Jun Li

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Research Interest: *symplectic topology, complex geometry, and their interaction.*

Education

June 30, 2017 **Ph.D. in Mathematics**, *University of Minnesota-Twin Cities*, Minneapolis.
Advisor: Tian-Jun Li

2007– 2011 **B.S. in Mathematics**, *Shandong University*, Jinan, China.

Employment

2017–now **Post-Doctoral Assistant Professor**, *University of Michigan*, Ann Arbor.
Mentor: Yongbin Ruan

Publication and Preprints

1 **Topological limit and stability of $Symp$ for one point blowups of ruled surfaces**.
With Olguta Buse, preprint (2019, 20 pages)

2 **Stability of the symplectomorphism group of rational surfaces**.
With Sílvia Anjos, Tian-Jun Li, and Martin Pinsonnault, (2019, 9 pages), submitted

3 **Topology of symplectomorphism groups and ball-swappings**.
With Weiwei Wu, (2019, 20 pages) to appear in ICCM Proceeding 2019

4 **Symplectic (-2)-spheres and symplectomorphism group of small rational 4-manifolds II**.
With Tian-Jun Li and Weiwei Wu (2019, 44 pages), submitted.

5 **Symplectic (-2)-spheres and symplectomorphism group of small rational 4-manifolds I**, *With Tian-Jun Li (2019, 30 pages), to appear in*, to appear in **Pacific Journal of Math.**

6 **Symplectomorphism group of rational 4-manifolds**.
Ph.D Thesis, University of Minnesota

7 **The Symplectic mapping class group of $\mathbb{C}P^2\#n\overline{\mathbb{C}P^2}$, $n \leq 4$**, *With Tian-Jun Li and Weiwei Wu*, **Michigan Math. J. 64.2 (2015), pp. 319 - 333.**

Work in progress

8 **Braid groups and symplectomorphism groups of rational surfaces**.
With Tian-Jun Li and Weiwei Wu, In preparation

9 **Chambers in symplectic cone and isotopy of non-minimal ruled surfaces**.
With Olguta Buse, In preparation

10 **Symplectic dynamics of divisor complements**.
With Tian-Jun Li and Weiwei Wu, In preparation

Grants

2019-2021 **AMS-Simons travel grant**, *$4000 for research related travels.*

Awards

2018 Postdoc Travel Award, University of Michigan

Nov. 2016 Graduate Student Travel Award, University of Minnesota

2011-2012 First-year Graduate Student Fellow, University of Minnesota

2009-2011 National Scholarship for Excellent Students, Shandong University

Invited Talks

Seminars

Nov. 2019 **Columbia University**, *Symplectic Geometry, Gauge and Categorification Seminar*.

Oct. 2019 **University of Georgia**, *Geometry Seminar*.

Mar. 2019 **Indiana-Purdue**, *Geometry/Modern Analysis Seminar*.

July 2018 **IST, Lisbon, Portugal**, *Geometria em Lisboa Seminar*.

Mar. 2018 **SUNY, Binghamton**, *Topology Seminar*.

Nov. 2017 **University of Notre Dame**, *Felix Klein Geometry Seminar*.

Oct. 2017 **University of Michigan-Ann Arbor**, *Geometry Seminar*.

Mar. 2017 **Beijing Normal University**, *Geometry Seminar*.

Nov. 2016 **University of Minnesota**, *Differential Geometry and Symplectic Topology Seminar*.

Nov. 2016 **University of Iowa**, *Joint Geometry and Topology Seminar*.

Mar. 2016 **University of Minnesota**, *Differential Geometry and Symplectic Topology Seminar*.

Dec. 2015 **Shandong University**, *Geometry/Topology Seminar*.

Colloquia and conference talks

May 2020 **Workshop on equivariant symplectic geometry**, *Fields Insitute, Toronto*.

Nov. 2019 **AMS Fall Western Sectional Meeting**.
Special Session on Symplectic Geometry and Low Dimensional Topoloty

May 2019 **36th Annual workshop on Geometric Topology**, *Milwaukee*.

Apr 2019 **Workshop on quantitative geometry and topology**, *Ohio State*, lighting talk.

May 2018 **Mini-workshop on Symplectic Symmetry and J-hol Curves**, *Minneapolis*.

Mar. 2017 **Shandong University**, *Department talk*.

Oct. 2016 **AMS Fall Central Sectional Meeting**.
Special Session on Symplectic Geometry and Contact Geometry

Sep. 2016 **Minnesota State University**, *Department Colloquium*.

