

Bevin Maultsby

NC State University Department of Mathematics
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Curriculum Vitae

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EXPERIENCE

Teaching Associate Professor, North Carolina State University Department of Mathematics	2020–present
Administrator for Distance Education, North Carolina State University Department of Mathematics	2016–present
- Coordinator for all distance education courses (undergraduate and graduate)	2019–present
- Administrator for the distance track for the Graduate Certificate program	2016–present
Teaching Assistant Professor, North Carolina State University Department of Mathematics	2016–2020
MathCEP Assistant Professor (Postdoctoral Fellowship), University of Minnesota School of Mathematics	2014–2016

EDUCATION

Ph.D. in Mathematics, University of North Carolina at Chapel Hill Dissertation: “The Geometry of Radial States in Nonlinear Elliptic Problems” Advisor: Dr. Christopher K.R.T. Jones	2014
B.S. in Mathematics, B.A. in French, University of North Carolina at Chapel Hill with Highest Distinction	2009

TEACHING

All courses listed are as *instructor of record* at each institution.

• NC State University	2016–present
<i>Numbering: < 500 undergraduate, ≥ 500 graduate (all graduate courses listed are online sections)</i>	
Introduction to Scientific Programming (Matlab) (MA 116)	13 sections
Calculus II/Single Variable Calculus II (MA 241)	1 section (Fall 2023)
Calculus III/Multivariable Calculus (MA 242)	10 sections
Introductory Linear Algebra and Matrices (MA 305)	2 sections
Applied Differential Equations I (MA 341)	2 sections
Mathematical Analysis I (MA 425)	5 sections
Mathematical Analysis II (MA 426)	11 sections
Advanced Mathematics for Engineers & Scientists I (PDEs) (MA 501)	1 section
Survey of Real Analysis (MA 507)	3 sections
Selected Topics In Mathematics For Secondary Teachers (MA 510)	2 sections
Advanced Calculus I (MA 511)	†: 10 sections
Introduction to Complex Variables (MA 513)	2 sections
Linear Transformations and Matrix Theory (MA 523)	4 sections
(Topics in) Linear Algebra & Differential Equations (MA 591)	5 sections

NC State Total Teaching: 14 subjects, 224 credit hours (approximately 34.5 credit hours per academic year)
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- Duke University Talent Identification Program (TIP) 2016
Topology (Summer instructor at the Georgia Institute of Technology and Duke University)
 - University of Minnesota (Postdoctoral Position) 2014-2016
UMTYMP = University of Minnesota Talented Youth in Mathematics Program
Single-Variable Calculus (UMTYMP) F14
Multivariable Calculus (UMTYMP) S14, F15
Linear Algebra (UMTYMP) S16
Differential Equations with Applications (Math 4512) S15, S16
 - UNC-Chapel Hill (Graduate Teaching Fellow, all courses as sole instructor) 2010-2014
College Algebra (Math 110) Sum 11, Sum 13[‡], S14
Selected Topics in Mathematics (Math 118) F10, Sum 13
Calculus I (Math 231) S11
Calculus II (Math 232) S13, F13
Calculus III (Math 233) S14
Advanced Calculus (Math 521) Sum 14
- [‡]: UNC Summer Bridge Program

