

CURRICULUM VITAE

ILIJAS FARAH, PROFESSOR
JANUARY 2012

1. NAME

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2. DEGREES

Ph.D. in Mathematics, University of Toronto, 1997

M.D. in Mathematics, University of Belgrade, 1992

B.D. in Mathematics, University of Belgrade, 1988

3. EMPLOYMENT HISTORY

- 2009–present Professor, York University
- 2006–2009 Associate Professor, York University
- 2002–2006 Assistant Professor, York University
- 2000–2003 Assistant Professor, CUNY–Graduate center and College of Staten Island
- 1999–2000 Hill Assistant Professor, Rutgers University
- 1997–1999 NSERC Postdoctoral Fellow, York University
- 1997–present Member of the Mathematical Institute of the Serbian Academy of Sciences and Arts
- 1993–1997 Graduate student, University of Toronto
- 1990–1993 Teaching Assistant, University of Belgrade, Yugoslavia
- 1988–1990 Research Fellow, Institute For Nuclear Sciences, Vinca, Yugoslavia

Visiting positions.

- (1) Invited Visiting professor, National University of Singapore, July 2012.
- (2) Invited Visitor at the Mittag–Leffler Institute, Fall 2009.
- (3) Invited Professor at Université Paris 7, July 2009.
- (4) Invited Professor at IHES, Bures-sur-Yvette, France, July 2008.
- (5) Member of the Fields Institute, Toronto, Fall 2007.
- (6) Invited Visiting Professor at the Kobe University, Japan, November 2006.
- (7) Invited Visiting Professor, Kobe University, Japan, November 20–December 4, 2006.
- (8) Invited Visiting Professor, The Erwin Schrödinger International Institute for Mathematical Physics, Vienna, December 2004.
- (9) Invited Visiting Professor, Christian–Albrechts-Universität zu Kiel, Germany, April 2004.
- (10) Member of the Fields Institute, Toronto, Fall 2002.

- (11) Invited Professor at IHES, Bures-sur-Yvette, France, June 2002.
- (12) Invited Professor at CNRS/University of Paris 7, Summer 2001.

4. ACADEMIC HONORS

- (1) Dean's award for outstanding research, Faculty of Arts, York University, 2006.
- (2) Sacks prize for the best doctorate in Mathematical Logic in 1997 (co-recipient with Dr. T. