Robin D. Tucker-Drob

CONTACT INFORMATION

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ACADEMIC POSITIONS

- **Associate Professor, University of Florida**. August 2021 - present.
- **Associate Professor, Texas A&M University**. September 2020 - August 2021.
- **Assistant Professor, Texas A&M University**. September 2015 - September 2020.
- **NSF Postdoctoral fellow**. July 2013 - August 2015
  Host institution: Rutgers University.
  Scientific mentor: Simon Thomas.

EDUCATION

- **California Institute of Technology**, Pasadena, CA.
  September 2008 - June 2013.
  Ph.D. in Mathematics.
  Thesis: *Descriptive set theory and the ergodic theory of countable groups.*
  Advisor: Alexander Kechris.
- **University of Münster** (Westfälische Wilhelms-Universität), Münster, Germany
  Visiting graduate fellow; June-July 2011.
- **Tulane University School of Engineering**, New Orleans, LA.
  September 2004 - May 2008.
  B.S. in Mathematics Cum Laude with departmental honors; May 2008.
  Majors: Mathematics and Philosophy.
- **Pennsylvania State University**, State College, PA.
  Mathematics Advanced Studies Semester (MASS) program; August-December 2007.
- **Columbia University**, New York, NY.
  Visiting student and undergraduate course work; June 2005-August 2006.

PAPERS AND PUBLICATIONS

- **Measure equivalence, superrigidity, and weak Pinsker entropy**
  with L. Bowen. To appear, Groups, Geometry, and Dynamics.
- **Dynamical alternating groups, stability, property Gamma, and inner amenability**
  with D. Kerr. To appear, Annales Scientifiques de l'École Normale Supérieure
- **Cost of inner amenable groupoids**
  with K. Wrobel. To appear, Proceedings of the AMS
- **CAT(0) cube complexes and inner amenability**
  with B. Duchesne and P. Wesolek. To appear, Groups, Geometry, and Dynamics.
- **Groups with infinite FC-center have the Schmidt property**
  with Y. Kida. To appear, Ergodic Theory and Dynam. Systems
- **Invariant means and the structure of inner amenable groups**
  Duke Mathematical Journal 169.13 (2020): 2571-2628.
- **Inner amenable groupoids and central sequences**
  with Y. Kida, Forum of Mathematics, Sigma, (2020), vol 8, e29. doi:10.1017/fms.2020.15
- **A new lattice invariant for lattices in totally disconnected locally compact groups**, with B. Duchesne and P. Wesolek, Israel J. of Math. 240.2 (2020): 539-565
- **Hyperfiniteness and Borel combinatorics**
  with C. Conley, S. Jackson, A. Marks, B. Seward. J. Eur. Math. Soc. 22.3 (2019):

877-892

• **Cocycle superrigidity for translation actions of product groups**
with A. Ioana and D. Gaboriau, Amer. J. Math., 141, no. 5 (2019): 1347-1374.

• **Folner tilings for actions of amenable groups**
with C. Conley, S. Jackson, D. Kerr, A. Marks, B. Seward,
Math. Ann. 371, no. 1-2 (2018): 663-683

• **The space of stable weak equivalence classes of measure preserving actions**
with L. Bowen, Journal of Functional Analysis 274, no. 11 (2018): 3170-3196.

• **Invariant random subgroups of inductive limits of finite alternating groups**
with S. Thomas., J. Algebra, 503 (2018), 474-533.

• **Weak containment rigidity for distal actions**
with A. Ioana, Adv. in Math., 2016 vol. 302, 309-322

• **Approximations of standard equivalence relations and Bernoulli percolation at p_u**
with D. Gaboriau., C. R. Math. Acad. Sci. Paris, 354.11 (2016): 1114-1118.

• **Brooks's Theorem for measurable colorings**
with C.T. Conley and A.S. Marks, Forum of Mathematics, Sigma (2016), Vol. 4, e16, doi:10.1017/fms.2016.14

• **Borel structurability on the 2-shift of a countable group**, with B. Seward
Ann. Pure Appl. Logic, 167 (2016), no. 1, 1–21.

• **Mixing actions of countable groups are almost free**
Proceedings of the AMS, 143 (2015), no. 12, 5227-5232.

• **Weak equivalence and non-classifiability of measure preserving actions**
Ergodic Theory and Dynam. Systems, 35 (2015), 293-336

• **Invariant random subgroups of strictly diagonal limits of finite symmetric groups**, with S. Thomas
Bull. London Math. Soc. 46 (2014), no. 5, 1007-1020.

• **On a co-induction question of Kechris**, with L. Bowen
Israel J. of Math, 194 (2013), no. 1, 209-224.

• **Ultraproducts of measure preserving actions and graph combinatorics**
with C.T. Conley and A.S. Kechris
Ergodic Theory and Dynam. Systems 33 (2013), no. 2, 334-374

• **The complexity of classification problems in ergodic theory**
with A.S. Kechris
Appalachian Set Theory: 2006-2012; J. Cummings and E. Schimmerling. eds., London Mathematical Society Lecture Note Series, Cambridge University Press (2013)

• **One-ended spanning subforests and treeability of groups**
with C.T. Conley, D. Gaboriau, and A.S. Marks, Submitted.

