

Catherine PFAFF

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| CONTACTS | <i>E-mail:</i> cpfaff@math.ucsb.edu | <i>Webpage:</i> http://math.ucsb.edu/~cpfaff/ |
| APPOINTMENTS | University of California Santa Barbara Ky Fan Visiting Assistant Professor | July 2015 - August 2018 |
| | Universität Bielefeld Postdoctoral Research Fellow | July 2014 - August 2015 |
| | Université d'Aix-Marseille Laboratoire d'Excellence Postdoctoral Research Fellow | January 2013 - June 2014 |
| VISITING POSITIONS | Centre de Recerca Matemàtica Research Programme on Automorphisms of Free Groups | Fall 2012 |
| | Bard College at Simon's Rock Visiting Assistant Professor of Mathematics | Fall 2011 - Spring 2012 |
| | Mathematical Sciences Research Institute Associate Member (as a graduate student) | Fall 2007 |
| EDUCATION | Rutgers University , Ph.D. in Mathematics, <i>Advisor: Lee Mosher</i> | October 2012 |
| | University of Chicago , Honors B.A. in Mathematics | May 2004 |
| PUBLICATIONS/ PREPRINTS | <ol style="list-style-type: none">1) <i>Compactifying Teichmüller Space Using the Right Trousers.</i> w. D. Cooper In preparation, preliminary preprint available upon request2) <i>Counting conjugacy classes of fully irreducibles: double exponential growth.</i> w. I. Kapovich arxiv: 1801.07471, Submitted3) <i>Stable Strata of Geodesics in Outer Space.</i> w. Y. Algom-Kfir, I. Kapovich International Mathematics Research Notices, to appear.4) <i>Normalizers and centralizers of cyclic subgroups generated by lone axis fully irreducible outer automorphisms.</i> w. Y. Algom-Kfir New York Journal of Mathematics 23 (2017), 365381.5) <i>A Dense Geodesic Ray in Reduced Outer Space.</i> w. Y. Algom-Kfir Groups, Geometry, & Dynamics, to appear.6) <i>A Train Track Directed Random Walk on $\text{Out}(F_r)$.</i> w. I. Kapovich Inter. Journal of Algebra and Computation (IJAC). Volume No.25, Issue No. 5.7) <i>Lone Axes in Outer Space.</i> w. L. Mosher Algebraic & Geometric Topology 16.6 (2016): 3385-3418.8) <i>$\text{Out}(F_3)$ Index Realization.</i> Math. Proc. of the Cambridge Phil. Society, vol. 159, issue 03, pp. 445-458 (2015).9) <i>Ideal Whitehead Graphs in $\text{Out}(F_r)$ IV.</i> Topology Proceedings, subject to revisions.10) <i>Ideal Whitehead Graphs in $\text{Out}(F_r)$ III.</i> Journal of Topology & Analysis, Volume No.08, Issue No. 02 (2016).11) <i>Ideal Whitehead Graphs in $\text{Out}(F_r)$ II.</i> Journal of Homotopy and Related Structures: Volume 10, Issue 2 (2015), pp 275-301.12) <i>Ideal Whitehead Graphs in $\text{Out}(F_r)$ I.</i> New York Journal of Mathematics, Volume 21 (2015) 417-463. | |

ACADEMIC
HONORS/AWARDS

Ky Fan Visiting Assistant Professorship, UCSB, *2015 - 2018*.
GEAR Conference Grant (\$26,500), *2017*.
Humboldt Research Fellowship for Postdoctoral Researchers, not utilized, *2015*.
NSF Conference Grant DMS - 1331129, *2013*.
Labex Archimède Research in Residence Grant, *2013*.
NSF Graduate Research Fellowship Honorable Mention, *2006*.
NSF Graduate Research Fellowship Honorable Mention, *2005*.
Henry C. Torrey Graduate Fellowship (recruitment fellowship), *2004 - 2006*.
Weill Fellowship (summer funding fellowship), *2004*.

