Christin Bibby

Louisiana State University, Department of Mathematics, Baton Rouge, LA 70803

bibby@math.lsu.edu   https://www.math.lsu.edu/~bibby

Appointments

Louisiana State University, Baton Rouge
　　Assistant Professor (tenure track)   Aug. 2020 – Present

University of Michigan, Ann Arbor
　　Postdoctoral Assistant Professor   Sept. 2017 – May 2020

University of Western Ontario (Western University), London, Canada
　　Assistant Professor and Postdoctoral Fellow   July 2015 – June 2017

Education

University of Oregon, Eugene
　　Ph.D. in Mathematics (advisor: Nick Proudfoot)   June 2015
　　M.S. in Mathematics   June 2011
Northern Arizona University, Flagstaff
　　B.S. in Mathematics, extended major with minor in Chemistry   May 2009

Research

Research interests

Interactions between combinatorics, algebraic geometry, and topology; representation stability; hyperplane arrangements, configuration spaces, and their generalizations; matroids

Journal publications

[1] C. Bibby. Cohomology of abelian arrangements. *Proceedings of the American Mathematical Society* 144 (2016), pp. 3093-3104. MR 3487239. http://dx.doi.org/10.1090/proc/12937

[2] C. Bibby, J. Hilburn. Quadratic-linear duality and rational homotopy theory of chordal arrangements. *Algebraic and Geometric Topology* 16 (2016), pp. 2637-2661. MR 3572342. https://doi.org/10.2140/agt.2016.16.2637

[3] C. Bibby. Representation stability for the cohomology of arrangements associated to root systems. *Journal of Algebraic Combinatorics* 48 (2018), pp. 51-75. MR 3836246. https://doi.org/10.1007/s10801-017-0792-0

[4] C. Bibby, A. Odesky, M. Wang, S. Wang, Z. Zhang, H. Zheng. Minimal flag triangulations of lower-dimensional manifolds. *Involve. A Journal of Mathematics* 13 (2020), pp. 683-703. MR 4190432. https://doi.org/10.2140/involve.2020.13.683

[5] C. Bibby, N. Gadish. Combinatorics of orbit configuration spaces. *International Mathematics Research Notices* 2022:9 (2022), pp. 6903-6947. MR 4411471. https://doi.org/10.1093/imrn/rnaa296

[6] C. Bibby, G. Denham, E. M. Feichtner. A Leray model for the Orlik-Solomon algebra. *International Mathematics Research Notices* 2022:24 (2022), pp. 19105-19174. MR 4523245. https://doi.org/10.1093/imrn/rnab131

[7] C. Bibby, N. Gadish. A generating function approach to new representation stability phenomena in orbit configuration spaces. *Transactions of the American Mathematical Society, Series B* 10 (2023), pp. 241-287. MR 4546785. https://doi.org/10.1090/btran/130

In Press

[8] C. Bibby, M. Chan, N. Gadish, C. H. Yun. Homology representations of compactified configurations on graphs applied to $\mathcal{M}_{2,n}$, 18 pp. Accepted for publication in *Experimental Mathematics.* https://arxiv.org/abs/2109.03302

[9] C. Bibby, E. Delucchi. Supersolvable posets and fiber-type abelian arrangements, 32 pp*.* https://arxiv.org/abs/2202.11996.

Extended abstracts

[10] C. Bibby, N. Gadish. Combinatorics of orbit configuration spaces, FPSAC extended abstract. *Séminaire Lotharingien de Combinatoire* 80B (2018), Article #72, 11 pp. MR 3940647. http://www.mat.univie.ac.at/~slc/wpapers/FPSAC2018/72-Bibby-Gadish.pdf

[11] C. Bibby, N. Gadish. A generating function approach to new representation stability phenomena in orbit configuration spaces. In "Logarithmic Vector Fields and Freeness of Divisors and Arrangements: New perspectives and applications" Oberwolfach Rep. 18 (2021). https://doi.org/10.4171/OWR/2021/5

[12] C. Bibby, E. Delucchi. Supersolvable posets and fiber-type arrangements, FPSAC extended abstract. Accepted (2024).

