Issues in Mathematics Undergraduate Studies (PRIMUS)*

2011 *Young Mathematician's Conference (YMC)*

Mentorship Activities

Colleague Mentoring

2012-current Inquiry learning (IBL) Mentorship. Involves course observations, weekly phone discussions, feedback on course notes, etc.

- 2018 Lidia Mrad (University of Arizona), Real Analysis II.
- 2018 Angelica Gonzalez (University of Arizona), Calculus.
- 2018 Tracy Payne (Idaho State University), Number Theory.
- 2017 Kyle Pounder (University of Arizona), Calculus.
- 2016 Alex Rennet (University of Toronto at Mississauga), Logic.
- 2014 Xiao Xiao (Utica College), Introduction to Mathematical Proof.
- 2014 Heather Lewis (Nazareth College), Calculus II.
- 2012 Shay Fuchs (University of Toronto at Mississauga), Topology.

2015-16 MAA Project NExT (New Experiences in Teaching) consultant.

2011, 15 "Great talks" session, which groups a graduate student speaker with a faculty mentor and an undergraduate observer. MathFest.

Student Mentoring

Service Activities Related to Students

2019-current Masters of Arts in Teaching student advising; 4 students

2010-current Advising students on study abroad/away programs, UNO & SUNY Geneseo.

1 student	Budapest Semesters in Mathematics Education
8 students	Budapest Semesters in Mathematics
1 student	John Cabot University in Rome
1 student	Mathematics Advanced Study Semesters
1 student	Math in Moscow
4 students	Other locations

2018 Mathematics projects through UA South senior capstone seminar. 2 students through the UA South Student Showcase and 1 through an external conference.

2009-15 Undergraduate advising, SUNY Geneseo Math Dept.

2008-current National William Lowell Putnam Exam: trainer or co-host for 2018-10, 13, 2018-19.

Awards to Mentored Students

Kerrigan Research Mini-grants

2022 Luis Rodriguez, "Unit Vector Generation Over Finite Fields."
Noah Polacek, "Behavior of Finite Field Numerical Ranges in Higher Dimensions."

2021 James Willson, "Numerical ranges over $\mathbf{Z}_p[i]$."
Brandon Collins, "Numerical ranges over $\mathbf{F}_q$."

UA South Student Showcase, Undergraduate Poster Session division

2018 Victoria Eveningred, "The Strength of a Signal versus the Echo of Noise." 1st place prize.

MathFest Pi Mu Epsilon (national honors society) speaking awards.

2015 Jack Jenkins, "There's a Glitch in the Matrix!: Categorizing Numerical Ranges of Matrices."
Douglas Knowles, "Finite Fun with Numerical Ranges."

2012 Wilson Cheung, "Contracting and Rotating Ellipses."

Honors Theses Mentored

2015 Jane Coons, "On the Numerical Ranges of Integer Matrices."
Jack Jenkins, "On the Boundary of Numerical Ranges."
Doug Knowles, "Numerical Ranges Over Finite Fields."
Rayanne Luke, "Pushing the Bounds of Numerical Ranges."

2012 Dan Rossi. "The numerical range of 4x4 doubly stochastic matrices."

Mentored Student Work Recognized in Journals

2014 Dec Samer, Andrew. Mathematics Magazine. *Solution chosen for publication.*

2013 Dec Chichester, Alex; Daniels, Patrick. Mathematics Magazine.

2011 Oct. Cohn, Sam. Math Horizons.
2011 Feb. Cheung, Wilson; Cohn, Sam; Vaiana, Michael; Zeng, Jian Cong. Math Horizons.

Select Presentations by Students

Madi Lane, Noah Polacek, Luis Rodriguez, "Expanding the Frontiers of Finite Field Numerical Ranges"
2022 Mar. UNO Student Research and Creative Activity Fair, oral presentation

Brandon Collins, Jonny Quezada, James Willson, "What is the boundary of the pac-man universe?"
2021 Mar. UNO Student Research and Creative Activity Fair, poster presentation

Brandon Collins, Gage Hoefer, Jonny Quezada, James Willson, "What is the boundary of a finite field numerical range?"
2021 Jan. Joint Mathematics Meetings, MAA Undergraduate Student Poster Session

Greg Lawson, "STEM Exposure through Themed Escape Rooms and Math Circles"
2020 May NSF STEM For All video showcase
https://stemforall2020.videohall.com/presentations/1792

Amanda Shultz & Rachel Pugh, "UNO STEM activities"
2019 May Network of STEM Education Centers conference, refereed poster session
(joint poster with C. Cutucache, B. Dorn, N. Grandgenett, C. Moore, P. Rault)

David Hurowitz, "The ABCs You Were Never Taught In School" (on the ABC Conjecture)
2018 Apr. Southwestern Undergraduate Mathematics Research Conference.