PROFESSIONAL
SERVICE

Scientific Committee *Fall 2017*
 “Groups explored through geometry & dynamics”
Organizer *Fall 2017*
 “Groups explored through geometry & dynamics”
Co-Organizer *Fall '16 - Spring '18*
 University of California Santa Barbara Topology Seminar
Organizer *Fall '14 - Spring '15*
 Universität Bielefeld Oberseminar Gruppen & Geometrie
Organizer & Co-PI *Summer 2013*
 “Special Program on Geometry of Outer Space”
Organizer *Fall '08 - Spring '09*
 Graduate Student Geometric Group Theory Seminar
Organizer *Spring 2008*
 Graduate Student Mapping Class Group & Teichmüller Theory Seminar
Committee Head *2005 - 2008*
 Rutgers Directed Reading Program Committee
A Primary Organizer *Spring 2007*
 Asha for Education International Conference
University of Chicago Math Club President *2002 - 2003*

INSTRUCTIONAL
OUTREACH,
ADVISING,
MENTORING

Academic Advisor for 2 College Students *Fall 2011- Spring 2012*
Founder & Committee Head - Rutgers Directed Reading Program *2005-2008*
Mentor in Rutgers Directed Reading Program in Mathematics *2005-2008*
University of Chicago Young Scholars Program Counselor *Summer 2003*
University of Chicago Young Scholars Program Assistant *2001-2004*
Bard College at Simon’s Rock Mathclub Faculty Advisor *Fall 2011- Spring 2012*

COURSES
TAUGHT

University of California Santa Barbara

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|---|----------------------------------|
| Math 3A (Calculus I) | Spring '17, Winter '18 |
| Math 3B (Calculus II) | Fall '15, Fall '16, Spring '17 |
| Math 34B (Calculus for Social & Life Sciences II) | Spring '17 |
| Math 8 (Transition to Higher Mathematics) | Winter '16, Spring '17, Fall '17 |
| Math 108B (Advanced Linear Algebra II) | Fall '17 |
| Math 117 (Methods of Analysis) | Spring '16 |

Universität Bielefeld

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| Graph Theory I | Fall 2014 |
| Graph Theory II | Spring 2015 |

Bard College at Simon's Rock

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| Elementary Functions (Precalculus) | Fall '11, Spring '12 |
| Calculus | Spring '12 |
| Geometric Group Theory | Fall '11 |

Rutgers University

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| Calculus I | Summer '08 |
| Multivariable Calculus (Calculus III) | Summer '07 |
| Differential Equations for Engineers | Summer '09 |

CONFERENCE
TALKS

- Large Scale Geometry and Applications**,
Fields Institute (Toronto, Canada), *Spring 2018*
- Joint Mathematics Meetings - Special Session Boundaries for groups and spaces**,
San Diego, CA, *Winter 2017*
- Groups explored through geometry and dynamics**,
Princeton University (Princeton, NJ), *Fall 2017*
- Fall Eastern Sectional - Special Session on Geometric Group Theory**,
University at Buffalo (Buffalo, NY), *Fall 2017*
- Spring Eastern Sect. - Special Session on Comp. & Algorithmic Group Theory**,
Hunter College (New York City, NY), *Spring 2017*
- Spring Eastern Sectional - Special Session on Infinite Permutation Groups, Totally Disconnected Locally Compact Groups, & Geometric Group Theory**,
Hunter College (New York City, NY), *Spring 2017*
- AWM Research Symposium - Special Session in Geometric Group Theory**,
University of California, Los Angeles (Los Angeles, CA), *Spring 2017*
- Southern California Women in Mathematics Symposium**,
University of Southern California (Los Angeles, CA), *Winter 2017*
- Dubrovnik VIII - Geom. Topology, Geom. Group Theory and Dyn. Systems**,
Inter-University Centre (Dubrovnik, Croatia), *Summer 2015*
- Bielefeld-Münster Seminar on Groups, Geometry and Topology**,
Universität Bielefeld (Bielefeld, Germany), *Winter 2014*
- Geometric Group Theory in Bonn**,
Max Planck Institute (Bonn, Germany), *Fall 2014*
- Geometry on Groups and Spaces ICM Satellite Conference**,
KAIST (Daejeon, Korea), *Summer 2014*
- KAIST Geometric Topology Fair**,
Jeonju, Korea, *Summer 2013*
- Cool-down Workshop for Conference on Automorphisms of Free Groups**,
Centre de Recerca Matemàtica (Barcelona, Spain), *Fall 2012*
- Opening Workshop on Automorphisms of Free Groups**,
Centre de Recerca Matemàtica (Barcelona, Spain), *Fall 2012*
- 46th Spring Topology and Dynamics Conference Special Session**,
Universidad Nacional Autonoma de Mexico (Mexico City, Mexico), *Spring 2012*
- Workshop on Geometric Group Theory, Part II**,
Louisiana State University (Baton Rouge, LA), *Summer 2011*
- Geometric Group Theory Conference**,
Technion (Haifa Israel), *Summer 2011*
- OSU Workshop on the Torelli Group, Mapping Class Group, and $Out(F_n)$** ,
Ohio State University (Columbus, OH), *Summer 2011*

