
Juanita Pinzón Caicedo

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Positions

Postdoctoral Research Scholar, NC State University. 2017-today.

Postdoctoral Teaching and Research Assistant, University of Georgia, Athens. 2014-2017.

Research Interests

- Knot Theory
- Gauge Theory
- Open Book Decompositions
- Concordance
- Homology Cobordism
- Instantons
- Satellite Operations
- Trisections
- Chern-Simons

Education

- 2008-2014 **Ph.D. Mathematics**, *Indiana University, Bloomington, IN*
 Department of Mathematics
 Thesis: *Independence of satellite operations of torus knots in the smooth concordance group*
 Adviser: Paul Kirk
- 2007-2008 **Graduate Studies, Mathematics**, *Universidad de Los Andes, Bogotá, Colombia*
 Department of Mathematics
- 2003-2007 **B.S. Mathematics**, *Universidad de Los Andes, Bogotá, Colombia*
 Department of Mathematics
 Thesis: *Morse Homology*
 Adviser: Bernardo Uribe
- 1989-2002 **K-12 Colegio**, *Gimnasio Los Portales, Bogotá, Colombia*

Publications

Published or Submitted

- [1] Nickolas A Castro, David T Gay, and Juanita Pinzon-Caicedo. “Diagrams for Relative Tri-sections”. In: *Pacific Journal of Mathematics* 294.2 (2018), pp. 275–305. URL: <https://doi.org/10.2140/pjm.2018.294.275>.
- [2] Nickolas A. Castro, David T. Gay, and Juanita Pinzón-Caicedo. “Trisections of 4-manifolds with Boundary”. In: *Proceedings of the National Academy of Sciences* 115.43 (2018), pp. 10861–10868. URL: <http://www.pnas.org/content/115/43/10861>.
- [3] Yoshihiro Fukumoto, Paul Kirk, and Juanita Pinzón-Caicedo. “Traceless $SU(2)$ representations of 2-stranded tangles”. In: *Math. Proc. Cambridge Philos. Soc.* 162.1 (2017), pp. 101–129. ISSN: 0305-0041. URL: <https://doi.org/10.1017/S0305004116000360>.
- [4] Matthew Hedden and Juanita Pinzón-Caicedo. “Satellites of Infinite Rank in the Smooth Concordance Group”. In: *Submitted* (2018). URL: <https://arxiv.org/abs/1809.04186>.
- [5] Juanita Pinzón-Caicedo. “Independence of Iterated Whitehead Doubles”. In: *Proc. Amer. Math. Soc.* (2018). URL: <https://doi.org/10.1090/proc/14261>.
- [6] Juanita Pinzón-Caicedo. “Independence of satellites of torus knots in the smooth concordance group”. In: *Geom. Topol.* 21.6 (2017), pp. 3191–3211. ISSN: 1465-3060. URL: <https://doi.org/10.2140/gt.2017.21.3191>.

In Preparation

- [7] Peter Feller and Juanita Pinzón-Caicedo. *Algebraic Genus of Satellites*.
- [8] Tye Lidman and Juanita Pinzón-Caicedo. *Mazur-type manifolds and $SU(2)$ representations*.
- [9] Tye Lidman, Juanita Pinzón-Caicedo, and Christopher Scaduto. *Framed instanton homology of surgeries on torus knots*.
- [10] Allison Miller and Juanita Pinzón-Caicedo. *Satellites that are not homomorphisms*.

Grants, Honors & Awards

AIM SQuaRE - Trisections, Knotted Surfaces, and Symplectic 4-Manifolds,	2017
NSF FRG Trisections - New Directions in Low-dimensional Topology,	2016
OVPR Foreign Travel Assistance Program, <i>University of Georgia</i>	2015
Provost’s Travel Award for Women in Science, <i>Indiana University</i>	2013
David A. Rothrock Associate Instructor Award, <i>Indiana University</i>	2012
Women in Science Program Travel Award, <i>Indiana University</i>	2012
Women in Science Program Travel Award, <i>Indiana University</i>	2011
Office of Women’s Affairs Fellowship, <i>Indiana University</i>	2008
Teaching Assistanship, <i>Universidad de Los Andes</i>	2007
Academic Excellence, <i>Gimnasio Los Portales</i>	2002

Teaching Experience

Since my arrival at NC State University I have been a participant in the highly competitive Teaching and Communication Certificate, a program designed to make participants more effective instructors. The standard requirements for the Teaching and Communication Certificate are 100 hours of approved activities plus a professional development portfolio. I will complete the program in May 2018.

