

## Lam, Wai Yeung

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### CONTACT INFORMATION

Mathematics Department  
Brown University  
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### RESEARCH INTERESTS

My research is centered on structure-preserving discretization of Differential Geometry. I am also interested in the interplay of integrable systems, statistical mechanics and computational geometry. Recently I have been working on discrete holomorphic quadratic differentials with the aim of unifying the discrete theory.

### EDUCATION

**Technische Universität Berlin**, Germany  
*Ph.D., Mathematics* Jun 2016  
– Thesis: Infinitesimal deformations of discrete surfaces  
– Advisor: Prof. Dr. Ulrich Pinkall  
*M.Sc., Mathematics* Dec 2013  
– Thesis: Infinitesimal conformal deformations of triangulated surfaces  
– Advisor: Prof. Dr. Ulrich Pinkall  
**The Chinese University of Hong Kong (CUHK)**, Hong Kong  
*B.Sc., Mathematics (First-class Honors)* Aug 2011

### EMPLOYMENT

**Tamarkin Assistant Professor**, Brown University Jul 2016- Jun 2019  
**Research Assistant**, Technische Universität Berlin 2014-2016

### AWARDS

**Berlin Mathematical School Fellowship** 2011-2014  
**Croucher Scholarship**, Croucher Foundation & German Academic Exchange Service (DAAD) 2011-2014  
**Bronze Medal**, 38th International Physics Olympiad in Iran 2007

### PREPRINTS

- [1] W. Y. Lam. Minimal surfaces from infinitesimal deformations of circle packings (2018). arXiv: 1712.08564.
- [2] R. Kenyon and W. Y. Lam. Holomorphic quadratic differentials on graphs and the chromatic polynomial (2018). arXiv: 1803.00115.
- [3] R. Kenyon, W. Y. Lam, S. Ramassamy, and M. Russkikh. Dimers and circle patterns (2018). arXiv: 1810.05616.

### PUBLICATIONS

- [1] W. Y. Lam and U. Pinkall. Infinitesimal conformal deformations of triangulated surfaces in space. *Discrete Comput. Geom.* (2018). DOI: 10.1007/s00454-018-0008-y.
- [2] W. Y. Lam and M. Yasumoto. Trivalent maximal surfaces in Minkowski space. In: *Lorentzian Geometry and Related Topics*. Ed. by M. A. Cañadas-Pinedo, J. L. Flores, and F. J. Palomo. Springer Proceedings in Mathematics & Statistics. Springer International Publishing, 2017, pp. 169–184.
- [3] W. Y. Lam. Discrete Minimal Surfaces: Critical Points of the Area Functional from Integrable Systems. *Int. Math. Res. Not. IMRN* 6 (2018), pp. 1808–1845.
- [4] W. Y. Lam and U. Pinkall. Holomorphic vector fields and quadratic differentials on planar triangular meshes. In: *Advances in Discrete Differential Geometry*. Ed. by A. I. Bobenko. Springer Berlin Heidelberg, 2016, pp. 241–265.
- [5] W. Y. Lam and U. Pinkall. Isothermic triangulated surfaces. *Mathematische Annalen* 368.1-2 (2017), pp. 165–195.

**NON-REFEREED  
PUBLICATIONS**

- [1] W. Y. Lam. From isothermic triangulated surfaces to discrete holomorphicity. In: *Oberwolfach Report No. 13/2015*.

**SEMINAR  
TALKS**

- University of Illinois at Chicago Chicago, IL, Dec 2018
- Princeton University Princeton, NJ, Dec 2018
- University of California, Davis Davis, CA, May 2018
- Pennsylvania State University University Park, PA, Feb 2018
- Fudan University Shanghai, China, Jan 2018
- University of Massachusetts Amherst Amherst, MA, May 2017
- Stony Brook University Stony Brook, NY, April 2017
- Rutgers University Piscataway, NJ, Feb 2017
- ICERM Semester Program ‘Topology in Motion’ Providence, RI, Nov 2016
- Technische Universität Wien Vienna, Austria, Aug 2016
- Max-Planck-Institute for Mathematics in the Sciences Leipzig, Germany, Jan 2016
- Kobe University Kobe, Japan, Jan 2016

**CONFERENCE  
TALKS**

- Invited lecture in Summer School ‘Generalized Curvature’ Switzerland, Sep 2018  
Ecole Polytechnique Federale de Lausanne (EPFL)
- Workshop ‘Geometry of Submanifolds and Integrable Systems’ Osaka, Japan, Mar 2018  
Osaka City University
- Workshop ‘Discrete and Computational geometry’ Beijing, China, Jul 2017  
Capital Normal University
- Workshop ‘Differential Geometric Aspects of Integrable Systems’ Kobe, Japan, Jul 2017  
Kobe University
- The Tenth IMACS International Conference Athens, GA, Mar 2017  
‘Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory’
- AMS Spring Southeastern Sectional Meeting Charleston, SC, Mar 2017  
Special Session on Rigidity Theory and Inversive Distance Circle Packings
- Contributed talk at the 7th European Congress of Mathematics Berlin, Germany, Jul 2016
- Workshop on Geometric Rigidity, Lancaster University United Kingdom, Jun 2016
- Geometric rigidity theory and applications Edinburgh, United Kingdom, Jun 2016  
International Centre for Mathematical Sciences (ICMS)
- Conference: Discretization in Geometry and Dynamics Munich, Germany, Oct 2015
- Workshop ‘Advances in Combinatorial and Geometric Rigidity’ Banff, Canada, Jul 2015  
Banff International Research Station
- Workshop ‘Discrete Differential Geometry’ Oberwolfach, Germany, Mar 2015  
Mathematisches Forschungsinstitut Oberwolfach
- Workshop ‘Discretization in Geometry and Dynamics’ Berlin, Germany, Sep 2014  
Technische Universität Berlin

**CONFERENCE  
PARTICIPATION**

- Workshop ‘Geometry of Teichmüller Space’, Fields Institute Toronto, Canada, Aug 2018
- Integrable Probability, MIT Cambridge, MA, May 2018
- Semester programs ‘Point Configurations’, Providence, RI, 2018  
Institute for Computational and Experimental Research in Mathematics (ICERM)

**SERVICE**

- Graduate admissions committee, Brown University Jan 2019
- Co-organizer of a special session at AMS sectional meeting Boston, Apr 2018  
‘Discretization in Geometry and Dynamics’
- Organizer of Geometry lunch seminars, Brown University Spring 2017
- Referee for *Geometriae Dedicata*, *IMRN* and others

**TEACHING**

- ‘Differential geometry’, ‘Multivariable Calculus’, Brown University Fall 2018
- ‘Linear Algebra’, ‘Fundamental Problems of Geometry’, Brown University Spring 2018
- ‘Structure-preserving discretizations in differential geometry’ Beijing, Jul-Aug 2017  
Capital Normal University
- Course head of ‘Multivariable Calculus’ Fall 2016, Spring & Fall 2017  
Brown University
- Teaching assistant of ‘Differential geometry’ Berlin, Summer 2016  
Technische Universität Berlin

**REFERENCES**

**Prof. Thomas Banchoff** (Teaching)  
Department of Mathematics, Brown University, United States  
banchoff@math.brown.edu

**Prof. Richard Kenyon**  
Department of Mathematics, Brown University, United States  
rkenyon@math.brown.edu

**Prof. Feng Luo**  
Department of Mathematics, Rutgers University, United States  
fluo@math.rutgers.edu

**Prof. Ulrich Pinkall**  
Institut für Mathematik, Technische Universität Berlin, Germany  
pinkall@math.tu-berlin.de