

## **Curriculum Vitae**

Lee Kennard

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### **EDUCATION:**

Ph.D., Mathematics, University of Pennsylvania, 2012.

B.A., Mathematics, Kenyon College, 2007.

### **ACADEMIC POSITIONS:**

Associate Professor, Department of Mathematics, Syracuse University, 2022 – present.

Assistant Professor, Department of Mathematics, Syracuse University, 2018 – 2022.

Assistant Professor, Department of Mathematics, University of Oklahoma, 2015 – 2018.

RTG Visiting Assistant Professor, Department of Mathematics, University of California, Santa Barbara, 2012 – 2015.

### **VISITS:**

Visitor, WWU Münster, Summer 2022.

Postdoc, Program on Differential Geometry, MSRI, Berkeley, California, Spring 2016.

Visiting student, IMPA, Rio de Janeiro, Brazil, Fall 2011 – Spring 2012.

### **EXTERNAL GRANTS:**

P.I., NSF Research Grant DMS-2005280, \$181,397, 2020 – 2023.

P.I., NSF Research Grant DMS-1708493/DMS-1904354, \$130,792, 2017 – 2020.

P.I., NSF Research Grant DMS-1404670/DMS-1622541, \$81,264, 2014 – 2017.

P.I., NSF Conference Grant DMS-1855960, \$30,000, 2019.

Co-P.I., NSF Conference Grant DMS-1720590, \$36,200, 2017 (P.I. Christine Escher).

### **SELECTED INTERNAL FELLOWSHIPS AND AWARDS:**

Junior Faculty Fellowship, University of Oklahoma Research Council, 2017.

Carlitz-Zippin Thesis Prize, University of Pennsylvania Department of Mathematics, 2012.

Dissertation Completion Fellowship, University of Pennsylvania School of Arts and Sciences, 2011-2012.

Dean's Award for Distinguished Teaching by a Graduate Student, University of Pennsylvania School of Arts and Sciences, 2011.

## **PUBLICATIONS:**

11. J. DeVito, L. Kennard. Cohomogeneity one manifolds with singly generated rational cohomology, *Doc. Math.*, 25: 1835-1863, 2020.
10. M. Amann, L. Kennard. Positive curvature and symmetry in small dimensions, *Commun. Contemp. Math.*, 22(6): 57 pp., 2020.
9. L. Kennard, W. Wylie, D. Yeroshkin. The weighted connection and sectional curvature for manifolds with density, *J. Geom. Anal.*, 29(1): 957-1001, 2019.
8. L. Kennard, Z. Su. On dimensions supporting a rational projective plane, *J. Topol. Anal.*, 11(3): 535-555, 2019.
7. L. Kennard. Fundamental groups of manifolds with positive sectional curvature and torus symmetry, *J. Geom. Anal.*, 27: 2894-2925, 2017.
6. M. Amann, L. Kennard. On a generalized conjecture of Hopf with symmetry, *Compos. Math.*, 153: 313-322, 2017.
5. L. Kennard, W. Wylie. Positive weighted sectional curvature, *Indiana Univ. Math. J.*, 66(2): 419-462, 2017.
4. M. Amann, L. Kennard. Positive curvature and rational ellipticity, *Algebr. Geom. Topol.*, 15(4): 2269-2301, 2015.
3. M. Amann, L. Kennard. Topological properties of positively curved manifolds with symmetry, *Geom. Funct. Anal.*, 24(5): 1377-1405, 2014.
2. L. Kennard. Positively curved Riemannian manifolds with logarithmic symmetry rank bounds, *Comm. Math. Helv.*, 89(4): 937-962, 2014.
1. L. Kennard. On the Hopf conjecture with symmetry, *Geom. Topol.*, 17(1): 563-593, 2013.

## **PREPRINTS:**

3. L. Kennard, E. Khalili Samani, C. Searle. Positive curvature and discrete abelian symmetry, <https://arxiv.org/abs/2110.13345>.
2. L. Kennard, M. Wiemeler, B. Wilking. Splitting of torus representations and applications in the Grove symmetry program, *submitted*, <https://arxiv.org/abs/2106.14723>.

1. L. Kennard, Y. Wu (B.S., Syracuse University, 2021). Halperin's conjecture in formal dimensions up to 20, *submitted*, <https://arxiv.org/abs/2104.04086>.

### **OTHER PUBLICATIONS:**

3. L. Kennard, J. Rainone (B.S., University of California, Santa Barbara, 2015). Characterizations of the round two-dimensional sphere in terms of closed geodesics, *Involve*, 10(2):243-255, 2017.
2. L. Kennard. On the Hopf conjecture with symmetry, *Geometry of Manifolds with non-negative sectional curvature*, Lecture Notes in Math. 2110:111-116, 2014. (Conference proceedings.)
1. J. Holdener, L. Kennard, M. Zaremsky. Generalized Thue-Morse sequences and the von Koch curve. *Int. J. Pure Appl. Math.*, 47(3):397-403, 2008. (Undergraduate publication.)

