

## Peter Bonventre

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CONTACT INFORMATION	College of the Holy Cross Swords 325 Worcester, MA 01610	Email: <a href="mailto:pbonvent@holycross.edu">pbonvent@holycross.edu</a> Phone: (518) 227-0314 Web: <a href="https://petejb88.github.io">https://petejb88.github.io</a>
RESEARCH INTERESTS	Algebraic topology and equivariant stable homotopy theory: equivariant operads, dendroidal sets, model categories, structured ring spectra, power operations.	
ACADEMIC APPOINTMENTS	<b>College of the Holy Cross</b> , Worcester, MA Visiting Assistant Professor, Mathematics	September 2020 – present
	<b>University of Kentucky</b> , Lexington, KY Postdoctoral Scholar, Mathematics	August 2017 – June 2020
EDUCATION	<b>University of Virginia</b> , Charlottesville, VA Ph.D., Mathematics. Thesis: <i>Comparison of Models for Equivariant Operads</i> Advisor: Michael Hill	May 2017
	<b>Union College</b> , Schenectady, NY B.S. in Mathematics and Physics, <i>summa cum laude</i>	June 2011
PUBLICATIONS	<b>Genuine equivariant operads</b> (with L. Pereira) To appear in <i>Advances in Mathematics</i> . <a href="#">arXiv:1707.02226</a>	
	<b>Rigidification of dendroidal infinity-operads</b> (with L. Pereira) To appear in <i>Homology, Homotopy and Applications</i> . <a href="#">arXiv:2004.12296</a>	
	<b>Equivariant dendroidal Segal spaces and <math>G</math>-<math>\infty</math>-operads</b> (with L. Pereira) <i>Algebraic &amp; Geometric Topology</i> , 20 (2020), no. 6, 2687–2778. <a href="#">arXiv:1801.02110</a>	
	<b>The genuine operadic nerve</b> <i>Theory and Application of Categories</i> , <b>34</b> (2019), 736–780. <a href="#">arXiv:1904.01465</a>	
	<b>Estimating Energy Expenditure during Level, Uphill, and Downhill Walking</b> D. Looney, W. Santee, E. Hansen, <b>P. Bonventre</b> , C. Chalmers, A. Potter <i>Medicine &amp; Science in Sports &amp; Exercise</i> , 2019, Vol.51(9), pp. 1954–1960	
PREPRINTS	<b>On the homotopy theory of equivariant colored operads</b> (with L. Pereira) <a href="#">arXiv:2004.01352</a> , submitted	
	<b>Additive power operations in equivariant cohomology</b> (with B. Guillou and N. Stapleton), <a href="#">arXiv:2001.11078</a> , submitted	
	<b>Equivariant dendroidal sets and simplicial operads</b> (with L. Pereira) <a href="#">arXiv:1911.06399</a> , submitted	
	<b>Homotopy theory of equivariant operads with fixed colors</b> (with L. Pereira) <a href="#">arXiv:1908.05440</a> , submitted	
GRANTS	Learning Technologies Incubator grant, “An Experiment in Flipped-Classroom Calculus Instruction,” University of Virginia, 2016-2017	

Travel support for Young Topologists Meeting, 2016  
 Dean's Dissertation Completion Fellowship, University of Virginia, 2015–2017  
 Travel support for GSTGC, 2016

