



Curriculum Vitae Professor Dr Hélène Esnault

Name: Hélène Esnault
Born: 17 July 1953



Image: Bernd Wannemacher

Research Priorities: Number theory, algebraic geometry, arithmetic geometry, diophantine geometry, topology

Hélène Esnault is a French-German mathematician. She is considered one of the most renowned researchers in the field of pure mathematics, dealing with purely mathematical problems. Her area of expertise lies at the interface between number theory and algebraic geometry.

Academic and Professional Career

- 2023 - 2028 Associate Faculty, Harvard University, Cambridge, USA
- 2023 - 2028 Part-time Professor, University of Copenhagen, Copenhagen, Denmark
- 2022 Eilenberg Chair, Columbia University, New York City, USA
- 2019 - 2020 Guest Professor, Institute for Advanced Studies (IAS), Princeton, USA
- 2012 - 2019 Einstein Professor, Chair for Number Theory, Freie Universität (FU) Berlin, Berlin, Germany
- 1990 - 2012 Professor of Algebraic Geometry, University Duisburg-Essen, Germany
- 1989 - 1990 Lecturer, Université Paris VII, Paris, France
- 1985 - 1989 Heisenberg Fellow, Max-Planck Institute for Mathematics, Bonn, Germany
- 1985 Habilitation, Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, Germany
- 1984 State Doctorate, Université Paris VII, Paris, France
- 1983 - 1985 Guest Scientist, Max-Planck Institute for Mathematics, Bonn, Germany
- 1977 - 1983 Assistant, Université Paris VII, Paris, France

- 1976 PhD, Université Paris VII, Paris, France
- 1975 Diploma (E.A.), Université Paris VII, Paris, France

Functions in Scientific Societies and Committees

- 2024 Member, Selection Committee, Cole Prize, American Mathematical Society, Rhode Island, USA
- 2023 - 2026 Co-Editor, Acta Mathematica
- since 2023 Co-Editor, Memoirs of the European Mathematical Society
- since 2023 Member, Scientific Advisory Committee, Géométrie Algébrique en Liberté (GAeL)
- 2023 Member, Committee, Infosys Prize, Infosys Science Foundation, Bangalore, India
- since 2022 Chair, Advisory Committee, Institute of Mathematics, Academia Sinica, Taipeh, Taiwan
- 2022 Chair, Visiting Committee, Department of Mathematics, Eidgenössische Technische Hochschule (ETH) Zürich, Zurich, Switzerland (resigned)
- 2022 - 2025 Member, Advisory Committee, National Centre of Mathematics, Mumbai, India
- 2022 - 2025 Member, Scientific Advisory Committee, Banach Center, Warsaw, Poland
- 2021 - 2025 Chair, Selection Committee, Shaw Prize in Mathematical Sciences, Hong Kong, China
- 2021 Chair, Scientific Committee, Journées Arithmétiques
- 2018 - 2020 Member, Selection Committee, Shaw Prize in Mathematical Sciences, Hong Kong, China
- since 2018 Co-Editor, Peking Mathematical Journal
- since 2018 Member, Scientific Committee, Société mathématique de France, France
- 2018 Member, Selection Committee, Fields Medal, International Congress of Mathematicians (ICM)
- 2018 Member, Visiting Committee, Department of Mathematical Sciences, University of Copenhagen, Copenhagen, Denmark
- 2018 Member, Committee for Developing Countries, European Mathematical Society
- 2018 Co-Editor, Proceedings of the London Mathematical Society
- 2017 - 2022 Co-Editor, Annals of K-Theory
- 2016 - 2019 Member, Committee, Research Foundation – Flanders (FWO), Brussels, Belgium
- 2015 - 2023 Member, Advisory Board, Institut des Hautes Études Scientifiques (IHES), Bures-sur-Yvette, France

- 2015 Member, Visiting Committee, Departement of Mathematics, ETH Zürich, Zurich, Switzerland
- since 2015 Member, Advisory Committee, Taipei National University, Taipei, Taiwan
- 2014 - 2022 Co-Editor, Journal of the European Mathematical Society
- 2014 Member, Program Committee, ICM
- 2013 - 2023 Co-Editor, Centre de Recherches Mathématiques, Montréal-American Mathematical Society and CRM-AMS Publications
- 2011 - 2018 Co-Editor, Astérisque
- since 2008 Member, Scientific Advisory Committee, Dahlem Conference, Berlin, Germany
- since 2007 Founder and Editor, Algebra and Number Theory
- 2007 - 2022 Member, Scientific Advisory Committee, Institute of Mathematics, Academia Sinica, Taipei, Taiwan
- 2007 - 2012 Member, Scientific Selection Committee, Gottfried Wilhelm Leibniz Award, German Research Council (DFG), Germany
- since 2007 Co-Editor, Mathematical Research Letters
- 2006 - 2013 Member, Scientific Advisory Committee, Mathematical Research Institute Oberwolfach, Oberwolfach-Walke, Germany
- Member, Panel, National Science Foundation (NSF), Alexandria, USA
- since 2005 Member, Institute for Science and Ethics (IWE), Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn, Germany
- 2005 Member, Evaluation Committee, Harvard Mathematics Department, Harvard University, Cambridge, USA
- 2004 - 2007 Member, Senate Committee for Graduate Schools, DFG, Germany
- since 2002 Co-Editor, Cubo Journal
- 2002 - 2003 Member, National Council, Centre National de la Recherche Scientifique (CNRS), France
- 2001 Member, Jury, Cantor-Medal, German Mathematical Society (DMV), Germany
- since 2000 Co-Editor, Acta Mathematica Vietnamica
- 1998 - 2010 Co-Editor, Mathematische Annalen
- 1997 - 2003 Member, Scientific Advisory Committee, Alexander von Humboldt Foundation, Bonn, Germany
- since 1995 Co-Editor, Duke Mathematical Journal