PROGRAM AND COURSE DEVELOPMENTS

- Distance Education Program, Department of Mathematics 2016-present
 - Coordinator for the online Graduate Certificate Program created in 2016 ([Program link](#))
 - Coordinator for all undergraduate and graduate online courses (since 2019)
I supervise all instructors teaching DE courses, and created standardized syllabi, schedules, and Moodle sites for most undergraduate and graduate online courses.
 - Created several new, fully online asynchronous courses with interactive videos, new learning objectives, active course forums, AI graded quizzes, homework sets, practice sheets, etc/:
 - * Single Variable Calculus II (MA 241) Online Development ([Video Playlist](#)) 2022
 - * Multivariable Calculus Online (MA 242) Online Development ([Video Playlist](#)) 2020
 - * Selected Topics in Mathematical Modeling (MA 510) ([Video Playlist](#)) 2021
I designed this course to increase teacher confidence when using mathematics to solve real-world problems.
 - * Survey of Real Analysis (MA 507), ([Video Playlist](#)) 2020-2021
I developed a new Distance Education version of MA 507, then improved the course according to the Quality Matters Essential Standards Program (QMESP) in the Higher Education rubric.
I completed the QM "Peer Reviewer Course" Apr.-May 2021
QM Nationally Certified (with a perfect score) Mar. 2021
I completed "Improving Your Online Course (IYOC) workshop" Apr.-May 2020
 - * MA 511: Advanced Calculus I 2018
I designed this course to be accessible for graduate students in other disciplines (e.g., engineering, statistics).
 - * MA 591: Fundamentals of Linear Algebra and Differential Equations 2017
I created this course as a "bridge course" for post-baccalaureate students making the transition back to advanced mathematics.
- STEM: Quito in Ecuador ([Program link](#)) 2023-2024
I am collaborating with Study Abroad and three other faculty to create a new study abroad program, to debut in Summer 2024. The program will offer STEM-focused courses (including MA 341 Applied Differential Equations) that complement students' degree plans, enabling them to continue their academic progress while abroad.
- Introduction to Scientific Programming (MA 116) 2017-2021
I redesigned this entire course to implement mastery-based grading. This course redesign has shifted the focus away from scores and test averages and towards clear content objectives.

HONORS, AWARDS, AND GRANTS

- DELTA Faculty Fellow (\$10000), NC State University 2021-2023
- Thank a Teacher Award, NCSU Office of Faculty Excellence Feb. 2021, Feb. 2022
- Open Textbook grant (\$2500), NC State University 2021-2022
- Multimedia Accessibility Grant (\$2,268), NC State University 2021-2022
- John Franke Faculty Award for Excellence in Teaching NCSU Department of Mathematics April 2021
- Certificate of Reflective Teaching, NC State Office of Faculty Development Oct. 2020
- American Mathematical Society Award for Exemplary Program or Achievement in a Mathematics Department 2018 University of Minnesota, MathCEP instructional team recognized for the UMTYMP high school program
- The Linker Award, UNC-Chapel Hill Department of Mathematics May 2014
Award for excellence in teaching by a graduate student, awarded to 1-2 graduate students per year
- WHOI Geophysical Fluid Dynamics Fellowship, Woods Hole Oceanographic Institution June-Aug. 2012
Woods Hole, Massachusetts, awarded to 10 students per year
- The Alfred Brauer Award for the top-performing undergraduate student in Algebra and Number Theory May 2009
UNC-Chapel Hill Department of Mathematics
- Jacques Hardré Prize May 2009
UNC-Chapel Hill Chancellor's Award, awarded to 1 student per year
- Phi Beta Kappa 2008

PUBLICATIONS

MATHEMATICAL

- B. Maultsby. Settling a Tomoe-sen: Wrestling with Chip Firing. *Math Horizons*, 2023, 31(1): 12-15. DOI: 10.1080/10724117.2023.2224671
- C.K.R.T. Jones and B. Maultsby. A dynamical approach to phytoplankton blooms. *Discrete and Continuous Dynamical Systems*, 2017, 37(2): 859-878. DOI: 10.3934/dcds.2017035
- B. Maultsby. Uniqueness of solutions to singular p-Laplacian equations with subcritical nonlinearity. *Advances in Nonlinear Analysis*, 2017, 6(1): 37-59. DOI: 10.1515/anona-2015-0161
- *The Geometry of Radial States in Nonlinear Elliptic Problems*, (2014) Ph.D. Thesis.
- B. Maultsby, 2:1 spatial resonance in Langmuir circulation. *Proceedings of the 2012 Program in Geophysical Fluid Dynamics*, 2012, 334-361.

INSTRUCTIONAL

- IntelliBoard Encourages Faculty Intervention (NC State DELTA News Article, contributor), Feb. 2023.
- Top Five Reasons to Embrace Moodle 4.0 (NC State DELTA News Article, contributor), Oct. 2022.
- Early Adopters of Moodle 4 Share Experiences (NC State DELTA News Article, contributor), May 2022.
- Utilizing Activity Completion and Restrict Access in Moodle (NC State DELTA News Article, sole author), Mar. 2022.
- Traveling and Need to Teach? Check Out My Mediasite (NC State DELTA News Article, contributor), Oct. 2019.

