CURRICULUM VITAE - KAREN VOGTMANN

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PRINCIPAL FIELDS OF INTEREST

Geometric group theory, Low-dimensional topology, Cohomology of groups

EDUCATION

B.A. University of California, Berkeley 1971
Ph.D. University of California, Berkeley 1977

ACADEMIC POSITIONS

University of Warwick, Professor, 9/13 to present
Cornell University
- Goldwin Smith Professor of Mathematics Emeritus, 7/15 to present
- Goldwin Smith Professor of Mathematics, 7/11 to 7/15
- Professor, 1/94 to 7/11
- Associate Professor, 7/87 to 12/93
- Assistant Professor, 7/85 to 6/87
- Visiting Assistant Professor, 9/84 to 6/85
Columbia University, Assistant Professor, 7/79 to 6/86
Brandeis University, Visiting Assistant Professor, 9/78 to 12/78
University of Michigan, Visiting Assistant Professor, 9/77 to 6/78 and 1/79 to 6/79

RESEARCH AND SABBATICAL POSITIONS

Max Planck Institute, Bonn, 8/24
MSRI, Berkeley, CA 8/19 to 11/19
Newton Institute, Cambridge, Mass, 3/17 to 5/17
MSRI, Berkeley, CA 8/16 to 12/16
Research Professor, ICERM, Providence, RI, 9/13 to 12/13
Freie Universität Berlin, Berlin, Germany, 6/12
Mittag-Leffler Institute, Stockholm, Sweden, 3/12 to 5/12
Visiting Researcher, Oxford University, Oxford, England, 2/12
Professeur invite, Marseilles, France, 5/11
Hausdorff Institute for Mathematics, 9/09 to 12/09 and 5/10-8/10
Mathematical Sciences Research Institute, Berkeley, CA, 8/07-12/07
I.H.E.S., Bures-sur-Yvette, France 3/04
Professeur Invité, Marseilles, France, 3/00
Mathematical Sciences Research Institute, Berkeley, 1/95 to 7/95
I.H.E.S., Bures-sur-Yvette, France, 1/93-8/93
Chercheur, C.N.R.S., E.N.S. de Lyon, France, 9/92-12/92
Mathematical Sciences Research Institute, Berkeley,1/89 to 6/89
University of Illinois at Chicago, 1/88 to 6/88
Institute for Advanced Study, Princeton, 9/80 to 8/81

AWARDS AND HONORS

Member American Academy of Arts and Sciences, elected April 2023
Member of the U.S. National Academy of Sciences, elected April 2022
Fellow of the Royal Society, elected April 2021
Member Academia Europaea, elected July 2020
Pólya Prize, London Mathematical Society, June 2018
Honorary Doctorate, University of Copenhagen, November 2017
Simons Professor, Newton Institute, Spring 2017
Simons Professor, MSRI, Fall 2016
Plenary Lecture, European Congress of Mathematicians, July 2016
Clay Senior Scholar award, 2015
Humboldt Research Prize, 2014
Royal Society Wolfson Research Merit Award, 2014
Fellow of the American Mathematical Society (Inaugural class), 2012
European Mathematical Society Lecturer, 2011
AWM Noether Lecturer, 2007
Invited speaker, International Congress of Mathematicians, 2006
National Science Foundation Career Advancement Award, 1989
National Science Foundation Visiting Professorship for Women, 1984-85

RESEARCH GRANTS

National Science Foundation grants for summer research in mathematics 1978-79, 1983-2014
EPSRC grant for Warwick Symposium, 2017-18

PH.D. STUDENTS

Thomas Brady (1988)   Matt Horak (2003)
Martin Bridson (1991)   Brad Forrest (2009)
Debra Boutin (1998)   Owen Baker (2011)
Craig Jensen (1998)   Victor Kostyuk (2011)
Lisa Orlandi-Korner (1998)   Juan Alonso (2012)
G. Christopher Hruska (2002)   Jone Lopez De Gamiz (2022)
F. Gerlits (2002)

