

Anna Wienhard

Curriculum Vitae

Education

- 2001 – 2004 **Dr. rer. nat (PhD)**, *Rheinische Friedrich-Wilhelms Universität Bonn*.
Title: “Bounded Cohomology and Geometry”, Advisors: Werner Ballmann, Marc Burger
- 1995 – 2000 **Diploma in Mathematics**, *Rheinische Friedrich-Wilhelms Universität Bonn*.
“Über die Starrheit des Spektrums auf Flächen”
- 1995 – 2001 **Diploma in Theology**, *Rheinische Friedrich-Wilhelms Universität Bonn*.

Employment

- since 2022 **Director of the Max Planck Institute for Mathematics in the Sciences**,
Leipzig.
- 2020 – 2022 **Director of the Research Station Geometry and Dynamics**, *Ruprecht-Karls-Universität, Heidelberg.*
- 2012 – 2022 **Chair of Differential Geometry**, *Ruprecht-Karls-Universität, Heidelberg.*
- 2015 – 2022 **Group Leader**, *Heidelberg Institute of Theoretical Studies, Heidelberg.*
- since 2013 **Associate Member**, *Interdisciplinary Center for Scientific Computing, Heidelberg.*
- 2007 – 2012 **Assistant Professor**, *Princeton University, Princeton.*
- 2009 – 2012 **Visitor**, *School of Mathematics, Institute for Advanced Study, Princeton.*
- 2005 – 2008 **Dickson Instructor**, *University of Chicago, Chicago.*
- 2005 – 2006 **Member**, *School of Mathematics, Institute for Advanced Study, Princeton.*
- 2004 – 2005 **Postdoctoral Fellow**, *Swiss National Science Foundation, Universität Basel, Basel.*
- 2001 – 2002 **Research Associate**, *SFB 534 “Judaism and Christianity”, Rheinische Friedrich-Wilhelms Universität, Bonn.*

Honors and Awards

- since 2021 **Henriette-Herz-Scout**, Alexander von Humboldt Foundation
- since 2019 **Elected Member of the Berlin-Brandenburg Academy of Science**
- since 2017 **Elected Member of the Heidelberg Academy of Science**
- since 2013 **Fellow of the American Mathematical Society**
- 2021 **ERC Advanced Grant**
- 2019 **Clay Senior Scholar**, MSRI Berkeley
- 2019 **Whittemore Lectures**, Yale University
- 2018 **Award of Heidelberg University**

- 2018 Invited Address, International Congress of Mathematicians
- 2017 Invited Plenary Address, AMS Joint Mathematical Meetings
- 2016 Invited Address, European Congress of Mathematics
- 2015 Invited Plenary Address, Annual Meeting of the Leopoldina, National Academy of Science Germany
- 2014–2015 Moore Distinguished Scholar, Caltech
- 2014 ERC Consolidator Grant
- 2013 Sloan Research Fellowship
- 2012 Emmy-Noether-Lecture, Annual Meeting of the Deutsche Mathematiker-Vereinigung
- 2012 Beatrice Yorck Distinguished Lecture, Stanford University
- 2012 Invited Plenary Address, AMS Sectional Meeting, Eastern Section
- 2009 NSF-CAREER Award
- 2008 – 2013 Member of the Young Academy of the National Academy of Science, Germany
- 2002 – 2004 Graduate Fellowship of the German National Academic Foundation
- 1996 – 2000 Scholarship of the German National Academic Foundation
- 2004 Best talk, Topology section, Annual Meeting German Mathematical Society
- 1999 Theodor-Fontane-Preis, Award of the German National Academic Foundation for outstanding international social activities

Professional Service

- since 2022 Member of the Scientific Advisory of the Institute for Theoretical Studies at ETH Zurich
- since 2022 Member of the Scientific Advisory of the University of Basel
- since 2021 Member of the Stiftungsrat, Oberwolfach Stiftung
- since 2021 Member of the Board of the Collaborative Research Center 191 “Symplectic Structures in Geometry, Algebra and Dynamics”
- since 2020 Member of the Scientific Advisory Interdisciplinary thematic institutes Mathematics, interactions and applications IRMIA++ Strasbourg
- since 2020 Scientific Chair of the Heidelberg Laureate Forum Foundation
- since 2020 Member of the Selection Committee for the Heiner-Maier-Leibnitz Award
- since 2019 Member of the Scientific Advisory Board for the Mathematisches Forschungsinstitut Oberwolfach
- since 2018 Member of the Structure Committee of the IMU
- since 2017 Co-Spokesperson, Cluster of Excellence STRUCTURES, Heidelberg University
- since 2016 Member of the Program Committee, DFG Priority Program 2026
- 2016 – 2022 Co-Spokesperson DFG Research Training Group 2229 “Asymptotic invariants and limits of groups and spaces”, Heidelberg - Karlsruhe
- since 2011 PI and member of the Network Executive Committee, NSF Research network in the mathematical sciences "Geometric structures and representation varieties" (GEAR)

