

Curriculum Vitae of Alexandru Nica

Contact:

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Education:

- University of California, Berkeley, 1990-94. Degree: Ph.D. in Mathematics, with specialization in Operator Algebras (May 1994); thesis advisor: Dan-Virgil Voiculescu.
- University of Bucharest, Romania, 1981-86. Degrees: Bachelor (June 1985), and Master of Science (June 1986).

Awards:

- Mathematics Faculty Fellowship, May 2004 – April 2007.
- University of Waterloo Math Society “Instructor of the Year” award for 2001–2002.
- Premier’s Research Excellence Award (Province of Ontario), 2001-2006.
- Israel Halperin Prize, June 2000.
- Canada International Fellowship, January 1995 – July 1996.
- The Regents of the University of California Fellowship, 1993-94.
- National Fellowship, Romania, 1985-86.

Research interests:

Non-commutative probability and operator algebras, particularly their connections to classical probability and combinatorics. My current line of research is in free probability.

Scientific positions:

Permanent position in Pure Mathematics Department of the University of Waterloo:
Assistant Professor from July 1997 to June 2001;
Associate Professor from July 2001 to June 2005;
Professor from July 2005 to present.

Postdoctoral positions:

– T.H. Hildebrandt Research Assistant Professor in Department of Mathematics of the University of Michigan, Ann Arbor, September – December 1994 and January 1996 – June 1997.

– Visiting scholar at Queen’s University, Kingston (September-December 1995, May-July 1996), and at the Fields Institute, Waterloo (January-August 1995), while holding a Canada International Fellowship.

Short-term visiting positions:

– Visiting scholar at the Erwin Schrödinger Institute in Vienna, Austria, during special program on “Bialgebras in Free Probability”, February-April 2011.

– Member of MSRI (Mathematical Sciences Research Institute) in Berkeley, January – June 2001.

– Visiting scholar at the Henri Poincaré Institute in Paris, France, during special program on “Free Probability and Operator Spaces”, September – December 1999.

Scientific positions before PhD:

– Visitor at Centre des Recherches Mathématiques, Montréal, January – May 1991.

– Visitor at Université Paris 7, France, May – June 1990.

– Researcher at the Mathematics Institute of the Romanian Academy (a.k.a. INCREST), 1986-90.

Organization of meetings:

– “Focus Program on Noncommutative Distributions in Free Probability Theory” at the Fields Institute, July 2013. (Specifically, I was an organizer for one of the two 5-day workshops of the program, and for two weeks of activities run in the period between workshops.)

List of organizers was: S.T. Belinschi (Queen’s), B. Collins (Ottawa), J. Mingo (Queen’s), A. Nica (Waterloo), R. Speicher (Saarbrücken), D. Voiculescu (Berkeley).

– “Research in Teams” week at the Banff International Research Station, August 2010. List of organizers was: M. Anshelevich (Texas A&M), S.T. Belinschi (Saskatoon), M. Fevrier (Toulouse), A. Nica (Waterloo).

– 5-day workshop on “Free Probability, Extensions and Applications” at the Banff International Research Station, January 2008.

List of organizers was: A. Nica (Waterloo), R. Speicher (Queen’s), A. Tulino (Sannio, Italy), D. Voiculescu (Berkeley).

– Meeting Director for the Summer 2005 Meeting of the Canadian Mathematical Society (Waterloo, June 4-6, 2005).

– 5-day workshop on “Braid Groups, Clusters and Free Probability” at the American Institute of Mathematics in Palo Alto, California, January 2005.

List of organizers was: J. McCammond (Santa Barbara), A. Nica (Waterloo), V. Reiner (Minnesota).

– 5-day workshop on “Free Probability” at the Banff International Research Station, October, 2004.

List of organizers was: A. Nica (Waterloo), R. Speicher (Queen’s), D. Voiculescu (Berkeley).

– 32nd annual Canadian Operator Symposium, held in Waterloo in May 2004.

List of organizers was: K.R. Davidson (Waterloo), L.W. Marcoux (Waterloo), A. Nica (Waterloo), N. Spronk (Waterloo).

– Fields Institute workshop on “Free Probability and Random Matrices”, December 2001. List of organizers was: A. Nica (Waterloo), R. Speicher (Queen’s).

– Special session on “Free Probability” at the Winter Meeting of the Canadian Mathematical Society in Toronto, December, 2001.

List of organizers was: A. Nica (Waterloo), R. Speicher (Queen’s).

Supervision of graduate students and of postdoctoral fellows:

A. Master’s students.

– Mario Grgic (MMath thesis, 2000). Thesis title: “Brown spectral measures for elements of finite von Neumann algebras”.

– Michael Neagu (MMath thesis, 2000). Thesis title: “The combinatorics of free probability theory with an application to operator norms”.

– Matthew Tucker (MMath thesis, 2005). Thesis title: on “Subfactors, knots, and the Temperley-Lieb algebra”.

– Matthew Fiset (MMath essay, 2010).

– Boyu Li (MMath Thesis, 2013). Thesis title: “Asymptotic distributions for block statistics on non-crossing partitions”.

B. Doctoral students.

– Michael Neagu, PhD degree awarded in 2006. PhD thesis on “The asymptotic freeness phenomenon for random permutation matrices with restricted cycle lengths”.

– Ion Oancea, PhD degree awarded in 2008. PhD thesis on “Posets of non-crossing partitions of type B and applications”.

C. Postdoctoral fellows.

– Peter Friis, 1999-2001 (co-supervised with Ken Davidson).

