Curriculum Vitae, Benjamin Isaac Schmidt

Education:

• Ph.D., Mathematics, University of Michigan, 2006.
• M.S. and B.S., Mathematics, Emory Univeristy, 2000.

Academic Employment History:

• Associate Professor, Michigan State Univeristy, 2015-Present .
• Assistant Professor, Michigan State University, 2009-2015.
• L.E. Dickson Instructor, University of Chicago, 2006-2009.

Acknowledgements:

• RCPD Spirit of Ability Award, 2015.
• Michigan State University Teacher-Scholar Award, 2014.
• College of Natural Science Teacher-Scholar Award, 2013.
• Mathematics Department J.S. Frame Teaching Award, 2011.
• Clay Mathematics Institute Liftoff Fellow, 2006.

External Support:

• NSF, DMS-1207655, "Curvature, geodesics, and rigidity." 08/2012-08/2016
• NSF, DMS-0905906 and DMS-1013334, "Extremality of symmetry in nonpositive curvature, geodesics, and the dynamics of large group actions." 07/2009-07/2012. $132,002.
• NSF, DMS-1133198 and DMS-1104514, "The 2011 Graduate Student Topology and Geometry Conference." 02/2011-02/2012.
• NSF PostDoctoral Fellowship. 2006-2008.

Published or Accepted for Publication:

• (Joint with S. Lin) Manifolds with many hyperbolic planes. To appear in *Differential Geometry and its Applications.*
• (Joint with J. Wolfson) Three-manifolds with constant vector curvature one. To appear in *Comptes Rendus Mathematique.*
• (Joint with S. Lin) Real projective spaces with all geodesics closed. To appear in *Geometric and Functional Analysis.*
• (Joint with R. Bettiol) Three-manifolds with many flat planes. To appear in *Transactions of the AMS.*
• (Joint with J.-F. Lafont and W. van Limbeek) Quasicircle boundaries and exotic almost isometries. To appear in *Annales De L' Institut Fourier*.
• (Joint with R. Shankar and R. Spatzier) Positively curved manifolds with large spherical rank. *Commentarii Mathematici Helvetici*. **91** (2016), 219-251.
• (Joint with J.-F. Lafont and A. Kar) Rigidity of almost-isometric universal covers. *Indiana University Mathematics,* **65** (2016), No. 2, 585-613.
• (Joint with J. Wolfson) Complete curvature homogeneous metrics on SL(2,R). *Pacific Journal of Mathematics,* **273** (2015), No. 2, 499-509.
• (Joint with J. Wolfson) Three-manifolds with contant vector curvature. *Indiana University Mathematics Journal,* **63** (2014), 1757-1783.

• Positively curved manifolds with large conjugate radius. *Journal of Topology and Analysis,* **5** (2013), No. 3, 333-344.
• (Joint with C. Sutton) Two remarks on the length spectrum of a Riemannian manifold. *Proceedings of the American Mathematical Society,* **139** (2011), 4113-4119.
• Spherical Points in Riemannian manifolds. *Proceedings of the American Mathematical Society,* **139** (2011), no.1, 305-308.
• (Joint with J. Souto) A characterization of round spheres in terms of blocking light. *Commentarii Mathematici Helvetici, **85*** (2010), 259-271.
• (Joint with I. Biringer) The three gap theorem and Riemannian geometry. *Geometria Dedicata*, **136** (2008), no. 1, 175-190.
• (Joint with A. Pelayo) Maximal ball packings of symplectic-toric manifolds. *International Mathematics Research Notices* (2008), 24p, IDrmn139.
• Blocking light in closed Riemannian manifolds, Guido's Book of Conjectures, Monographie de L'Enseignment Mathematique, **40** (2008), 165-167.
• (Joint with J.-F. Lafont) Blocking light in compact Riemannian manifolds. *Geometry & Topology,* **11** (2007), 867-887.
• (Joint with J.-F. Lafont) On submanifolds in locally symmetric spaces of non-compact type. *Algebraic and Geometric Topology,* **6** (2006), 2455-2472.
• **(**Joint with J.-F. Lafont) Simplicial volume of closed locally symmetric spaces of noncompact type. *Acta Mathematica,* **197** (2006), no.1, 129-143.
• Weakly hyperbolic actions of Kazhdan groups on tori. *Geometric and Functional Analysis,* **16** (2006), no. 5, 1139-1156.