PROFESSIONAL SERVICE

SCIENTIFIC ADVISORY BOARDS

- Strategic Advisory Board, London School of Geometry and Number Theory (chair) (2019 -)
- Advisory Board, Cluster of Excellence "Mathematics Münster: Dynamics, Geometry, Structure" (2019 -)
- Conseille Scientifique, Fondation Mathematique Jacques Hadamard, (2019-)
- Scientific Advisory Board, Math Plus Berlin (2019 - 2023)
- Scientific Advisory Board, Berlin Mathematical School (2015 - 2019)
- Conseil Scientifique Exterieur, Labex MILYON - Université Lyon (2011-2016)
- Scientific Advisory Committee, Internaitonal Summer School of Mathematics for Young Students (2012)
- U.S. National Committee for Mathematics (2009-2016)
- ArXiv Advisory Board (2004-2016)
- Steering Committee, Park City Mathematics Institute (2010-2014)
- Board on Mathematical Sciences and Their Applications of the National Academies (2010-2013)
- Research Advisory Panel, Mathematics, Simons Foundation (2011)
- Scientific Advisory Committee of the Mathematical Sciences Research Institute (2006-2010)
- Scientific Research Board of the American Institute of Mathematics (1998-2005)

EDITORIAL BOARDS

- Chair, Advisory Board, AMS Open Math Notes (2018-)
- Editorial Board, Geometry and Topology Monographs (2013-)
- Consulting Editor, Journal of the Edinburgh Math Society (2012-)
- Associate Editor, Journal of the AMS (2010- 2019)
- Editorial Board, Algebraic and Geometric Topology, (2006 - 2016)
- Associate Editor, Research/Expository surveys, Bulletin of the A.M.S. (1998-2000)

AMERICAN MATHEMATICAL SOCIETY

- Board of Trustees, American Mathematical Society (2008-2018 (chairman 2011 and 2016))
- Vice President, American Mathematical Society, (2003-2006)
- AMS Committee on Education (2003-2006)
- Executive Committee, American Mathematical Society (1999-2003)
- AMS Committee on Meetings and Conferences (1997-2003), chairman (2000-2003)
- Member-at-Large, Council of the AMS (1997-2000)
- AMS Fellowship Committee 1989-90 (chairman 1990)

EXTERNAL REVIEW PANELS

- ETH, Zurich (2015)
- University of Texas at Austin (2013)
- University of Southern California (2010)
- CUNY (2008)
- University of Utah, (2007)
- University of Texas at Austin (2004)
- Rutgers University Newark (1997)

OTHER SERVICE

- Selection committees for positions at several UK and European universities
- Panels for several prizes and fellowships in the UK and Europe
- UUK Working Group on Repositories, 2017
- Topology Panel, International Congress of Mathematicians, 2018
- National Science Foundation Committee of Visitors, 2013
- Topology Panel, International Congress of Mathematicians, 2010 (chair)
- U.S. Delegation to the International Mathematical Union General Assembly (2006, 2010 (chair in 2010))
- National Research Council Panel to evaluate the VIGRE program (2007-2008)
- National Science Foundation grant evaluation panels (7 times)
- Vietnam Education Foundation mathematics panel (June 2005)
- Selection committee, NSF graduate fellowships in Mathematics, 1994, 1996-99 (chairman1999)
- Selection committee, Gehman lectures, Seaway section of the MAA, 1997
- AWM Noether Lecturer selection committee 1991-1993 (chairman 1993)
- Reviewer, Math Reviews 1977-1990
- Served on numerous panels at the National Science Foundation
- Referee for numerous professional journals

