

Walter D. Neumann: Curriculum Vitae

PERSONAL DATA

Walter David Neumann, born 01/01/1946 in Caerphilly, Wales, UK; U.S. permanent resident.

Education

University of Adelaide	B.A. Hons.	1966
University of Adelaide	M.A.	1968
University of Bonn, Germany	Ph.D.	1969

Experience in Higher Education

Permanent Positions:

Barnard College, Columbia U.	Professor	2000–
University of Melbourne	Personal Chair	1997–1999
University of Melbourne	Reader (Professorial loading)	1993–1997
The Ohio State University	Professor	1988–1993
University of Maryland	Asst./Assoc./Full Professor	1975–/78–/81–88
University of Bonn	Wissenschaftlicher Assistent	1969–1975

Visiting Positions (teaching & research):

Duke University	Visiting Professor	Jan–April 1997
The Ohio State University	Visiting Professor	1986–1988
Brandeis University	Visiting Assoc. Prof.	Jan.–May 1981
University of Michigan, Ann Arbor	Visiting Assoc. Prof.	1977–1978
University of Aarhus	Visiting Lecturer	Feb.–July 1975
University of California, Berkeley	Visiting Lecturer	Summer 1973
University of Regensburg	Wissenschaftlicher Assistent	Winter 1970/71

Visiting Research Positions of 3 months or more:

Institute for Advanced Study, Princeton	Member	2015–16
Institute for Advanced Study, Princeton	Member	Jan–June 2011
Max-Planck-Institut für Math. Bonn	Member	Feb–Apr 2009
Tokyo Institute of Technology	Research Professor	June–Aug 2006
Institute for Advanced Study, Princeton	Member	Jan–June 2005
Max-Planck-Institut für Math. Bonn	Member	May–July 1997
Princeton University	Visiting Research Fellow	1992–1993
University of Melbourne	Visiting Professor	June–Aug 1985
Institute for Advanced Study, Princeton	Member	Spring 1985
Math. Sci. Research Inst., Berkeley	Member	Fall 1984
Institute for Advanced Study, Princeton	Member	1971–1973

Honorary appointments:

University of Melbourne	Professorial Fellow	2000–2005
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Honors

European Academy of Sciences	Elected Member	2002
University of Illinois Champaign/Urbana	Coble Lectures	2003
Faces of Geometry: A Conference in Honor of Walter Neumann		June 2011
American Mathematical Society	Elected Fellow (FAMS)	2012
Aix-Marseille University	Doctor Honoris Causa	November 9 2016

Membership of Professional Societies

American Association for the Advancement of Science (AAAS)
American Math. Society
Association for Women in Mathematics
Australian Math. Society
European Academy of Sciences

RESEARCH

Research Area

Geometry/Topology: Geometric Group Theory, Geometric Topology, Algebraic Geometry.

Research Grants:

“3-manifolds and geometry” NSF, 2016–2019
“3-manifolds and geometry” NSF, 2009–2012, 2012–2016
“New techniques in low-dimensional topology and geometry” NSF Research Training Grant, with Khovanov, Morgan, Ozsváth, 2008–2013.
“3-manifolds, singularities, and invariants” NSF, 2005–2007, 2007–2009
“Abelian Galois Extensions as Complete Intersections” NSA, 2006–2008
“Collaborative Research: FRG: Hyperbolic Geometry and Jones Polynomials” NSF, 2005–2008
“Invariants of 3-manifolds and their applications” NSF, 2002–2005
“3-manifolds and their applications to geometry” NSF, 2000–2002
Continuous research support Australian Research Council 1993–2000
Continuous research support NSF 1976–1993

