

CURRICULUM VITA — AMNON NEEMAN

PERSONAL:

Name: Amnon Neeman
Date of Birth: April 10, 1957
Birthplace: Jerusalem, Israel
Australian citizen
Home Address: 3 Elimatta Street
Reid, ACT 2612
Office Address: Centre for Mathematics and its Applications
Mathematical Sciences Institute
The Australian National University
Canberra, ACT 0200
Office Phone: +61-2-6125-0795
Fax: +61-2-6125-5549
email: amnon.neeman@anu.edu.au

EDUCATION:

B.Sc. Sydney University Completed 1978, awarded 1979
M.Sc. Sydney University Completed and awarded 1979
Ph.D. Harvard University 1983

RESEARCH INTERESTS:

Algebraic Geometry, Algebraic K-theory, Homological Algebra

POSITIONS HELD:

Member	Institute for Advanced Study	1983–1984
Instructor	Princeton University	1984–1987
Associate Professor	University of Virginia	1987–1998
Senior Visiting Fellow	ANU	1999–2000
Senior Fellow	ANU	2001–2002
Professor	ANU	2003–present

AWARDS AND HONOURS:

Room Medal	Top HSC score in NSW	1975
University Medal	Sydney University	1979
Welsh Scholarship	Harvard University	1979–81
Parker Fellowship	Harvard University	1982–83
Humboldt Stiftung Fellowship	Universität Bielefeld	1989-90
Fellow, Australian Academy of Science		2005
Australian Laureate Fellow		2011

PhD STUDENTS:

Avishay Vaknin	2003
Daniel Murfet	2008

SEMINAR AND COLLOQUIUM TALKS IN THE LAST TWO YEARS: University of Chicago, Harvard University, Princeton University, Columbia University, UCLA, University of Pennsylvania, Stanford University, University of Paris 7, University of Paris 13, Universität Paderborn, Hebrew University (Jerusalem), University of Adelaide, University of Sydney.

MAJOR RECENT ACTIVITY:

Organizer, conference in honor of David Mumford's 70th birthday, Providence, RI, June 2007.

Organizer, special year at *Centre de Recerca Matemàtica*, Barcelona 2007–08.

EDITORIAL DUTIES:

Editor	<i>Journal of K-Theory</i> .
Editor	<i>Applied Categorical Structures</i> .

JOURNALS REFEREED FOR, LAST FEW YEARS:

I have refereed for *Annals of Mathematics*, for *Inventiones Mathematicæ*, for the *Duke Journal of Mathematics*, the *Annales Scientifiques de l'École Normale Supérieure*, the *Advances in Mathematics*, the *Israel Journal of Mathematics*, the *Mathematische Annalen*, the *Journal für die reine und angewandte Mathematik*, the *American Journal of Mathematics*, as well as *Journal of K-Theory*, the *Manuscripta Mathematica* and the *Journal of Pure and Applied Algebra*.

TALKS PRESENTED AT CONFERENCES, LAST 2 YEARS

LMS workshop on motives	Belfast	August 2007
Hochschild cohomology of algebras: structure and applications	Banff	September 2007
Categories in geometry	Split, Croatia	September 2007
Workshop on derived categories and applications	Barcelona	November 2007
Fourth Pacific rim conference	Hongkong (plenary lecture)	December 2007
International Colloquium 2008	TIFR, Bombay	January 2008
CIMPA–UNESCO–IPM school on representation theory of algebras	Teheran (plenary lecture)	June 2008
HOCAT 2008	Barcelona (plenary lecture)	July 2008
AustMS–NZMS combined annual meeting	Christchurch	December 2008
Workshop on complex geometry	Adelaide (two talks)	February 2009
Triangulated categories and singularities	Paderborn, Germany (two talks)	May 2009
Pacific Rim Mathematical Association Congress	Sydney	July 2009
LMS Durham workshop: New directions in the model theory of fields	Durham (two talks)	July 2009

Bibliography

Books

- [1] *Ueda Theory: Theorems and Problems*. MEMOIRS AMS 81 (1989), no. 415, vi+123 pp.
- [2] *Triangulated Categories*. ANNALS OF MATHEMATICS STUDIES 148 (2001), Princeton University Press, viii+449 pp.
- [3] *Algebraic and Analytic Geometry*. LONDON MATHEMATICAL SOCIETY LECTURE NOTE SERIES 345 (2007), Cambridge University Press, xii+420 pp.

