

LEE KENNARD
CURRICULUM VITAE

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Appointments

- 2018 – Assistant Professor, Syracuse University.
2015 – 2018 Assistant Professor, University of Oklahoma.
2012 – 2015 RTG Visiting Assistant Professor, University of California, Santa Barbara.
Mentor: Guofang Wei.

Education

- 2012 Ph.D., Mathematics, University of Pennsylvania.
Advisor: Wolfgang Ziller.
2007 B.A., Mathematics, Kenyon College.

Visits

- Spring 2016 Postdoc, Program on Differential Geometry, MSRI, Berkeley, California.
2011 – 2012 Visiting Student, IMPA, Rio de Janeiro, Brazil.

External grants

- 2020 – 2023 P.I., NSF Research Grant DMS-2005280, \$181,397.
2017 – 2020 P.I., NSF Research Grant DMS-1708493/DMS-1904354, \$130,792.
2014 – 2017 P.I., NSF Research Grant DMS-1404670/DMS-1622541, \$81,264.
2019 P.I., NSF Conference Grant DMS-1855960, \$30,000.
2017 Co-P.I., NSF Conference Grant DMS-1720590, \$36,200 (P.I. Christine Escher).

Internal fellowships and awards

- 2017 Junior Faculty Fellowship, University of Oklahoma Research Council.
2012 Carlitz-Zippin Thesis Prize, Penn Department of Mathematics.
2011 – 2012 Dissertation Completion Fellowship, Penn School of Arts and Sciences.
2011 Dean's Award for Distinguished Teaching by a Graduate Student, Penn SAS.

Publications

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

Publications by students

- (3) L. Kennard, Y. Wu (SU Class of 2021). Halperin’s conjecture in formal dimensions up to 20.
Submitted, arxiv:2104.04086.
- (2) E. Khalili Samani (Ph.D. 2021, SU). Obstructions to free actions on Bazaikin spaces.
Transform. Groups (to appear), arxiv:1905.11770.
- (1) L. Kennard, J. Rainone (UCSB Class of 2015). Characterizations of the round two-dimensional sphere in terms of closed geodesics. *Involve*, 10(2):243–255, 2017.

Additional publications

- (2) 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) (with J. Holdener and M. Zaremsky) Generalized Thue-Morse sequences and the von Koch curve.
Int. J. Pure Appl. Math., 47(3):397–403, 2008. (Undergraduate publication.)

Invited research talks

- 2021 Jul. Conference, invited speaker: Mathematical Congress of the Americas Special Session “Group actions in Differential Geometry”, Buenos Aires, Argentina (virtual).
Apr. Topology-Geometry Zoom Seminar, University of Oregon (virtual).
Mar. AMS Sectional Meeting Special Session “Recent Developments in Differential Geometry”, Brown University (virtual).
- 2020 May Conference, invited speaker: Groups in Galway meets The Irish Geometry Conference, NUI Galway, Ireland. <http://www.maths.nuigalway.ie/ggg20> (*postponed due to the covid-19 pandemic*).
May Virtual Seminar on Geometry with Symmetries (virtual).
Apr. Dartmouth Mathematics Colloquium (virtual), Dartmouth College.
- 2019 Sep. Conference, contributed talk: Union College Mathematics Conference.
May Seminar lecture, Capital Normal University, Beijing, China.
May Conference, invited talk: Curvature and topology of spaces, Beijing International Center for Mathematical Research (BICMR), Beijing, China.
May Algebra/Topology Seminar, University at Albany, SUNY.
Apr. Geometry/Topology Seminar, Rutgers University.
Apr. Felix Klein Seminar, University of Notre Dame.
Apr. Topology-Geometry Seminar, Indiana University.
Feb. Conference, submitted talk: Australian-German workshop on differential geometry in the large, MATRIX, Creswick, Australia.
- 2018 Jun. Workshop: Geometrie, MFO, Oberwolfach, Germany.
Jan. JMM Special Session, San Diego, CA.
- 2017 Nov. AMS Sectional Meeting, University of California, Riverside.
Oct. Frank Stones Memorial Colloquium, Texas Christian University.
Oct. Geometry & Topology Seminar, University of Toronto.
Jul. Workshop on Curvature and Global Shape, University of Münster, Germany.
Jun. Lie Group Actions in Riemannian Geometry Conference, Dartmouth College
Feb. Geometric Analysis Seminar, University of Notre Dame
Feb. Topology-Geometry Seminar, Indiana University
- 2016 Feb. Postdoc Seminar, MSRI.
- 2015 Jul. Workshop on Curvature and Global Shape, University of Münster, Germany.
Jul. Geometry and Topology Seminar, KIT, Karlsruhe, Germany.
Mar. Smoky Great Plains Geometry Conference, Wichita State University.
- 2014 Dec. Differential Geometry Seminar, Rutgers University.
Nov. Differential Geometry/Topology Seminar, Ohio State University.

- Oct. Lecture Series in the Mathematical Sciences and the Differential Geometry Seminar, Wichita State University.
- Apr. Cascade Topology Seminar, Oregon State University.
- Jan. Differential Geometry Seminar, University of California, Irvine.

- 2013 Nov. AMS Sectional Meeting, University of California, Riverside.
- Oct. Felix Klein Seminar, University of Notre Dame.
- Oct. Geometry Seminar, Indiana University.
- Jul. Geometry and Topology Seminar, KIT, Karlsruhe, Germany.
- Jul. Topology Seminar, University of Fribourg, Switzerland.