HIGHER DEGREE SUPERVISION

PhD Students

Harold Sultan (co-supervisor: Jason Behrstock) “The Asymptotic Cone of Teichmüller Space: Thickness and Divergence” May 2012
Helge Møller Pedersen, “Splice diagrams, singularity links and universal abelian covers” May 2009
Christian Zickert, “Hyperbolic Manifolds and the Cheeger-Chern-Simons Class” May 2008
Philip Ording, “On knot Floer homology of satellite (1,1)-knots” May 2006
P.J. Lamberson, “Splice type singularities and iterated branched cyclic covers” May 2006
Harriet Moser, “Proving a manifold to be hyperbolic once it has been approximated to be so” Dec 2004
Abhijit Champanerkar, “A-polynomial and Bloch invariants of 3-manifolds” 2003
P. Wightwick, “Topology of Affine Algebraic Plane Curves” 2002
S. Tillmann, “Surfaces associated to mutation and deformation of hyperbolic 3-manifolds” 2002 (co-supervisor: C. Hodgson)
M. Elder, “Automaticity, almost convexity, and falsification by fellow traveller properties of some finitely generated groups” 2000
A. DiPasquale, “Links and Complements of Plane Curves” 1999
M. Ouyang, “Eta-invariants of geometric 3-manifolds” 1992
L. Christine Kinsey, “Pseudoisotopies and Submersions of a Compact Manifold to the Circle” 1984 (co-supervisor: H. King)
M. Jankins, “The space of homomorphisms of a Fuchsian group to $PSL(2, \mathbf{R})$ ” 1983

N. Duchon, “Involutions of plumbed manifolds” 1982
D. Bernstein, “Newton polyhedra and cohomology of complete intersections” 1982
K.H. Knapp, “Signaturdefekte modulo \mathbf{Z} für freie G -Aktionen” 1975 (first supervisor: F. Hirzebruch)
A. Scharf, “Faserungen von Graphenmannigfaltigkeiten” 1973 (first supervisor: F. Hirzebruch)

Other:

M.A.: P. Wightwick, “Singularities of Plane Curves” 1995
Diplom: W. Heymans, “Klassifikation der Automorphismen von Flächen und Vollbrezeln” 1975
Diplom: N. Ryska, “Bettizahlen von Open Books” 1975
Diplom: C.P. Fitting, “Faserungen von Graphenmannigfaltigkeiten” 1975
Diplom: C. Olk, “Die Singuläre Homologietheorie mit geschlossenem Träger” 1975
Diplom: R. Bohm, “Orbiträume abelscher G -Aktionen” 1974

Thesis defense committees (since 2000: Columbia U. unless otherwise noted):

2015: Thesis Referee (July) and Thesis Jury (Sept), Roberto Castellini, Université Lille.
2014: Corrin Clarkson, Jonathan Hanselman
2013: Kristen Hendricks
2012: Habilitation: Pierre Derbez (Centre de Mathématiques et Informatique, Université de Provence)
2012: Harold Sultan, Ina Petkova, Irena Penev
2011: Haydée Aguilar Cabrera (Universidad Nacional Autónoma de México, Cuernavaca); Thesis Jury (Mar) and Defense Committee (April)
2009: Helge Møller Pedersen
2008: Eric Simring, Christian Zickert
2007: Yang Su (Heidelberg University)
2006 Habilitation: Anne Pichon (Institut de Mathématiques de Luminy) and Héléne Maugendre (University of Grenoble)
2006 Jeff Phan, PJ Lamberson, Phil Ording, Keiko Kamumuro
2005: Sally Kuhlman (Melbourne)
2004: H. Moser, A. McInroy
2003: N. Broaddus, A. Champanerkar
2002: N. Wrinkle, T. Brendle, C. Leininger (Austin TX), D. Cimasoni (Geneva; Thesis Referee and Thesis Jury).
2001: M. Zinno, G. Rosenberg, R. Popescu, G. Langmead, D. Rebecchi (Rutgers Newark).

