Elaine Cozzi

Curriculum Vitae · February 2021

Department of Mathematics, Oregon State University
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Research Interests.

- Mathematical Fluid Mechanics.
- Partial Differential Equations.
- Harmonic Analysis.

Employment.

- Associate Professor, Oregon State University. September 2018 - present
- Assistant Professor, Oregon State University. September 2011 - September 2018
- Visiting Assistant Professor, Drexel University. July 2010-June 2011
- RTG Postdoctoral Fellow, Center For Nonlinear Analysis, Carnegie Mellon University. August 2007-May 2010

Education.

- University of Texas at Austin, Ph.D. in Mathematics. 2001-2007
- University of Virginia, B.A. in Mathematics and Economics. 1996-2000

Grants Awarded.

- *Behavior of Solutions to Equations of Fluid Motion.* Simons Foundation Collaboration Grant (Principal Investigator). 2016-2021
- *Applications of Harmonic Analysis to the Study of Incompressible Flow.* NSF Research Grant (Principal Investigator). 2010-2014
- *Applications of Harmonic Analysis to Incompressible Flow.* Oregon State University FRT Grant. Spring 2012
- *Solutions to Fluid Equations with Unbounded Initial Data.* Oregon State University FRT Grant. Spring 2015

Other Awards/Fellowships.

- Graduate Student Faculty Award. Oregon State University. 2015, 2019
- Frank Gerth III Dissertation Award. UT Austin. 2007
- Frank Gerth III Teaching Excellence Award. UT Austin. 2004
- R.H. Bing Fellowship. UT Austin. Spring 2004
- Departmental Fellowship. UT Austin. Summer 2002

Papers.

- Well-posedness of the 2D Euler equations when velocity grows at infinity, with James P. Kelliher, *Discrete and Continuous Dynamical Systems, Series A*, 39(5): 2361-2392, 2019.
- The aggregation equation with Newtonian potential, with Gung-Min Gie and James P. Kelliher, *Journal of Mathematical Analysis and Applications*, 453(2): 841-893, 2017.

- Incompressible Euler equations and the effect of changes at a distance, with James P. Kelliher, *Journal of Mathematical Fluid Mechanics*, 18(4): 765-781, 2016.
- Solutions to the 2D Euler equations with velocity unbounded at infinity, *Journal of Mathematical Analysis and Applications*, 423(1): 144-161, 2015.
- The axisymmetric Euler equations with vorticity in borderline spaces of Besov type, *Journal of Dynamics and Differential Equations*, 26(4): 1095-1114, 2014.
- Vanishing viscosity in the plane for nondecaying velocity and vorticity II, *Pacific Journal of Mathematics*, 270(2): 335-350, 2014.
- On optimal estimates for the Laplace-Leray commutator in planar domains with corners, with Robert Pego, *Proceedings of the American Mathematical Society*, 139: 1691-1706, 2011.
- A finite time result for vanishing viscosity in the plane with nondecaying vorticity, *Communications in Mathematical Sciences*, 8(4): 851-862, 2010.
- Vanishing viscosity in the plane for nondecaying velocity and vorticity, *SIAM Journal on Mathematical Analysis*, 41(2): 495-510, 2009.
- An initial value problem for two-dimensional ideal incompressible fluids with continuous vorticity, *Mathematical Research Letters*, 14(4): 573-588, 2007.
- Vanishing viscosity in the plane with vorticity in borderline spaces of Besov type, with James P. Kelliher, *Journal of Differential Equations*, 235(2): 647-657, 2007.
- Incompressible fluids with vorticity in Besov spaces, Ph.D. Dissertation, The University of Texas at Austin, 2007.

Teaching Experience.