- (with M. Borinsky) Workshop on Moduli spaces of curves, moduli spaces of graphs and graph complexes, E.T.H. Zurich, September 2024.
- (with A.Eskin, U. Hamenstadt, M. Kontsevich, H. Masur) Combinatorics, Dynamics and Geometry on Moduli Spaces, in honor of A. Zorich, September 2022, C.I.R.M. Luminy,
- (with H. Baik, M. Bestvina, C. Horbez, K. Rafi) Mapping class groups and $Out(F_n)$, I.H.P. Paris, April 2022.
- (with D. Kreimer and K. Yeats) Graph complexes and quantum field theory, Berlin March-April 2022.
- (with I. Chatterji, Mike Davis, Mark Pengitore and Rachel Skipper) Workshop on Artin Groups, CAT(0) Geometry and Related Topics, Ohio State University, July 2021
- (with I. Chatterji and L. Paris) Virtual geometric group theory, CIRM, Luminy, France, June 2020
- (with T. Delzant, G. Levitt and Y. Minsky) Aspects of Non-Positive and Negative Curvature in Group Theory, CIRM, Luminy, France, June 2019
- (with J. Aramayona, L. Ciobanu, S. Kim, C. Perin, C. Rivas and S. Taylow) Young Geometric Group Theory VIII, Bilbao, Spain, July 2019
- (with R. Charney) Geometry of outer spaces and outer automorphism groups, University of Warwick, April 2018.
- (with A. Bartels and W. Lueck) Oberwolfach Seminar: Algebraic K- and L-Theory and Geometric Group Theory, October 2017
- (with B. Bowditch, C. Leininger, S. Schleimer and J. Smillie) Warwick Symposium on low-dimensional topology, group theory and dynamics, academic year 2017-2018.
- (with M. Bridson, L. Kramer, B. Remy) Geometric group theory, Oberwolfach, June 2017.
- (with I. Agol, M. Bestvina, C. Drutu, M. Feighn and M. Sageev) Jumbo program at M.S.R.I in Geometric Group Theory, Fall 2016.
- (with M. Bestvina, T. Delzant, D. Gaboriau, F. Paulin) Impact of geometric group theory, C.I.R.M. Luminy, July 2015.
- (with S. Kerckhoff, D. Gabai, J. Hubbard, J. Smillie and D. Thurston) What's Next? The mathematical legacy of Bill Thurston, June 2014
- (with M. Culler, D. Calegari, D. Gabai, J. Hass, R. Lipshitz, G. Walsh) Topology, geometry and group theory, informed by experiment, ICERM, Providence, RI, October 2013
- (with M. Bridson, L. Kramer and B. Remy) Geometric group theory, Oberwolfach, June 2013
- (with Cornell topologists) Topology Festival, Cornell University, 1986-2012.
- (with B. Farb, G. Niblo and D. Witte-Morris) Cohomological methods in geometric group theory, BIRS, Banff, November 2012
- (with M. Bestvina and M. Sageev) Park City/IAS summer math institute in Geometric Group Theory, July 2012
- (with Cornell topologists) Topology Festival, Cornell University, 1986-2012
- (with M. Bridson, M. Bucher-Karlsson, A. Karlsson, T. Smirnova-Nagnibeda) Geometric and Analytic Methods in Group Theory, Mittag-Leffler Institute, Spring 2012
- (with S. Hermiller, J. Meier and D. Webb), Approaches to Group Theory, a conference in honor of Ken Brown, October 2010.
- (with M. Bridson, L. Kramer and B. Remy) Non-positive curvature and geometric structures in group theory, Oberwolfach, April 2010
- (with M. Bestvina, J. McCammond and M. Sageev) Semester program in Geometric Group Theory, M.S.R.I., Berkeley, CA, Fall 2007
- (with M. Bestvina, J. McCammond and M. Sageev) Introductory workshop in Geometric Group Theory, M.S.R.I., Berkeley, CA, August 27-31 2007
- (with R. Charney and I. Chatterji) Connections for Women: Classics of Geometric Group Theory, M.S.R.I., Berkeley, CA August 23-24, 2007
- (with R. Charney) Special session on Geometric Group Theory, Annual meeting of the AMS, New Orleans, LA, January 2007
- (with M. Bridson and P. Kropholler) Topological and geometric methods in group theory, Oberwolfach, Germany, April 2006

