

## **Brandon Tippings**

*Graduate Teaching/Research Associate*  
University of Arizona Mathematics  
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<http://math.arizona.edu/~tippings/>

### **Education:**

*University of Arizona, Tucson AZ, 2014-2020*  
Ph.D. in Mathematics, Minor in Philosophy

*University of California Irvine, Irvine CA, 2010-2014*  
B.S. in Mathematics *Magna Cum Laude*, Minor in Philosophy

### **Awards and Honors:**

Galileo Scholar  
Phi Beta Kappa  
Pi Mu Epsilon Mathematics Honor Society  
Undergraduate Research/Departmental Service Award

### **Research Experience:**

Department of Mathematics, University of Arizona  
*Doctoral Research, 2016-2020.*

Research Advisor: Nicholas Ercolani

- Study of various discrete dynamical systems, with a focus on the discrete Painlevé equations and other equations that fall under the Sakai classification.
- Via blow-ups, these systems are classified by their space of initial values (a rational surface).
- Using a dynamical systems approach, we solved various counting problems involving graphs and labeled trees.

Department of Mathematics, University of Arizona  
*Graduate Research, 2015.*

Research Advisor: Lotfi Hermi

- Found several Sobolev inequalities for the hyperbolic plane and interpolated between these and inequalities for the Euclidean plane.
- Connected these results to other isoperimetric results.

Department of Mathematics, University of California Irvine  
*Undergraduate Research, 2014.*

Research Advisor: Knut Solna

- Developed Green's functions for various domains in the plane.
- Conjectured form of the Green's functions for Robin boundary conditions.

Department of Mathematics, University of California Irvine  
*Undergraduate Research*, 2013.

Research Advisor: Alessandra Pantano

- Developed a metric for isomorphism classes of groups using Cayley tables.

Department of Philosophy, University of California Irvine  
*Undergraduate Research*, 2013.

Research Advisor: Sean Greenberg

## Teaching Experience:

University of Arizona, Tucson AZ, 2014-2020.

<i>Spring 2020</i>	Instructor	Math 313 – Linear Algebra
<i>Spring 2020</i>	Assistant	Math 534B – Geometry/Topology
<i>Spring 2019</i>	Instructor	Math 223 – Vector Calculus
<i>Fall 2018</i>	Instructor	Math 223 – Vector Calculus
<i>Spring 2018</i>	Instructor	Math 122B - Calculus I
<i>Fall 2017</i>	Instructor	Math 122A - Functions for Calculus
<i>Fall 2017</i>	Instructor	Math 122B - Calculus I
<i>Summer 2017</i>	Instructor	Graduate Analysis Qual. Prep.
<i>Spring 2017</i>	Instructor	Math 122B - Calculus I
<i>Fall 2016</i>	Instructor	Math 122B - Calculus I
<i>Spring 2016</i>	Instructor	Math 120R - Pre-Calculus
<i>Fall 2015</i>	Instructor	Math 112 - College Algebra
<i>Fall 2014</i>	Instructor	Math 112 - College Algebra

## Invited Talks:

- Accepted. *Random Combinatorial Structures, Complex Analysis and Integrable Systems Special Session*, Joint Mathematics Meeting, January 2020.
- Accepted. *Analysis, Dynamics and Applications Seminar*, University of Arizona, November 2019.
- Accepted. *Mathematical Physics and Probability Seminar*, University of Arizona, October 2018.

## Special Skills and Training:

English: Native Proficiency

Spanish: Minimum Professional Proficiency

Computer Skills: LaTeX, Python, Matlab, Mathematica