

# Russell Lodge

Institute for Mathematical Sciences  
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## EMPLOYMENT

*Milnor lecturer*, Institute for Mathematical Sciences, Stony Brook University 2016-2018  
*Postdoctoral fellow*, Jacobs University, Bremen, Germany 2012-2016

## EDUCATION

*PhD Mathematics*, Indiana University Bloomington (adviser: Kevin Pilgrim) 2005-2012  
*BS Mathematics*, Grove City College, computer science minor 2001-2005

## RESEARCH INTERESTS

Holomorphic dynamics (especially combinatorial aspects), Teichmüller space, self-similar groups

## PUBLICATIONS

- *Invisible tricorns in real slices of rational maps*  
with S. Mukherjee, *Preprint*, [arXiv:1710.05071](https://arxiv.org/abs/1710.05071)
- *Quadratic Thurston maps with few postcritical points*  
with G. Kelsey, *Submitted*, [arXiv:1704.03929](https://arxiv.org/abs/1704.03929)
- *Origami, affine maps, and complex dynamics*  
with W. Floyd, G. Kelsey, S. Koch, W. Parry, K. Pilgrim, and E. A. Saenz,  
*Arnold Mathematical Journal*, 3(3) (2017), 365-395.
- *A classification of postcritically finite Newton maps*  
with Y. Mikulich and D. Schleicher, *Submitted*, [arXiv:1510.02771](https://arxiv.org/abs/1510.02771)
- *Combinatorial properties of Newton maps*  
with Y. Mikulich and D. Schleicher, *Submitted*, [arXiv:1510.02761](https://arxiv.org/abs/1510.02761)
- *Boundary values of the Thurston pullback map*  
*Conform. Geom. Dyn.*, 17 (2013), 77-118.

## EXTERNAL PRESENTATIONS

Braids and rational maps, Harvard University, August 2017  
Special session on discrete structures in conformal dynamics and geometry, AMS sectional meeting, Indiana University, Bloomington, April 2017  
Geometry and dynamics seminar, Harvard University, March 2017  
Fractals in geometry and dynamics, CUNY Graduate Center, Jan 2017  
Dynamics seminar, University of Rhode Island, Nov 2016  
Capsule research talk, Stony Brook University, NY, Sept 2016  
Complex analysis, dynamics and geometry seminar, University of Michigan, Ann Arbor, Nov 2015  
Teichmüller theory seminar, Indiana University, Bloomington, Nov 2015  
Dynamical systems seminar, Boston University, Nov 2015  
Geometry and topology seminar, University of Warwick, Coventry, England, Nov 2015  
Dynamical Developments, in honor of the 70th birthday of John H. Hubbard (software presentation, young people's seminar), Bremen, Germany, August 2015

Joint Math Meetings, special session on holomorphic dynamics in one and several variables, San Antonio, TX January 2015

Bremen Winter School, Kleinian groups and transcendental dynamics, Germany, April 2014

Topological and combinatorial problems in one-dimensional complex dynamics, Centro di Ricerca Matematica Ennio De Giorgi, Pisa, Italy, Oct 2013

AIM SQuaRE, The global dynamics of Thurston's pullback map, Palo Alto, CA July 2013

Topics in complex dynamics, IMUB-UB Barcelona, Spain, June 2013

Groups and dynamics seminar, Georg-August-Universität Göttingen, Germany, April 2013

Workshop on moduli spaces associated to dynamical systems (poster session), ICERM, Providence, RI, April 2012

AMS sectional meeting, special session on Geometric Topology and Group Theory, Lawrence, KS, March 2012

Workshop on polynomial mappings, Institut de Mathématiques de Toulouse, June 2011

Workshop on trends in complex dynamics, Clay Math Institute, May 2011

## MINICOURSES

Iterated monodromy groups, Workshop on holomorphic dynamics, Holbaek, Denmark, November 2017

A positive characterization of rational maps (3 lectures), Learning seminar, Stony Brook University, March-April 2017

Thurston's pullback map (4 lectures), Teichmüller theory seminar, Indiana University Bloomington, May-June 2010

## OTHER CONFERENCES ATTENDED

AIM SQuaRE, The global dynamics of Thurston's pullback map, Palo Alto, CA July 2013, August 2014, June 2015

The role of complex analysis in complex dynamics, Edinburgh, UK, May 2013

Workshop on holomorphic dynamics, Holbaek, Denmark, September 2012

Joint Mathematics Meetings, Boston MA, January 2012, attended minicourse by Paul Blanchard and Robert Devaney *A dynamical systems approach to the differential equations course*

Bloomington geometry workshop, Bloomington IN, March 2011

AMS spring central sectional meeting, Urbana IL, March 2009

Graduate students topology conference, Urbana IL, March 2008

## TEACHING

### Stony Brook University 2016-2018

- Geometric structures
- Multivariable calculus with linear algebra
- Language, logic, and proof
- Introduction to linear algebra

### Jacobs University 2012-2016

- Undergraduate seminar
- Linear algebra, Fourier, probability
- Multivariable calculus, ODE
- Introductory complex analysis

- General mathematics and computational science II
- Perspectives of mathematics

#### **Indiana University 2005-2012**

- Finite mathematics (6 semesters)
- Math for elementary teachers 1, 2
- Precalculus (4 semesters)
- Introduction to college mathematics (2 semesters)
- Basic algebra
- Calculus I recitation

#### **Yanbian University of Science and Technology 2005**

- Elementary conversational English (2 semesters)
- Calculus I
- Trigonometry

#### **AWARDS**

**Rothrock Teaching Award**, Indiana University mathematics department, 2010

**Glenn Schober Memorial Travel Award**, Indiana University mathematics department, 2010, 2011

#### **OTHER ACTIVITIES**

**Webpage development**, dynamics group, Jacobs University Bremen

**Local organizer**, Dynamical Developments: a conference in Complex Dynamics and Teichmüller theory, in honor of the 70th birthday of John H. Hubbard, Jacobs University (August 2015)

**Speaker**, Summer camp: Mathematics for pre-college students, Jacobs University (July 2015)

**Organizer**, Geometry and dynamics seminar, Jacobs University (Fall 2013-Spring 2016)

**Discussion session leader**, International summer school for students, Bremen, Germany (July 2013)

**Organizer and instructor**, conversational English class for Mandarin speakers, Bloomington, IN (Sept 2008-May 2010)

#### **REFERENCES**

Sarah Koch  
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