- (with A. Chang, R. Charney, A. Grassi, C-L Terng, and K. Uhlenbeck) The Geometry of Groups, Program for Women in Mathematics, Institute for Advanced Study and Princeton University, Princeton, NJ, May 2005
- (with S. Holmes and L. Billera) AIM workshop on Geometric models of biological phenomena, Palo Alto, CA, June 2003
- (with G. Levitt) Special session at joint meeting of AMS and French Mathematical Society, Lyon, France, July 2001
- (with H. Abels and P. Kropholler) Conference on Topological and Geometric Methods in Group Theory, Oberwolfach, Germany, January 2001
- (with R. Alperin) A.M.S. Special Session on Geometric Methods in Combinatorial Group Theory, November 1989.
- (with A. Borel and J. Harer) M.S.R.I. Workshop on Buildings and Arithmetic Groups, Berkeley, CA, May 1989

- Heilbronn Annual Conference, Bristol, UK, September 2023
- London Math Society lecture at ICM Copenhagen, July 2022
- Plenary Address, European Congress of Mathematicians, Berlin, Germany, July 2016
- Keynote Lecture, Jahrestagung der Deutschn Mathematiker-Vereingung (125th anniversary meeting of the DMV), Hamburg, Germany, September 2015
- The 7th MSJ-Seasonal Institute, Hyperbolic Geometry and Geometric Group Theory (3 lectures), Tokyo, Japan August 2014
- Groups St. Andrews (4 lectures), St. Andrews, Scotland, UK, August 2013
- 2011 European Math Society Lectures (Barcelona, Oxford, Stockholm)
- Plenary Address, British Mathematical Colloquium, Leicester, England, April 2011
- Felix Klein Lectures (6 lectures), Hausdorff Institute for Mathematics, Bonn, Germany, May-June 2010
- AWM Noether Lecture, New Orleans, LA, January 2007
- Topology Section, International Congress of Mathematicians, Madrid, Spain, August 2006

ADDRESSES AT CONFERENCES IN HONOR OF COLLEAGUES

- Groups, geometry and dynamics, in honor of Ursula Hammenstadt, Ascona, Switzerland, May 2023
- Artin Groups, CAT(0) geometry and related topics, in honor of Ruth Charney (virtual), Columbus, Ohio, July 2021
- Algebraic structures in perturbative quantum field theory, in honor of Dirk Kreimer , I.H.E.S. (virtual), November 2020
- Aspects of non-positive and negative curvature in group theory (Bestvina fest), Luminy, France, June 2019
- Groups, spaces and geometries on the occasion of Alessandra Iozzi's 60th birthday, ETH, Zurich, Switzerland, January 2019
- Groupes, géométrie et analyse, in honor of Alain Valette, IHES, Bures-sur-Yvette, France, December 2018
- Groups, geometry and representations, in honor of Dan Segal and Aner Shalev, Oxford, UK, September 2018
- Wasatch Topology Conference, in honor of Mark Feighn, Utah, USA, August 2018
- Groups, manifolds and K-theory, a conference on the occasion of Wolfgang Lueck's 60th birthday, Muenster, Germany, June 2017
- Faces of Groups, in honor of Alex Lubotzkys 60th birthday, Jerusalem, Israel, November 2016
- Conference on the Cohomology of Arithmetic Groups on the occasion of Joachim Schwermer's 66th birthday, Bonn, Germany, June 2016
- Topology of manifolds: a conference in honour of Michael Weiss' 60th birthday, Lisbon, Portugal, June 2016
- Groups 2012, Conference in honor of Bernd Fischer, Bielefeld, Germany, March 2012
- Geometry and the Imagination, in honor of William P. Thurston's 60th birthday, Princeton, NJ, June 2007
- Panorama of Topology, in honor of William Browder, Princeton, New Jersey, May 2012
- Recent Developments in Topology, a conference honoring W.-C. Hsiang on the occasion of his 60th birthday, Princeton, NJ, October 1995