Preprints

[13] C. Bibby. Matroid schemes and geometric posets, 20 pp. https://arxiv.org/abs/2203.15094

[14] C. Bibby, M. Chan, N. Gadish, C. H. Yun. A Serre spectral sequence for the moduli space of tropical curves. https://arxiv.org/abs/2307.01960

Research visits

2022   Collaborate@ICERM (Providence, RI), one week

2022   Oberwolfach research-in-pairs (Germany), two weeks

2021   ICERM thematic program on Combinatorial Algebraic Geometry (virtual), spring semester

2019   Arrangements at Western intensive research period (London, Canada), two weeks

2017   Institute for Algebra, Geometry, Topology, and their Applications at Universität Bremen (Germany), two weeks

Awards and Grants

Research and conference grants

2023   NSF DMS-2231492 "RTG: Topology, Representation Theory, and Mathematical Physics at Louisiana State University" senior personnel ($2,496,082)

2022   NSF DMS-2204299 "Topology and combinatorics of arrangements" PI ($186,130)

2019   NSF DMS-1933786 conference grant co-PI ($24,000)

2008   NAU-NASA Space Grant for undergraduate research

Travel grants

2018   AMS-Simons Travel Award
2018   US Junior Oberwolfach Fellow
2017   AMS-NSF Travel Grant for the Mathematical Congress of the Americas
2014   Johnson Fellowship, University of Oregon

Teaching awards

2019   The Juha Heinonen Award, University of Michigan Department of Mathematics
2019   Honored Instructor, University of Michigan Housing

Teaching and Mentoring

PhD Students

Peter Ramsey

Louisiana State University (2020-)

Calculus I, Math 1550
Linear Algebra, Math 2085
Elementary Differential Equations and Linear Algebra, Math 2090
Vertically Integrated Research, Math 4997
Topology I, Math 7510
Arrangements and Configuration Spaces, Math 7590
Combinatorial Algebraic Topology, Math 7590

University of Michigan (2017-2020)

Calculus I, Math 115
Linear Algebra, Math 217
Intro to Combinatorics, Math 465

Western University (2015-2017)

Calculus I, Calc 1000A
Methods of Finite Math, Math 1228B
Linear Algebra I, Math 1600A
Discrete Structures for Engineering, Math 2151A

University of Oregon (2009-2015)

College Algebra, Math 111
Elementary Functions, Math 112
Calculus for Business and Social Science II, Math 242
Intro to Probability and Statistics, Math 243
Calculus I, Math 251
Calculus II, Math 252
Elementary Analysis, Math 315

Service

Outreach
2024   Recruitment table at the Gulf States Math Alliance Conference in Nacogdoches, TX
2023   Panel member discussing the LSU Math RTG at College of Science's "Science and Spirits"
2023   Recruitment table at the Gulf States Math Alliance Conference in Houston, TX
2022   Chat Leader for Girls Day at the Museum, program for girls in 4th-6th grades organized through LSU College of Science
2021   Contributed to the "When did you know you wanted to be a scientist?" article in an edition of the LSU College of Science Pursuit for Kids newspaper
2021   Chat Leader for Girls Day at the Museum, program for girls in 4th-6th grades organized through LSU College of Science
2015   Co-lead activity at math program for girls organized with UO AWM and the Science Factory
2015   Grader for Oregon Invitational Mathematics Tournament at Univ Oregon
2014-15 Helped organize an undergraduate reading program and panels on summer programs and careers in mathematics, with the UO AWM
2014   Co-lead activity at math program for girls organized with UO AWM and the Science Factory
2012   Proctor for Oregon Invitational Mathematics Tournament at Univ Oregon

University, College, and Department Service
2023-   Association for Women in Mathematics LSU Student Chapter faculty advisor
2023-24 Mentor for graduate teaching assistants, LSU Department of Mathematics
2021-23 Hiring committee member, LSU Department of Mathematics
2020-22 Diversity committee member, LSU College of Science
2013-15 Secretary of University of Oregon's Student Chapter of the Association for Women in Math

Professional Service
2018-   Referee and expert opinion for journals in general mathematics, topology, algebra, and combinatorics
2018-   Contributor to Mathematical Reviews
2018   Oberwolfach Reports reporter for workshop on Topology of Arrangements and Representation Stability