AWARDS	<p>Outstanding All-Campus GTA, Honorable Mention, University of Virginia, 2017          Outstanding Mathematics GTA, University of Virginia, 2016          COMAP Mathematical Contest in Modeling, Meritorious Designation, 2009,2010,2011          Martin Terry Resch Prize, Mathematics Department, Union College, 2011          Barry M. Goldwater Scholarship, 2010</p>
MENTORSHIP ROLES	<p>Group leader, University of Kentucky MathLab, <i>3D Visualization</i>, 2019–2020          Math Club Faculty Advisor, University of Kentucky, 2017–2020          Math Outreach Ambassador, University of Virginia, 2014–2016          Graduate Teaching Mentor, University of Virginia, 2014–2016</p>
SERVICE	<p>Referee for several mathematics journals          Co-organizer, Midwest Topology Conference, University of Kentucky, Fall 2018          Co-organizer, Student Seminar in Homotopy Theory, University of Virginia, Fall 2015          Academic Opportunities Program Tutor, Union College, 2007–2008</p>
INVITED TALKS	<p><i>Rigidification of dendroidal infinity-operads</i>, Ohio State, Homotopy Theory Seminar, March 2021  <i>Additive power operations in equivariant cohomology</i>, Vanderbilt University, Topology Seminar, March 2020 (cancelled, COVID-19)  <i>Additive power operations in equivariant cohomology</i>, AMS Sectional Meeting, Special Session on Homotopy Theory, University of Virginia, March 2020 (cancelled, COVID-19)  <i>Power operations and transfers in equivariant cohomology theory</i>, Joint Mathematics Meetings, Special Session on Categorical and Computational Methods in Homotopy Theory, January 2020  <i>Equivariant symmetric monoidal categories and K-theory</i>, UIUC, Topology Seminar, November 2019  <i>Equivariant trees and equivariant higher algebra</i>, AMS Section Meeting, Special Session on Homotopy Theory, University of Wisconsin-Madison, September 2019  <i>G-trees and equivariant higher algebra</i>, UCLA, Algebraic Topology Seminar, May 2019  <i>Generalizing composition of functions and operads</i>, Union College, Student Seminar, February 2019  <i>Symmetric monoidal Mackey functors</i>, SUNY Albany, Algebra/Topology Seminar, February 2019  <i>Models for equivariant operads</i>, AMS, Special Session on Recent Progress and New Directions in Homotopy Theory, April 2018  <i>Genuine equivariant operads</i>, Indiana University, Topology Seminar, November 2017  <i>Genuine equivariant operads</i>, Vanderbilt University, Topology Seminar, October 2017  <i>Genuine equivariant operads</i>, Johns Hopkins University, Topology Seminar, April 2017  <i>Equivariant trees and G-dendroidal sets</i>, 31st Summer Conference on Topology and its Applications, Algebraic Topology Special Session; Leicester, England, August 2016</p>

SELECT OTHER  
TALKS

*Rigidification of infinity operads*, University of Kentucky, Topology Seminar (joint with Vanderbilt University), August 2020

*Generalizing composition of functions and operads*, University of Kentucky, Undergraduate Math Club, February 2020

*Additive power operations in equivariant cohomology*, University of Kentucky, Topology Seminar, February 2020

*Equivariant trees and equivariant higher algebra*, University of Kentucky, Topology Seminar, September 2019

*Equivariant power operations and the transfer*, University of Kentucky, Topology Seminar, January 2019

*Symmetric monoidal Mackey functors*, University of Kentucky, Topology Seminar, September 2018

*Equivariant dendroidal Segal spaces and categorical homotopy theory*, University of Kentucky, Topology Seminar, January 2018

*Operads and exotic multiplications*, University of Kentucky, Topology Seminar, September 2017

*Genuine equivariant operads*, Joint Mathematics Meetings, January 2017

*Genuine equivariant operads*, University of Virginia, Topology Seminar, October 2016

*Equivariant trees and G-dendroidal sets*, Bell Talk, BIRS Operations in Highly Structured Homology Theories; Banff, Canada, May 2016

*Presenting Equivariant Operads*, Graduate Student Topology and Geometry Conference; Bloomington, Indiana, April 2016

*Models for Equivariant Infinite Loop Spaces*, University of Virginia, Graduate Student Seminar, November 2015

*Presenting Equivariant Operads*, University of Virginia, Topology Seminar, Oct. 2015

*G-spectra and duality*, University of Virginia, Equivariant Homotopy Theory Seminar, September 2015

*Flexibly Planar and Flexibly Flat Graphs*, MathFest 2010, with Lydia Garcia, Alex Murray, and Sarah Rasco, August 2010