Book Chapters

- [4] *The K-theory of triangulated categories*. HANDBOOK OF K-THEORY, Springer Verlag (2005) 1011–1078.
- [5] *Derived categories and Grothendieck duality*. TRIANGULATED CATEGORIES, London Mathematical Society Lecture Note Series 375, Cambridge University Press (2010) 290–350.

Journal Articles

- [6] *Weierstrass points in characteristic p* . INVENTIONES MATHEMATICAE 75 (1984) 359–376.
- [7] *The distribution of Weierstrass points on a compact Riemann surface*. ANNALS OF MATHEMATICS 120 (1984) 317–328.
- [8] *The topology of quotient varieties*. ANNALS OF MATHEMATICS 122 (1985) 419–459.

- [9] *A weak GAGA statement for arbitrary morphisms.* PROCEEDINGS OF AMS 100 (1987) 429–432.
- [10] *Steins, affines and Hilbert’s fourteenth problem.* ANNALS OF MATHEMATICS 127 (1988) 229–244.
- [11] *The derived category of an exact category.* JOURNAL OF ALGEBRA 135 (1990) 388–394.
- [12] *Zero cycles in \mathbb{P}^n .* ADVANCES IN MATHEMATICS 89 (1991) 217–227
- [13] *Some new axioms for triangulated categories.* JOURNAL OF ALGEBRA 139 (1991) 221–256.
- [14] *The Brown representability theorem and phantomless triangulated categories.* JOURNAL OF ALGEBRA 151 (1992) 118–155.
- [15] (with appendix by M. Bökstedt): *The chromatic tower for $D(R)$.* TOPOLOGY 31 (1992) 519–532.
- [16] *Stable homotopy as a triangulated functor.* INVENTIONES MATHEMATICAE 109 (1992) 17–40.
- [17] *The connection between the K -theory localisation theorem of Thomason, Trobaugh and Yao, and the smashing subcategories of Bousfield and Ravenel.* ANNALES SCIENTIFIQUES DE L’ÉCOLE NORMALE SUPÉRIEURE 25 (1992) 547–566.
- [18] (with M. Bökstedt): *Homotopy limits in triangulated categories.* COMPOSITIO MATHEMATICA 86 (1993) 209–234.
- [19] *The relation between a conjecture of Carlisle and Kropholler, now a theorem of Benson and Crawley–Boevey, and Grothendieck’s Riemann–Roch and duality theorems.* COMMENTARII MATHEMATICI HELVETICI 70 (1995) 339–349.
- [20] *The Grothendieck duality theorem via Bousfield’s techniques and Brown representability.* JOURNAL OF THE AMERICAN MATHEMATICAL SOCIETY 9 (1996) 205–236.