### **INVITED CONFERENCE / SEMINAR TALKS**

Seminar: Geometry Seminar, University of Rochester, 11-4-2022.

Seminar: Oberseminar Differentialgeometrie, WWU Münster, 7-4-2022.

Conference: Groups in Galway meets The Irish Geometry Conference, NUI Galway, Ireland, May 2022.

Conference (20 minutes): JMM Special Session, Seattle, WA, 1-8-2022 (postponed to 4-9-2022 and made virtual due to the COVID-19 pandemic)

Seminar: Differential Geometry and Dynamical Systems Seminar, Centro de Investigación en Matemáticas (CIMAT), (virtual), 11-22-2021 (postponed)

Seminar: Geometric Analysis Seminar, University of Notre Dame, 11-11-2021.

Seminar: Geometry-Topology Seminar, University of Pennsylvania, 9-30-2021.

Seminar: Irish Geometry Seminar, NUI Galway (virtual), 9-21-2021.

Conference: Workshop on Curvature and Global Shape, WWU Münster, Germany, 8-4-2021.

Conference (30 minutes): Mathematical Congress of the Americas Special Session "Group actions in differential geometry", Buenos Aires, Argentina (virtual), 7-23-2021.

Seminar: Topology-Geometry Zoom Seminar, University of Oregon (virtual), 4-21-2021.

Conference (20 minutes): AMS Sectional Meeting Special Session "Recent Developments in Differential Geometry", Brown University (virtual), 3-21-2021.

Seminar: Virtual Seminar on Geometry with Symmetries (virtual), 5-6-2020.

Seminar: Dartmouth Mathematics Colloquium (virtual), Dartmouth College, 4-30-2020.

Conference (contributed talk, 20 minutes): Union College Mathematics Conference, 9-14-2019.

Seminar: Capital Normal University, Beijing, China, 5-30-2019.

Conference: Curvature and topology of spaces, Beijing International Center for Mathematical Research, Beijing, China, 5-25-2019.

Seminar: Algebra/Topology Seminar, University at Albany, SUNY, 5-2-2019.

Seminar: Geometry/Topology Seminar, Rutgers University, 4-30-2019.

Seminar: Felix Klein Seminar, University of Notre Dame, 4-11-2019.

Seminar: Topology-Geometry Seminar, Indiana University, 4-9-2019.

Conference (contributed talk): Australian-German workshop on differential geometry in the large, MATRIX, Creswick, Australia, 2-15-2019.

Conference: Geometrie Workshop, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, June 2018.

Conference (20 minutes): JMM Special Session, San Diego, CA, 1-13-2018.

Conference (20 minutes): AMS Sectional Meeting, University of California, Riverside, 11-5-2017.

Seminar: Frank Stones Memorial Colloquium, Texas Christian University, 10-20-2017.

Seminar: Geometry & Topology Seminar, University of Toronto, October 2017.

Conference: Workshop on Curvature and Global Shape, WWU Münster, Germany, July 2017.

Conference: Lie Group Actions in Riemannian Geometry Conference, Dartmouth College, June 2017.

Seminar: Geometric Analysis Seminar, University of Notre Dame, February 2017.

Seminar: Topology-Geometry Seminar, Indiana University, February 2017.

Seminar: Postdoc Seminar, MSRI, February 2016.

Conference: Workshop on Curvature and Global Shape, WWU Münster, Germany, July 2015.

Seminar: Geometry and Topology Seminar, KIT, Karlsruhe, Germany, July 2015.

Conference: Smoky Great Plains Geometry Conference, Wichita State University, March 2015.

Seminar: Differential Geometry Seminar, Rutgers University, December 2014.

Seminar: Differential Geometry/Topology Seminar, Ohio State University, November 2014.

Seminar: Lecture Series in the Mathematical Sciences and the Differential Geometry Seminar, Wichita State University, October 2014.

Conference: Cascade Topology Seminar, Oregon State University, April 2014.

Seminar: Differential Geometry Seminar, University of California, Irvine, January 2014.

Conference (20 minutes): AMS Sectional Meeting, University of California, Riverside, November 2013.

Seminar: Felix Klein Seminar, University of Notre Dame, October 2013.

Seminar: Geometry Seminar, Indiana University, October 2013.

Seminar: Geometry and Topology Seminar, KIT, Karlsruhe, Germany July 2013.

Seminar: Topology Seminar, University of Fribourg, Switzerland, July 2013.

Conference (20 minutes): AMS Sectional meeting, University of Arizona, October 2012.

Seminar: Karcher Colloquium, University of Oklahoma, September 2012.

Seminar: Geometry and Topology Seminar, University of Oklahoma, September 2012.

Seminar: Differential Geometry Seminar, University of California, Santa Barbara, June 2012.

