

JAKE WEBER

Mathematics Department
Louisiana State University
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WORK EXPERIENCE

Graduate Teaching Assistant, Louisiana State University	2020-Present
Graduate Teaching Assistant, University of Northern Iowa	2018-2020

EDUCATION

Louisiana State University, Baton Rouge, LA

- Ph.D. Candidate, Mathematics (May 2026)
 - Advisor: Dr. Guoli Ding
 - Dissertation: *Classes Between Line Graphs and Claw-Free Graphs*
- M.S. in Computer Science: Systems Science (May 2026)
 - Advisor: Dr. Evangelos Triantaphyllou
 - Project: *Group Decision Making Processes by Means of a Graph Theoretic Approach: Football AP Top 25*
- M.S. in Mathematics (December 2022)

University of Northern Iowa, Cedar Falls, IA

- M.A. in Mathematics (May 2020)
 - Advisor: Dr. Adrienne Stanley
 - Thesis: *Exploration in Ramsey Theory*
- B.A. in Mathematics (May 2018)

HONORS AND AWARDS

- LSU Department of Mathematics: Certificate of Teaching Excellence (Dec 2025)
- LSU Graduate Student Leadership Initiative Program - Pinkie Gordon Lane Graduate School (Dec 2025)
- LSU Summer 2025 Graduate Research Assistantship - Mathematics Department
- LSU Department of Mathematics: Certificate of Teaching Excellence (May 2024)
- UNI Graduate Assistant First Award (May 2020)
- UNI Department of Mathematics: Purple and Old Gold Meritorious Award (2018)
- University of Northern Iowa Mathematics Department Scholarships
 - Augusta Schurrer Scholarship - Math Excellence (2017)
 - Science Symposium Scholarship in Mathematics (2015-2018)
 - Nathan McCay Mathematics Scholarship (2015)

- Math Day Scholarship (2015)

PUBLICATIONS

- (with G. Ding) Classes Between Line Graphs and Claw-Free Graphs, in preparation.

SELECTED PROJECTS

- Classes Between Line Graphs and Claw-Free Graphs, Dissertation, Louisiana State University (Spring 2026)
- Group Decision Making Processes by Means of a Graph Theoretic Approach: Football AP Top 25, Masters Project, Louisiana State University (Spring 2026)
 - We look at the NCAA Associated Press (AP) Top 25 poll through a graph theoretic lens and determine group dynamics that speak to how the group makes decisions, ultimately deciding which teams make the playoffs and which do not.
- General Exam Preparation Website (2024 - Present)
 - Launched an HTML website to centralize exam prep resources for 100+ graduate students across all LSU math disciplines; incorporated feedback from students/faculty to ensure product efficacy. [\[LINK\]](#)
- Exploration in Ramsey Theory, Masters Thesis, University of Northern Iowa (Spring 2020)
- Exploration of Counterexamples of Balanced Sets, Honors Thesis, University of Northern Iowa (Spring 2018)
- The Genetic Algorithm: Relevance Beyond Biology, Preparing for Industrial Careers (PIC) Math Project, University of Northern Iowa (2016)

TEACHING

Louisiana State University

- Instructor of Record
 - MATH 4019: Calculus Internship Capstone
 - MATH 1552: Calculus II
 - MATH 1550: Calculus I
 - MATH 1202: Geometry, Reasoning, and Measurement
 - MATH 1020/1021: College Algebra Coreq & College Algebra
- Teaching Assistant
 - MATH 1550: Calculus I
- Grading
 - MATH 2090: Elementary Differential Equations and Linear Algebra
 - MATH 1552: Calculus II
 - MATH 1550: Calculus I

University of Northern Iowa

- Grading

- MATH 2422: Calculus III
- MATH 1422: Calculus II
- MATH 1421: Calculus I
- MATH 1100: Mathematics in Decision Making
- UNI Math Lab
 - Managed simultaneous learning needs of at least 15 students over 20 different courses using inquiry-based instruction to promote critical thinking, active learning, and collaborative group engagement.
- Instructor of Record
 - Classic Upward Bound Summer Program: Pre-Calculus (2019)

TALKS

Conferences

- Invited talks
 - July 2016 - “The Genetic Algorithm: Relevance Beyond Biology”, PIC Math Student Recognition Conference: SIAM Annual Meeting, Boston, Massachusetts.
- Submitted talks
 - October 2017 - “Exploration of Counterexamples of Balance Sets”, Fall Meeting MAA Iowa, Loras College, Dubuque, Iowa.

Seminar/Colloquium

- November 2025 - “Classes Between Line Graphs and Claw-Free Graphs”, Louisiana State University Combinatorics Seminar
- December 2023 - “Proof Assistants: A Consideration for All”, Computer Science Research Seminar, Louisiana State University, Baton Rouge, LA.
- April 2021 - “Excluding a Directed Path”, Communicating Math Seminar, Louisiana State University, Baton Rouge, LA.