ADDITIONAL EXPERIENCE

- WHOI Geophysical Fluid Dynamics Fellow Summer 2012
Woods Hole Oceanographic Institution, Woods Hole, Massachusetts
- Statistical and Applied Mathematical Sciences Institute Graduate Fellow 2011-2012
The Statistical and Applied Mathematical Sciences Institute (SAMSI), Research Triangle Park, NC

PRESENTATIONS

- ChatGPT Workshop Oct. 2023
RTC: Randomized Numerical Analysis Group, NC State University
- Gradescope Workshop Aug. 2023
Teaching and Learning Seminar, NC State University
- Estimating pi with darts and needles May 2023
Durham School of the Arts, Durham, NC
- My favorite Moodle trick April 2023
Teaching and Learning Seminar lightning talk, NC State University
- Using mastery-based grading to motivate student success in a programming course (poster) April 2023
UNC Teaching and Learning Symposium, Charlotte, NC
- ChatGPT: Adapt, Reject, or Embrace? Mar. 2023
Faculty Excellence Conference, NC State University
- MATLAB Grader Workshop October 2022
Teaching and Learning Seminar lightning talk, NC State University
- Creating Interactive Lessons with Feedback in Moodle Aug. 2022
DELTA Summer Shorts, NC State University
- A Simple Energy Balance Model for the Climate May 2022
Durham School of the Arts, Durham, NC
- Utilizing Activity Completion and Restrict Access in Moodle (article, link) Mar. 2022
DELTA News, NC State University
- Using Gradescope Effectively to Assess Student Work Aug. 2021
DELTA Summer Shorts, NC State University
- Alternative Assessments Mar. 2021
North Carolina Council of Teachers of Mathematics (NCCTM)
- Grading for Mastery with Moodle (poster) Feb. 2021
Teaching and Learning Symposium, NC State University
- Testing with a Mastery-Based Approach Dec. 2020
Mastery Based Grading Webinar Keynote Speaker, MAA Project Next
- Using Mastery Grading to Motivate Students to Become Good Coders (poster) Feb. 2020
Teaching and Learning Symposium, NC State University
- Applications of Optimization May 2019
Durham School of the Arts, Durham, NC
- It's Binary: Using Mastery Grading to Motivate Students to Become Good Coders Aug. 2018
MAA MathFest, Denver, CO
- Short Networks and Soap Bubbles Oct. 2017
Society for Undergraduate Mathematics (SUM) Series, NC State University
- 1:2 Resonances in Langmuir Circulation Jan. 2015
Applied Math Seminar, UNC-Greensboro
- Geometry of radial states in p -Laplacian equations Jan. 2015
*AMS Special Session on Theory and Application of Reaction Diffusion Models (invited)
Joint Mathematics Meetings, San Antonio, TX*
- An Introduction to Climate Modeling June 2014
Toyota-RIT Applied Math Initiative, Minneapolis, MN
- Existence and uniqueness results for Emden-Fowler equations Nov. 2013
9th Annual UNCG Regional Mathematics and Statistics Conference, Greensboro, NC
- An Introduction to Math and Climate Nov. 2013
Agnes Scott College, Decatur, GA
- Invariant Manifolds and Melnikov's Method Oct. 2011
Graduate Mathematics Association Seminar, UNC-Chapel Hill

OUTREACH AND SERVICE (DOES NOT INCLUDE COMMITTEE WORK)