Conferences and Workshops

Meetings co-organized
2024-   Combinatorics and Geometry BLT Seminar, a monthly virtual seminar
2024   Special Session on Algebraic Combinatorics and Matroids at the Joint Meeting of the NZMS, AustMS, and AMS (Auckland, New Zealand)
2024   MSRI Hot Topics Workshop on Artin groups and arrangements: topology, geometry, and combinatorics (Berkeley, CA)
2024   Modern developments in configuration spaces special session at the Joint Mathematics Meetings (San Francisco, CA)
2022   Arrangements in Ticino (Locarno and Lugano, Switzerland)
2021   Arrangements at Home IV (virtual)
2020   Arrangements at Home I-III (virtual)
2019   Arrangements at Western workshop and research period (London, Canada)

2017   Advances in Arrangement Theory special session at the Mathematical Congress of the Americas (Montréal, Canada)

Invited lecture series
2019   Toric Arrangements, 7 lectures at CIMPA Research School on Hyperplane Arrangements (Hanoi, Vietnam)

Invited conference talks
2024   Workshop on Polyhedral Products, Fields Institute (Toronto, ON, Canada)
2024   Suzhou Workshop on Matroid Theory (Soochow University, Suzhou, China)
2024   Mid-Atlantic Topology Conference (Northeastern U, Boston, MA)
2024   Lloyd Roeling Conference (U Louisiana, Lafayette, LA)
2024   Modern development in the theory of configuration spaces, Joint Mathematics Meetings (San Francisco, CA)
2023   Conference on Hyperplane Arrangements (Tokyo, Japan)
2023   Combinatorial algebraic geometry and rigidity theory mini-symposium, SIAM Texas-Louisiana Sectional Meeting (Lafayette, LA)
2023   South Central Topology Conference (New Mexico State U, Las Cruces)
2023   Stability in topology, arithmetic, and representation theory (Purdue U, IN)
2022   Stability in topology, arithmetic, and representation theory (Purdue U, IN, hybrid)
2021   Algebraic combinatorics in the southeast special session, AMS Fall Southeastern Section Meeting (virtual)
2021   Oberwolfach Workshop Logarithmic Vector Fields and Freeness of Divisors and Arrangements: New perspectives and applications (Germany, virtual)
2019   Hyper-JARCS: Hyperplane Arrangements and the Japanese-Australian Real and Complex Singularities conference (Tokyo, Japan)
2019   AlGeCom: Algebra, Geometry, and Combinatorics Day (Washington U in St. Louis, MO)
2019   Arrangements at Western (London, Canada)
2019   Midwest Representation Stability Meeting (Chicago, IL)
2018   Combinatorics in algebra and algebraic geometry special session, AMS Fall Central Section Meeting (U Michigan, Ann Arbor)
2018   Matroids, reflection groups, and free hyperplane arrangements (RIMS, Kyoto, Japan)
2018   Topics in toric geometry special session, AMS Spring Eastern Section Meeting (Northeastern U, Boston)
2018   Arrangements of hypersurfaces, AMS Spring Eastern Section Meeting (Northeastern U, Boston)
2017   Arrangements and beyond: combinatorics, geometry, topology, and applications in honor of Mario Salvetti (Centro di Giorgi, Pisa, Italy)
2017   Encounter in Topology 'n Algebra (Scuola Superiore di Catania, Italy)
2017   Representation stability and its applications special session, AMS Spring Central Section Meeting (Indiana U, Bloomington)
2016   Equivariant geometry and topology session, CMS Winter Meeting (Niagara, Canada)
2016   Topology and combinatorics of arrangements (in honor of Mike Falk) special session, AMS Spring Eastern Section Meeting (SUNY Stony Brook)
2016   Algebraic and topological methods in combinatorics special session, JMM (Seattle, WA)
2015   Combinatorial Constructions in Topology (U Regina, Canada)
2015   Computational Geometric Topology in Arrangement Theory (ICERM, Providence, RI)
2015   Workshop on Combinatorics and Algebraic Topology of Configurations in INdAM Intensive Period "Perspectives in Lie Theory" (Centro di Giorgi, Pisa, Italy)