- since 2011 Ahlfors-Bers Colloquium Organizing Board
- 2022 Local organizer of the nationwide Millennium Prize Problem Festival, Heidelberg
- 2021 Member of the Selection Committee for the Noether Lecture of the IMU
- 2021 Member of the Scientific Committee of the IMU Centennial Conference
- 2015 –2020 Member of the Scientific Advisory Board of the Heidelberg Laureate Forum
- 2019 Member of the Prize Committee, Cantor Medal, DFG
- 2013–2019 Member of the Kuratorium of the Internationales Wissenschaftsforum Heidelberg
- 2013 – 2019 Coordinator of Erasmus program in Mathematics, Heidelberg University
- 2016 – 2018 Department Chair, Mathematical Institute, Heidelberg University
- 2013 – 2015 Spokesperson, Partnership Mathematics and Physics, Heidelberg University
- 2009 – 2012 Coordinator of the Training Research and Motion network (TRAM), Department of Mathematics, Princeton University
- 2007 – 2011 Director of Graduate Studies, Department of Mathematics, Princeton University

Editorial Services

- since 2022 Founding and Managing Editor of the new journal Moduli, Compositio Foundation
- since 2018 Editor, Geometric and Functional Analysis
- since 2018 Editor, Annales Henri Lebesgue
- since 2017 Editor, Geometry and Topology
- since 2013 Advisory Board, Springer Lecture Notes in Mathematics
- 2016 – 2022 Editor, Annales Scientifique de l'École normale supérieure
- 2019 – 2021 Editor, Proceedings of the London Mathematical Society
- 2016 – 2020 Editor, Forum Mathematicum
- 2011 – 2020 Editor, Geometriae Dedicata

Publications

- B. Pozzetti, A. Sambarino, A. Wienhard, **Anosov representations with Lipschitz limit sets**, arXiv: 1910.06627, to appear in Geometry & Topology
- D. Alessandrini, A. Berenstein, V. Retakh, E. Rogozinnikov, A. Wienhard, **Symplectic groups over non-commutative algebras**, arxiv:2106.08736, to appear in Selecta Mathematica
- D. Alessandrini, O. Guichard, E. Rogozinnikov, A. Wienhard, **Non-commutative coordinates for symplectic representations**, Preprint, arXiv:1911.08014, to appear in Memoir of the AMS
- D. Spitz, J. Berges, M. Oberthaler, A. Wienhard, **Finding universal structures in quantum many-body dynamics via persistent homology**, arXiv: 2001.02616, SciPost Phys. 11, 060 (2021)

M. Bridgeman, B. Pozzetti, A. Sambarino, A. Wienhard, **Hessian of Hausdorff dimension on purely imaginary directions**, arXiv: 2010.16308, Bull. Lond. Math. Soc. 54, 3 (2022) 1027-1050.

F. Lopez, B. Pozzetti, S. Trettel, M. Strube, A. Wienhard, **Vector-valued Distance and Gyrocalculus on the Space of Symmetric Positive Definite Matrices** In Proceedings of the Thirty-fifth Conference on Neural Information Processing Systems (NeurIPS 2021), arXiv:2110.13475.

F. Lopez, B. Pozzetti, S. Trettel, M. Strube, A. Wienhard, **Symmetric Spaces for Graph Embeddings: A Finsler-Riemannian Approach**, arXiv:2106.04941, ICML 2021.

F. Lopez, B. Pozzetti, S. Trettel, A. Wienhard **Hermitian Symmetric Spaces for Graph Embeddings**, arXiv:2105.05275, NeurIPS 2020 workshop on Differential Geometry meets Deep Learning.

B. Pozzetti, A. Sambarino, A. Wienhard, **Conformality for a robust class of non-conformal attractors**, Preprint, arXiv: 1902.01303, to appear in Journal für die reine und angewandte Mathematik, <https://doi.org/10.1515/crelle-2020-0029>.

Z. Sun, A. Wienhard, T. Zhang, **Flows on the $\mathrm{PGL}(\mathbf{V})$ Hitchin component**, Geometric and Functional Analysis 30 (2020), 588–692.

A. Wienhard, **Representations and geometric structures**, in: What's Next?: The Mathematical Legacy of William P. Thurston, Princeton University Press, 2020.