- Current Graduate School Representative Member of two Ph.D. committees
NC State University, College of Sciences 2022-present
- Course Coordinator, all Distance Education courses
NC State University, Department of Mathematics 2019-present
- Maintain website on Online Teaching Resources
NC State University, Department of Mathematics 2020-present
- Moodle Tutorial for new instructors
NC State University, Department of Mathematics Graduate Student Orientation Aug. 2021, 2022, 2023
- Grants Reviewer
NC State University, College of Sciences May 2023, May 2022
- Panelist, Test Writing Panel
NC State University, Teaching and Learning Seminar Sep. 2022
- Covid-19 Task Force
NC State University, Department of Mathematics 2020-2021
- Panelist, Graduate Training Module on “Job Interview Strategies”
NC State University Nov. 2019
- Panelist, Graduate Training Module on “Attending Important Conferences”
NC State University Nov. 2018
- Panelist, Association for Women in Mathematics Triangle Conference
UNC-Chapel Hill Feb. 2018
- Editorial Board, Minnesota Journal of Undergraduate Mathematics
University of Minnesota 2018-present
- Panelist at Southeastern Conference for Undergraduate Women in Mathematics
Duke University Nov. 2016
- Panelist at Triangle Area Graduate Mathematics Conference
UNC-Chapel Hill Dec. 2016
- Managing Editor, Minnesota Journal of Undergraduate Mathematics
University of Minnesota 2015-2018
- Judge for Undergraduate Poster Session, Joint Mathematics Meeting
San Antonio, Texas Jan. 2015
- Academic Director, Girls Excel in Mathematics (GEM)
Minneapolis, Minnesota 2014-2016
- Assistant Faculty Coordinator for College in the Schools
Minneapolis, Minnesota 2014-2016
- Faculty Sponsor for Peer Mentor Network for high school girls in math
Minneapolis, Minnesota 2014-2016
- Math and Science Expo Volunteer
UNC-Chapel Hill Apr. 2014
- Directed five undergraduate research projects
University of Minnesota 2014-2016
- Instructor for the Problem Solving Seminar (for Putnam Team Training)
UNC-Chapel Hill 2009-2010
- North Carolina Science Festival Volunteer
UNC-Chapel Hill Sep. 2010
- Family Science and Math Day Volunteer
UNC-Chapel Hill Oct. 2009
- Sonia Kovalevsky Mathematics Day Volunteer and Presenter
UNC-Chapel Hill Apr. 2009

TEACHING WORKSHOPS AND COURSES ATTENDED AT NC STATE UNIVERSITY

DELTA stands for Digital Education and Learning Technology Applications, an organization at NCSU.

- DELTA: Create Custom Learning Experiences for Students Sept. 2023
- Division of Academic & Student Affairs (DASA): Question, Persuade, Refer: Suicide Prevention Training Mar. 2023
- DELTA: "Summer Shorts" Workshops Aug. 2022
- DELTA: "Summer Shorts" Workshops Aug. 2021
- Office for Institutional Equity and Diversity, GLBT Advocate Program 2020-2021
- DELTA: Creating Online Assignments Oct. 2020
- DELTA: Marrying Google Drive and Moodle: Assignments, Feedback, & Grading Oct. 2020
- DELTA: "Summer Shorts" Online Sessions Aug. 2019
- DELTA: What's New in Moodle? June 2019
- DELTA: Teach Anywhere with Zoom Feb 2019
- DELTA: "Summer Shorts" Week-long Workshops Summer 2018
- Accessibility in the Classroom Course (summer-long program) Summer 2018
- DELTA: Grants Group Consultation Apr 2018
- How to Implement Competency-Based Grading Mar 2018
- Integrating the Scholarship of Teaching and Learning into the Teaching Track Feb 2018
- DELTA: Making Connections and Building Community Online Workshop Feb 2018
- DELTA: Utilizing Engaging Instructional Video Nov 2017
- DELTA: "Summer Shorts" Week-long Workshops Summer 2017
- DELTA: Beyond the Gradebook: Giving Better Feedback by Monitoring Student Progress in Moodle May 2017
- DELTA: What's New in Moodle? Apr 2017
- New Faculty Orientation Workshop Aug 2016

TEACHING WORKSHOPS (NOT AT NC STATE)

- Peer Reviewer Course April-May 2021
Quality Matters (<https://www.qualitymatters.org>)
- Improving Your Online Course workshop Spring-Summer 2020
Quality Matters (<https://www.qualitymatters.org>)
- Beyond Traditional Grading Schemes: Mastery Based Grading Course Aug 2017
MAA MathFest, Chicago, IL
- Directing Undergraduate Research Course Jan 2014
Joint Mathematics Meetings, Baltimore, MD

SKILLS

- Python, JavaScript, HTML, CSS
- Mathematical Software: MATLAB, Mathematica, XPP
- LMS: Moodle, Sakai, Canvas
- Other: H5P, Panopto, Mediasite, Zoom

LANGUAGES

- English (native)
- French (fluent)