2024
– International Colloquium on Randomness, Geometry and Dynamics, IISER Pune, India, January 2024
– Geometry seminar, Orsay, France, January 2024
– Combined algebra and geometry seminar, Bristol, UK, January 2024
– Seminario a distancia de Teora geomtrica de grupos en Mxico (virtual), May 2024
– Topology and arithmetic of moduli spaces of curves, Montpellier, France, May 2024
– Workshop on Topology, Representation Theory and Higher Structures, Isle of Skye, UK, June 2024
– AlMaRe Conference on mapping class groups, Institut Fourier, Grenoble, France, July 2024
– Physical Math Seminar, Program on Quantum Field Theory, Max Planck Institutefor mathematics, Bonn, August 2024
– Minicourse on Moduli spaces of graphs (4 lectures), U. of Geneva, Geneva, Switzerland, October 2024
– Holonomic Workshop, Max Planck Institute for Physics, Garching, Germany, October 2024

2023
– Plenary address, LMS sectional meeting, Southampton, UK, January 2023
– Geometry and Groups in the Southeast, Warwick, UK, March 2023
– Main speaker, GROW, Bonn, Germany, March 2023
– Groups, Geometry and Dynamics, in honor of Ursula Hammenstadt, Ascona, Switzerland, June 2023
– Conference on Group actions and low-dimensonal topology, ICMAT, Madrid, Spain, July 2023
– Heilbronn Annual Conference, Bristol, UK, September 2023
– Mapping class groups: pronilpotent and cohomological approaches, Les Diablerets, Switzerland, September 2023

2022
– Topology seminar, Cambridge University (virtual) February 2022
– Conference on Geometric Structures in Group Theory (virtual), Oberwolfach, Germany, (virtual) March 2022
– AMS annual meeting (virtual), Special Session on Geometric Group Theory, April 2022
– Introductory minicourse (4 lectures, virtual) for IHP trimester on Groups Acting on Fractals, Self-Similarity and Hyperbolicity, CIRM, Luminy, France, April 2022
– Colloquium, Cardiff University, May 2022
– British Math Colloquium, London, UK, June 2022
– GAGTA (virtual), June 2022
– London Mathematical Society lecture at ICM Copenhagen, Denmark, July 2022
– Modern Advances in Geometric Group Theory, Manchester, UK, September 2022
– Minicourse on moduli spaces of graphs and graph complexes, Vienna Summer School, Weisensee, Austria, September 2022

2021
– Colloquium, Vanderbilt University, (virtual) February 2021
– Colloquium, Purdue University, (virtual) April 2021
– Conference on Artin Groups, CAT(0) geometry and related topics, in honor of Ruth Charney (virtual) July 2021
– Young Topologists Meeting (3 lectures, virtual), Stockholm, Sweden, July 2021
– Women in Algebra and Symbolic Computation, Bad Durkheim, Germany (virtual), December 2021

2020
– Groups and Dynamics (2 lectures), Les Diabelerets, Switzerland, March 2020
– Algebra and Geometry La Sapienza, (virtual), Rome, Italy, June 2020
– Geometric structures in group theory (virtual), Oberwolfach, Germany, June 2020
– Plenary address, Barcelona Mathematical Days (virtual), October 2020
– Algebraic structures in perturbative quantum field theory, , I.H.E.S. (virtual), November 2020

2019
– Groups, spaces and geometries on the occasion of Alessandra Iozzi's 60th birthday, ETH, Zurich, Switzerland, January 2019
– Geometric Analysis meets Geometric Topology, Heidelberg, Germany, February 2019
– Colloquium, St. Petersburg State University, April 2019
– Geometric and Asymptotic Group Theory with Applications, Tel Aviv, Israel, May 2019
– Colloquium, Tel Aviv University, Tel Aviv, Israel, June 2019
– Aspects of Non-Positive and Negative Curvature in Group Theory, CIRM, Luminy, France, June 2019
– SYM 10 years, Copenhagen, Denmark, June 2019
– Aspects of Geometric Group Theory (6 lectures), I.H.E.S., Bures-sur-Yvette, France, July 2019
– Workshop on graph complexes in algebraic geometry and topology, University of Manchester, United Kingdom, September 2019
– 50th Anniversity of Bielefeld University, Bielefeld, Germany, September 2019
– Patterns in cohomology of moduli spaces, Oxford, United Kingdom, September 2019
– Topology Seminar, University of California, Berkeley, November 2019
– Mathematical physics seminar, Humboldt University, Berlin, Germany, December 2019

