

David McMorris

CONTACT INFORMATION	Department of Mathematics Luter Hall 340 Christopher Newport University One Avenue of the Arts Newport News, VA 23606	david.mcmorris@cnu.edu https://davidmcmorris.github.io/
RESEARCH INTERESTS	Mathematical biology and scientific computing, applications of control theory to plant life history and ecology.	
EDUCATION	University of Nebraska-Lincoln Ph.D. in Mathematics August 2020 Advisor: Glenn Ledder Dissertation: <i>Optimal Allocation of Two Resources in Annual Plants</i> M.S. in Mathematics May 2016 Hope College B.S. in Mathematics May 2014 <i>Magna Cum Laude</i> Advisor: Brian Yurk	
APPOINTMENTS	Adjunct , Christopher Newport University August 2021 - present Graduate Teaching Assistant , UNL 2014 - 2020	
TEACHING EXPERIENCE	Instructor of Record Christopher Newport University Math 130: Precalculus Spring 2022, Spring 2023 Math 125: Elementary Statistics Fall 2023 Math 135: Calculus for Business and Social Sciences Fall 2021, Spring 2022 University of Nebraska-Lincoln Math 302: Math Modeling Spring 2017, 2019, 2020 A course for pre-service elementary teachers. Math 104: Applied Calculus (~ 110 students) Fall 2019 Math 106: Calculus I Fall 2018 Part of the WHT Scholars Learning Community for first-generation students Math 203: Contemporary Mathematics Spring 2018 Math 301: Geometry Matters Summer 2017 A course for pre-service elementary teachers. Math 103: College Algebra & Trigonometry Fall 2016, 2017 Part of the WHT Scholars Learning Community for first-generation students Math 101: College Algebra Fall 2015, Spring 2016, Summer 2016	

Teaching Assistant

University of Nebraska-Lincoln

Math 107: Calculus II Recitation

Spring 2015

Math 106: Calculus I Recitation

Fall 2014, Summer 2015

Qualifying Exam Workshops

University of Nebraska-Lincoln

Organized workshops for first-year graduate students preparing for qualifying exams

PDE and Applied Math Workshop

May 2018

ODE and Applied Math Workshop

May 2017

Grader

University of Nebraska-Lincoln

Math 489/889: Stochastic Processes

Fall 2018

Math 831: Partial Differential Equations

Fall 2017

Math 842: Methods in Applied Mathematics

Fall 2016

Math 104: Applied Calculus

Spring 2015

PUBLICATIONS AND PREPRINTS

1. D. McMorris and G. Ledder, *Resource Allocation in Annual Plants*. (submitted)
bioRxiv 2021.04.19.440512.
2. D. McMorris, P. Pearson, and B. Yurk, *A modified wavelet method for identifying transient features in time signals with applications to bean beetle maturation*.
Involve, a Journal of Mathematics, **10(1)** (2016), 21-42.

PRESENTATIONS

† DENOTES INVITED TALK

- Optimal Allocation of Two Resources in Annual Plants*
(50 min)
UNL, Dissertation Defense July 2020
- † *Plant Life History and Optimal Control*
(20 min)
Nebraska Wesleyan University Math Club November 2019
- † *Investigating Plant Growth Through Mathematical Biology*
(50 min)
Nebraska Wesleyan University STEM Seminar March 2019
- † *Using Optimal Control Theory to Model Resource Allocation in Annual Plants*
(50 min)
Creighton University Department of Mathematics Colloquium November 2018
- An Optimal Control Approach to Resource Allocation in Annual Plants*
(50 min)
UNL MathBio Seminar October 2018
- An Application of Optimal Control to Resource Allocation in Annual Plants*
(20 min)
Midwest Mathematical Biology Conference, UW - La Crosse May 2018
- † *Optimal Control Theory and Math Biology*
(10 min)
Nebraska Wesleyan University Math Club October 2017

SERVICE

- MCM/ICM**, Consortium for Mathematics and Its Applications Since 2021
The Mathematical Contest in Modeling and Interdisciplinary Contest in Modeling are international modeling contests each spring which challenge students to engage with open-ended problems and write detailed reports of their work. I helped with the first round of judging each year, and worked with a team to complete the final round of judging in 2023.
- Referee**, Letters in Biomathematics Since 2021
- New Student Enrollment**, UNL Summer 2019, 2020
Worked with academic advisors and incoming freshmen to determine their math placement based on their backgrounds and major requirements.
- Nebraska Conference for Undergraduate Women in Mathematics**,
Department of Mathematics, UNL January 2019, 2020
NCUWM is an annual conference open to undergraduate women mathematicians. I volunteered to assemble informational packets and register conference attendees.
- Dean Search**, College of Arts and Sciences, UNL January 2019
Served on a panel of 10 students who met with and evaluated each candidate.
- Math Day**, Department of Mathematics, UNL November 2014 - 2019
Proctored/coordinated throughout a day of high school mathematics competitions for approximately 1400 students across Nebraska.