- 2012 Oct. AMS Sectional meeting, University of Arizona.
- Sep. Karcher Colloquium and Geometry and Topology Seminar, University of Oklahoma.
- Jun. Differential Geometry Seminar, University of California, Santa Barbara.
- Jan. Mini-Workshop on Manifolds with Lower Curvature Bounds, MFO, Oberwolfach, Germany.

- 2011 Nov. Differential Geometry Seminar, IMPA, Rio de Janeiro, Brazil.
- July Workshop on Curvature and Global Shape, University of Münster, Germany.

- 2010 Dec. Mini-encuentro de geometría diferencial, CIMAT, Guanajuato, Mexico.

Advising

- Ph.D. student: Elahe Khalili Samani (Ph.D. expected Spring 2021).
- Undergraduate advising at Syracuse University
 - Yantao Wu (SU '21, going on to Johns Hopkins as a Ph.D. student)
 - * SU SOURCE project, Summer 2020 - Fall 2020.
 - * Funds awarded: \$5,000.
 - * Co-authored a paper submitted for publication.
 - Can Luo (SU '21) and Bin Liao (SU '21), both to start a M.S. at UNC, Chapel Hill.
 - * SU SOURCE project, Fall 2020.
 - * Funds awarded: \$2,800 (funds declined to to COVID-19 travel restrictions).
- Undergraduate advising at University of California, Santa Barbara.
 - Adam Rose (UCSB, went on to UC, Davis, as a Ph.D. student)
 - * Student talk, Pacific Coast Undergraduate Math Conference, March 14, 2015.
 - * Honors senior thesis, given distinction in the major, Winter 2015 – Spring 2015.
 - Yevgeniya Tarasova (UCSB, went on to Purdue University as Ph.D. student)
 - * Student talk, MAA SoCal–Nevada Section, Fall Meeting, November 1, 2014.
 - * Honors senior thesis, given distinction in the major, Fall 2014 – Winter 2015.
 - * Undergraduate RTG summer research fellowship, Summer 2014.

- Jordan Rainone (UCSB, went on to SISSA, Trieste, Italy, as master’s student and then Stony Brook University as a Ph.D. student)
 - * Co-authored publication in *Involve* (see Publications).
 - * CCS senior thesis, Fall 2013 – Spring 2014 (see ccs.math.ucsb.edu/Senior-thesis.html).
 - * CCS Summer Undergraduate Research Fellowship, Summer 2013.
- Eric Ling (B.S. and M.A. 2015 UCSB)
 - * Undergraduate RTG summer research fellowship, co-advised with Professor Xianzhe Dai, Summer 2013.
 - * Completed his Ph.D. in 2019 at the University of Miami.

Teaching

- Syracuse University:
 - MAT 296: Calculus II (Fall 2018, Fall 2020), MAT 397: Calculus III (Spring 2019), MAT 551: Fundamental Concepts of Geometry (Spring 2020), MAT 661: Introduction to Topology (Fall 2019). MAT 860: Topics in Topology (Spring 2021).
- University of Oklahoma:
 - Math 2433: Calculus and Analysis 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 (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 147B: Elementary differential geometry, II, Math 147A: Elementary differential geometry, I, Math 260P: Bundles, curvature, and anomalies 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:
 - Instructor of record for Math 170: Ideas in Mathematics; Teaching assistant for Math 114: Calculus II, Math 260: Honors Calculus II, and Math 509: Advanced Analysis II; and Grader for Math 608: Graduate Analysis.

Professional service and outreach

- Conference and event organizing
 - Chair, University of Oklahoma Math Day Committee (November 2016, November 2017)
 - Co-organizer, Representations of Riemannian Geometry Conference, Saint Joseph’s University, Philadelphia, PA (August 10-13, 2017)
 - Student Competition Committee, MAA Oklahoma/Arkansas Section Meeting, University of Oklahoma, Norman, OK (April 6-8, 2017)
- Reviewer for *Mathematical Reviews* and referee for mathematics journals, including *Advances in Geometry*, *Advances in Mathematics*, *Archiv der Mathematik*, *Compositio Mathematica*, *Documenta Mathematica*, *Geometriae Dedicata*, *Geometry & Topology*, *Journal of the London Mathematical Society*, *Michigan Mathematical Journal*, *Proceedings of the AMS*, and *Transformation Groups*.

- Department service
 - Undergraduate Committee, SU Department of Mathematics (2019 - 2022).
 - Graduate Recruiting Committee, SU Department of Mathematics (2018 - 2020).
 - Organizer, Riemannian Geometry Seminar, MSRI (Spring 2016).
 - Organizer, Differential Geometry Seminar, UCSB (Fall 2014 – Spring 2015).
 - Master Teaching Assistant, TA Training Program, University of Pennsylvania Department of Mathematics (Fall 2009 – Spring 2011).
- Outreach: Invited talks and panels
 - Science Cafe, Norman, OK (February 2018).
 - Public lecture, Lie Group Actions in Riemannian Geometry, Dartmouth College (June 2017).
 - Pi Mu Epsilon Induction Ceremony, Kenyon College (April 2016).
 - Graduate student seminar, USCB (April 2013 and 2014) and OU (November 2016 and 2017).
 - Hypatian seminar, UCSB (April 2013, February 2014, December 2014).