Jonathan Dahl

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EDUCATION

Johns Hopkins University, Baltimore, Maryland USA

Ph.D., 2010 Mathematics

- Thesis topic: *Existence and structure of solutions of Steiner problems in optimal transport*
- Advisor: Prof. Chikako Mese

M.A., 2006 Mathematics

University of Maryland, College Park, Maryland USA

B.S., 2004 Mathematics with High Honors

TEACHING EXPERIENCE

Lafayette College, Easton, Pennsylvania USA

Lecturer, Department of Computer Science, Fall 2023 to present,
Visiting Assistant Professor, Departments of Computer Science and Mathematics, Fall 2013 to Spring 2023,
Transitioned from initially teaching courses exclusively for Mathematics through a split appointment to now teaching exclusively for Computer Science. Have taught at a range of levels and both introductory/serivce courses as well as courses within the major program. Developed and taught a special topics course in Cybersecurity. Supervised multiple Independent Study courses, Excel Scholars, and served on Thesis Committees. Coordinate the TAs and MSG leaders for the department.
Specific courses taught/scheduled:

- CM151 Introduction to Computational Science, Spring 2019.
- CM160 Games as a Model of the Natural World, Fall 2017.
- CS104 Introduction to Game Programming, Fall 2023.
- CS105 Digital Media Computing, Spring 2018, Fall 2018, Spring 2021, Spring 2022, Fall 2022.
- CS150 Data Structures and Algorithms, Spring 2024, Fall 2024, Spring 2025.
- CS150L Data Structures and Algorithms Lab, Fall 2019 through Spring 2025.
- CS200 Computers and Society, Spring 2017, Spring 2018, Spring 2019, Spring 2021, Spring 2022, Spring 2023.
- CS202 Analysis of Algorithms, Fall 2016, Fall 2017, Fall 2018, Fall 2020, Fall 2021.
- CS303 Theory of Computation, Spring 2017, Spring 2019, Spring 2020.
- CS410 Cybersecurity, Spring 2018.

- CS390 Independent Study (Advanced Topics in Complexity Theory, Applied Cryptography, Combinatorial Optimization, Computer Graphics and VR, Cybersecurity, Post-Quantum Cryptography), Spring 2018, Fall 2018, Fall 2019, Fall 2020, Spring 2024.
- DS201 Principles of Data Science, Fall 2022.
- MATH125 Modeling and Differential Calculus, Fall 2013, Spring 2015.
- MATH141 Differential Calculus and Economic Modeling, Fall 2014.
- MATH161 Calculus I, Fall 2013, Summer 2014, Fall 2015, Spring 2016, Fall 2019.
- MATH162 Calculus II, Fall 2014, Fall 2016.
- MATH186 Applied Statistics, Spring 2014, Spring 2015.
- MATH263 Calculus III, Spring 2014, Fall 2019, Spring 2020.
- MATH264 Differential Equations with Linear Algebra, Spring 2016.
- MATH343 Advanced Multivariable Calculus, Fall 2015.
- MATH391 Independent Study (Theories of Integral and Set Theory), Fall 2015.

University of California, Berkeley, California USA

RTG Postdoctoral Fellow, Fall 2010 to Spring 2013,
Specific courses taught:

- MATH1B Calculus, Summer 2012.
- MATH104 Introduction to Analysis, Spring 2011, Spring 2013.
- MATH141 Elementary Differential Topology, Spring 2012, Fall 2012.
- MATH199 Supervised Independent Study (Homotopy Theory), Fall 2012.
- MATH199 Supervised Independent Study (Minimal Networks), Spring 2013.
- MATH214 Differential Manifolds, Fall 2010, Fall 2011.

Johns Hopkins University, Baltimore, Maryland USA

Teaching Assistant, Fall 2004 to Spring 2010,
Taught recitation sections. Graded homework, quizzes, and exams. Held office hours, and participated in weekly Math Help Room open tutoring sessions. Specific courses taught:

- MATH106 Calculus I (Biological and Social Sciences), Fall 2004, Fall 2005, Spring 2007.
- MATH109 Calculus II (Physical Sciences and Engineering), Fall 2007, Spring 2010.
- MATH201 Linear Algebra, Fall 2009.
- MATH202 Calculus III, Spring 2005, Spring 2006, Fall 2006, Fall 2008.
- MATH302 Differential Equations with Applications, Spring 2008.

Instructor, Summer 2010,
MATH109 Online Calculus II. Used WebCT and Elluminate web conferencing software to run a completely online course.

Instructor, Summer 2009,
MATH302 Online Differential Equations. Used WebCT and Elluminate web conferencing software to run a completely online course.

Instructor, Summer 2008,
MATH202 Online Calculus III. Used WebCT and Elluminate web conferencing software to run a completely online course.

Instructor, Summer 2006,
MATH105 Introduction to Calculus.

Instructor, Summer 2005,
MATH108 Calculus I (Physical Sciences and Engineering).