Under Revision (Pre-Revision versions available at http://users.math.msu.edu/users/schmidt/papers.html):
• (Joint with C. Sutton) Detecting the moments of inertia of a molecule via its rotational spectrum, II.
• (Joint with R. Shankar and R. Spatzier) A Schur type theorem for Kahlerian manifolds.

Likely Never to be Submitted (but written and available by request):
• (Joint with K. Burns) Closed geodesics without proper chords.
• (Joint with K. Burns) CROSS blocked manifolds are Blaschke.
• (Joint with K. Burns) On the singularities and radial injectivity of Riemannian exponential maps.

Invited Visits to Research Institutes:
• Chern Institute of Mathematics, Tianjin, China. One week visit.
• Banff International Research Station, Banff, Canada (BIRS). Two one week visits.
• American Institute of Mathematics, (AIM) Palo Alto, CA. Four one week visits.
• Institut Des Hautes Etudes Scientifiques (IHES). Bures-sur-Yvette, France. One month visit.
• Instituto de Matematicas de la UNAM. Oaxaca, Mexico. Two one week visits.
• Instituto de Matematicas de la UNAM. Morelia, Mexico. One week visit.

• Swiss Federal Institute of Technology (ETH). Zurich, Switzerland. One month visit.
• Instituto Nacional de Matematica Pura e Aplicada (IMPA). Rio de Janeiro, Brazil. One week visit.

Recent Invited Lectures:

2017:
• Smith College: Research Seminar for faculty and Lunch Series Seminar for undergraduates.
•Group Actions in Riemannian Geometry Conference, Dartmouth College, scheduled.
•Evans-Hall Award Ceremony Lecture, Emory University, scheduled.

2016:
• Declined travel.

2015:
• 49th Spring Topology and Dynamics Conference, BGSU.
• Bowling Green State University Colloquium
• Central Michigan University Colloquium
• Geometry Seminar, UC Santa Barbara.

2014:
• Group Actions in Riemannian Geometry Conference, University of North Carolina, Chapel Hill.
• Undergraduate Mathematics Colloquium, Hope College.
• Mathematics Club, Williamston Michigan High School.

2013:
• Metric Geometry, Geometric Topology and Groups Conference, BIRS.
• Geometry Seminar, Notre Dame.
• Geometry Seminar, Indiana University.
• American Institute of Mathematics, Research Square on Gromov's Simplicial Volume.
• Geometry Seminar, Indiana University.
• Research Experience for Undergraduates Colloquium, Grand Valley State University.
• Research Experience for Undergraduates Colloquium, Central Michigan University.

2012:
• American Institute of Mathematics, Research Square on Gromov's Simplicial Volume.
• Geometry and Topology in Samos, Karlovassi, Samos.
• Geometric Analysis Seminar, M.I.T.
• Geometry and Topology Seminar, University of Wisconsin, Madison.
• Mathematics Colloquium, Dartmouth University.
• Geometry/Topology Seminar, Dartmouth University.
• American Mathematical Society Special Session on Interactions Between Geometry and Topology, University of Akron.
• Mathematics Colloquium, Grand Valley State University.
• Canada/USA Mathcamp, University of Puget Sound.

Ph.D Advising:

• Samuel Lin, Ph.D. expected Spring 2017. First Position: Dartmouth College.
• Reza Bidar, Ph.D. expected Spring 2018.