– Jiankui Li, 2001-2003 (co-supervised with Ken Davidson).

– Herbert Lee, 2002-2004.

– Serban Belinschi, 2005-2008.

– Mitja Mastnak, 2007-2008 (co-supervised with Heydar Radjavi).

– Michael Noyes, 2011-2012.

Grant record:

A. Grants held as principal investigator

– Discovery Grant from NSERC, for proposal “Current directions in the combinatorics of free probability”. Amount: \$ 20,000 per year for the period 2010-2015.

– Discovery Grant from NSERC, for proposal “Combinatorial aspects of free probability and random matrix theory”. Amount: \$ 28,000 per year for the period 2005-2010.

– Research Grant from NSERC, for proposal “Combinatorial and analytical aspects of free probability”. Amount: \$ 25,000 per year for the period 2001-2005.

– Research Grant from NSERC, for proposal “Combinatorial techniques in free probability”. Amount: \$ 18,000 per year for the period 1998-2001.

– Premier’s Research Excellence Award from the Province of Ontario. Amount: \$ 150,000 for the period 2001-2006.

– ORDCF Matching Grant. Amount: \$ 7,600, for the period 1999-2000.

– Startup Grant from the Mathematics Faculty of the University of Waterloo. Amount: \$ 15,000, for the period 1997-1998.

– Research Grant from the National Science Foundation of the USA, for proposal “Models and linearization for freeness in operator algebras”. Amount: US\$ 21,000, for the period 1996-1997.

B. Grants held as co-applicant

– CFI New Opportunities Grant. Amount: \$ 58,200, awarded in October 1998.

This grant was awarded to a group of 11 new faculty members of the Mathematics Faculty at Waterloo, for purchase of computer equipment.

– Leadership Support Initiative Grant. Amount: \$ 40,000 per year, for the period 2003-2007.

This grant was awarded to a research group in noncommutative probability consisting of J. Mingo (Queen’s), M. Neufang (Carleton), A. Nica (Waterloo) and R. Speicher (Queen’s, principal investigator).

Invited talks in meetings and seminars, in the last few years:

– 45 minute talk in the workshop “Free Probability and the Large N Limit IV”, Berkeley, March 2014.

– 50 minute talk at workshop on “Combinatorial and random matrix aspects of non-commutative distributions and free probability” at the Fields Institute, July 2013.

– 25 minute talk in special session on “Progress in free probability and free analysis” at the annual meeting of the American Mathematical Society, San Diego, January 2013.

– 50 minute talk at the “Wabash Annual Conference on Modern Analysis”, Indianapolis, September 2012.

- 45 minute talk in the workshop “Free Probability and the Large N Limit III”, Berkeley, March 2012.
- 50 minute talk in “4th Annual Meeting of the European Non-commutative Geometry Network”, Bucharest, Romania, April 2011.
- 50 minute talk in workshop on “Random Matrix, Operator Algebra and Mathematical Physics Aspects of Free Probability” at the Erwin Schrödinger Institute in Vienna, Austria, April 2011.
- 50 minute talk in the department seminar of the Mathematics Department of the University of Texas at San Antonio, April 2011.
- 50 minute talk in workshop on “Combinatorial, Bialgebra and Analytic Aspects of Free Probability” at the Erwin Schrödinger Institute in Vienna, Austria, February 2011.
- Two hour talks during a Research in Teams week on “Subordination Problems Related to Free Probability” at the Banff International Research Station, August 2010.
- 45 minute talk in the workshop “Free Probability and the Large N limit II”, UCLA, February 2010.
- 25 minute talk in special session on “Operator Algebras” of the Winter CMS meeting, Windsor, December 2009.
- 40 minute talk in “12th Workshop on Non-commutative Harmonic Analysis”, Bedlewo, Poland, August 2009.
- 90 minute talk in “Random Matrix Seminar” at Université Paul Sabatier in Toulouse, France, March 2009.
- 50 minute talk in “Free Probability Seminar” at Texas A&M University, February 2009.
- 25 minute talk in special session on “Operator Algebras” of the Winter CMS Meeting, Ottawa, December 2008.
- Colloquium talk in Department of Mathematics and Computer Science at St. Mary’s University, Halifax, November 2008.
- Two talks of 90 minutes each in “Probabilistic Operator Algebra Seminar” at Berkeley, November 2008.
- Colloquium talk in Department of Mathematics and Statistics of University of Saskatchewan, Saskatoon, October 2008.
- 50 minute talk at workshop on “Free Probability, Extensions and Applications” at the Banff International Research Station, January 2008.
- 50 minute talk at workshop on “Free Probability, Random Matrices and Planar Algebras” at the Fields Institute in Toronto, September 2007.
- Series of 4 lectures of 1 hour each, on the combinatorics of free probability, during “Free Probability Concentration Week” at Texas A&M, July 2007.

– 45 minute talk at workshop on “Free Probabilities, Operator Spaces and von Neumann Algebras” in Sibiu, Romania, June 2007.

– 50 minute talk at “35th Canadian Operator Theory Symposium”, University of Guelph, June 2007.

– 45 minute talk at meeting on “Free Probability and the Large N Limit”, Berkeley, March 2007.

– 50 minute talk in special session on “Probabilistic Methods in Analysis and Algebra” at the Winter CMS Meeting, Toronto, December 2006.

– 50 minute talk at workshop on “Free Analysis” at the American Institute of Mathematics in Palo Alto, California, June 2006.

– 50 minute talk at “26th Great Plains Operator Theory Symposium”, University of Iowa, May 2006.