Rui Wang

Department of Mathematics, University of California, Berkeley
ruiwang@berkeley.edu | math.berkeley.edu/~ruiwang/

Academic Appointments

University of California, Berkeley
Continuing Lecturer, Mathematics — July 2025–present
Lecturer, Mathematics — January 2019–June 2025
University of San Francisco
Adjunct Professor, Mathematics and Statistics — August–December 2018
University of California, Irvine
Visiting Assistant Professor, Mathematics — September 2015–July 2018
IBS Center for Geometry and Physics, South Korea
Research Fellow — June 2013–August 2015

Education

Ph.D., Mathematics, University of Wisconsin–Madison — May 2013
B.A., Mathematics, Peking University — July 2006

Teaching Experience

University of California, Berkeley (2019–present)

Upper-division courses: Introduction to Analysis (104); Abstract Linear Algebra (110); Introduction to Abstract Algebra (113); Introduction to Partial Differential Equations (126); Metric Differential Geometry (140); Introduction to Complex Analysis (185).
Lower-division courses: Precalculus (3); Analytic Geometry and Calculus (16B); Multivariable Calculus (53, W53); Linear Algebra and Differential Equations (54).
Large-enrollment and online instruction
Coordinated teams of 2–6 GSIs, including teaching assignments and exam grading.

Course and format	Approx. enrollment	GSIs
Math 3: Precalculus, in person	100–180	2
Math 16B: Calculus, in person	400	4–6
Math 53: Multivariable Calculus, in person	300	5
Math W53: Multivariable Calculus, online	300	6

GSI = Graduate Student Instructor.

University of San Francisco (Fall 2018)

Introduction to Statistics (106).

University of California, Irvine (2015–2018)

Theory of Ordinary Differential Equations (118); Abstract Algebra: Group Theory (120A) and Ring and Field Theory (120B); Modern Geometry (161); Multivariable Calculus I and II (2D, 2E); Introduction to Linear Algebra (3A).
Developed Modern Geometry (161) using surfaces to connect three types of metric geometry.

University of Wisconsin–Madison (Teaching Assistant)

Calculus for Business Students (211); Single Variable Calculus I and II (221, 222); Multivariable Calculus (234); Linear Algebra (340).

Educational Grants

Berkeley Collegium Grant, UC Berkeley 2026–2028

Principal Investigator; $18,000.

Bridging Upper-Division Coursework and Undergraduate Research in Pure Mathematics Through Complex Analysis.

Organizing an undergraduate seminar in Fall 2026 to support independent reading and research. Developing an undergraduate research course proposal for curricular review at UC Berkeley.

Undergraduate Research and Mentoring

Research Mentor, Marco Troper REU, UC Berkeley Summer 2026

Mentored Austin Lin and Adrian Fry on complex analysis, Diophantine approximation, and interpolation in the unit disk.

Student manuscript: A. Lin and A. Fry, *An interpolating sequence in the disk*. In preparation.

Independent Study and Research, Math 199, UC Berkeley

Supervised undergraduate reading and research on Riemann surfaces, representation theory, Morse theory, characteristic classes, and related topics.

Textbook and Instructional Materials

Introduction to Complex Analysis: Classical Foundations and Modern Perspectives

(working title). Sole-authored textbook manuscript; peer reviewed and under consideration for publication.

Original Lecture Notes

Authored lecture notes in analysis, linear algebra, abstract algebra, and complex analysis, with proofs, examples, and exercises. Public materials include the Math 104 analysis notes and Math 185 complex analysis notes.

Honors and Recognition

Continuing Appointment and Merit Advancement, UC Berkeley 2025

Appointed Continuing Lecturer following a six-year excellence review and received a merit increase one step above the standard advancement.

Honored Instructor, University of Wisconsin–Madison 2011

International Teaching Assistant Training Program.

Outstanding Undergraduate Thesis Award, Peking University 2006

Presidential Undergraduate Research Scholarship, Peking University 2004

Research

Symplectic and contact topology; mathematical physics. Research topics include Gromov–Witten theory, symplectic field theory, gauge theory, Floer theory, and orbifold theory.