- Instructor, Partial Differential Equations. Fall 2018, Winter 2019, Spring 2019
- Instructor, Topics in Analysis - Mathematical Fluid Mechanics. Spring 2018
- Instructor, Complex Analysis. Spring 2017
- Instructor, Systems of Ordinary Differential Equations. Winter 2017, Fall 2020
- Instructor, Functional Analysis. Fall 2016
- Instructor, Elements of Discrete Mathematics. Spring 2016
- Instructor, Vector Calculus II. Winter 2015
- Instructor, Discrete Mathematics. Fall 2014, Spring 2015, Spring 2016, Fall 2017
- Instructor, Real Analysis III. Spring 2014
- Instructor, Real Analysis II. Winter 2014
- Instructor, Real Analysis I. Fall 2013
- Instructor, Linear Algebra I. Fall, 2013, Winter 2013, Fall 2015
- Instructor, Advanced Calculus II. Winter 2013, Winter 2017, Winter 2018
- Instructor, Advanced Calculus I. Fall 2012, Winter 2014, Fall 2016, Winter 2018
- Instructor, Vector Calculus I. Winter 2012, Fall 2015
- Instructor, Partial Differential Equations. Fall 2011
- Instructor, Introduction to Linear Algebra. Spring 2011
- Instructor, Introduction to Mathematical Fluid Dynamics. Spring 2010
- Instructor, Introduction to Lebesgue Integration. Fall 2009
- Instructor, Principles of Mathematical Analysis II. Spring 2009
- Instructor, Principles of Mathematical Analysis I. Fall 2008
- Instructor, Calculus I. Fall 2007, Spring 2008, Winter 2011
- Instructor, Introduction to Real Analysis. Summer 2007
- Instructor, Foundations of Arithmetic for Elementary Education Majors. Spring 2006, Fall 2006, Spring 2007
- Instructor, Precalculus. Fall 2005, Summer 2006, Fall 2010
- Teaching Assistant, Calculus. Fall 2001, Spring 2002, Fall 2004

- Teaching Assistant, Discrete Math-Dean's Scholars. Spring 2004
- Teaching Assistant, Conference Course-Plan II. Spring 2003
- Supplemental Instruction Participant. Spring 2002

Invited Talks.

- SIAM Conference on Analysis of Partial Differential Equations, La Quinta, California. Fall 2019
- Partial Differential Equations Seminar, University of California, Riverside. Fall 2019
- Geometry and Analysis Seminar, University of Colorado, Boulder. Spring 2019
- Partial Differential Equations and Applied Math Seminar, Drexel University. Fall 2018
- AMS Special Session on Recent Advances in Mathematical Fluid Mechanics, University of Arkansas, Fayetteville. Fall 2018
- SIAM Conference on Analysis of Partial Differential Equations, Baltimore, Maryland. Fall 2017
- AMS Special Session on Mathematical Fluid Mechanics, University of California at Riverside. Fall 2017
- MCA Special Session on Equations of Fluid Mechanics: Analysis, McGill University. Summer 2017
- Workshop on the Essence of $u \cdot \nabla u$: Reflections on Mathematical Fluid Dynamics, University of Virginia. Spring 2017
- Partial Differential Equations Seminar, Vanderbilt University. Fall 2016
- SIAM Annual Meeting, Boston, Massachusetts. Summer 2016
- Applied Partial Differential Equations Online Seminar, University of Washington. Spring 2016
- SIAM Conference on Analysis of Partial Differential Equations, Scottsdale, Arizona. Fall 2015
- Analysis Seminar, Portland State University. Spring 2015
- Center for Nonlinear Analysis Seminar, Carnegie Mellon University. Fall 2014
- Analysis Seminar, University of Oregon. Spring 2014
- SIAM Conference on Analysis of Partial Differential Equations, Lake Buena Vista, Florida. Fall 2013
- AWM Research Symposium, Santa Clara University. Spring 2013
- Colloquium, Oregon State University. Spring 2011
- Colloquium, The College of Charleston. Spring 2011
- Colloquium, The University of Kansas. Spring 2011
- Colloquium, Swarthmore College. Spring 2011
- Colloquium, Bryn Mawr College. Spring 2011
- Partial Differential Equations Seminar, Pennsylvania State University. Fall 2010
- AMS Special Session on Fluid Mechanics, University of California at Riverside. Fall 2009
- Partial Differential Equations Seminar, University of Maryland at College Park. Spring 2009
- AMS Special Session on Nonlinear Partial Differential Equations and Applications, University of Illinois at Urbana-Champaign. Spring 2009
- AMS Special Session on Nonlinear Evolution Equations of Mathematical Physics, Louisiana State University. Spring 2008
- Partial Differential Equations Seminar, Brown University. Fall 2007

- AMS Special Session on the Euler and Navier-Stokes Equations, Depaul University. Fall 2007
- Mathematics and its Applications Seminar, University of Illinois at Chicago. Spring 2007

Mentoring/Degree Committees.