Jane Ivy Coons, "Fun with Numerical Ranges."
2015 Aug. Pi Mu Epsilon session, MathFest.
2015 Mar. MAA Intermountain Section meeting / Center for Undergraduate Research in Mathematics national conference.

Jack Jenkins, "There's a Glitch in the Matrix!: Categorizing Numerical Ranges of Matrices."
2015 Aug. Pi Mu Epsilon session, MathFest.
2015 Apr. MAA Seaway Section meeting.
SUNY Undergraduate Research Conference.
2015 Mar. MAA Intermountain Section meeting / Center for Undergraduate Research in Mathematics national conference.

Douglas Knowles, "Numerical Ranges over Finite Fields."
2016 Jan. MAA General Contributed Paper Session on Geometry, Joint Mathematics Meetings.
2015 Aug. Pi Mu Epsilon session, MathFest.
2015 Apr. MAA Seaway Section meeting.
SUNY Undergraduate Research Conference.
2015 Mar. MAA Intermountain Section meeting / Center for Undergraduate Research in Mathematics national conference.

Rayanne Luke, "Pushing the Bounds of Numerical Ranges."
2016 Jan. Nebraska Conference for Undergraduate Women in Mathematics.
2015 Aug. Pi Mu Epsilon session, MathFest.
2015 Apr. SUNY Undergraduate Research Conference.
2015 Mar. MAA Intermountain Section meeting / Center for Undergraduate Research in Mathematics national conference.

Wilson Cheung, "Contracting and Rotating Ellipses."
2012 Aug. Pi Mu Epsilon session, MathFest.

Dan Rossi, "When is a Matrix like an Ellipse?"
2012 Apr. MAA Seaway Section meeting.

Kirill Lazebnik, "Intersecting Hyperbolas and Ellipses."
2011 Aug. Pi Mu Epsilon session, MathFest.

Jeffrey Singer, "On the Measure of the Intersection of Two Conic Regions."
2011 Apr. Hudson River Undergraduate Mathematics Conference.
MAA Seaway Section meeting.

Directed Studies and Student Projects (outside of standard courses)

2022 Spring	Linear algebra and numerical ranges over finite fields, continued research. Madi Lane (0 credit), Noah Polacek (0 credit), Luis Rodriguez (0 credit), Grant Cole (0 credit), Colin Summers (0 credit).
2021 Fall	Linear algebra and numerical ranges over finite fields. Ian DeRuiter (0 credits), Madi Lane (1 credit), Noah Polacek (1 credit), Jonny Quezada (0 credits), Luis Rodriguez (1 credit).
2021 Spring	Numerical ranges over finite fields. Brandon Collins (0 credits), Jonny Quezada (3 credits), James Willson (0 credits).
2020 Fall	Numerical ranges over finite fields. Brandon Collins (0 credits), Jonny Quezada (2 credits), James Willson (0 credits).
2020 Spring	Numerical ranges over finite fields, 0 credits. Brandon Collins, Gage Hoefer, Jonny Quezada.
2015 Spring	Honors theses, 3 credits. Jane Coons, Jack Jenkins, Doug Knowles, Rayanne Luke. Educational technology project, 0 credits. Kristen Gottstine.
2014 Fall	Research on numerical ranges, 3 credits. Jane Coons, Jack Jenkins, Doug Knowles, Rayanne Luke.
2014 Spring	Research on numerical ranges and 3-ellipses, 1 credit. Jacob Pasanen. Solutions to math journal problems, 1 credit. Andrew Samer.
2013 Spring	Research on singular cases of Hensel's Lemma, 1 credit. Michael O'Boyle. Programming on Hensel's Lemma, 0 credits. Marcus Elia. Research on applied mathematics, 0 credits. Evan Losh.
2012 Fall	Research on applied math, 1 credit. Evan Losh. Educational technology project, 0 credits. Alex Chichester and Suraj Uttamchandani.
2012 Spring	Honors thesis, 3 credits. Dan Rossi. Lattice point research, 2 credits. Wilson Cheung. Research on applied math, 1 credit. Evan Losh. Educational technology project, 2 credits. Emmy Petty.
2011 Fall	Honors thesis, 1 credit. Dan Rossi Educational technology project, 3 credits. Brian Knapp, Dan Rossi, Wilson Cheung. *See* https://sites.google.com/view/prault *for the program we created, which has been used in many classes across North America.*
2011 Spring	Research on lattices, 3 credits. Michael Cerchia, Kirill Lazebnik, Jeffrey Singer.
2009 Fall	Putnam Problem Solving, 1 credit for 9 students. Theory of Groups and Rings, 3 credits. Brendan Murphy.
2009 Spring	Elliptic Curve Cryptography, 1 credit. Michael Bennett. Arithmetic Geometry and Invariant Theory, 1 credit. Tyler Massaro, Hannah Miller, Brendan Murphy.