David M. Failing, Ph.D.
Curriculum Vitae

Email:	david.failing@gmail.com	Address:	
Web:	http://www.davidfailing.com	5205 E Cortland Blvd Apt 106	
Phone:	630-939-0691 (Cell)	Flagstaff, AZ 86004	

EDUCATION

Northern Arizona University
Ph.D. in Informatics (Ecological and Environmental Informatics Emphasis), expected May 2025.

Iowa State University
Ph.D. in Mathematics, August 2013; Major Professor: Cliff Bergman.
Dissertation Title: Commutative, idempotent groupoids and the constraint satisfaction problem.

University of Illinois
Graduate coursework in Library and Information Science, School of Information Sciences, 2013-2019

Truman State University
B.S. in Mathematics, Cum Laude with General Honors, May 2008; Minors: Asian & International Studies
B.A. in Philosophy & Religion, Cum Laude with Departmental & General Honors, May 2008

EMPLOYMENT
- Graduate Assistant, Northern Arizona University, May 2020 - Present
- Part-Time Faculty in Mathematics, Coconino Community College, May 2020 - Present
- Assistant Professor of Mathematics (Tenure Track), Lewis University, August 2017 - August 2020
    Director, Scholars Academy Honors Program, August 2019 - May 2020
- Assistant Professor of Mathematics (Tenure Track), Quincy University, August 2014 - May 2017
- Research Assistant, Socio-Technical Data Analytics, University of Illinois, July - December 2013
- Mathematics Graduate Teaching Assistant, Iowa State University, August 2008 - July 2013
- Grader, Mathematics, Truman State University, August 2007 - May 2008
- Undergraduate Researcher, Auburn University Department of Mathematics, May - August 2007
- Laborer, Greenhaven Sod Company, Riverside, MO, May - July 2006
- Circulation Desk Clerk, Pickler Memorial Library, Kirksville, MO, April 2006 - May 2008
- Teaching Assistant, Philosophy & Religion, Truman State University, January 2006 - May 2008
- Undergraduate Researcher in Mathematics, STEP Program, Truman State University, May - August 2005
- Deli Clerk, Dominick's, Naperville, IL, February - August 2004
- Popular Collections / AV Page, Lisle Library District, Lisle, IL, August 2001 - December 2004

TEACHING
Courses taught at Coconino Community College
- MAT 140 College Mathematics with Algebra Review: Summer 2021, Spring 2021, Fall 2020, Summer 2020

Courses taught at Northern Arizona Univeristy
- CS 476 Requirements Engineering (GTA): Fall 2020
- CS 486 Capstone Design (GTA): Spring 2021

Courses taught at Lewis University
- DATA 500 / MATH 510 Mathematics for Data Science: Spring 2020, Spring 2019, Fall 2017 (2 sections)
- MATH 115 Introduction to Mathematical Thinking: Spring 2019
- MATH 190 Workshop - LaTeX: Spring 2019, Fall 2018, Spring 2018
- MATH 215 Prob. and Stat. Concepts for Educators: Spring 2020, Fall 2019, Spring 2019, Fall 2018
- MATH 305 Linear Algebra: Fall 2019, Fall 2018, Fall 2017

- MATH 306 Advanced Linear Algebra: Spring 2020, Spring 2018
- MATH 310 Discrete Mathematics: Spring 2018 (2 sections)
- MATH 314 Applied Probability and Statistics: Spring 2018, Fall 2017
- MATH 320 Theories of Geometry: Fall 2018
- MATH 440 Abstract Algebra: Fall 2018
- MATH 441 Abstract Algebra: Spring 2019
- MGSC 230 Finite Mathematics: Summer 2020, Spring 2020, Summer 2019, Spring 2019
- MGSC 349 Business Statistics: Spring 2020