- Undergraduate Research Mentor for: John Baldwin (Physics Senior Capstone Project (2016-2017)), Jeremy Lilly (Honors College Thesis (2018-2019))
- M.S. Advisor for: Andrew Farrar (2014), Zackery Reed (2015), Sayantika Nag (2016), Daniel Erickson (2018), Jeremy Lilly (2021 (expected)), Hannah Barta (2021 (expected)), David Guillory (2021 (expected)), Sahir Gill (2022 (expected))
- Ph.D. Advisor for: Daniel Erickson (2022 (expected)), Hannah Barta (2024 (expected)), Sahir Gill (2025 (expected))
- Current or past member of Doctoral Committee for: Hussain Al-Hammali, Azhar Alhammali, Diba Behnoudfar, Dionysus Birnbaum, Sarah Hagen, Eleanor Holland, Alireza Hosseinkhan, Hisham Jashami, Darren Marotta, Arpita Mukherjee, Zackery Reed, Firas Siala, Naren Vohra, Ayse Yiltekin, Jhih-Jyun Zeng.
- Current or past member of M.S. degree committees for: Cole Anderson, Nick Cappello, Atul Dhage, Patrick Donaghue, Sarah Hagen, Alireza Hosseinkhan, Moayad Odeh, Jesse Rushen, Alper Dumanli.
- Mathematics minor advisor for: Arpita Mukherjee.
- Member of Honors College Thesis Committee for: Isaac Stallcup (Spring 2018), Michael Aimonetto (Spring 2019), Sara Tro (Spring 2019)

Professional Activities/Service.

Department Service (OSU Mathematics).

- Strategic Planning-Steering Committee. Fall 2018-Spring 2019
- Chair, Curriculum and Programs Working Group for Strategic Planning. Winter 2019-Spring 2019
- Chair, Undergraduate Curriculum Committee. Fall 2018-Spring 2019
- Chair, Assessment Committee. Fall 2018-Spring 2019
- Head Search Committee. 2015, 2018
- Qualifying Exam Committee. Fall 2017-Fall 2018, Winter 2021-present
- Advisory Committee. Fall 2016 - Spring 2019
- Undergraduate Curriculum Task Force. Fall 2013
- Hiring Task Force. Fall 2013 - Spring 2014
- Undergraduate Committee. Fall 2013 - Spring 2019
- Co-Organizer, Undergraduate Seminar. Fall 2013 - Spring 2015
- Organizer, Analysis Seminar. Winter, Spring 2013-2016
- Graduate Advisor. Fall 2012-Spring 2013
- Faculty Advisor, Association for Women in Mathematics, OSU Chapter. Fall 2011-Spring 2015
- Faculty Advisor, Society for Industrial and Applied Mathematics, OSU Chapter. Fall 2011-Spring 2015
- Undergraduate Advisor. Fall 2015-Spring 2017, Fall 2020 - present

University Service (OSU).

- Faculty Senate. Spring 2017-Fall 2018

Service to the Profession.

- Associate Editor, *American Mathematical Monthly*. Winter 2021-present

- Co-organizer, (Virtual) Special Session on Recent Advances in the Theory of Fluid Dynamics, Western Sectional Meeting of the AMS. Fall 2020
- Co-organizer, SIAM Pacific Northwest Regional Conference, Corvallis, OR. Fall 2017
- Co-organizer, Thematic Session on Applied Analysis and Fluids, SIAM Pacific Northwest Regional Conference, Corvallis, OR. Fall 2017
- Co-organizer, Special Session on Equations of Fluid Motion. Joint Mathematics Meetings of the AMS. Spring 2016
- Reviewer for Simons Foundation Collaboration Grants for Mathematicians Program.
- Referee for *Journal of Mathematical Analysis and Applications*, *Advances in Difference Equations*, *SIAM Journal on Mathematical Analysis*, *Electronic Journal of Differential Equations*, *Nonlinearity*, *Physica D*.
- NSF Applied Analysis Panel Member.
- Co-organizer, Special Session on Nonlinear Partial Differential Equations of Fluid and Gas Dynamics. Western Sectional Meeting of the AMS. Spring 2012
- Co-organizer, Working Group on Recent Advances in Analysis and Approximation of Fluids, Center for Nonlinear Analysis. Carnegie Mellon University. Fall 2009

Other Professional Activities.

- Participant (invitation only), Workshop on Recent Advances in Hydrodynamics, Banff International Research Station. Summer 2016
- Co-organizer, Junior PDE Seminar, UT Austin. 2004-2006