ETHAN MCCARTHY

⚬ Home page   🎓 ORCID

EMPLOYMENT

Visiting Assistant Professor
University of Florida

📅 2018 – 2020   📍 Gainesville, FL

- Taught graduate and undergraduate sequences in mathematical logic and foundations of mathematics, contributed to in-house textbook.
- Developed clicker questions, animations, and a lecture video sequence for Calculus II course.
- Converted undergraduate courses in differential equations and introduction to proofs for online-delivery.
- Led seminar series for the research group in Mathematical Logic.
- Co-PI for Southeastern Logic Symposium, Spring 2020.

Graduate Teaching Assistant
UW–Madison

📅 2012 — 2018   📍 Madison, WI

- Organized 15th Graduate Student Conference in Logic, Spring 2014.
- Organized social and research events, including Logic Picnic, Logic Cookies, Graduate Student Logic Seminar, and the 15th Graduate Student Conference in Logic, Spring 2014.
- Created worksheets for calculus sequence, lead-TA for Calculus II.
- Volunteer grader at *Mega Math Meet* Primary School Math Competition.

Undergraduate Teaching Assistant
Michigan State University

📅 2010 — 2012   📍 East Lansing, MI

- Taught recitations for terminal mathematics course on finite mathematics and elements of college algebra.
- Math Learning Center tutor in multivariable calculus, linear algebra, and differential equations.

SELECTED AWARDS AND HONORS

2014	Graduate Research Fellowship, NSF.
2011 & 2012	Herbert T. Graham Scholar, MSU.
2012	Math in Moscow Scholarship, AMS.
2011	Herzog Mathematical Competition, 1st Prize, MSU.

SELECTED TALKS

2019	Workshop on Computablity Theory. *University of Leeds*.
2019	AMS Spring Eastern Sectional. *University of Connecticut*.
2018	14th Conference on Computability in Europe, *Kiel University*.
2018	Midwest Computability Seminar XXI, *University of Chicago*.
2017	13th Conference on Computability in Europe, *University of Turku*.
2016	Conference on Computability and Complexity in Analysis. *Faro*.
2014	CMS Winter Meeting. *Hamilton, ON*.
2011	Midsummer Combinatorics Workshop. *Charles University, Prague*.

OTHER SKILLS AND INTERESTS

- **Coding**: Extensive knowledge and interest in programming and theoretical computer science, including programming experience in Python, JavaScript, MATLAB, C/C++, Rust, Haskell.
- **Sailing**: Sailing Instructor at UW Hoofers sailing club.

EDUCATION

Ph.D. Mathematics
UW–Madison

📅 2018   📍 Madison, Wisconsin

Supervisor: Prof. Joseph S. Miller
Research topics: theory of computation, mathematical logic, symbolic dynamics, algorithmic randomness, computable analysis. Minor in mathematical analysis.

M.A. Mathematics
UW–Madison

📅 2014   📍 Madison, Wisconsin

Specialty topics: Algorithmic randomness, Martin-Löf-random paths of Brownian motion.

B.S. Mathematics *Summa cum laude*
Michigan State University

📅 2012   📍 East Lansing, Michigan

Independent research in geometric combinatorics and dynamical systems.
Advisor: Prof. Michael Shapiro.

OTHER EXPERIENCE

- Art of Problem Solving. "Halper" and Grader. Assorted mathematics courses and Intro to Programming.
- *Asian Initiative for Infinity*. Graduate Summer School. Singapore, 2013.
- *Park City Summer School*. Institute for Advanced Study. Summer 2012.
- *Math in Moscow*. Independent University of Moscow. Spring 2012.
- DIMACS REU. Rutgers University. Piscataway, New Jersey, Summer 2011.

RESEARCH

- *Pointwise complexity of the derivative of a computable function*. Arch. Math. Logic. (2021). https://doi.org/f7ms
- *Cototal enumeration degrees and their applications to effective mathematics*. Proc. Am. Math. Soc. 146 (2018), 3541-3552.
- *Characterizing the strongly jump-traceable sets via diagonal non-computability*. Preprint.
- *Strong difference randomness and jump domination*. Preprint.