

EMPLOYMENT Duke University, Department of Mathematics 2016 – Present

William W. Elliott Research Assistant Professor; Supervisor: Rick Durrett

EDUCATION University of Washington 2006 – 2016

Ph.D. Mathematics; Advisor: Christopher Hoffman 2016

M.S. Mathematics Advisors: William McGovern, James Morrow 2012

B.S. Mathematics, Cum Laude 2010

B.A. Philosophy with College Honors, Cum Laude 2010

RESEARCH Probability; Statistical Physics; Mathematical Biology

PUBLICATIONS (listed in order of arXiv postdate)

1. [Recurrence and transience for the frog model on trees](#). Christopher Hoffman, Tobias Johnson, Matthew Junge. *Annals of Probability*. Volume 45, Number 5 (2017), 2826-2854.
2. [Choices, intervals and equidistribution](#). Matthew Junge. *Electronic Journal of Probability*. Volume 20 (2015), paper no. 97, 18 pp.
3. [From transience to recurrence with Poisson tree frogs](#). Christopher Hoffman, Tobias Johnson, Matthew Junge. *Annals of Applied Probability*. Volume 26, Number 3 (2016), 1620-1635.
4. [The critical density for the frog model is the degree of the tree](#). Tobias Johnson, Matthew Junge. *Electronic Communications in Probability*. Volume 21 (2016), paper no. 82, 12 pp.
5. [Site recurrence for coalescing random walk](#). Itai Benjamini, Eric Foxall, Ori Gurel-Gurevich, Matthew Junge, Harry Kesten. *Electronic Communications in Probability*. Volume 21 (2016), paper no. 47, 12 pp.
6. [Stochastic orders and the frog model](#). Tobias Johnson, Matthew Junge. *Annales de l'Institut Henri Poincaré*. Volume 54, Number 2 (2018), 1013-1030.
7. [Frog model wakeup time on the complete graph](#). Nikki Carter, Brittany Dygert, Stephen Lacina, Collin Litterell, Austin Stromme, Andrew You. *The Rose-Hulman Undergraduate Mathematics Journal*. Volume 17 : Issue 2 (2016), Article 9.
8. [Ewens sampling and invariable generation](#). Gerandy Brito, Christopher Fowler, Matthew Junge, Avi Levy. To appear in *Combinatorics, Probability, and Computing*. Available online (2017).
9. [The bullet problem with discrete speeds](#). Brittany Dygert, Christoph Kinzel, Matthew Junge, Jennifer Zhu, Annie Raymond, Erik Slivken. In revision at *Electronic Communications in Probability*.

10. [Coalescing random walk on unimodular graphs](#). Eric Foxall, Tom Hutchcroft, Matthew Junge. *Electronic Communications in Probability*. Volume 23 (2018), paper no. 62, 10 pp.
11. [Infection spread for the frog model on trees](#). Christopher Hoffman, Tobias Johnson, Matthew Junge. Submitted to *Electronic Journal of Probability*.
12. [Cover time for the frog model on trees](#). Christopher Hoffman, Tobias Johnson, Matthew Junge. In revision at *Forum of Mathematics, Sigma*.
13. [Asymptotic behavior of the Brownian frog model](#). Erin Beckman, Emily Dinan, Rick Durrett, Ran Huo, and Matthew Junge. *Electronic Journal of Probability*. Vol. 23 (2018), paper no. 104, 19 pp.
14. [Block size in Geometric\( \$p\$ \)-biased permutations](#). Irina Cristali, Vinit Ranjan, Jake Steinberg, Erin Beckman, Rick Durrett, Matthew Junge, James Nolen. *Electronic Communications in Probability*. Vol. 23, (2018) paper no. 80, 10 pp.
15. [Poisson percolation on the square lattice](#). Irina Cristali, Matthew Junge, Rick Durrett. In revision at the *Latin American Journal of Probability and Mathematical Statistics*.
16. [Poisson percolation on the oriented square lattice](#). Irina Cristali, Matthew Junge, Rick Durrett. In revision at *Stochastic Processes and their Applications*.
17. [Parking on transitive unimodular graphs](#). Janko Gravner, Hanbeck Lyu, Matthew Junge, David Sivakoff. To appear in *Annals of Applied Probability*.
18. [The upper threshold in ballistic annihilation](#). Debbie Burdinski, Shrey Gupta, Matthew Junge. In preparation.
19. [Coexistence in chase escape](#). Rick Durrett, Matthew Junge, Si Tang. Submitted to *Annals of Applied Probability*.
20. [The frog model on trees with drift](#). Erin Beckman, Natalie Frank, Yufeng Jiang, Matthew Junge, Si Tang. In revision at *Electronic Communications in Probability*.
21. [The contact process on periodic trees](#). Yufeng Jiang, Remy Kassem, Grayson York, Brandon Zhao, Matthew Junge, Xianqing Huang, Rick Durrett. Submitted to *Electronic Journal of Probability*.
22. [The phase structure of asymmetric ballistic annihilation](#). Matthew Junge and Hanbaek Lyu. In preparation.