Courses taught at Quincy University
- MAT 099 Intermediate Algebra: Fall 2014
- MAT 124 Applied College Algebra: Fall 2016, Fall 2015, Spring 2015, Fall 2014
- MAT 125 College Algebra: Spring 2016, Spring 2015
- MAT 142 Pre-Calculus: Spring 2016, Spring 2015
- MAT 252 Discrete Mathematics: Fall 2015
- MAT 260 Mathematical Logic: Fall 2016, Fall 2015, Spring 2015
- MAT 329 Linear Algebra: Spring 2017
- MAT 346 Differential Equations: Spring 2017, Spring 2016
- MAT 350 Numerical Analysis: Fall 2014
- MAT 353 Number Theory: Fall 2016
- MAT 440 Abstract Algebra: Fall 2016, Spring 2016
- MAT 485 Real Analysis: Spring 2017
- MAT 497 Senior Seminar: Spring 2017

Courses taught at Iowa State University
- Math 140 College Algebra (Instructor): Fall 2012, Summer 2012, Fall 2009
- Math 141/2 Trigonometery & Analytic Geometry (Recitation Leader): Spring 2009
- Math 150 Discrete Mathematics For Business & Social Sciences (Recitation Leader): Fall 2008
- Math 166 Calculus II (Instructor): Summer 2013, Spring 2013
- Math 265 Calculus III (Grader): Summer 2009
- Math/CprE 533 Cryptography (Grader): Spring 2010

ADMINISTRATIVE EXPERIENCE
From August 2019 to May 2020, I served as Director of the Scholars Academy honors program at Lewis. From May 2010 through May 2012, I served as the Mathematics Computer Lab Coordinator at Iowa State, managing a staff of 10-12 undergraduate exam proctors and scheduling computer lab needs for the math department. I developed a handbook for the position, to clarify the duties to each new Coordinator.

UNIVERSITY SERVICE AT LEWIS UNIVERSITY
- Committees:
○ CoAST Budget and Technology Review Committee (BTRC) (voting member), Fall 2019 - Spring 2020.
○ Community Engaged Learning Team (CELT) (appointed member), Fall 2019 - Spring 2020.
○ Culture of Inquiry Coordinating Committee (COICC), Fall 2019 - Spring 2020.
○ Writing Across the Curriculum Subcommittee (appointed member), UAAC, Fall 2019 - Spring 2020.
○ Hiring Committee, Assistant Professor of Computer and Mathematical Sciences, Fall 2017.
○ Budget Review Committee (CAS) (non-voting member), Fall 2017 - Spring 2019

- Advising:
○ Academic advisor to CaMS students. Fall 2019: 2

UNIVERSITY SERVICE AT QUINCY UNIVERSITY
- Committees:
○ Hiring Committee, Visiting Assistant Professor of Mathematics, Summer 2016.
○ Common Read Committee, Fall 2015 - Spring 2016.

∘ Academic Standards Committee, Fall 2015 to Spring 2017.
∘ Active participant in the General Assembly of the Faculty, Fall 2014 to Spring 2017.

• Student Clubs:
∘ Faculty co-advisor to Chalk Hawks (Education Club), Fall 2015.

• Advising:
∘ Academic advisor to several students. Fall 2016: 12; Spring 2016: 3; Fall 2015: 3 (1 math major, 2 undeclared); Fall 2014: 8 undeclared.

MATHEMATICAL COMMUNITY SERVICE
∘ ICTM Regional High School Mathematics Competition Judge (Division 4AA), Glenbard East High School, Feb. 24, 2018.