since 1989 Member, Scientific Committee, MPI for Mathematics, Bonn, Germany

Project coordination, Membership in Collaborative Research Projects

- 2018 - 2022 Applicant, Subproject "Chern classes of automorphic bundles", Priority Programme (SPP) 1786, DFG, Germany
- 2015 - 2020 Applicant, Subproject "Motive with modulus", SPP 1786, DFG, Germany
- 2014 - 2017 Applicant, Project "Fundamentalgroup and crystals", DFG, Germany
- 2011 - 2019 Head, Subproject "Periods and Motives", Transregio (TRR) 45, DFG, Germany
- 2011 - 2019 Head, Subproject "Rational Points", TRR 45, DFG, Germany
- 2011 - 2015 Head, Subproject "Fundamentalgroups", TRR 45, DFG, Germany
- 2009 - 2014 Advanced Grant, European Research Council (ERC)
- 2008 - 2011 Head, Subproject "Feynman integrals and motives", TRR 45, DFG, Germany
- 2007 - 2011 Head, Subproject "Some aspects of limiting mixed Hodge structures", TRR 45, DFG, Germany
- 2007 - 2011 Head, Subproject "Congruences for the number of rational points over finite fields", TRR 45, DFG, Germany
- 2007 - 2011 Head, Subproject "Construction of moduli spaces: compactifications and ample sheaves", TRR 45, DFG, Germany
- 2007 - 2011 Head, Subproject "Periods of the nilpotent completion of the fundamental group", TRR 45, DFG, Germany
- 2007 - 2011 Head, Subproject "Tannaka group schemes of certain categories of bundles", TRR 45, DFG, Germany
- 2000 - 2008 Applicant, Subproject "Families of complex algebraic varieties" ("Familien komplexer algebraischer Varietäten"), SPP 1094, DFG, Germany

Honours and Awarded Memberships

- 2023 Honorary Doctorate, University of Chicago, Chicago, USA
- 2019 Cantor-Medal, German Mathematical Society (DMV)
- 2019 Chern Professor, Mathematical Sciences Research Institute (MSRI), Berkeley, USA
- 2019 Chair Pierre Bonelli, IHES, Bures-sur-Yvette, Frankreich
- since 2014 Member, Academia Europaea
- 2013 Honorary Doctorate, Université de Rennes, Rennes, France

2012	Invited Speaker, European Congress of Mathematicians (ECM), Kraków, Poland
2012	Appointment of Einstein-Professor, FU Berlin, Berlin, Germany
2011	Chair for Excellence, Fondation Sciences Mathématique de Paris (FSMP), Paris, France
since 2010	Member, Berlin-Brandenburg Academy of Sciences and Humanities (BBAW), Berlin, Germany
2009	Honorary Doctorate, Vietnam Academy of Science and Technology, Vietnam
since 2008	Member, German National Academy of Sciences Leopoldina, Germany
since 2005	Member, Nordrhein-Westfälische Akademie der Wissenschaften, Düsseldorf, Germany
2003	Gottfried Wilhelm Leibniz Award (together with Eckart Viehweg), DFG, Germany
2002	Invited Speaker, Section for Algebraic Geometry, ICM
2001	Paul Doistau-Emile Blutet Prize for Mathematics, Académie des sciences, France
1985 - 1989	Heisenberg Fellowship, Heisenberg Programme, DFG, Germany

Research Priorities

She is considered one of the most renowned researchers in the field of pure mathematics, dealing with purely mathematical problems. Her area of expertise lies at the interface between number theory and algebraic geometry.

For over four decades, H el ene Esnault researches mathematical questions in the field of algebraic and arithmetic geometry. In algebraic geometry, sets of solutions for polynomial equations are studied together with their classification. Arithmetical geometry looks to equations which are used for solutions in specific fields.

H el ene Esnault succeeded in decisively advancing numerous unresolved questions of mathematics with a comparative view between the disciplines of pure mathematics. She proved the Lang-Manin conjecture over a finite field, as well as the Giesker conjecture, the Simpson conjecture, as well as the crystallinity of rigid local systems.

She also looks beyond the boundaries between the disciplines and worked, for example, in quantum physics.