Apr. 2016 **AMS Spring Central Sectional Meeting**.
Special Session on Low Dimensional and Symplectic Topology

Aug. 2013 **Conference on the Topology and Invariants of Smooth 4-Manifolds**, *UMN*.

Academic Service

Apr 2020 **Co-organizer, Computational aspect of symplectic geometry, AMS sectional meeting special section**, *With Olguta Buse and Richard Hind*, Purdue University.

May 2019 **Organizer, FRG Workshop on symplectic packing/isotopy and complex geometry**, *With Tian-Jun Li and Yongbin Ruan*, U of Michigan, Ann Arbor.

2015-2017 **Organizer, Symplectic and low dimensional topology student seminar**, *U of Minnesota*.

2010-2011 **Co-organizer,Undergraduate Math Reading Seminar**, *Shandong University*.

Invited Conference Participation

Oct. 2018 Knotted Surfaces in Dimension 4, University of Massachusetts

Sep. 2018 Yamabe Symposium, special topics on Algebraic Geometry, University of Minnesota

Oct. 2017 No Boundaries, Groups in Algebra, Geometry and Topology, University of Chicago

June 2017 Georgia International Topology Conference, University of Georgia

May 2017 Workshop on Quantitative Symplectic Geometry, Simons Center, Stony Brook

Teaching

University of Michigan, Instructor for

Fall 2019 Math 636, Topics in Differential Geometry (Graduate Course)

Fall 2019 Math 217, Linear Algebra and Intro to Proof (IBL)

Fall 2019 Math 217, Manager of Canvas webpage (300-people course)

Spring 2019 Math 433, Intro to Differential Geometry

Spring 2019 Math 217, Linear Algebra and Intro to Proof (IBL)

Fall 2018 Math 217, Linear Algebra and Intro to Proof (IBL)

Spring 2018 Math 433, Intro to Differential Geometry

Fall 2017 Math 115, Calculus I

University of Minnesota

2014-2015 Grader for Manifold and Topology (Graduate Course)

2012-2016 Recitation Instructor or TA for:

Spring 2016 Math 2263, Multi-variable Calculus

Fall 2015 Math 2263, Multi-variable Calculus

Spring 2015 Math 2373, CSE Honor Differential Equation and Linear Algebra

Fall 2014 Math 2263, Multi-variable Calculus

Spring 2014 Math 1372, CSE Honor Calculus II

Fall 2013 Math 1372, CSE Honor Calculus II

Spring 2013 Math 1271, Calculus I

Fall 2012 Math 1271, Calculus I

Mentoring and Undergraduate Research

2019 Laboratory of Geometry at Michigan, LOG(M)

Fall 2019 **LOG(M) project: Curves in surfaces and mapping class groups**.

LOG(M) is a vertically integrated research experience for undergraduates. Each project is proposed and supervised by a faculty mentor and the undergraduates are advised by the faculty mentor and a graduate student.

Faculty Mentor: Jun Li (me), Becca Winarski.

Graduate Assistant: Bradley Zykoski

Students: Anthony Morales, Zijian Rong, Wendy Wang

We explore mathematical techniques to construct certain classes of mappings that's important on surfaces, and use Python to visualize/implement these constructions. As of Nov 2019, we reached the state of art on constructing pseudo-Anosov mapping classes in sphere braid groups.

Other mentor experience

Fall 2019 Michigan Postdoc-Graduate Mixer, mentor of Daniel Irvine

2018-2019 Mentor for Math Modelling Contest, 2 teams

Supervising undergraduate students to build model and write code in Sage and Matlab to solve real world problems and write essays.

Pedagogical Training

2019 Inquiry Based Learning (IBL) Workshop,University of Michigan, Ann Arbor, MI.

A three day workshop focused on managing an IBL classroom.

2018 IBL Workshop,University of Michigan, Ann Arbor, MI.

2017 Teacher Training,University of Michigan, Ann Arbor, MI.

The training consisted of a week long orientation on implementing active-learning techniques in the classroom and continues throughout the year with weekly seminars and monthly lunches discussing various style teaching.

Educational Outreach

Sept 2018 Math Mondays in Ypsilanti high schools.

Mar. 2019 Wolverine Pathways, K-12 outreach, University of Michigan

This is a program for underserved middle and high school students in the Ypsilanti and Southfield school districts. The goal of the program is to offer a pathway to college. Students who complete the rigorous program and are accepted to UM receive a full-tuition scholarship. The math department runs math circles for the students to introduce them to fun and interesting math.

Other activities and skills

2014-2019 Experience in using Python, Sage, R, and Matlab