Conference: Mini-Workshop on Manifolds with Lower Curvature Bounds, MFO, Oberwolfach, Germany, January 2012.

Conference: Workshop on Curvature and Global Shape, WWU Münster, Germany, July 2011.

Conference: Mini-encuentro de geometría diferencial, CIMAT, Guanajuato, Mexico, December 2010.

### **GRADUATE ADVISING:**

Elahe Khalili Samani, Ph.D., Syracuse University, 2021.

Marie Kramer, Ph.D. candidate, Syracuse University.

### **UNDERGRADUATE ADVISING:**

Yantao Wu, B.S., Syracuse University, 2021.

- Advised undergraduate resource project funded by Syracuse University's SOURCE.
- Student was awarded the SU Scholar award.
- Ph.D. student in Mathematics at Johns Hopkins University.

Adam Rose, B.S., University of California, Santa Barbara, 2015.

- Advised senior thesis, which earned distinction in the major.
- Contributed conference talk: Pacific Coast Undergraduate Math Conference, 2015.
- Ph.D. student in Applied Mathematics at the University of California, Davis.

Yevgeniya Tarasova, B.S., University of California, Santa Barbara, 2015.

- Advised RTG summer research project and senior thesis, which earned distinction in the major.
- Contributed conference talk: MAA SoCal-Nevada Section, Fall Meeting, 2014.
- Ph.D. student in Mathematics at Purdue University.

Jordan Rainone, B.S., University of California, Santa Barbara, 2014.

- Advised College of Creative Studies summer research project and senior thesis.
- Ph.D. student in Mathematics at Stony Brook.

Eric Ling, B.S. and M.S., University of California, Santa Barbara, 2015.

- Co-advised with Xianzhe Dai an RTG summer research project.
- Ph.D. completed at University of Miami.

## **COURSES TAUGHT:**

Syracuse University

- MAT 296: Calculus II (in-person in Fa 2018, online in Fa 2020)
- MAT 397: Calculus III (Sp 2019)
- MAT 551: Fundamental Concepts of Geometry (Sp 2020, Sp 2022)
- MAT 661: Introduction to Topology (Fa 2019, Fa 2021)
- MAT 860: Topics in Topology: Lie groups, Lie algebras, and representations (Sp 2021)

University of Oklahoma

- Math 2433: Calculus and Analytic Geometry III
- Math 2924: Differential and Integral Calculus II
- Math 3113: Introduction to Ordinary Differential Equations
- Math 3333: Introduction to Linear Algebra
- Math 5863: Topology II
- Math 6833: Topics in Topology, I (co-taught with Max Forester and Jing Tao)

University of California, Santa Barbara

- Math 5A: Differential Equations and Linear Algebra 2
- Math 8: Transition to Higher Mathematics
- Math 113: Non-Euclidean Geometry
- Math 147A: Elementary Differential Geometry I
- Math 147B: Elementary Differential Geometry II
- Math 260P: Bundles, curvature, and anomalies (co-taught with David Morrison)
- Math 260P: Fundamental groups and curvature bounds (with Guofang Wei)
- Math 260P: Group actions in Riemannian geometry (with Xianzhe Dai)

University of Pennsylvania

- Math 170: Ideas in Mathematics (Instructor of Record on two occasions)
- Math 114: Calculus II (Teaching Assistant)
- Math 260: Honors Calculus II (Teaching Assistant)
- Math 509: Advanced Analysis II (Teaching Assistant)
- Math 608: Graduate Analysis (Grader)

## **PROFESSIONAL SERVICE AND OUTREACH:**

Member: Undergraduate Committee, SU Department of Mathematics, 2019 – 2022.

Member: Graduate Recruiting Committee, SU Department of Mathematics, 2018 – 2020.

Event organizer: University of Oklahoma Math Day, November 2016 and November 2017.

- Annual event, attracting over 300 high school students each year.
- Chaired committee to advertise, plan, and run the event.

Co-organizer: Representations of Riemannian Geometry Conference, Saint Joseph's University, Philadelphia, PA, August 2017.

Member: Student Competition Committee, MAA Oklahoma/Arkansas Section Meeting, University of Oklahoma, Norman, OK April 2017.

Organizer: Riemannian Geometry Seminar, MSRI, Spring 2016.

Organizer: Differential Geometry Seminar, UCSB, Fall 2014 and Spring 2015.

Master Teaching Assistant: TA Training Program, Department of Mathematics, University of Pennsylvania, 2009 – 2011.

Public lectures and panels:

- Science Cafe, Norman, OK, February 2018.
- Public Lecture, Lie Group Actions in Riemannian Geometry Conference, Dartmouth College, June 2017.
- Pi Mu Epsilon Induction Ceremony, Kenyon College, April 2016.
- Graduate Student Seminars, UCSB (April 2013 and 2014) and University of Oklahoma (November 2016 and 2017).
- Hypatian Seminar, UCSB (April 2013, February 2014, December 2014).