2018
– Colloquium, SISSA, Trieste, Italy, April 2018
– Workshop on automorphism groups of RAAGs (2 lectures), University of Paris, Orsay, France, May 2018
– Groups and Geometry in the Southeast, University of Warwick, Coventry, UK, June 2018
– Structures in Local Quantum Field Theory, Les Houches, Switzerland, June 2018
– International Conference on Manifolds, Groups and Homotopy, Isle of Skye, UK, June 2018
– Wasatch Topology Conference, Utah, USA, August 2018
– Groups, Geometry and Representations, Oxford, UK, September 2018
– Colloquium du Laboratoire Dieudoneé, Nice, France, September 2018
– CGTA launch conference, Southampton, UK, September 2018
– GdR Topologie Algbrique et Applications (3 lectures), Montpellier, France, October 2018
– Géométrie et Dynamique dans les espaces de modules, IHP, Paris, France, December 2018
– Conference in honor of Alain Valette, IHES, Bures-sur-Yvette, France, December 2018

2017
– Topology seminar, University of Aberdeen, Scotland, UK, January 2017
– Hot Topics workshop on Galois theory of periods and their applications, M.S.R.I., Berkeley, CA, USA, March 2017
– Non-positive curvature seminar, Newton Institute, Cambridge, UK, April 2017
– Workshop on braids in algebra, geometry and topology, Edinburgh, UK, May 2017
– Georgia Topology Conference, Atlanta, GA, May 2017
– Groups, manifolds and K-theory, a conference on the occasion of Wolfgang Lueck's 60th birthday, Muenster, Germany, June 2017
– Group actions and cohomology in non-positive curvature, Isaac Newton Institute, Cambridge, England, June 2017
– Geometric and Asymptotic Group Theory with Applications, Bilbao, Spain, July 2017

- Ventotene International Workshops: Moduli Spaces (3 lectures), Ventotene, Italy, September 2017
- Geometry and analysis on groups seminar, University of Vienna, Vienna, Austria, October 2017
- Oberwolfach seminar on Algebraic K- and L-theory and geometric group theory (5 lectures), Oberwolfach, Germany, October 2017
- Minicourse on the Lie algebra of symplectic derivations (4 lectures), University of Geneva, Geneva, Switzerland, November 2017
- Colloquium, University of Copenhagen, Copenhagen, Denmark, November 2017
- Groups in Madrid, Universidad Autonoma de Madrid, Spain, November 2017
- Weihnachtsworkshop on Geometry and Number Theory, Saarbrucken, Germany, December 2017

2016
- Colloquium, University of Sheffield, Sheffield, UK, February 2016
- Young Geometric Group Theory workshop (4 lectures), Karlsruhe, Germany, February 2016
- North British Geometric Group Theory Seminar, Edinburgh, Scotland, March 2016
- Conference on Topological and Homological Methods in Group Theory, Bielefeld, Germany, April 2016
- Workshop on Geometry of Groups (3 lectures), Montevideo, Uruguay, April 2016
- Topology seminar, Oxford University, Oxford, UK, May 2016
- Effective and Algorithmic Methods in Hyperbolic Geometry and Free Groups, ICERM, Providence, RI, USA, May 2016
- Colloquium, Jussieu, Paris, France, May 2016
- Conference on the Cohomology of Arithmetic Groups on the occasion of Joachim Schwermer's 66th birthday, Bonn, Germany, June 2016
- Topology of manifolds: a conference in honour of Michael Weiss' 60th birthday, Lisbon, Portugal, June 27 - July 1, 2016.
- Plenary Address, European Congress of Mathematicians, Berlin, Germany, July 2016
- Topology seminar, U.C. Davis, October 2016
- Colloquium, University of California, Berkeley, October 2016
- Algebraic, Topological & Combinatorial Approaches to $Aut(F_n)$ Summer School 2016 (3 lectures), Technion, Haifa, Israel, July 2016
- Mapping class group and $Out(F_n)$ workshop, MSRI, November 2016
- Faces of Groups: a conference in honor of Alex Lubotzky's 60th birthday, Jerusalem, Israel, November 2016
- Colloquium, Stanford University, December 2016