Recent Courses Taught at MSU:

• Spring 2017: Reading course with Luke Vaicunas.
• Summer 2016: Reading course with Eliot Bongiovanni.
• Fall 2016: None.
• Spring 2016: None.
• Fall 2015: Applied Calculus (124), Geometry and Topology I (868)
• Spring 2015: Riemannian Geometry II (931), Topics in Geometry (993)
• Fall 2014: Calculus III (234), Honors Linear Algebra (317H)
• Spring 2014: Calculus III (234).
• Fall 2013: AP Calculus II (133AP) and Calculus II (133).
• Summer 2013: Graduate Reading Course on Holonomy (890).
• Spring 2013: Riemannian Geometry II (931).
• Fall 2012: Abstract Algebra and Number Theory I (310), Honors Abstract Algebra I (418H), Undergraduate Reading Course on Geometry and Billiards (490).
• Spring 2012: Honors Calculus II (153H), Capstone in Mathematics for Secondary Education (396).

Departmental Service at MSU:

• CSAS Hiring Committee, Spring 2017.
• Mathematics Hiring Committee, Fall 2016-Spring 2017.
• Colloquium Organizer, Fall 2016-Spring 2017.
• University Teacher Scholar Award Selection Committee, Fall 2016.
• Organized Postdoc Lightning Talks and Welcome Reception, Fall 2016.
• GII/PRIME Search Committee, 2015-2016.
• Associate Graduate Director, Spring 2016.
• AMS Joint Meetings Graduate School Fair MSU Representative, Spring 2016.
• Graduate Studies Committee, Fall 2015- Spring 2016.
• Undergraduate Studies Committee, Fall 2015- Spring 2016.
• Colloquium Committee, Fall 2015-Spring 2016.
• Organized Postdoc Welcome Reception, Fall 2015
• AMS Joint Meetings Graduate School Fair MSU Representative, Spring 2015.
• Graduate Studies Committee, Fall 2014-Spring 2015.
• Advanced Track Advisory Committee, Fall 2014-Spring 2015.
• Alumni Distinguished Scholars Recruitment Sessions, Springs 2010-2015.
• Ongoing organizational contribution and support of Geometry and Geometry/Topology Seminars 2009-Present.

College/University Level Service at MSU:

• CNS representative on the MSU Teacher-Scholar Award Committee, Fall 2016.
• Math Department representative on PRIME search committee, Fall 2013-Spring 2014.

Professional Service:

Referee: *Geometry and Topology, Algebraic and Geometric Topology, Journal of Modern Dynamics, Pacific Journal of Mathematics, Proceedings of the American Mathematical Society, Geometriae Dedicata , Journal of Topology and Analysis , Geometric and Functional Analysis, Commentarii Mathematici Helvetici, Indiana University Mathematics Journal, and Differential Geometry and Its Applications*.

• Special Session Organizer for AMS Sectional Meeting at MSU, Spring 2015.

• National Science Foundation Differential Geometry grant review panel, Spring 2013.

• Organization of the 9th annual Geometry and Topology Graduate Student Conference held at MSU April 2-3, 2011. Obtained $49,999 in grant support from the National Science Foundation.

Outreach:

• Lunch Series Lecture and Roundtable Discussion at the Center for Women in Mathematics. Smith College, Spring 2017.
• Math Club Lecture. Williamston, MI high school, Spring 2014.
• Undergraduate Mathematics Colloquium -- Paul Monsky's Theorem. Hope College, Spring 2014.
• Beihang University Exchange Program -- One week mini-course on the p-adic numbers for advanced undergraduates visiting MSU from Beihang University, Summer 2013.
• Research Experience for Undergradutes Colloquia -- Hammer's X-Ray Problem. Grand Valley State University and Central Michigan University, Summer 2013.
• Canada/USA Mathcamp--One week course on constructible numbers for mathematically talented high school students in addition to a research in pairs program with Craig Sutton from Dartmouth. Summer 2012.
• SpartaNature -- summer short course on Fibonacci sequence and Golden Ratio, Summer 2011, Kellogg Biological Station.