POSTDOC SUPERVISIONS (since 2000)

BogWang Jeon, Fall 2013 -
Murat Savas, Fall 2012 - Spring 2014
Haydée Aguilar Cabrera, Spring 2012 -Spring 2013
Xiaobo Liu, Fall 2005 - Spring 2009
Chris Leininger, Fall 2002 - Spring 2005

UNDERGRADUATE RESEARCH SUPERVISION (since 2000)

Supervised research Rankeya Datta Summer 2012
Senior thesis Michael Lim Spring 2007
Senior thesis “Complex reflection groups in dimension 2” Neeraj Pradhan 2005–06

Senior thesis and summer project “A mathematical model of cellular apoptosis through dynamics of telomere loss” Natalie Arkus, Spring/Summer 2003, appeared 2005 in J. Theoretical Biol. (cited as number 4 among the top 25 papers in Agricultural and Biological Sciences in 2005 by Scienencedirect.com)

Research Project on Computation of Dirichlet Domains (Max Lipyanskiy), Fall 2001/Spring 2002

Vigre Summer Research Project on exceptional 3-manifolds (Jacob Lewis, Max Lipyanskiy, Scott Meltzer), Summer 2001, published in Exper. Math.

Honours thesis: Research project on A-polynomial (J. Bueti), Spring Semester 2001

Research Project on cusp singularities (D. Anderson), Spring Semester 2001, published in Mathematische Annalen 2003

Vigre Summer Research Project on A-polynomial (J. Bueti, P. Ording, A. Stern), Summer 2000

DEPARTMENT AND UNIVERSITY ADMINISTRATION (Since 2000)

Current:

Faculty representative for Barnard/Columbia chapter of Gamma Iota Sigma (Risk Management, Insurance and Actuarial Science majors).

Undergraduate Committee, (Chair Fall 2010) 2004–

Columbia Mathematics Library Committee, 2004–06, 2007–

Kolchin and Ritt Lectures Committee, 2002–04, 2006–07, 2008–

Executive Committee, Columbia Univ. Math. Dept., 2000–

Advisory Board, Barnard Center for Research on Women, 2000–

Previous:

Calculus II director, 2014–2015

Barnard Committee on Honors, Fall 2013–2015

Chair, Barnard Department of Mathematics, 2000–04, 2005–06, 2011–2015

Barnard Library and Academic Information Service Committee, Fall 2009–Fall 2010

Barnard Committee on Programs and Academic Standing, Fall 2007

Chair, Prize Exam Committee, 2000, 2001–04 and 2005–07

Calculus Director, Barnard/Columbia, 2005–07

Chair, Helen Kimmel Chair Search Committee, 2006

Calculus 3 Captain, Fall 2004

PI for undergraduate affairs for the Math Dept Vigre grant, Fall 2001–2004

Junior Hiring Committee, Columbia, 2005/06/07

Chair, Columbia Math Dept Junior Hiring Committee 2001

Barnard Committee on Instruction, Fall 2001–Spring 2002

Barnard Grants Committee, Fall 2000–Spring 2002

Barnard ATP Committee (member at large), Fall 2000–Spring 2002

OTHER PROFESSIONAL ACTIVITIES, COMMUNITY RELATIONS

Current editorships, research journals:

Editorial board, Geometry & Topology since 1996 (Managing Editor 2005–2012)

Topology/Geometry editor, Illinois J. Math. 2008–

Editorial Board, Experimental Mathematics (A.K. Peters), 1996–

Editorial Board, Electronic Research Announcements in the Mathematical Sciences 2007–

Current editorships, monograph series:

Editorial Board, Ohio State Univ. Math. Research Institute Publications (de Gruyter), 1990–
Editorial Board, de Gruyter Expositions in Mathematics, 1987–

Previous editorships

Consulting Editor, Proceedings Edinburgh Maths. Soc., 1998–2015
Editorial Board, Transformation Groups (Birkhäuser Verlag), 1995–2007
Editorial Board, Electronic Research Announcements of the Amer. Math. Soc., 1995–2007
Associate Editor, Journal of the Australian Math. Soc., 1998–99
Editorial Board, Australian Math. Soc. Lecture Series (Cambridge Univ. Press), 1996–2000
Topology Editor, Transactions of the Amer. Math. Soc., 1982–85
Topology Editor, Memoirs of the Amer. Math. Soc., 1982–85

Conference Grants awarded (since 2000); size; funding agency; organizers:

Workshop “Lipschitz Geometry of Singularities”, Casa Matematica Oaxaca, Mexico, October 2018; 42 participants; BIRS/CMO; Neumann, Pichon, Snoussi.
Workshop “Low-dimensional topology and number theory” Oberwolfach, Germany, August 2017; 48 participants; MFO; Gunnells, Neumann, Sikora, Zagier.
Workshop “Topological methods in singularity theory”, Edinburgh UK, 2015; approx. 50 participants; ICMS; Borodzig, Neumann, Pichon, Ranicki.
Funding for US participants; NSF; Neumann.
Petits groupes de travail “Lipschitz Geometry of function germs $\mathbb{C}^2 \rightarrow \mathbb{C}$ ”; Luminy, France; 01/12/2015–01/16/2015; CIRM; participants: Neumann, Pichon, Teissier.
Workshop “Low-dimensional topology and number theory” Oberwolfach, Germany, August 2014; 48 participants; MFO; Gunnells, Neumann, Sikora, Zagier.
Petits groupes de travail “Lipschitz Geometry of function germs $\mathbb{C}^2 \rightarrow \mathbb{C}$ ”; Luminy, France; 06/01/2014–06/13/2014; CIRM; participants: Gaffney, Neumann, Pichon, Teissier.
Workshop “Low-dimensional topology and number theory” Oberwolfach, Germany, August 2012; 48 participants; MFO; Gunnells, Neumann, Sikora, Zagier.
Petits groupes de travail “Géométrie bilipschitz des espaces analytiques complexes”; Luminy, France; 05/14/2012–05/25/2012; CIRM; participants: Birbrair, Neumann, Pichon.
Workshop “Low-dimensional topology and number theory” Oberwolfach, Germany, August 2010; 48 participants; MFO; Gunnells, Neumann, Sikora, Zagier.
Workshop “Rigidity in Topology” Banff, March 2010; 20 participants; BIRS; Behrstock, Kapovitch, Neumann.
Research in pairs, Luminy, France (2 weeks Jun/Jul 2009); CIRM; participants: Birbrair, Neumann, Pichon.
Workshop “Low-dimensional topology and number theory” Banff, Oct 2007; 40 participants; BIRS; Boyd, Gunnells, Neumann, Sikora.
Conference in honor of Joan Birman, “Braids, Links and Mapping Class Groups” Barnard/Columbia, March 2005; 108 participants; NSF; Behrstock, Kofman, Leininger, Neumann.

Other Conference Committees (since 2000):

Co-organizer, Conference “Topological and Quantitative Aspects of Symplectic Manifolds” Barnard/Columbia, March 17-20 2016
Scientific Committee, “10th MiniWorkshop, Singularities, Geometry and Differential Equations” Fortaleza, Brazil, May 2015.
Co-organizer, Conference “Invariants in Low Dimensional Geometry”, Gazi University, Ankara, August 10-14 2015.

Co-organizer, ICERM (Brown U.) Semester program: “Low Dimensional Topology, Geometry and Dynamics” Fall 2013
 Co-organizer, International conference “Geometric Topology in New York”, August 2013 (NSF funded).
 Co-organizer, Special Session on Geometry and Singularities, AMS Regional Meeting, Worcester MA, April 2011
 Scientific Committee, “The XI Workshop on Real and Complex Singularities,” Sao Carlos, Brazil, July 2010.
 Chair of organizing committee, Graduate workshop and international conference “Interactions between Hyperbolic Geometry, Quantum Topology and Number Theory,” Columbia University, Jul 2–20 2009
 Co-Organizer, International conference “A second time around the Volume Conjecture”, Baton Rouge, May 2007
 Chair of organizing committee, International conference “Around the Volume Conjecture”, Barnard/ Columbia, March 2006
 Co-organizer, International workshop “Software for the Working Mathematician”, CUNY, May 2003
 Co-organizer, Special Session on Topological Methods in Complex Singularities, AMS Regional Meeting, New York University, April 2003
 Co-organizer, Special Session on Topology of 3-Manifolds (+ pre-meeting workshop), AMS Meeting 959, New York, Nov. 2000

Reviewing and Refereeing (Since 2000)