COLLOQUIUM
TALKS

- College of Charleston, Colloquium, *Winter 2018*
- Manhattan College, Colloquium, *Winter 2018*
- Queen's University, Colloquium, *Winter 2018*
- University of Florida, Colloquium, *Winter 2018*

Hofstra, Colloquium, *Fall 2017*
 University of California Riverside, Colloquium, *Spring 2017*
 California Polytechnic State University, San Luis Obispo, Colloquium, *Winter 2017*
 California State University at Long Beach, Colloquium, *Fall 2016*
 San Jose State University, Colloquium, *Fall 2016*
 SUNY Buffalo, Colloquium, *Spring 2015*
 Haifa University, Colloquium, *Winter 2014*

SELECT SEMINAR
TALKS

University of Pennsylvania, Geometry-Topology Seminar, *Winter 2017*
 CUNY, Topology Seminar *Fall 2017*
 University of Virginia, Algebra Seminar, *Fall 2017*
 San Francisco State University, Geometry & Topology Seminar, *Spring 2017*
 University of South California, Geometry & Topology Seminar, *Spring 2017*
 UIUC, Geometry, Groups & Dynamics/GEAR Seminar, *Winter 2014, Spring 2017*
 Claremont Topology Seminar, *Fall 2016*
 University of Virginia, Geometry Seminar, *Fall 2016*
 University of Illinois Chicago, Geometry, Topology, and Dynamics Seminar, *Winter '13, '15*
 Wawrick University, Geometry & Topology Seminar, *Spring 2015*
 SUNY Buffalo, Topology Seminar, *Spring 2015*
 Univ. of Utah, Max Dehn Seminar on Geom., Top., Dyn., & Groups, *Winter 2014*
 University of Oklahoma, Geometry and Topology Seminar, *Winter 2014*
 Technion, Geometry and Topology Seminar, *Winter 2014*
 École Normale Supérieure de Lyon, Séminaire de Géométrie et Dynamique, *Summer 2014*
 Hebrew University, Algebra seminar, *Spring 2014*
 Université de Rennes 1, Séminaire de théorie ergodique, *Spring 2014*
 Institut de Mathématiques de Toulouse, Séminaire de Géométrie, *Spring 2014*
 Yale University, Geometry and Topology Seminar, *Fall 2013*
 University of Chicago, Geometry/Topology Seminar, *Fall 2013*
 University of Illinois Urbana-Champaign, Group Theory Seminar, *Winter 2013*
 CUNY Graduate Center, Algebra Seminar, *Fall 2013*
 Seoul National University, *Summer 2013*
 Université Paris-Sud 11, Higher Teichmüller-Thurston spaces, *Spring 2013*
 Brown University, Geometry Topology Seminar, *Spring 2013*
 University of Michigan, Topology Seminar, *Spring 2012*
 Michigan State University, Low Dimensional Topology Seminar, *Spring 2012*
 University at Albany, SUNY Geometry and Topology Seminar, *Spring 2012*
 University of Illinois Urbana-Champaign, Group Theory Seminar, *Winter 2012*
 Rutgers-Newark, Topology/Geometry Seminar, *Spring 2010*
 CUNY Graduate Center, Geometry and Topology Seminar, *Spring 2010*

REFERENCES

Lee Mosher (PhD Advisor)
Professor of Mathematics
Rutgers -Newark
mosher@andromeda.rutgers.edu

Benson Farb
Professor of Mathematics
University of Chicago
farb@math.uchicago.edu

Peter Garfield (Teaching Reference)
Senate Lecturer
University of California Santa Barbara
garfield@math.ucsb.edu

Daryl Cooper
Professor of Mathematics
University of California Santa Barbara
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Ilya Kapovich
Professor of Mathematics
University of Illinois at Urbana-Champaign
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Moritz Kaßman (Teaching Reference)
Professor of Mathematics
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