PROFESSIONAL SERVICE & MEMBERSHIPS
• Northern Arizona University Graduate Student Government (GSG)
   Director of Travel, 2020 - Present.
• Mathematical Association of America (MAA) (2014 -)
   Special Interest Group on Inquiry-Based Learning (SIGMAA-IBL) 2016 - Present;
      Communications Officer, March 2019 - March 2021
   Special Interest Group on Recreational Mathematics (SIGMAA-REC), 2018-20.
   Special Interest Group on Research in Undergraduate Mathematics Education (SIGMAA-RUME), 2016-20.
   Special Interest Group on Mathematics and Sports (SIGMAA-SPORTS), 2018-20.
   Special Interest Group on Mathematical Knowledge of Teachers (SIGMAA-MKT), 2018-20.
   Special Interest Group on Undergraduate Research (SIGMAA-UR), 2017 - 20.
   Special Interest Group on Quantitative Literacy (SIGMAA-QL), 2016-17.
   Special Interest Group on Statistics Education (SIGMAA-STAT-ED), 2017 - 2018.
   Initiated #LoveYourMath, a 5-day Facebook, Twitter, and Instagram campaign in September 2016.
   Illinois Section NExT Fellow ('18-'19).
   Project NExT Fellow (Gold '14 Dot).
   MAA Early Career Mathematicians Mentoring Network (Mentee)
• American Mathematical Society (AMS) (2008 - 2013; 2014 - 2015, 2018 - 2020)
• American Statistical Association (ASA) (2017 - 2018)
   Member, Chicago Chapter.
   Section on Statistical Education, 2017- 2018.
• Phi Lambda Phi Fraternity - National Board, Treasurer, August 2012 - August 2014
• Iowa State University Graduate & Professional Student Senate (GPSS), Mathematics Department Senator, August 2010 - April 2013
• Iowa State University Faculty Senate - Academic Standards & Admissions Committee, GPSS Representative, August 2010 - May 2012

HONORS, AWARDS, & FINANCIAL SUPPORT

• Lewis University Writing Across the Curriculum Faculty Learning Community, 2019-2020.
• Lewis University Faculty Development Reading Group "Composing Science," (with Tom McNamara).
• NSF Robert Noyce Teacher Scholarship Program Track 3 grant proposal "Robotics as an Integrative, Interdisciplinary Context Helping to create Exceptional STEM classrooms (RIICHES)" (Unfunded application). (co-PI, with Dr. Dorene Huvaere and Dr. Elizabeth Sturm), August 2018.
• Travel support from the American Institute of Mathematics, REUF (Research Experiences for Undergraduate Faculty) Travel Grant, June 2018.
• Travel support from the Educational Advancement Foundation, Symposium on Active Learning in Mathematics Instruction (at MathFest 2016), August 2016.
• Travel support from the Howard Hughes Medical Institute, $500 grant for Southwestern University - HHMI

Transforming STEM Pedagogy Through Active Learning Conference, June 2016.
• Steelcase Active Learning Center Grant (Unfunded), March 2016; funds would have been used to renovate a STEM classroom at Quincy University to better suit active learning pedagogy.
• Travel support from Cal Poly $500 lodging and travel support, MAA PREP (PRofessional Enhancement Program) Inquiry Based Learning Workshop, Cal Poly, San Luis Obispo, CA, July 7-10, 2015.
• Travel support from the Educational Advancement Foundation, $300, 18th Annual Legacy of R.L. Moore Conference, June 2015.
• AIBL Category 1 (Novice IBL Instructor) Small Grant, $2500 Summer Stipend to support redevelopment of MAT 260 (Mathematical Logic) at Quincy University, Summer 2015.
• Graduate College Research Excellence Award, Iowa State University, Spring 2013.
• AMS Graduate Student Travel Grant, Western Section Meeting (Boulder, CO), Spring 2013.
• Scientific Researcher stipend, $1500 in summer support, Fields Institute, Toronto, ON, June-August 2011.
• Department travel support, Department of Mathematics, Iowa State University, Spring 2013, Summer 2011, Spring 2011, Spring 2010, Spring 2009.

PUBLICATIONS
• *Commutative, Idempotent Groupoids and the Constraint Satisfaction Problem* (with C. Bergman), *Algebra Universalis* **73** (2015), 391-417. DOI: 10.1007/s00012-015-0323-6.

OTHER WRITINGS
• Blog post, *Careers in Mathematics.*
http://tvazzana.sites.truman.edu/careers-in-mathematics/david-failing/.
• Blog post (guest), *The IBL Blog.*
https://theiblblog.blogspot.com/2018/04/interview-professor-david-failing-lewis.html
• Blog (regular contributor), *A Novice IBL Blog.* https://noviceiblblog.wordpress.com/
• Blog post (guest), *Many Voices Are Greater Than One* (with N. Long, L. Cope), *MAA Math Ed Matters.*
http://maamathedmatters.blogspot.com/2015/10/many-voices-are-greater-than-one.html