- [21] (with V. Retakh): *Extension categories and their homotopy*. COMPOSITIO MATHEMATICA 102 (1996) 203–242.
- [22] *K-theory for triangulated categories I(A): homological functors*. ASIAN JOURNAL OF MATHEMATICS 1 (1997) 330–417.
- [23] *K-theory for triangulated categories I(B): homological functors*. ASIAN JOURNAL OF MATHEMATICS 1 (1997) 435–529.
- [24] *On a theorem of Brown and Adams*. TOPOLOGY 36 (1997) 619–645.
- [25] (with C.-L. Chai): *The naturality of Kirwan’s decomposition*. MANUSCRIPTA MATHEMATICA 97 (1998) 429–434.
- [26] *K-theory for triangulated categories II: the subtlety of the theory and potential pitfalls*. ASIAN JOURNAL OF MATHEMATICS 2 (1998) 1–125.
- [27] *K-theory for triangulated categories III(A): the theorem of the heart*. ASIAN JOURNAL OF MATHEMATICS 2 (1998) 495–589.
- [28] *Non compactly generated categories*. TOPOLOGY 37 (1998) 981–987.
- [29] *Brown representability for the dual*. INVENTIONES MATHEMATICAE 133 (1998) 97–105.
- [30] *K-theory for triangulated categories III(B): the theorem of the heart*. ASIAN JOURNAL OF MATHEMATICS 3 (1999) 557–608.
- [31] *Oddball Bousfield classes*. TOPOLOGY 39 (2000) 931–935.
- [32] *An improvement on a theorem of Ben Martin*. MATHEMATICAL RESEARCH LETTERS 7 (2000) 411–415.
- [33] *Loop spaces for the Q-construction*. FUNDAMENTA MATHEMATICÆ 164 (2000) 71–95.
- [34] *K-theory for triangulated categories $3\frac{1}{2}(A)$: a detailed proof of the theorem of homological functors*. K-THEORY 20 (2000) 97–174.
- [35] *K-theory for triangulated categories $3\frac{1}{2}(B)$: a detailed proof of the theorem of homological functors*. K-THEORY 20 (2000) 243–298.

- [36] *K-theory for triangulated categories $3\frac{3}{4}$: a direct proof of the theorem of the heart.* K-THEORY 22 (2001) 1–144.
- [37] (With B. Davies): *Algebraic geometry of the three-state chiral Potts model.* ISRAEL JOURNAL OF MATHEMATICS 125 (2001) 253–292.
- [38] (With J.D. Christensen and B. Keller): *Failure of Brown representability in derived categories.* TOPOLOGY 40 (2001) 1339–1361.
- [39] (with N.I. Shepherd–Barron): *Automorphisms of the Yang–Baxter equations, for the chiral Potts model.* JOURNAL OF PHYSICS A 34 (2001) L715–L720.
- [40] *On the derived category of sheaves on a manifold.* DOCUMENTA MATHEMATICA 6 (2001) 483–488.
- [41] (with B. Martin): *The map $V \longrightarrow V//G$ need not be separable.* MATHEMATICAL RESEARCH LETTERS 8 (2001) 813–817.
- [42] (with appendix by P. Deligne): *A counterexample to a 1961 “theorem” in homological algebra.* INVENTIONES MATHEMATICAE 148 (2002) 397–420.
- [43] (with B. Keller): *The connection between May’s axioms for a triangulated tensor product and Happel’s description of the derived category of the quiver D_4 .* DOCUMENTA MATHEMATICA 7 (2002) 535–560.
- [44] (with A.A. Ranicki and A. Schofield): *Representations of algebras as universal localizations.* MATHEMATICAL PROCEEDINGS OF THE CAMBRIDGE PHILOSOPHICAL SOCIETY 136 (2004) 105–117.
- [45] (with A.A. Ranicki): *Noncommutative localisation in Algebraic K-theory I.* GEOMETRY AND TOPOLOGY 8 (2004) 1385–1425.
- [46] (with R. Elmore and P. Hall): *An application of classical invariant theory to identifiability in nonparametric mixtures.* ANNALES DE L’INSITUT FOURIER 55 (2005) 1–28.
- [47] (with P. Hall, R. Pakyari and R. Elmore): *Nonparametric inference in multivariate mixtures.* BIOMETRIKA 92 (2005) 667–678.