Instructor

2018 Fall	Calculus II, <i>NC State University</i>
2018 Spring	Vector Bundles and Characteristic Classes, <i>NC State University</i>
2017 Fall	Finite Mathematics, <i>NC State University</i>
2017 Spring	Integral Calculus, <i>University of Georgia</i>
2016 Fall	Point Set Topology, <i>University of Georgia</i>
2016 Spring	Differential Calculus, <i>University of Georgia</i>
2015 Fall	Foundations of Geometry, <i>University of Georgia</i>
2015 Spring	Integral Calculus, <i>University of Georgia</i>
2014 Fall	Differential Calculus, <i>University of Georgia</i>
2014 Spring	Finite Mathematics, <i>Indiana University</i>
2012 Fall	Finite Mathematics I, <i>Indiana University</i>
2012 Spring	Basic Algebra for Finite Math, <i>Indiana University</i>
2010 Spring	Pre-Calculus Mathematics, <i>Indiana University</i>
2009 Fall	Pre-Calculus Mathematics, <i>Indiana University</i>
2007 Spring	Differential Calculus, <i>Universidad de Los Andes</i>

Recitation Leader/ Assistant Instructor

2013 Fall	Modern Algebra for Secondary School Teachers, <i>Indiana University</i>
2011 Fall	Calculus II, <i>Indiana University</i>
2010 Fall	Topics in Euclidean Geometry, <i>Indiana University</i>
2009 Spring	Finite Mathematics, <i>Indiana University</i>
2008 Spring	Vector Calculus, <i>Universidad de Los Andes</i>
2007 Fall	Calculus on Manifolds, <i>Universidad de Los Andes</i>
2007 Fall	Differential Calculus, <i>Universidad de Los Andes</i>
2006 Fall	Integral Calculus, <i>Universidad de Los Andes</i>

Academic Service and Contributions

AMS Special Session on Latinx in Math <i>JMM</i> , Organizer (contact person)	2018
Applied Dance+Inspired Math <i>NC State University</i> , Collaborated in the production and participated on the show.	2018
Community Engaged Project <i>NC Museum of History</i> , Designer of guide "Math in the Museum"	2018

AMS Special Session on Trisections <i>Northeastern University</i> , Organizer (contact person)	2018
GLBT Advocate Program <i>NCSU</i> , Advocate	2017-today
Working Seminar - Trisections of 4-manifolds <i>NCSU</i> , Organizer	2017
Mathematische Annalen <i>Springer</i> , Referee	2017
Georgia Topology International Conference <i>University of Georgia</i> , Co-organizer	2017
UGA MathCamp <i>University of Georgia</i> , Leader	2016
Georgia Topology Conference <i>University of Georgia</i> , Co-organizer	2016
Peach State Louis Stokes Alliance for Minority Participation (Peach State LSAMP) <i>University of Georgia</i> , Faculty Mentor	2015
Graduate Student Topology Seminar <i>University of Georgia</i> , Organizer	2014-2016
Program for Women in Science, Technology, and Math at IU <i>Indiana University</i> , Math Consultant	2012-2013
Women in STM mentoring program <i>Indiana University</i> , Mentor	2013 Spring
Lunch for Women in Math <i>Indiana University</i> , Organizer	2010-2013
10th Annual Graduate Student Topology and Geometry Conference <i>Indiana University</i> , Organizer	2012
Universidad de Los Andes Student Body <i>Universidad de Los Andes</i> , Mathematics Graduate Representative	2007-2008

Presentations - Research

- 2018 **Tech Topology Conference**, *Georgia Tech*
Satellites of Infinite Rank in Concordance
- 2018 **Escuela de Nudos**, *UNAM*
Nudos y Superficies
- 2018 **Topology Conference**, *University of Virginia*
Satellites of Infinite Rank in Concordance
- 2018 **AMS Sectional**, *University of Arkansas, Fayetteville*
Relative trisections and HF contact invariants
- 2018 **Topology Seminar**, *Indiana University Bloomington*
Satellites of Infinite Rank in Concordance
- 2018 **Topology Seminar**, *University of Nebraska-Lincoln*
Operations of Infinite Rank in Concordance