• **Borel asymptotic dimension and hyperfinite equivalence relations**
with C.T. Conley, S. Jackson, A.S. Marks, and B. Seward. Submitted.

Funding

• **NSF Grant DMS 1855825**. *Descriptive Dynamics: Group Actions and Their Measured, Borel, and Topological Structures.* ($163,221) 2019-2022.

• **NSF Grant DMS 1600904**. *Descriptive set theory and measured group theory.* ($150,000) 2016-2019.

• **NSF Mathematical Sciences Postdoctoral Research Fellowship**. 2013-2015.

• American Institute of Mathematics (AIM), SQuaRE (Structured Quartet Research Ensembles), *Measured group theory and combinatorics.* (with Clinton Conley, Kate Juschenko, Omer Tamuz, and Anush Tserunyan), 2021-2023.

• American Institute of Mathematics (AIM), SQuaRE (Structured Quartet Research Ensembles), *Measurable Graph Theory,* (with Clinton Conley, Steve Jackson, Andrew Marks, and Brandon Seward), 2015-2017.

Conferences Organized

• Oberwolfach Workshop: *Groups and Dynamics: Topology, Measure, and Borel Structure.* (With D. Kerr and A. Tserunyan). January 2022.
• CIRM workshop: *Measurable, Borel, and Topological Dynamics.* (With Clinton Conley, Julien Melleray, and Todor Tsankov). October 2019.

Awards and fellowships

• **Scott Russell Johnson Dissertation Prize**. 2013. California Institute of Technology. Awarded for the best graduate dissertation in mathematics.
• **Scott Russell Johnson Prize for Excellence in Graduate Research**. 2012. California Institute of Technology. Awarded for excellence in research.
• **Terry C. Lawson Prize**. 2008. Tulane University. Awarded for the best research by a graduating senior.
• **Mathematics Advanced Studies Semester (MASS) Merit Fellowship Award** (Highest level). 2007. Penn State University. Awarded to three students at MASS 2007 for the best overall performances.
• **Mathematics Advanced Studies Semester Award** for the best performance on the MASS geometry examination. 2007. Penn State University.
• **Penn State Mathematics Advanced Studies Semester Fellowship**. 2007. Penn State University. Tuition reduction fellowship.
• **National Science Foundation MASS Fellowship**. 2007. Provides an additional stipend at MASS.
• **National Science Foundation REU Fellowship**. 2007. Research Experience for Undergraduates (REU) at Missouri State University (Supported by the National Science Foundation); Advisor: Professor Leslie F. Reid.
• **Founders Scholarship**. 2004 - 2008. Tulane University.

Students

• Konrad Wrobel (Ph.D. student 2015-2021, graduated May 2021).
• Josiah Owens (Masters student 2019-2020).
• Mehrzad Monzavi (Ph.D. student 2016-2018).

Teaching

Texas A&M
- Spring 2020: Math 304 (Linear Algebra).
- Fall 2020: Math 304 (Linear Algebra).
- Spring 2020: Math 447 (Principles of Analysis II).
- Fall 2019: Math 446 (Principles of Analysis I) and Math 304 (Linear Algebra).
- Spring 2019: Math 423 (Linear Algebra II).
- Fall 2018: Math 653 (Graduate Algebra I) and Math 304 (Linear Algebra).
- Spring 2018: Math 447 (Principles of Analysis II).
- Fall 2017: Math 446 (Principles of Analysis I).
- Spring 2017: Math 409 (Advanced Calculus I).
- Fall 2016: Math 689 (Topics Course: Special Topics in Measurable Group Theory).
- Spring 2016: Math 410 (Advanced Calculus II).
- Fall 2015: Math 304 (Linear Algebra).

Rutgers
- Fall 2014: Math 435 (Geometry).

Caltech
Teaching Assistant, September 2008 to June 2013
- Spring 2013: TA for Math 117c Computability Theory.
- Winter 2013: TA for Math 117b Computability Theory.
- Fall 2012: TA for Math 117a Computability Theory.

- Spring 2012: TA for Math 1c Analytic Track. Multivariable Calculus.
- Winter 2012: TA for Math 1b Analytic Track. Linear Algebra
- Fall 2011: TA for Math 1a. Calculus of One and Several Variables
- Spring 2011: TA for Math 117c. Computability Theory
- Winter 2011: TA for Math 117b. Computability Theory
- Fall 2010: TA for Math 117a. Computability Theory
- Spring 2010: TA for Math 116c. Mathematical Logic and Axiomatic Set Theory
- Winter 2010: TA for Math 116b. Mathematical Logic and Axiomatic Set Theory
- Fall 2009: TA for Math 2a Practical Track. Differential equations
- Spring 2009: TA for Math 1c Analytic Track. Multivariable Calculus
- Winter 2009: TA for Math 1b Practical Track. Linear Algebra
- Fall 2008: TA for Math 1a. Calculus of One and Several Variables