Refereeing research proposals for the NSF, NSA, Simons Foundation, Canadian Research Council, Australian Research Council, English EPSRC, Swiss NSF, Georgian NSF, Indian Academy of Sciences, French National Research Agency, et al.
 Refereeing for many math. journals
 NSF review panels, Nov 2003, Feb 2006, Feb 2008, Oct 2009
 “Panel of experts” French National Research Agency (ANR) 2006–2007, 2009–
 Georgian National Science Foundation registered peer reviewer 2007–
 College of Reviewers, Canada Research Chairs Program, 2003–

Community (Since 2000):

Math for America Newton Fellowship Screening and Selection Committee 2007, 2008
 Committee on Human Rights, New York Acad. Sci. 2005–2011
 Member of Board: Committee of Concerned Scientists, 2004–

Administrative (Since 2000):

Board of Directors and Steering Committee: Mathematical Sciences Publishers, 2005–
 Board member: New Zealand Mathematics Research Institute Inc., 1997–
 Executive Committee: Geometry & Topology Publications, 2005–
 Editorial Boards Committee of the American Mathematical Society 2013–15 (chair 2015).
 Committee on Publications, American Mathematical Society, 2013, 2015
 Australian Math. Soc. Medal Committee, 1998–2000

LECTURE COURSES (Recent)

Lecture course, “Lipschitz geometry of singularities”, Banach Center, Bedlewo, Poland, August 2017

Lecture course, “Quasi-isometric classification of 3-manifold groups” Toulouse University, 3-7 July 2017

Lecture course (4 hours), GDR conference “Géométrie et topologie des singularité complexes” CIRM, Luminy, France, April 2013

Lecture course (4 hours, with A Pichon), Workshop on “The Topology of Algebraic Varieties” CRM Montreal, September 2012

Lecture course (5 × 75min), Winter School “Geometry & Topology Down Under”, Melbourne University, July 2011

Lecture course (4 hours), Hyperbolic geometry: algorithmic, number theoretic and numerical aspects, Korea Institute of Advanced Studies, Seoul, March 2010

Lecture Course (3 hours), Interactions Between Hyperbolic Geometry, Quantum Topology and Number Theory, Columbia, July 2009

Lecture series (5 lectures) “LeFest: School and Workshop on the Topology and Geometry of Singularities,” Cuernavaca, Mexico, Jan 2007

Lecture series for graduate students (7 lectures) Tokyo Inst. Tech., Jul–Aug 2006

Lecture course (2 hours + tutorials) ICTP Trieste, August 2005

Lecture course (3 hours), Singularities workshop for young researchers, CIRM, Feb 2005

INVITED LECTURES (Recent)

Topology Seminar, CUNY Graduate Center, March 28 2017

Plenary Lecture (substituting for Anne Pichon) at “A Panorama on Singular Varieties; A Conference to Celebrate Lê Dũng Tráng 70th Birthday”, Seville Feb 10 2017

Colloquium lecture, Rutgers Newark, Dec 13 2016

Colloquium lecture, Marseille, Nov 4 2016

Singularities, Mathematisches Forschungsinstitut Oberwolfach, Sept 25 2016

14th International Workshop on Real and Complex Singularities, São Carlos, July 2016

Seminar, Fortaleza, Brasil, July 2016

Seminar, Marseille University, June 2016

Members Seminar, Institute for Advanced Study, Feb 2016

Seminar, University of Lille, France, September 2015

Lecture, Workshop “Singularity Theory in Fortaleza”, Brasil May 2015

Plenary lecture, Conference on “Geometry of Singular Spaces and Maps”, CIRM, Luminy, March 2015.

Plenary lecture, Conference on “Singularities in geometry, topology, foliations and dynamics”, Merida, Mexico, Dec 2014

Topology Seminar, Princeton University, Nov 2014

PATCH Seminar, Temple University Sept 2014

Seminar, CUNY Graduate Center, May 2014

Plenary lecture, GEAR (GEometric structures And Representation varieties), U Maryland, March 2014

SUSI workshop, U Lille, France, January 2014

Seminar, Northeastern U, November 2013

Colloquium, U Michigan, October 2013

Session on Singularities, 1st Mathematical Congress of the Americas, Guanajuato, Mexico, August 2013

Brandeis/Harvard/MIT Colloquium, Brandeis, February 2013

Special session on academic publishing, Amer. Math. Soc. AGM, San Diego Jan 2013

Plenary Lecture, Conference “Arnold-75”, Steklov Institute, Moscow, December 2012.