PUBLICATIONS (IN REVERSE CHRONOLOGICAL ORDER)

1. *The boundary of bordified Outer space*, arXiv:2404.11371.
2. *Finite groups of untwisted outer automorphism groups of RAAGs* (with C. Bregman and R. Charney), to appear in Alg. Geom. Top.
3. *The Euler characteristic of the moduli space of graphs*, (with M. Borinsky), Adv. Math. 432 (2023).
4. *The topology and geometry of automorphism groups of free groups*, (from notes by G. Crowe and P. Helms), to appear in Panorama Synthèse, Société Mathématique de France, Paris.
5. *Computing Euler characteristics using quantum field theory*, (with M. Borinsky), Tome 34, Séminaires et Congrès, Société Mathématique de France, Paris. (arXiv:2202.08739)
6. *The complex of free factors of a free group*, (with A. Hatcher), arXiv:2203.15602, corrected update of 1998 paper in Quarterly Math J.
7. *Outer space for RAAGs*, (with C. Bregman and R. Charney), Duke Math J., 172 (2023), no. 6, 1033-1108
8. *Cube complexes and abelian subgroups of automorphism groups of RAAGs* (with B. Millard). Math. Proc. Cambridge Philos. Soc. 170 (2021), no. 3, 523–547.
9. *The Euler characteristic of $Out(F_n)$*, (with M. Borinsky), Comment. Math. Helv. 95 (2020), no. 4, 703–748.
10. *On the bordification of Outer space*, (with K.-U. Bux and P. Smillie), J. London Math Soc. 98, Issue 1 (2018), 12–34.
11. *The topology and geometry of automorphism groups of free groups*, Proceedings of the 2016 European Congress of Mathematicians, EMS Publishing House, Zurich (2018), 181-202.
12. *Tethers and homology stability for surfaces*, (with A. Hatcher), Algebr. Geom. Topol. 17 (2017), no. 3, 1871–1916.
13. *Contractibility of Outer space: reprise*, Hyperbolic Geometry and Geometric Group Theory, Advanced Studies in Pure Mathematics 73 (2017), Math. Soc. Japan, 265–280.
14. *Outer space for untwisted automorphisms of right-angled Artin groups*, (with R. Charney and Nathaniel Stambaugh), Geom. Topol. 21 (2017), no. 2, 1131–1178.
15. *Assembling homology classes in automorphism groups of free groups*, (with J. Conant, A, Hatcher and M. Kassabov), Commentarii Math. Helv. 91 (2016), 751-806.
16. *$GL(n, \mathbb{Z}), Out(F_n)$ and everything in between: automorphism groups of RAAGs*, London Mathematical Society Lecture Note Series 422: Groups St Andrews 2013, 105-127, Cambridge University Press, 2015.
17. *Higher hairy graph homology*, (with J. Conant and M. Kassabov), Geometriae Dedicata 176 (2015), 345-374.
18. *On the geometry of Outer space*, Bull. Amer. Math. Soc. (N.S.) 52 (2015), no. 1, 27–46.
19. *Actions of arithmetic groups on homology spheres and acyclic homology manifolds*, (with M.R. Bridson, F. Grunewald and B. Zimmermann), Math. Z. 276 (2014), no. 1-2, 387–395.
20. *Hairy graphs and the unstable homology of M(g,s), $Out(F_n)$ and $Aut(F_n)$*, (with J. Conant and M. Kassabov), J Topology (2013) 6(1): 119-153.
21. *The Dehn functions of $Aut(F_n)$ and $Out(F_n)$* (with M. R. Bridson), Annales de l'institut Fourier, 62 no. 5 (2012), p. 1811-1817.
22. *Abelian covers of graphs and maps between outer automorphisms of free groups*, (with M. R. Bridson), Math. Ann. 353 (2012), no. 4, 1069-1102.
23. *Subgroups and quotients of automorphism groups of RAAGs*, (with R. Charney), Low-dimensional and Symplectic Topology - Proceedings of Symposia in Pure and Applied Math., Michael Usher ed University of Georgia, Editor - AMS, 2011.
24. *What is Outer space?*, Notices of the AMS 55, No. 7 (2008) 784-786.
25. *Automorphisms of two-dimensional RAAGs and partially symmetric automorphisms of free groups*, (with K.-U. Bux and R. Charney), Groups, Geometry and Dynamics 3 (4) (2009) 541-554.
26. *Actions of automorphism groups of free groups on spheres and acyclic manifolds*, (with Martin Bridson), Commentarii Math. Helv. 86 (1) (2011)
27. *Automorphisms of higher-dimensional right-angled Artin groups*, (with Ruth Charney), Bull. London Math Soc. (41) February (2009) 94-102.
28. *A presentation for $Aut(F_n)$*, (with H. Armstrong and B. Forrest), J. of Group Theory 11 (2008), 267-