Publications and Manuscripts

1. R. Wang. Nonabelian ungauging by augmented symplectic vortices. Manuscript in preparation, 2026.
2. B. Chen, C. Du, and R. Wang. Double ramification cycles with orbifold targets. *Acta Mathematica Sinica, English Series* **38** (2022), 1333–1376.
3. B. Chen, B.-L. Wang, and R. Wang. The asymptotic behavior of finite energy symplectic vortices with admissible metrics. *Scientia Sinica Mathematica* **51**(2) (2021), 365–392. In Chinese.
4. B. Chen, C. Du, and R. Wang. Orbifold Gromov–Witten theory of weighted blowups. *Science China Mathematics* **63** (2020), 2475–2522.
5. B. Chen, C. Du, and R. Wang. The groupoid structure of groupoid morphisms. *Journal of Geometry and Physics* **145** (2019), Article 103486.
6. Y.-G. Oh and R. Wang. Analysis of contact Cauchy–Riemann maps I: A priori C^k estimates and asymptotic convergence. *Osaka Journal of Mathematics* **55**(4) (2018), 647–679.
7. Y.-G. Oh and R. Wang. Analysis of contact Cauchy–Riemann maps II: Canonical neighborhoods and exponential convergence for the Morse–Bott case. *Nagoya Mathematical Journal* **231** (2018), 128–223.
8. C.-Y. Du, B. Chen, and R. Wang. Symplectic neighborhood theorem for symplectic orbifold groupoids. *Acta Mathematica Sinica, Chinese Series* **61**(2) (2018), 217–232. In Chinese.
9. B. Chen, B.-L. Wang, and R. Wang. L^2-moduli spaces of symplectic vortices on Riemann surfaces with cylindrical ends. Preprint, 2015.
10. Y.-G. Oh and R. Wang. Canonical connection on contact manifolds. In *Real and Complex Submanifolds*, Springer Proceedings in Mathematics & Statistics, vol. 106, Springer Japan (2014), 43–63. Book chapter.
11. B. Liu and R. Wang. Quasi-periodic solutions for reversible oscillators at resonance. Preprint, 2006.

Selected Talks and Seminar Presentations

2024 *Compactification of Seiberg–Witten Moduli Spaces.* Seiberg–Witten Learning Seminar, UC Berkeley.

2024 *My Journey of Mathematics after IBS-CGP.* IBS-CGP Reunion Workshop on Geometry and Physics, Pohang, South Korea, October 21–24.

2020 *From Classic Mechanics to Symplectic Geometry.* Mathematics Colloquium, California State University, Long Beach, October 23.

2019 *Hamiltonian Gromov–Witten Theory.* Conference on Fukaya Category and Homological Mirror Symmetry, Peking University, August 15–20.

2015 *Orbifold groupoids and orbifold Gromov–Witten theory* (three lectures). IBS-CGP Postdoc Lecture Series, April 20, 21, and 24.

2014 Symplectic and Contact Topology Seminar, MIT, April 7; Symplectic Topology Seminar, Rutgers University, March 31.

Leadership and Service

Teaching and University Service, UC Berkeley

- Faculty Panelist, MPS Launch Day, Fall 2025.
- Provided new instructors with support on syllabus and assignment design, course materials, and departmental teaching procedures.
- Participated in discussions on student preparation during the Fall 2023 launch of Math 1, Foundations of Lower-Division Mathematics, drawing on experience teaching Math 3.
- Conducted classroom observations for colleagues' academic job applications.
- Worked with the Student Learning Center and Disabled Students Program on student support and accommodations.

Teaching Assistant Training, University of Wisconsin–Madison

International Teaching Assistant Training Program 2011

Organized a six-week program preparing international teaching assistants for teaching and classroom management.

Professional Reviewing

- Research-paper referee, *International Journal of Mathematics*.
- Mathematics textbook reviewer, World Scientific Publishing.
- Preliminary research-paper assessment (quick opinion), *New York Journal of Mathematics*.

Conference Organization

Co-organizer, University of Wisconsin–Madison:

- *Mirror Symmetry in the Midwest II*, November 8–11, 2012.
- *Great Lakes Geometry Conference*, April 10–11, 2010.
- *Graduate Student Topology and Geometry Conference*, April 18–19, 2009.

Mathematical Outreach

Director and Instructor, Ray of Math Thinking 2020–2026

Developed and taught approximately 100 lectures across five mathematics series for elementary and middle school students, covering prealgebra, algebra, geometry, and number theory.

Math Circle Instructor: Bay Area Math Circle, November 2018, *On the Three Reflections Theorem in Euclidean Geometry*; UC Irvine Math Circle, February 2018, *Euler Numbers*.

MATHCOUNTS Volunteer: UC Irvine, April 2017.