

Junqing Qian | CV

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Positions

Visiting Assistant Professor in Pure Mathematics

2020 -

*Department in Mathematics and Statistics
University of New Mexico, Albuquerque, NM, U.S.*

Mentors: Prof. Alexandru Buium and Prof. Hongnian Huang

Teaching Assistant

2014 - 2020

*Department in Mathematics
University of Connecticut, Storrs, CT, U.S.*

Education

Ph.D. in Mathematics

2014 - 2020

Advisor: Prof. Damin Wu

University of Connecticut, Storrs, CT, U.S.

Thesis: Modular Functions and Asymptotic Geometry on Punctured Riemann Spheres

B.S. in Mathematics

2010 - 2014

*School of Gifted Young
University of Science and Technology of China, Hefei, Anhui, China*

Research Interests

Differential geometry and its connection to number theory, complex geometry.

Papers

1. (with A. Buium) Algebraic differential equations satisfied by the Calabi-Yau metrics on punctured Riemann spheres. (paper under construction.)
2. (with H. N. Huang and A. Stump) A different approach of the C^1 -estimate for the Calabi flow on toric surfaces. (working in progress.)
3. Hyperbolic metric, punctured Riemann sphere and modular functions. **Trans. Amer. Math. Soc.** 373 (2020), no. 12, 8751-8784.
4. (with G. Cho) The Kobayashi-Royden metric on punctured spheres. **Forum Mathematicum.** 32 (2020), no. 4, 911-918.

Awards

Outstanding Faculty

University of New Mexico, Department of Mathematics and Statistics

spring 2021

– Yearly teaching awarded to three Math & Stats faculties as voted by UNM Math & Stats students.

Limited Competition Awardee for Johnson&Johnson WiSTEM²D Scholar Award Program

University of New Mexico

fall 2020

– Internal competition where each college selects only one female junior faculty member to sponsor a grant application for the J&J WiSTEM²D Scholar program.

DeLuca Graduate Teaching Award

University of Connecticut, Department of Mathematics

spring 2020

– Top departmental teaching award given to only 2 teaching assistant a year.

Commendation Letter of Excellence in Teaching

Office of the Provost, University of Connecticut

each semester, 2016 - 2020

Fellowships

Doctoral Dissertation Fellowship

University of Connecticut

spring 2020

Doctoral Travel Fellowship

University of Connecticut

fall 2019

William H. Ezell Scholarship

University of Connecticut

summer 2018

Graduate Summer Fellowship

University of Connecticut

summer 2015

Scholarship for Freshman

University of Science and Technology of China

fall 2010

Research Talks

- *JMM special session* 4/2022
The Kahler-Einstein metric on punctured Riemann sphere and an algebraic perspective on curvature
2022 JMM Special Session on "Scalar Curvature and Convergence," Seattle
- *Global Youth Forum 2022* 1/2022
Explicit Asymptotic Expansion of the Complete Kähler-Einstein Metric on Punctured Riemann Spheres
Institute of Geometry and Physics, University of Science and Technology of China (USTC)
- *AMS western sectional meeting special session* 10/2021
Explicit asymptotic expansion of the complete Kähler-Einstein metric on punctured Riemann sphere.
hosted virtually by the AMS, formerly at University of New Mexico
- *Colloquium* 9/2020
Modular functions and Asymptotic geometry on Punctured Riemann Sphere.
University of New Mexico
- *PDE and Differential Geometry Seminar* 10/2019
Hyperbolic metric on punctured Riemann surfaces.
University of Connecticut

Academic Services

- *Invited referee for Annals of Global Analysis and Geometry*
- *Co-organizer of an AMS western sectional meeting special session "Geometry and Geometric Analysis"*
virtual due to Covid. 10/2021
- *Reviewer for AMS Mathematical Reviews* 2/2021 - current
- *Co-making and co-grading of Topology & Geometry qualifying exam at UNM* 1/2021, 8/2021

Expository Talks

- *Seminar* 2/2021
Talk: An efficient geometric approach to the Iwasawa decomposition of the special linear group $SL_2(\mathbb{R})$

Union College

- *Algebra & Geometry Seminar* 9/2021
Talk: Kähler structure on toric manifold, Part III
University of New Mexico
- *Algebra & Geometry Seminar* 9/2021
Talk: Kähler structure on toric manifold, Part II
University of New Mexico
- *Algebra & Geometry Seminar* 8/2021
Talk: Kähler structure on toric manifold, Part I
University of New Mexico
- *Algebra & Geometry Seminar* 10/2020
Talk: "a gentle overview of Kähler-Einstein metric, Part II"
University of New Mexico
- *Algebra & Geometry Seminar* 10/2020
Talk: "a gentle overview of Kähler-Einstein metric, Part I"
University of New Mexico
- *Algebra & Geometry Seminar* 9/2020
Talk: "From the hypergeometric differential equation to conformal maps of curvilinear polygons"
University of New Mexico
- *S.I.G.M.A seminar* 10/2019
Talk: "conformal mapping, Schwarzian derivative and accessory parameters"
University of Connecticut
- *S.I.G.M.A seminar* 4/2018
Talk: "Poincaré hyperbolic models, punctured Riemann sphere and modular functions"
University of Connecticut

Conferences

- *Current Developments in Mathematics 2019* 11/2019
Harvard University *attended with financial support*
- *Conference on Differential Geometry* 11/2019
a conference in celebration of the 40 years JDG Editorship and the 70th Birthday of S. T. Yau
Lehigh University *attended*
- *Northeast Analysis Meeting* 10/2019
Contributed talk: "hyperbolic metric, punctured sphere and modular functions"
Syracuse University
- *Northeast Analysis Network* *attended, 9/2019*
University of Connecticut
- *Current Developments in Mathematics 2018* 11/2018
Harvard University *attended with financial support*
- *Summer School in Minimal Surfaces, Flows, and Relativity* 7/2018
University of Connecticut *attended*

Teaching Experience

Past: at University of New Mexico:

MATH 401/501: Advanced Calculus I	<i>undergrad./grad. spring 2020</i>
MATH 319: Theory of Numbers	<i>spring 2020</i>
MATH 1512: Calculus I	<i>fall 2020</i>
MATH 327: Discrete Structures	<i>fall 2020</i>
Past: at University of Connecticut:	
Elementary Differential Equations (primary instructor)	<i>2 sections, supervised 4 honors students, fall 2019</i>
Elementary Differential Equations (primary instructor)	<i>2 sections, spring 2019</i>
Multi-Variable Calculus (primary instructor)	<i>summer 2017</i>
Calculus II (online TA)	<i>spring 2020</i>
Multi-Variable Calculus (TA)	<i>3 sections, spring/fall 2017, spring/fall 2018</i>
Multi-Variable Calculus (TA)	<i>online, summer 2018</i>
Calculus II (TA)	<i>3 sections, fall 2016</i>
Calculus I (TA)	<i>3 sections, fall 2015, spring 2016</i>
Calculus I (TA)	<i>1 section, spring 2015</i>