276.

29. *Automorphism groups of right-angled Artin groups*, (with Ruth Charney), Guido's book of conjectures, L'Enseignement Mathematiques Monographie No. 40, 2008.

30. *Automorphisms of two-dimensional right-angled Artin groups*, (with Ruth Charney and John Crisp), Geometry & Topology 11 (2007) 2227-2264.

31. *Morita classes in the homology of $Aut(F_n)$ vanish after one stabilization*, (with Jim Conant), Groups, Geometry and Dynamics 2 (1) (2008) 121-138.

32. *The cohomology of automorphism groups of free groups*, Proceedings of the International Congress of Mathematicians, Madrid 2006, European Mathematical Society Publishing House, Zurich, 2006.

33. *Erratum to: Homology stability for outer automorphism groups of free groups*,(with A. Hatcher and N.Wahl), Algebr. Geom. Topol. 6 (2006), 573–579.

34. *Automorphisms of free groups, surface groups and free abelian groups*, (with Martin Bridson), in Problems on Mapping Class Groups and Related Topics, ed. by B. Farb, Proc. Symp. Pure Math. 74, Amer. Math. Soc., Providence RI, (2006).

35. *Automorphisms of free groups and outer space*, Proceedings of the Conference on Geometric and Combinatorial Group Theory, Part I (Haifa, 2000). Geom. Dedicata 94 (2002), 1–31.

36. *Geometry of the space of phylogenetic trees* (with L. Billera and S. Holmes), Advances in Applied Math 27 (2001), 733-767.

37. *Automorphisms of automorphism groups of free groups* (with M. R. Bridson), J. Algebra 229 (2000), no. 2, 785–792.

38. *The symmetries of Outer space* (with M. R. Bridson), Duke Math Journal 106 (2001), 391–409.

39. *A Whitehead algorithm for surface groups* (with G. Levitt), Topology 39 (2000), no. 6, 1239–1251.

40. *An Equivariant Whitehead algorithm and conjugacy for roots of Dehn twists* (with S. Krstic and M. Lustig), Proceedings of the Edinburgh Math Society 44 (2001), 117-141.

41. *Rational homology of $Aut(F_n)$* (with A. Hatcher), Mathematical Research Letters 5 (1998), 759-780.

42. *The complex of free factors of a free group* (with A. Hatcher), Quart. J. Math. Oxford Ser. (2) 49 (1998), no. 196, 459–468.

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