Memorial Colloquium for Friedrich Hirzebruch, MPIM Bonn, October 2012

12th International Workshop on Real and Complex Singularities, São Carlos, Brazil, July 2012

Plenary lecture, Conference “Singularity theory, its modern applications and future prospects,” Liverpool, June 2012

Seminar, University of Marseille, May 2012

Plenary lecture, 50th Cornell Topology Festival, May 2012

Lunch Seminar and Geometry Seminar, PSU, Feb 2012

Plenary Lecture, Conference “Resolution of Singularities and Related Topics” in honor of the 80th birthday of Heisuke Hironaka, Tordesillas, Spain, Sep 2011

Plenary Lecture, “Geometry & Topology Down Under” (Conference in honour of Hyam Rubinstein), Melbourne University, July 2011

Special seminar, Jagiellonian University, Cracow, Poland, May 2011

Plenary lecture, “Workshop on Singularities in Geometry and Applications”, IMPAS Banach Center, Bedlewo, Poland, May 2011

Seminar, Université Marseille 1, May 2011

Plenary Address, Eastern Sect. AMS Meeting, Worcester, MA Apr 2011

Invited 45 minute lecture, Special Session “Number Theory, Arithmetic Topology, and Arithmetic Dynamics”, Eastern Sect. AMS Meeting, Worcester, MA Apr 2011

Colloquium, UNAM, Cuernavaca, Mexico, Apr 2011

Invited Address, Conference “Finitely Presented Solvable Groups” CUNY, Mar 2011

Rutgers/IAS/Penn “Applications of Topological Ideas” seminar, Rutgers, Feb 2011

Topology Seminar, Chicago University, Nov 2010

Colloquium, Temple University, Oct 2010

Low-dimensional topology and number theory, MFO, Germany, Aug 2010

Plenary lecture, 11th International Workshop on Singularities - São Carlos, Brazil, Jul 2010

Seminar, Federal University of Ceara, Brasil, July 2010

Quantum Geometry and Topology, CIRM, Luminy, France, July 2010

Eighth Joint International Meeting of the AMS and the Sociedad Matemática Mexicana, Special Session on Singularity Theory and Algebraic Geometry June 2010

Topology Seminar, Boston College, April 2010

BIRS workshop “Rigidity in Topology,” Banff, March 2010.

New Directions in Geometric Group Theory, Brisbane, Australia, Dec 2009

Manhattan Group Theory Day, CUNY, NY Dec 2009

William Rowan Hamilton Geometry and Topology Workshop, Dublin, Sep 2009

BHN Day, Group Theory conference, Bath, England, August 2009

Lib60ber singularities conference, Jaca, Spain, June 2009

Topology Seminar, Warwick University, April 2009

Topology Seminar, MPIM Bonn, April 2009

Lecture for the 6-year review of Max-Planck-Institut für Math, Bonn, March 2009

Workshop “Low Dimensional Topology and Number Theory”, Fukuota, Japan, Mar 2009

Geometry Seminar, Oxford University, Mar 2009

Plenary lecture, 10th International Workshop on Singularities - São Carlos, Brazil, Jul 2008

Seminar, Université de la Provence, Marseille, Jun 2008

“Affine Geometry, Number Theory and Singularities in Honor of Pierrette Cassou-Nogues,” CIEM, Cantabria, Spain, June 16–20, 2008

Plenary lecture, Conference “Algebraic and geometric topology,” Gdansk, June 9–13, 2008