SERVICE AND INVOLVEMENT

Louisiana State University

- LSU Math Department Student Colloquium Committee (Fall 2024 - Present)
 - Coordinated speaker proposals, invitations, marketing, and event logistics for academic presentations from faculty in various math disciplines, increasing faculty/graduate student engagement and research progress. [LINK]
- GEAUX Orientation (2021-2025)
 - Prepared 20 math graduate students for and participated in panel discussions (Surviving Graduate School, Teaching, and Mental Health/Wellness) for the incoming class, helping new graduate students have a successful transition to graduate school, LSU, and Louisiana.
- Communicating Mathematics Mentor (Fall 2024)
- LSU Discover Day Judge (2022-2025)

- Served as a judge and moderator for undergraduate speakers presenting on their research.
- Sigma Phi Epsilon: LA Beta, Secretary (2020 - Present)
 - Documented all Chapter Counselor workflows (e.g., working with local and national stakeholders, mentoring chapter leaders and their administration, attending and hosting monthly events) to ensure smooth executive transitions, maintain operational quality, and offer a scalable model for peer chapters.
 - Biweekly collected agendas, scribed minutes, and conveyed business happenings of the AVC board to all board members and undergraduates for transparency and goal follow-through.
- LSU/Baton Rouge Safety Forum (Nov 2022)
 - I initiated and ran a safety forum in response to the spike in crime experienced on and surrounding LSU's campus.(Read about it [HERE](#) & [HERE](#))
 - Brought together: Baton Rouge Mayor-President, Director of Operations of Safe Hopeful Healthy with the Office of the Mayor-President, BR Metro Council District 10 Representative, LSU Police Chief and Captain, Administrative Chief Baton Rouge Police Department, LSU Executive Vice President & Chief Administrative Officer, and Media Relations Coordinator with LSU Office of Communications and University Relations.

University of Northern Iowa

- Sigma Phi Epsilon: IA Theta, Undergraduate VP of Finance (2015 - 2020)
 - Composed a VP of Finance transition guide resulting in zero outstanding debts/collections, improved transparency, and streamlined onboarding; trained 3 successors in budgeting, leadership, and organizational management.
- UNI CHAS Champs: College of Humanities, Arts, and Sciences Recruitment (2019-2020)
- Kappa Mu Epsilon: President/Member (2016-2018)
- UNI Bowling Club: President/Member (2015-2018)
- Student Fees Committee (At-Large seat, Spring 2017)

Other

- Troopers Drum and Bugle Corps (2018)
- Iowa Irish Fest Committee: Logistics Member/Lead (2015-2019)

GRANT WORK

Supporting Effective Educator Development (SEED) Grant Graduate Assistant, Louisiana State University GeauxTeach STEM

- GeauxTeach STEM Website
 - Oversaw transition from old site to new Modern Campus site; streamlined site skeleton while adding new design elements (Check it out!)
 - Launched (interviewed, transcribed, created, and reviewed with College of Science Communications and the LSU Office of Communications and University Relations) the initial rollout of Geauxing Places, an alumni blog series.
- GeauxTeach STEM Networking Liason

- Established and maintained firm relationships with 15+ entities across the College of Science, College of Engineering, University Center for Freshman Year/Advising and Counseling, and university-wide admissions/student success entities.
- Program Advisement
 - Analyzed and drafted education pathways for all STEM majors at LSU, providing a comprehensive look at what best serves students, the program, LSU, and the state of Louisiana.
 - Assisted in tracking progress of all GeauxTeach STEM Alternative Certification students, providing the GeauxTeach STEM program with information needed for scholarship dispersal and grant/accreditation reports.
 - Rejuvenated GeauxTeach STEM Student Lair and advised the GeauxTeach STEM Student Organization.
 - * Coached student workers on their communication skills, developing a robust elevator speech about the program and their own personal experiences.
 - * Advised all new GeauxTeach STEM Alternative Certification pathway students.
- Summer Marketing and Messaging Meetings (2023)
 - Advised co-directors and program manager through meeting discussions, sharing experiential insights on student attitudes, and delivering a comprehensive state of the program presentation for campus and off-campus stakeholders.
 - Developed and finalized a marketing and messaging plan that was delivered on in Spring 2024.
- GeauxTeach STEM Alternative Certification
 - Independently conducted focus groups of engineering students and their attitudes towards teaching/pursuing teaching courses and a post-baccalaureate certification program.
 - Orchestrated focus groups for engineering majors as needed for John Rice with Common-Sense Communications (Spring 2023) during his Marketing, Grassroots Plan, and Focus Group endeavor for GeauxTeach STEM
- Recruitment Implementation
 - Coordinated (and often represented) GeauxTeach STEM's presence at over 30 recruitment events per calendar year (including those put on by LSU entities)
 - * Instituted sustainable processes to ensure continued participation in recruitment events.
 - Developed targeted marketing materials (based on student classification, student majors, programmatic stakeholders, state STEM initiatives, etc.)
 - * Pre-Med Accelerated GeauxTeach (Secondary Education) Certification Track
- GeauxTeach STEM Program Emails
 - Created recruitment emails/campaigns in fall, spring, and summer semesters. Engaged prospective students after LSU visit days and new student orientations. Assisted with sending the semester Alumni Newsletter.

LSU College of Science Communications

- Science Next Blog and Website Transition
 - Oversaw transition from old SquareSpace blog to new Modern Campus blog format and transitioned College of Science About Us Pages.

REFERENCES

- Dr. Guoli Ding, Louisiana State University, ding@math.lsu.edu
- Dr. James Madden, Louisiana State University, mmmad@lsu.edu
- Dr. Evangelos Triantaphyllou, Louisiana State University, etriantaphyllou@yahoo.com
- Dr. James Oxley, Louisiana State University, oxley@math.lsu.edu