AWARDS	Mathematical Research Community: Stochastic Spatial Systems	2018
	AMS–Simons Travel Grant	2017
	Excellence in Teaching Award, University of Washington	2015
	Tyrell Rockafellar Fellowship	2015
	NSF Research Training Grant Graduate Fellowship	2012
	Excellence in Teaching Award, University of Washington Math Dept.	2011

TEACHING EXPERIENCE	<p>Duke University</p> <ul style="list-style-type: none"> <li>• Advanced Introduction to Probability</li> <li>• Duke Opportunities in Math</li> <li>• Introduction to Probability and Statistics</li> <li>• Math Everywhere</li> <li>• Graduate Probability Topics Course (Discrete Interacting Particle Systems)</li> </ul> <p>University of Washington</p> <ul style="list-style-type: none"> <li>• Matrix Algebra with Applications</li> <li>• Single Variable Calculus</li> <li>• Online Course Development: Calculus I and II</li> <li>• Lead Teaching Assistant</li> <li>• Calculus and Business Math Teaching Assistant</li> </ul>	
SERVICE AND LEADERSHIP	<p>U. of North Carolina Adjunct Professor in Prisons.</p> <p>Graduate Student Representative</p> <p>Women's Prison Instructor for Freedom Education Project Puget Sound.</p> <p>Lead Teaching Assistant.</p> <p>NSF Research Experience for Undergraduates Project Leader.</p>	<p>2016 – 2017</p> <p>2015 – 2016</p> <p>2014 – 2016</p> <p>2014 – 2015</p> <p>2014 – 2016</p>
SELECTED TALKS	<ul style="list-style-type: none"> <li>• Cornell University</li> <li>• University of Southern California</li> <li>• University of California Los Angeles</li> <li>• Claremont Colleges Mathematics Colloquium</li> <li>• Fall AMS Eastern Sectional Meeting</li> <li>• Texas A&amp;M (conference in random walk)</li> <li>• City University New York Graduate School</li> <li>• Ohio State University</li> <li>• University of Cambridge</li> <li>• Paris VI Diderot</li> <li>• University of Oxford</li> <li>• Georgia Institute of Technology</li> <li>• U.C. Berkeley</li> <li>• Duke University</li> <li>• University of Washington</li> <li>• City University New York Graduate School</li> <li>• University of Delaware</li> <li>• University of Miami</li> <li>• Ohio State University</li> </ul>	<p>2018</p> <p>2017</p>
EVENTS ORGANIZED	<ul style="list-style-type: none"> <li>• Pacific Northwest MAA session organizer. Corvallis, OR. <i>Title:</i> Thinking outside the circle: alternative outreach.</li> </ul>	<p>2016</p>