AMS Special Session Baton Rouge, March 29, 2008

BIRS workshop “Topology and Number Theory” Banff, Oct 2007

CUNY group theory seminar, Oct 2007

IV Congresso Iberoamericano de Geometria Complexa, Ouro Preto, Brasil. August 2007
 Conference “Hyperbolic structures on 3-manifolds and the large scale geometry of Teichmüller space,” Warwick, July 2007
 Bonn Arbeitstagung (50 year Jubiläum), Max-Planck-Institut für Math. Bonn, June 2007
 AIM Workshop on Geometric Group Theory, Apr, 2007
 Colloquium and Seminar, Oklahoma State University, Apr 2007
 RTG lecture and Topology seminar, MSU, Apr 2007
 Colloquium, Brown University, Mar 2007
 Topology Seminar, UT Austin, Nov 2006
 Colloquium and Seminar, UNC Chapel Hill, Oct 2006
 Conference “Polynomial Automorphisms and related topics”, Hanoi, Vietnam, Oct 2006
 3-Manifolds conference, Oberwolfach, Sep 2006
 Conference ILDT2006, Hiroshima, July 2006
 Colloquium and Topology seminars (5 lectures) Tokyo Inst. Tech., Jun–Jul 2006

PUBLICATIONS

Refereed Research Articles

1. On cardinalities of free algebras and ranks of operations, *Arch. Math.* **20** (1969), 132–133
2. 3–dimensional G –manifolds with 2–dimensional orbits, *Proc. Conf. on Transformation Groups Tulane 1969* (Springer Verlag 1970), 220–222
3. Representing varieties of algebras by algebras, *J. Austr. Math. Soc.* **11** (1970), 1–8
4. On the quasivariety of convex subsets of affine spaces, *Arch. Math.* **21** (1970), 11–16
5. Fiberings over the circle within a bordism class, *Math. Ann.* **192** (1971), 191–192
6. On Malcev conditions, *J. Austr. Math. Soc.* **17** (1974), 376–384
7. Cyclic suspension of knots and periodicity of signature for singularities, *Bull. Amer. Math. Soc.* **80** (1974), 977–982
8. Cutting and pasting groups, *Topology* **14** (1975), 237–244
9. (With U. Hirsch): On cyclic branched coverings of spheres, *Math. Ann.* **215** (1975), 237–244
10. (With M. Brown): Proof of the Poincaré–Birkhoff fixed point theorem, *Mich. Math. Journal* **24** (1977), 21–31
11. (With L. Kauffman): Product of knots, branched fibrations, and sums of singularities, *Topology* **16** (1977), 369–393
12. Generalizations of the Poincaré–Birkhoff fixed point theorem, *Bull. Austr. Math. Soc.* **17** (1977), 375–389
13. Brieskorn complete intersections and automorphic forms, *Invent. Math.* **42** (1977) 285–293
14. Homotopy invariance of Atiyah invariants, *Proc. Symposia in Pure Math.* **32** (Amer. Math. Soc. 1978), 181–188
15. (With F. Raymond): Seifert manifolds, plumbing, μ –invariant, and orientation reversing maps, *Algebraic and Geometric Topology*, Lecture Notes in Math. **664** (Springer Verlag 1978), 162–194
16. Mal’cev conditions, spectra, and Kronecker Product, *J. Austr. Math. Soc. (Series A)* **25** (1978), 103–117. Errata, *Ibid.* **28** (1979), 510
17. Multiplicativity of signature, *J. of Pure and Appl. Algebra* **13** (1978), 71–78
18. (With Steven H. Weintraub): Four-manifolds constructed via plumbing, *Math. Ann.* **238** (1978), 71–78
19. Normal subgroups with infinite cyclic quotient, *The Math. Scientist* **4** (1979), 143–148

