Curriculum Vitae Professor Dr Marc N. Levine

Name: **Marc N. Levine**

Born: **29 July 1952**

Research Priorities: Algebraic geometry, topology, algebra, theory of algebraic cobordism, motivic cohomology, algebraic K-theory

Marc N. Levine is an American mathematician whose research centres on algebraic geometry. He analyses the structures of mathematical equations and develops mathematical methods. He and the French mathematician Fabien Morel jointly developed the theory of algebraic cobordism, which combines geometry, topology, and algebra.

Academic and Professional Career

since 2009	Humboldt Professorship, University of Duisburg-Essen, Duisburg/Essen, Germany
2006 - 2007	Humboldt Senior Research Fellow, University of Duisburg-Essen, Duisburg/Essen, Germany
2005	Guest Fellow, University Paris VI, Paris, France
2004	Guest Fellow, Institut Henri Poincaré, Paris, France
2002 - 2003	Wolfgang Paul Programme, University of Duisburg-Essen, Duisburg/Essen, Germany
1998 - 1999	Visiting Professor, University of Essen, Essen, Germany
1995 - 1996	Visiting Professor, University of Essen, Essen, Germany
since 1988	Professor, Northeastern University, Boston, USA
1986 - 1988	Associate Professor, Northeastern University, Boston, USA
1984 - 1986	Assistant Professor, Northeastern University, Boston, USA
1979 - 1984	Assistant Professor, University of Pennsylvania, Philadelphia, USA

1983	Guest Fellow, Max Planck Institute for Mathematics, Bonn, Germany
1974 - 1979	Lecturer, Brandeis University, Waltham, USA
1979	Doctorate, Brandeis University, Waltham, USA
1974	B.Sc., Massachusetts Institute of Technology (MIT), Boston, USA

Project Coordination, Membership in Collaborative Research Projects

2015 - 2024	Spokesperson, Priority Programme (PP) 1786 "Homotopy Theory and Algebraic Geometry", German Research Foundation (DFG), Germany
2018 - 2022	Subproject "Enumerative geometry with quadratic forms", PP 1786, DFG, Germany
2015 - 2022	Subproject "Applying motivic filtrations", PP 1786, DFG, Germany
2015 - 2020	Subproject "Motives with modulus", PP 1786, DFG, Germany
2015 - 2018	Subproject "Mixed Hodge structures in homotopy theory", PP 1786, DFG, Germany
2011 - 2019	Subproject "Periods and Motives", Transregio (TRR) 45, DFG, Germany
2011 - 2019	Subproject "Rational Points", TRR 45, DFG, Germany
2008 - 2011	"Motivic homotopy theory", National Science Foundation (NSF), USA
2005 - 2008	"Algebraic homotopy theory and algebraic cycles", NSF, USA
2002 - 2005	"Cohomology theories for algebraic varieties", NSF, USA
1994 - 2002	"K-theory and motivic cohomology", NSF, USA
1991 - 1994	"Research in K-theory", NSF, USA
1989 - 1991	"K-theory of fields", NSF, USA
1987 - 1989	"K-theory", NSF, USA
1985 - 1987	"Research in algebraic geometry", NSF, USA
1983 - 1985	"Classification and deformations of complex manifolds", NSF, USA
1981 - 1982	"Modern geometric methods in algebra", NSF, USA

Honours and Awarded Memberships

since 2018	Member, Academia Europaea
2018	Senior Berwick Prize, London Mathematical Society, London, UK
since 2013	Member, German National Academy of Sciences Leopoldina, Germany
2006	Humboldt Research Award, Alexander von Humboldt Foundation, Bonn, Germany

2001   Wolfgang Paul Award, Alexander von Humboldt Foundation, Bonn, Germany

Research Priorities

Marc N. Levine is an American mathematician whose research centres on algebraic geometry. He analyses the structures of mathematical equations and develops mathematical methods. He and the French mathematician Fabien Morel jointly developed the theory of algebraic cobordism, which combines geometry, topology, and algebra.

Algebraic geometry deals with geometric spaces that are defined by equations. In mathematics, topology is concerned with spatial objects and how they relate to each other in space. Marc N. Levine uses methods from topology to help solve mathematical equations and questions from the field of algebra. He investigates the structural characteristics of equations. Applying this method to a mathematical equation results in the formation of a spatial object consisting of geometric forms, such as circles, ellipses, cubes, and spheres.

He and Fabien Morel jointly developed the theory of algebraic cobordism. Cobordism defines an equivalence relation that allows a set to be divided into subsets. The theory combines geometry, topology, and algebra. Geometric-topological descriptions can thus be applied to algebra, while concepts such as cobordism could also be transferred from topology to algebra. The theory of algebraic cobordism allowed Marc N. Levine and Fabien Morel to derive various mathematical propositions.

Other key research areas of interest to Marc N. Levine are motivic cohomology, motivic homotopy, and algebraic K-theory. K-theory is used in both quantum physics and string theory.