

Peter Bonventre

CONTACT INFORMATION	College of the Holy Cross Swords 325 Worcester, MA 01610	<i>Email:</i> peterbonventre@uky.edu <i>Phone:</i> (518) 227-0314 <i>Web:</i> https://petejb88.github.io
RESEARCH INTERESTS	Algebraic topology and equivariant stable homotopy theory: equivariant operads, dendroidal sets, model categories, structured ring spectra, power operations.	
ACADEMIC APPOINTMENTS	College of the Holy Cross , Worcester, MA Visiting Assistant Professor, Mathematics	September 2020 – present
	University of Kentucky , Lexington, KY Postdoctoral Scholar, Mathematics	August 2017 – June 2020
EDUCATION	University of Virginia , Charlottesville, VA Ph.D., Mathematics. Thesis: <i>Comparison of Models for Equivariant Operads</i> Advisor: Michael Hill	May 2017
	Union College , Schenectady, NY B.S. in Mathematics and Physics, <i>summa cum laude</i>	June 2011
PUBLICATIONS	Rigidification of dendroidal infinity-operads (with L. Pereira) To appear in <i>Homology, Homotopy and Applications</i> . arXiv:2004.12296.	
	Equivariant dendroidal Segal spaces and G-∞-operads (with L. Pereira) To appear in <i>Algebraic & Geometric Topology</i> . arXiv:1801.02110	
	The genuine operadic nerve <i>Theory and Application of Categories</i> , 34 (2019), 736–780. arXiv:1904.01465	
	Estimating Energy Expenditure during Level, Uphill, and Downhill Walking D. Looney, W. Santee, E. Hansen, P. Bonventre , C. Chalmers, A. Potter <i>Medicine & Science in Sports & Exercise</i> , 2019, Vol.51(9), pp. 1954–1960	
PREPRINTS	On the homotopy theory of equivariant colored operads (with L. Pereira) arXiv:2004.01352, submitted	
	Additive power operations in equivariant cohomology (with B. Guillou and N. Stapleton), arXiv:2001.11078, submitted	
	Equivariant dendroidal sets and simplicial operads (with L. Pereira) arXiv:1911.06399, submitted	
	Homotopy theory of equivariant operads with fixed colors (with L. Pereira) arXiv:1908.05440, submitted	
	Genuine equivariant operads (with L. Pereira) arXiv:1707.02226, submitted	

GRANTS	<p>Learning Technologies Incubator grant, “An Experiment in Flipped-Classroom Calculus Instruction,” University of Virginia, 2016-2017</p> <p>Travel support for Young Topologists Meeting, 2016</p> <p>Dean’s Dissertation Completion Fellowship, University of Virginia, 2015–2017</p> <p>Travel support for GSTGC, 2016</p>
AWARDS	<p>Outstanding All-Campus GTA, Honorable Mention, University of Virginia, 2017</p> <p>Outstanding Mathematics GTA, University of Virginia, 2016</p> <p>COMAP Mathematical Contest in Modeling, Meritorious Designation, 2009,2010,2011</p> <p>Martin Terry Resch Prize, Mathematics Department, Union College, 2011</p> <p>Barry M. Goldwater Scholarship, 2010</p>
MENTORSHIP ROLES	<p>Group leader, University of Kentucky MathLab, <i>3D Visualization</i>, 2019–2020</p> <p>Math Club Faculty Advisor, University of Kentucky, 2017–2020</p> <p>Math Outreach Ambassador, University of Virginia, 2014–2016</p> <p>Graduate Teaching Mentor, University of Virginia, 2014–2016</p>
SERVICE	<p>Referee for several mathematics journals</p> <p>Co-organizer, Midwest Topology Conference, University of Kentucky, Fall 2018</p> <p>Co-organizer, Student Seminar in Homotopy Theory, University of Virginia, Fall 2015</p> <p>Academic Opportunities Program Tutor, Union College, 2007–2008</p>
INVITED TALKS	<p><i>Additive power operations in equivariant cohomology</i>, Vanderbilt University, Topology Seminar, March 2020 (cancelled, COVID-19)</p> <p><i>Additive power operations in equivariant cohomology</i>, AMS Sectional Meeting, Special Session on Homotopy Theory, University of Virginia, March 2020 (cancelled, COVID-19)</p> <p><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</p> <p><i>Equivariant symmetric monoidal categories and K-theory</i>, UIUC, Topology Seminar, November 2019</p> <p><i>Equivariant trees and equivariant higher algebra</i>, AMS Section Meeting, Special Session on Homotopy Theory, University of Wisconsin-Madison, September 2019</p> <p><i>G-trees and equivariant higher algebra</i>, UCLA, Algebraic Topology Seminar, May 2019</p> <p><i>Generalizing composition of functions and operads</i>, Union College, Student Seminar, February 2019</p> <p><i>Symmetric monoidal Mackey functors</i>, SUNY Albany, Algebra/Topology Seminar, February 2019</p> <p><i>Models for equivariant operads</i>, AMS, Special Session on Recent Progress and New Directions in Homotopy Theory, April 2018</p> <p><i>Genuine equivariant operads</i>, Indiana University, Topology Seminar, November 2017</p> <p><i>Genuine equivariant operads</i>, Vanderbilt University, Topology Seminar, October 2017</p> <p><i>Genuine equivariant operads</i>, Johns Hopkins University, Topology Seminar, April 2017</p> <p><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
Calculus 1 (inquiry-based learning), Math 135, Fall 2020
Multivariable Calculus, 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