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- 2018 **Topology Seminar**, *Michigan State University*
Gauge Theory and Knot Concordance
- 2018 **AMS Sectional**, *Ohio State University*
Cable-like satellites are not homomorphisms
- 2018 **Latinx in Math - Poster Session**, *IPAM UCLA*
Gauge Theory and Knot Concordance
- 2018 **Topology Seminar**, *Duke University*
Gauge Theory and Knot Concordance
- 2017 **XXI Congreso Colombiano de Matemáticas**, *Universidad Nacional de Colombia*
La dimensión 4 y la concordancia de nudos
- 2016 **AMS Sectional**, *North Carolina State University*
Examples of relative trisections
- 2016 **Topology Seminar**, *Georgia Tech*
Examples of relative trisections
- 2016 **AMS Sectional**, *St. Thomas University*
Examples of relative trisections
- 2016 **Conference on 4-manifolds and knot concordance**, *MPIM*
Iterated Whitehead Doubles are Independent
- 2016 **Seminar on knot concordance and 4-manifolds**, *Hausdorff Research Institute for Mathematics*
Examples of relative trisections
- 2016 **Knots in the Triangle**, *North Carolina State University*
Independence of Whitehead Doubles of Torus Knots in the Smooth Concordance Group
- 2016 **Topology Seminar**, *University of Buffalo*
An Overview of Relative Trisections.
- 2016 **Advances in Quantum and Low-Dimensional Topology**, *University of Iowa*
An Overview of Relative Trisections.
- 2016 **AMS Sectional**, *University of Georgia*
An Overview of Relative Trisections.
- 2016 **Synchronizing Smooth and Topological 4-Manifolds**, *Banff International Research Station*
An Overview of Relative Trisections.
- 2015 **Matemáticas por estudiantes**, *Universidad de Los Andes*
Construcciones de 3-variedades y la esfera de Poincaré.
- 2015 **Workshop**, *CIRM*
Trisections, braids and two fold covers of S^4 .
- 2015 **Topology Seminar**, *Brandeis University*
Independence of Whitehead Doubles of Torus Knots in the Smooth Concordance Group
- 2015 **Topology Seminar**, *Georgia Tech*
Independence of Whitehead Doubles of Torus Knots in the Smooth Concordance Group
- 2014 **Topology Seminar**, *University of Georgia*
Independence of Whitehead Doubles of Torus Knots in the Smooth Concordance Group
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- 2013 **Taller de Geometría y Topología**, *Universidad Nacional Autónoma de México, Oaxaca*
Mini-course, 3-Esferas de Homología
- 2013 **Topology Seminar**, *Michigan State University*
Traceless $SU(2)$ -representations of 2-stranded tangles
- 2013 **Topology Seminar**, *Louisiana State University*
Traceless $SU(2)$ -representations of 2-stranded tangles
- 2013 **Workshop and Conference on the Topology and Invariants of Smooth 4-Manifolds**, *University of Minnesota*
Independence of Whitehead Doubles in the Smooth Concordance Group
- 2012 **Program for Women and Mathematics**, *Institute for Advanced Studies*
Independence In the Smooth Concordance Group Through $SO(3)$ -Chern-Simons Invariants
- 2007 **Geometric, Algebraic, and Topological Methods for Quantum Field Theory**,
Villa de Leyva, Colombia
Morse Homology

Presentations - Other

- 2018 **Working Seminar**, *NCSU*
Introduction to Trisections
- 2017 **SUM Series**, *NCSU*
Crunched Charms, a short introduction to knot theory
- 2017 **Working Seminar**, *NCSU*
Homology with Local Coefficients
- 2017 **Topology Seminar**, *NCSU*
Iterated Whitehead Doubles are Independent
- 2017 **Math Club**, *University of Georgia*
Crunched Charms, a short introduction to knot theory
- 2017 **Topology Seminar**, *UGA*
Concordance of Iterated Whitehead Doubles
- 2016 **Topology Seminar**, *UGA*
Diagrams of relative trisections
- 2016 **Topology Seminar**, *UGA*
An Overview of Relative Trisections
- 2016 **Graduate Student Seminar**, *UGA*
A group structure on knots
- 2015 **Topology Seminar**, *UGA*
The signature of branched covers of the 4-sphere
- 2015 **Topology Seminar**, *UGA*
Representation Spaces of Surfaces
- 2015 **Graduate Student Seminar**, *UGA*
Some constructions of 3-manifolds
- 2014 **Topology Seminar**, *UGA*
Chern-Simons Invariants

- 2013 **Topology Seminar**, *Indiana University*
Topological and Geometric Group Theory
- 2012 **Graduate Student Seminar**, *Indiana University*
Morse Theory
- 2011 **Graduate Student Seminar**, *Indiana University*
Poincaré's Homology Sphere
- 2011 **Topology Seminar**, *Indiana University*
Rational Blowdown
- 2011 **Topology Seminar**, *Indiana University*
Symplectic Manifolds and Fillability of Contact Manifolds
- 2010 **Topology Seminar**, *Indiana University*
The Slice Theorem
- 2008 **Topology Seminar**, *Indiana University*
Morse Homology