20. Signature related invariants of manifolds I: monodromy and γ -invariants, *Topology* **18** (1979), 147–172
21. An invariant of plumbed homology spheres, *Proc. Topology Symposium Siegen 1979*, *Lecture Notes in Math.* **788** (Springer Verlag 1980), 125–144
22. (With D. Eisenbud and U. Hirsch): Transverse foliations of Seifert bundles and self-homeomorphisms of the circle, *Comment. Math. Helv.* **56** (1981), 638–660
23. A calculus for plumbing applied to the topology of complex surface singularities and degenerating complex curves, *Trans. Amer. Math. Soc.* **268** (1981), 299–343
24. Invariants of plane curve singularities, *Monographie No. 31 de L'Enseignement Mathématique* (1983), 423–432
25. Geometry of quasihomogeneous surface singularities, *Singularities, Arcata 1981*, *Proc. Symp. Pure Math.* **40** (Amer. Math. Soc. 1983), 244–258
26. Abelian covers of quasihomogeneous surface singularities, *Singularities, Arcata 1981*, *Proc. Symp. Pure Math.* **40** (Amer. Math. Soc. 1983), 233–243
27. (With D. Zagier): A note on an invariant of Fintushel and Stern, *Proc. Special Year in Topology Maryland 1983/4*, *Lecture Notes in Mathematics* **1167** (Springer Verlag 1985)
28. (With D. Zagier): Volumes of hyperbolic 3-manifolds, *Topology* **24** (1985), 307–332
29. (With M. Jankins): Homomorphisms of Fuchsian groups to $PSL(2, \mathbf{R})$, *Comment. Math. Helv.* **60** (1985), 480–495
30. (With M. Jankins): Rotation numbers of products of circle homeomorphisms, *Math. Ann.* **271** (1985), 381–400
31. Splicing algebraic links, *Complex Analytic Singularities*, *Adv. Studies in Pure Math.* **8** (North Holland Publishing 1986), 349–361
32. (With F. Ehlers and J. Scherk): Links of surface singularities and CR space forms, *Comment. Math. Helv.* **62** (1987), 240–264
33. (With L. Rudolph): Unfoldings in knot theory, *Math. Ann.* **278** (1987), 409–439. Corrigendum, *ibid.* **282** (1988), 349–351
34. (With R. Bieri and R. Strebel): A geometric invariant of discrete groups, *Invent. Math.* **90** (1987), 451–477
35. (With L. Rudolph): The enhanced Milnor number in higher dimensions, *Differential Topology Proceedings, Siegen 1987*, *Lecture Notes in Mathematics* **1350** (Springer Verlag 1988), 109–121
36. Complex plane curves via their links at infinity, *Invent. Math.* **98** (1989), 445–489
37. On the topology of curves in complex surfaces, *Topological Methods in Algebraic Transformation Groups*, Eds. H. Kraft, Ted Petrie, G.W. Schwarz, *Progress in Math* **80** (Birkhäuser Verlag, 1989) 117–133
38. On bilinear forms represented by trees, *Bulletin of the Australian Math. Soc.* **40** (1989), 303–322
39. (With L. Rudolph): Difference index of vector fields and the enhanced Milnor number, *Topology* **29** (1990), 83–100
40. (With J. Wahl): Casson invariant of links of singularities, *Comment. Math. Helv.* **65** (1990), 58–78
41. On intersections of finitely generated subgroups of free groups, *Proceedings of the Third International Group Theory Conference*, *Lecture Notes in Math.* **1456** (Springer Verlag, 1990), 161–170
42. (With A. W. Reid): Amalgamation and the invariant trace field of a Kleinian group, *Math. Proc. Cambridge Philos. Soc.* **109** (1991), 509–515
43. (With A. W. Reid): Arithmetic of hyperbolic 3-manifolds, in *Topology 90, Proceedings of the Research Semester in Low Dimensional Topology at Ohio State* (Walter de Gruyter

- Verlag, Berlin - New York 1992), 273–310
44. Combinatorics of 3-cycles and the Chern-Simons invariant of hyperbolic 3-manifolds, in *Topology 90, Proceedings of the Research Semester in Low Dimensional Topology at Ohio State* (Walter de Gruyter Verlag, Berlin - New York 1992), 243–272
 45. (With A. W. Reid): Notes on Adams' small volume orbifolds, in *Topology 90, Proceedings of the Research Semester in Low Dimensional Topology at Ohio State* (Walter de Gruyter Verlag, Berlin - New York 1992), 311–314
 46. (With R. Meyerhoff): An asymptotic formula for the eta-invariants of hyperbolic 3-manifolds, *Comment. Math. Helv.* **67** (1992), 28–46
 47. Asynchronous combings of groups, *Int. J. of Alg. and Computation* **2** (1992), 179–185
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