TEACHING  
EXPERIENCE

**Instructor of Record**, College of the Holy Cross

Modern Algebra 1 (mastery grading, online-only), Math 351, Spring 2021

Calculus 2 (inquiry-based learning, online-only), Math 136, Spring 2021

Calculus 1 (inquiry-based learning, online-only), Math 135, Fall 2020

Multivariable Calculus (online-only), Math 241, Fall 2020

**Instructor of Record**, University of Kentucky

Number Theory (inquiry-based learning), MA 261, Spring 2020

Elementary Calculus and its Applications (large lecture), MA 123, Spring 2020

Elementary Calculus and its Applications (large lecture), MA 123, Fall 2019

Topology II, MA 352, Spring 2019

Independent Study in Category Theory, Spring 2019

Topology I, MA 351, Fall 2018

Calculus III (large lecture), MA 213, Fall 2018

Calculus III (large lecture), MA 213, Spring 2018

Calculus III (large lecture), MA 213, Fall 2017

Number Theory (inquiry-based learning), MA 261, Fall 2017

**Course Development Collaborator**, University of Virginia, Fall 2016  
Redesigned Calculus I with a focus on active- and cooperative-learning.

**Instructor of Record**, University of Virginia  
Flipped-Classroom Calculus I (inquiry-based learning), MATH 1310, Spring 2017  
Calculus I, MATH 1310, Fall 2016  
Applied Calculus II, MATH 1220, Fall 2015  
Applied Calculus II, MATH 1220, Fall 2014  
Applied Calculus II, MATH 1220, Spring 2014  
Applied Calculus I, MATH 1210, Fall 2013  
Applied Calculus II, MATH 1220, Spring 2013  
Applied Calculus I, MATH 1220, Fall 2012

**Graduate Teaching Assistant**, University of Virginia  
Differential Equations, MATH 3250, Spring 2012  
Calculus II, MATH 1320, Spring 2012  
Calculus I, MATH 1310, Fall 2011

SELECT CONFERENCES AND WORKSHOPS ATTENDED

BIRS Equivariant Stable Homotopy Theory and p-adic Hodge Theory, Banff, Canada, March 2020

Midwest Topology Seminar, University of Chicago, October 2019

Midwest Topology Seminar, Michigan State University, May 2019

Midwest Topology Seminar, UIUC, February 2019

Upstate New York Topology Seminar, SUNY Albany, November 2018

Co-organized Midwest Topology Seminar, University of Kentucky, September 2018

Chromatic Homotopy Theory, Journey to the Frontier, University of Colorado Boulder, May 2018

Midwest Topology Seminar, University of Indiana, April 2018

Midwest Topology Seminar, Northwestern University, March 2018,

Homotopy Theory Summer, Equivariant homotopy theory and K-theory, Freie Universität Berlin, Germany, June 2018

Speaker at 31st Summer Conference on Topology and its Applications, University of Leicester, England, August 2016

Invertibility and Duality in DAG and Homotopy Theory, University of Regensburg, Germany, April 2017

Young Topologists Meeting, University of Copenhagen, Denmark, July 2016

BIRS Operations in Highly Structured Homology Theories, Banff, Canada, May 2016

Speaker at Graduate Student Topology and Geometry Conference, University of Indiana, April 2016

Mid-Atlantic Topology Conference, Johns Hopkins University, March 2016

BIRS Equivariant Derived Algebraic Geometry, Banff, Canada, Feb. 2016

Introductory School to Homotopy theory, manifolds, and field theories, Hausdorff Institute for Mathematics, Germany, May 2015

Mid-Atlantic Topology Conference, University of Virginia, April 2015

Re-imagining the Foundations of Algebraic Topology, MSRI, April 2014

Mathfest, Pittsburg, Pennsylvania, August 2010

## References

Michael Hill  
UCLA, Professor  
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Andrew Blumberg  
University of Texas at Austin, Professor  
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Julie Bergner  
University of Virginia, Professor  
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Bertrand Guillou  
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Erica Whitaker (teaching)  
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