Contributed talks

2024   FPSAC: Formal Power Series and Algebraic Combinatorics (Bochum, Germany)
2018   FPSAC: Formal Power Series and Algebraic Combinatorics (Dartmouth College, NH)
2017   Joint Mathematics Meetings (Atlanta, GA)
2015   Joint Mathematics Meetings (San Antonio, TX)
2009   NASA Space Grant Symposium (Tempe, AZ)
2009   MAA Southwest Section Meeting (Silver City, NM)
2007-09 Southwest Undergraduate Math Research Conference (AZ, NM)

Poster presentations

2016   Introductory Workshop on Combinatorial Algebraic Geometry (Fields Institute, Canada)
2014   Configuration Spaces: Geometry, Topology, and Representation Theory (Cortona, Itay)
2013   Western Algebraic Geometry Symposium (San Diego, CA)
2009   Celebration for Undergraduate Research and Design (Flagstaff, AZ)
2009   Joint Mathematics Meetings (Washington, DC)

Selected workshops

2024   Oberwolfach Workshop Arrangements, Matroids, and Logarithmic Vector Fields (Germany)
2022   BIRS-CMO Workshop Topological Complexity and Motion Planning (Oaxaca, Mexico)
2021   Oberwolfach Workshop Logarithmic Vector Fields and Freeness of Divisors and Arrangements: New perspectives and applications (Germany, virtual)
2020   AIM Workshop Configuration Spaces of Graphs (San Jose, CA)
2018   Oberwolfach Workshop Topology of Arrangements and Representation Stability (Germany)
2015   Oberwolfach Seminar Topological Combinatorics of Configuration Spaces (Germany)

Seminars and colloquia

2023   Matroids Seminar, Fields Institute (virtual)
2022   RATCOW Seminar, University of Oregon (Eugene, OR)
         Algebraic Topology Seminar, UNAM, Mexico (virtual)
         Combinatorics Seminar, Brown University (virtual)
         Combinatorics Seminar, Cornell University (virtual)
         Algebra and Geometry Seminar, Goethe Universität Frankfurt, Germany (virtual)
2021   Topological Complexity Seminar, Applied Algebraic Topology Research Network (virtual)
         Geometry and Topology Seminar, Louisiana State University (Baton Rouge, LA)
         Discrete Mathematics Seminar, Simon Fraser University, Canada (virtual)
         Topology Seminar, Northeastern University (virtual)
         Algebraic Topology Seminar, Université de Strasbourg, France (virtual)
2020   Geometry and Combinatorics Seminar, Western University, Canada (virtual)
         Algebra Seminar, Illinois State University (virtual)
         Colloquium, Louisiana State University (Baton Rouge, LA)
2019   Representation Stability Seminar, University of Michigan (Ann Arbor, MI)
         REU Seminar, Grand Valley State University (Allendale, MI)
         Geometry and Topology Seminar, University of Chicago (Chicago, IL)
         Topology Seminar, Purdue University (Lafayette, IN)
2018   Algebra Seminar, University of Kentucky (Lexington, KY)
         Geometry and Topology Seminar, University of California, Irvine (Irvine, CA)
         Geometry and Topology Seminar, University of Chicago (Chicago, IL)
         Representation Stability Seminar, University of Michigan (Ann Arbor, MI)
2017   Algebraic Geometry Seminar, The Ohio State University (Columbus, OH)

	Combinatorics Seminar, University of Michigan (Ann Arbor, MI)
	Geometry and Topology Seminar, University of Chicago (Chicago, IL)
	Geometry and Topology Seminar, Western University (London, Canada)
2016	Algebraic Combinatorics Seminar, University of Waterloo (Waterloo, Canada)
	Geometry and Topology Seminar, McMaster University (Hamilton, Canada)
	Algebra Seminar, Western University (London, Canada)
2015	Geometry and Topology Seminar, Western University (London, Canada)
2014	Geometry and Topology Seminar, University of Oregon (Eugene, OR)
2013	Geometry and Topology Seminar, University of Oregon (Eugene, OR)