- [48] (with P. Hall and J.S. Marron): *Geometric representation of high dimension low sample size data*. JOURNAL OF THE ROYAL STATISTICAL SOCIETY, SERIES B, STATISTICAL METHODOLOGY 67 (2005) 427–444.
- [49] (with J. Lipman): *Quasi-perfect scheme-maps and boundedness of the twisted inverse image functor*. ILLINOIS JOURNAL OF MATHEMATICS 51 (2007) 209–236 (electronic).
- [50] *Noncommutative localisation in algebraic K-theory II*. ADVANCES IN MATHEMATICS 213 (2007) 785–819.
- [51] (with P. Hall, R. Pakyari and R. Elmore): *Amendments and corrections ‘Nonparametric inference in multivariate mixtures’*. BIOMETRIKA 94 (2007) 767.
- [52] (with D.-C. Cisinski): *Additivity for derivator K-theory*. ADVANCES IN MATHEMATICS 217 (2008) 1381–1475.
- [53] *The homotopy category of flat modules, and Grothendieck duality*. INVENTIONES MATHEMATICAE 174 (2008) 255–308.
- [54] (with C. Casacuberta): *Brown representability does not come for free*. MATHEMATICAL RESEARCH LETTERS 16 (2009) 1–5.
- [55] *Brown representability follows from Rosický’s theorem*. JOURNAL OF TOPOLOGY 2 (2009) 262–276.
- [56] *Some adjoints in homotopy categories*. ANNALS OF MATHEMATICS 171 (2010) 2143–2155.
- [57] *Colocalizing subcategories of $D(R)$* . JOURNAL FÜR DIE REINE UND ANGEWANDTE MATHEMATIK (CRELLE’S JOURNAL) 653 (2011) 221–243.

Articles in Conference Proceedings

- [58] *Analytic questions in geometric invariant theory*. CONTEMPORARY MATHEMATICS 88 (1989) 11–23.

- [59] *A survey of well generated triangulated categories*. FIELDS INSTITUTE COMMUNICATIONS 45 (2005) 307–329.
- [60] *A non-commutative generalisation of Thomason’s localisation theorem*. LONDON MATHEMATICAL SOCIETY LECTURE NOTES 330 (2006) 60–80.
- [61] *An infinite version of homological mirror symmetry*. REAL AND COMPLEX SINGULARITIES, proceedings of the Australian–Japanese workshop, World Scientific (2007) 290–298.
- [62] *Long exact sequences coming from triangles*. Proceedings of the 39th symposium on ring theory and representation theory, Hiroshima University 2006 (published February 2007) 23–29.
- [63] *Dualizing complexes—the modern way*. Proceedings of the international colloquium on CYCLES, MOTIVES AND SHIMURA VARIETIES, TIFR, Mumbai 2008, Narosa Publishing House (2010) 419–447.

Popular Renditions

- [64] *Matrix factorisations*. GAZETTE OF THE AUSTRALIAN MATHEMATICAL SOCIETY 38 (2011) 37–41.

Books Edited

- [65] (Edited with A. Davydov, M. Batanin, M. Johnson and S. Lack): *Categories in Algebra, Geometry and Mathematical Physics*. Papers from the conference and workshop in honor of Ross Street’s 60th birthday. CONTEMPORARY MATHEMATICS 431 (2007).
- [66] (Edited with C.-L. Chai and T. Shiota): *SELECTED PAPERS VOLUME II, on Algebraic Geometry, including Correspondence with Grothendieck*, DAVID MUMFORD. Springer Verlag (2010).

Accepted for publication, waiting to appear:

- [67] *Rigid dualizing complexes*. To appear in the PROCEEDINGS CONF. REPRESENTATION THEORY OF ALGEBRAS (TEHRAN 2008).
- [68] *Explicit cogenerators for the homotopy category of projective modules over a ring*. To appear in ANNALES SCIENTIFIQUES DE L'ÉCOLE NORMALE SUPÉRIEURE.
- [69] *Non-left-complete derived categories*. To appear in MATHEMATICAL RESEARCH LETTERS.

Submitted

- [70] (with W. Chachólski, W. Pitsch and J. Scherer): *Relative injective resolutions via truncations, Part II*. Preprint.