CONFERENCE TALKS
• *Structure Theory of CI-Groupoids of Bol-Moufang Type*, AMS Central Section Meeting (#1090), Iowa State University, Ames, IA, April 27-28, 2013
• *CSP For Commutative, Idempotent Groupoids*, AMS Western Section Meeting (# 1089), University of Colorado, Boulder, CO, April 13-14, 2013

Self-Generating Sets, Missing Blocks, And Substitutions
• Truman State University Undergraduate Research Conference, Kirksville, MO, April 20, 2006
• Mathematical Association of America, Missouri Section, Spring Meeting 2006, University Of Missouri Columbia, March 31, 2006
• MAKO Undergraduate Mathematics Research Conference, Missouri State University, November 12, 2005

SEMINAR TALKS
• *Computer-Aided Investigation of Abstract Algebras (Or, The Computer Solved My Thesis Problem...)*, Invited, MTCS Colloquium, Truman State University, Kirksville, MO, March 21, 2013
• *Affinely self-generating sets and substitution sequences*, ISU Combinatorics, Algebra, and Number Theory Seminar, Iowa State University, Ames, IA, December 1, 2008

OTHER INVITED TALKS
• *Go Forth and Multiply*, Careers in Mathematics Series, Truman State University, April 17, 2019.
• *I'm PHRE To Do What I Want*, Philosophy & Religion Senior Seminar, Truman State University, February 21, 2019.
• *Inquiry-Based Learning*, Faculty Forum on Teaching and Learning, Quincy University, October 30, 2015.
• Panelist on graduate programs in math/CS, Alumni Panel Discussion for Scholarships in Mathematics and Computer Science (SMaCS), Truman State University, Kirksville, MO, March 18, 2010.

PROFESSIONAL DEVELOPMENT
• MAA Minicourse: Beyond Traditional Grading Schemes, MAA Mathfest, Cincinnati, OH, August 1-3, 2019.
• MAA Illinois Section Project NExT Fellow, 2018-2019.
• MAA Minicourse: Teaching Introductory Statistics with Simulation-Based Inference (Rossman, Chance, Lock and Lock), MAA Mathfest, Chicago, IL, July 27-29, 2017.
• MAA PREP (PRofessional Enhancement Program) Inquiry Based Learning Workshop, Cal Poly, San Luis Obispo, CA, July 7-10, 2015.
   Four day intensive training workshop for inquiry based learning pedagogy.
• MAA Project NExT Fellow (R.L. Moore / EAF Fellow), 2014-2015 (Gold '14 Dot)
A program of the Mathematical Association of America for new or recent Ph.D.s in the mathematical sciences who are interested in improving the teaching and learning of undergraduate mathematics, Project NExT (New EXperiences In Teaching) addresses the full range of faculty responsibilities in teaching, research, and service.