DEPARTMENT
SERVICE

Academic advising, Fall 2023 to present,
Advising work began with promotion to Lecturer Fall 2023. Advisor to the CS junior class for academic year 23-24, 35 advisees. Advisor to the CS senior class for academic year 24-25, 34 advisees.

New faculty onboarding, Fall 2023,
Weekly meetings with Lauren Biernacki to ease her transition into our introductory programming courses.

Department TA coordinator, Fall 2019 to Fall 2023,
Oversaw recruitment of TAs and MSGs for the CS Department. Coordinated with the Academic Resource Hub for MSG hiring and managing any departmental issues. Intervened with training as needed for TAs.

Honors Thesis committee member,
Served as a member of Honors Thesis committees:
22-23 Math (1) and CS (1),
21-22 Math (2),
19-20 Math (1) and Mechanical Engineering (1),
18-19 CS (1) and Math (2),
17-18 Economics (1).

EXCEL scholar advisor,
Fall 2020, Summer 2020, Fall 2018, Summer 2018.

PUBLICATIONS

Steiner problems in optimal transport, Transactions of the American Mathematical Society **363** (2011), no. 4, 1805-1819.
Alexandrov curvature of convex hypersurfaces in Hilbert space, preprint, arXiv:0912.1825.
A maximum principle for pointwise energies of quadratic Wasserstein minimal networks, preprint, arXiv:1011.0236.

AWARDS

William Kelso Morrill Award for Excellence in the Teaching of Mathematics, 2009.
Spring Research Support, 2009.
Summer Research Support, 2007.
Abramowitz Award, 2004.
Strauss Scholarship, 2003.

TALKS	Symposium on AI Literacy Across the Curriculum, Lafayette College, Fall 2024.
	Brown Bag: Finding Our Way in a "Post-Truth" Era Panel, Lafayette College, Spring 2018.
	MAA Session on The Advancement of Open Educational Resources, Joint Mathematics Meeting, Winter 2017.
	AMS Contributed Paper Session on Convex and Discrete Geometry, Joint Mathematics Meeting, Winter 2017.
	SAT Seminar, Lafayette College, Spring 2016.
	Geometry & Analysis Seminar, University of California, Santa Cruz, Spring 2015.
	SAT Seminar, Lafayette College, Spring 2015.
	MAAD Talk, Lafayette College, Fall 2014.
	SAT Seminar, Lafayette College, Fall 2013.
	Analysis Seminar, ETH Zurich, Fall 2012.
	Geometry Seminar, Stanford University, Spring 2012.
	Combined Applied Math & PDEs Seminar, University of California, Davis, Spring 2012.
	Differential Geometry Seminar, University of California, Berkeley, Spring 2011.
	CNA Summer School: New Vistas in Image Processing and PDEs, Carnegie Mellon University, Summer 2010.
	Graduate student and Post-doc workshop on Mean curvature flows and related topics, Johns Hopkins University, Spring 2010.
	Analysis Seminar, Johns Hopkins University, Fall 2008.
CONFERENCES ATTENDED	The 36th International Symposium on Theoretical Aspects of Computer Science, Berlin, Germany, March 13–16, 2019.
	KEEN National Conference, Dallas, TX, January 3–5, 2019.
	Joint Mathematics Meetings, San Diego, CA, January 8–13, 2018.
	Joint Mathematics Meetings, Atlanta, GA, January 4–7, 2017.
	Joint Mathematics Meetings, Seattle, WA, January 6–9, 2016.
	Metro Area Differential Geometry Seminar, Washington, DC, October 24, 2015.
	Joint Mathematics Meetings, San Antonio, MD, January 10–13, 2015.
	Joint Mathematics Meetings, Baltimore, MD, January 13–18, 2014.
	Infinite-Dimensional Geometry Workshop, MSRI, December 7–8, 2013.
	Southeast Geomtery Seminar, Emory University, November 10, 2013.
	Joint Mathematics Meetings, San Diego, CA, January 9–12, 2013.
	Joint Mathematics Meetings, San Francisco, CA, January 13–16, 2010.
	Joint Mathematics Meetings, Washington, DC, January 5–8, 2009.
	Texas Geometry and Topology Conference, University of Texas at Austin, October 10–12, 2008.
	Geometry Festival, Duke University, April 25–27, 2008.
PROFESSIONAL DEVELOPMENT	AMS Short Course, Discrete Differential Geometry, January 2018.
	AMS Short Course, Random Growth Models, January 2017.
	MAA Minicourse, Algebraic Geometry: A Problem Based Course, January 2016.
	MAA Minicourse, Humanistic Mathematics, January 2015.
	MAA Minicourse, Doing the Scholarship of Teaching and Learning in Mathematics, January 2015.
	AMS Short Course, Geometry and Topology in Statistical Inference, January 2014.
	Undergraduate Faculty Program on Geometric Analysis and Undergraduate Research, Park City Mathematics Institute, July 2013.
	MAA Minicourse, Problem-based courses for teachers, future teachers, and math majors, January 2013.

MAA Minicourse, Teaching introductory statistics (for instructors new to teaching intro stats), January 2013.