A. Wienhard, **An invitation to higher Teichmüller theory**, Proc. Int. Cong. of Math. 2018, Rio de Janeiro, Vol. 1, 1007–1034.

O. Guichard, A. Wienhard, **Positivity and higher Teichmüller theory**, Proceedings of the 7th European Congress of Mathematics, Berlin 2016, arXiv:1802.02833.

A. Wienhard, T. Zhang, **Deforming convex real projective structures**, Geometriae Dedicata (2017), 1–34.

O. Guichard, F. Gueritaud, F. Kassel, A. Wienhard, **Anosov representations and proper actions**, Geometry & Topology 21-1 (2017) 485–584.

D. Cooper, J. Danciger, A. Wienhard, **Limits of geometries**, Transactions of the AMS 370 (2018), 6585–6627.

G. Ben Simon, M. Burger, T. Hartnick, A. Iozzi, A. Wienhard, **On weakly maximal representations of surface groups**, Journal of Differential Geometry 105 (2017) 375–404.

O. Guichard, F. Gueritaud, F. Kassel, A. Wienhard, **Compactification of certain Clifford–Klein forms of reductive homogeneous spaces**, Michigan Mathematical Journal, Volume 66 (2017), Issue 1, 49–84.

G. Ben Simon, M. Burger, T. Hartnick, A. Iozzi, A. Wienhard, **On order preserving representations**, J London Math Soc (2016) 94 (2): 525–544.

M. Burger, A. Iozzi, A. Wienhard, **Higher Teichmüller Spaces: From $SL(2, \mathbb{R})$ to other Lie groups**, <http://xxx.lanl.gov/abs/1004.2894>, Handbook of Teichmüller Theory, IV, 2014.

O. Guichard, A. Wienhard, **Anosov representations: Domains of discontinuity and applications**, Inventiones Mathematicae 190 (2012), 357–438.

O. Guichard, A. Wienhard, **Topological Invariants of Anosov Representations**, Journal of Topology 3 (2010), 578–642.

A. Wienhard, **Remarks on and around bounded differential forms**, Pure and Applied Mathematics Quarterly 8 (2012), no. 2, (Special Issue: In honor of F. Thomas Farrell and Lowell E. Jones part 2 of 2), 481–498.

M. Burger, A. Iozzi, A. Wienhard, **Surface group representations with maximal Toledo invariant**, Annals of Mathematics 172 (2010) no. 1, 517–566.

O. Guichard, A. Wienhard, **Domains of discontinuity for surface groups**, C. R. Math. Acad. Sci. Paris I 347 (2009), 1057–1060.

M. Burger, A. Iozzi, A. Wienhard, **Tight homomorphisms and Hermitian symmetric spaces**, (with M. Burger; A. Iozzi), GAFA 19 (2009), no. 3, 678–721.

O. Guichard, A. Wienhard, **Convex foliated projective structures and the Hitchin component of $PSL(4, \mathbb{R})$** , (with O. Guichard), Duke Mathematical Journal 144 (2008), no. 3, 381–445.

M. Burger, A. Iozzi, N. Monod, A. Wienhard, **Bounds for cohomology classes**, Guido’s book of conjectures, 38–39, L’Enseignement Mathématique 54 (2008), 3–189.

M. Burger, A. Iozzi, A. Wienhard **Hermitian symmetric spaces and Kähler rigidity**, Transformation Groups 12 (2007), no. 1, 5–32.

A. Wienhard, **The action of the mapping class group on maximal representations**, Geom. Dedicata 120 (2006), 179–191.

M. Burger, A. Iozzi, F. Labourie, A. Wienhard, **Maximal Representations of Surface Groups: Symplectic Anosov Structures**, Pure and Applied Mathematics Quarterly, 1 (2005), no. 2, (Special Issue: In Memory of Armand Borel), 555–601.

Preprints

O. Guichard, A. Wienhard, **Generalizing Lusztig's total positivity**, Preprint 2022

O. Guichard, F. Labourie, A. Wienhard, **Positivity and representations of surface groups**, arXiv:2106.14584.

D. Spitz, A. Wienhard, **The self-similar evolution of stationary point processes via persistent homology**, Preprint, arXiv: 2012.05751.

O. Guichard, F. Kassel, A. Wienhard, **Tameness of Riemannian locally symmetric spaces arising from Anosov representations**, Preprint arXiv: 1508.04759, under revision.

T. Haettel, A. Schilling, C. Walsh, A. Wienhard, **Horofunction Compactifications of Symmetric Spaces**, Preprint arXiv: 1705.05026.