CONFERENCES / WORKSHOPS ATTENDED
• MAA Mathfest, Philadelphia, PA, July 29 - August 1, 2020.
   Organizer (with A. Bishop, S. Crook, R. Goodman, M. Henriksen, E. Moss, and M. Wentworth),
   Themed Contributed Paper Session #12, "Encouraging Effective Teaching Innovation."
   Organizer (with S. Crook, A. Ksir, N. Miller, C. Mummert and V. Piercey),
   Themed Contributed Paper Session #22, "Inquiry-Based Teaching & Learning."
• National Collegiate Honors Council (NCHC) Annual Conference, New Orleans, LA, November 6-9, 2019.
   Workshop Participant: Beginning In Honors.
• Honors Council of the Illinois Region (HCIR) Fall Directors' Meeting, City Colleges of Chicago - Richard J. Daley College, Chicago, IL, September 27, 2019.
• Buttimer Institute of Lasallian Studies (Year One), Manhattan College, Bronx, NY, June 24 - July 5, 2019.
• MAA Mathfest, Cincinnati, OH, July 31 - August 3, 2019.
   Organizer (with Susan Crook, Russ Goodman and Mel Henriksen),
   Themed Contributed Paper Session #13, "Encouraging Effective Teaching Innovation."
• National Inquiry-Based Learning and Teaching Conference, Denver, CO, June 6-8, 2019.
   Moderator, Roundtable Discussion on "Authoring IBL Materials"
• MAA-IL Section Meeting, Southern Illinois University-Carbondale, Carbondale, IL, March 30-31, 2019.
• MAA Mathfest, Denver, CO, August 1-4, 2018
   Organizer (with Susan Crook, Russ Goodman and Mami Wentworth),
   Themed Contributed Paper Session #4, "Encouraging Effective Teaching Innovation."
• Research Experiences for Undergraduate Faculty (REUF) Workshop, American Institute of Mathematics (AIM), San Jose, CA. June 11-15, 2018.
• 75th Anniversary Tri-Section Meeting of the Illinois, Indiana, and Michigan Sections of the MAA, Valparaiso University, March 24-25, 2018.
   Attendee, Section NExT IBL Workshop by Mike Starbird, UT Austin.
• MAA Mathfest, Chicago, IL, July 26-29, 2017
   Organizer (with Susan Crook and Russ Goodman), Themed Contributed Paper Session #2, "Encouraging Effective Teaching Innovation."
   Attendee, "Constructing the Future of IBL: The Past 20 Years and the Next 20 Years," July 28.
• MAA Mathfest, Columbus, OH, August 3-6, 2016
   Organizer (with Susan Crook), Themed Contributed Paper Session #7, "Encouraging Early Career Teaching Innovation."
• 19th Annual Legacy of R.L. Moore Conference, Columbus, OH, August 4, 2016
• Symposium on Active Learning in Mathematics (at MathFest 2016), Columbus, OH, August 2-3, 2016
• Southwestern University - HHMI Transforming STEM Pedagogy Through Active Learning Conference, Georgetown, TX, June 1-3, 2016
• MAA Mathfest, Washington, D.C., August 3-8, 2015
   Organizer (with M. Shott, A. Montgomery, C. Yarnall), Project NExT Panel Discussion, "Teaching Groups of Students with Mixed Abilities."

- 18th Annual Legacy of R.L. Moore Conference, Austin, TX, June 25-27, 2015
- Joint Mathematics Meetings, San Antonio, TX, January 9-13, 2015
- MAA Mathfest, Portland, OR, August 4-9, 2014
- AMS Central Section Meeting (#1090), Iowa State University, Ames, IA, April 27-28, 2013
- AMS Western Section Meeting (#1089), University of Colorado, Boulder, CO, April 13-14, 2013
- MIdwestern GrapH TheorY (MIGHTY) LIII, Iowa State University, Ames, IA, September 21-22, 2012
- Summer Thematic Program on the Mathematics of Constraint Satisfaction, Fields Institute, Toronto, ON, Canada, June 25 - August 7, 2011
- AMS Central Section Meeting (#1069), University of Iowa, Iowa City, IA, March 18-20, 2011
- AMS Central Section Meeting (#1058), Macalester College, St. Paul, MN, April 10-11, 2010
- AMS Central Section Meeting (#1047), University of Illinois, Urbana, IL, March 27-29, 2009
- Truman State University Undergraduate Research Conference, Kirksville, MO, April 20, 2006
- Mathematical Association of America Missouri Section Spring Meeting 2006, University Of Missouri, Columbia, MO, March 31 - April 1, 2006
- MAKO Undergraduate Mathematics Research Conference, Missouri State University, Springfield, MO November 12, 2005

REFERENCES

Ray Klump
Professor of Computer Science
Lewis University
1 University Parkway, Romeoville, IL 60446
klumpra@lewis.edu
815-836-5528

Lee Enger
Division of Science & Technology
Quincy University
1800 College Ave, Quincy, IL 62301
engerle@quincy.edu
217-228-5572

Susan Crook
Associate Professor of Mathematics
Loras College
1450 Alta Vista St, Dubuque, IA 52001
Susan.Crook@loras.edu
563-588-7794

Ron Taylor
Professor of Mathematics
Berry College
337 McAllister Hall, Mount Berry, GA 30165
rtaylor@berry.edu
706-290-2677

Clifford Bergman
Department of Mathematics
Iowa State University
396 Carver Hall, Ames, IA 50011
cbergman@iastate.edu
515-294-1752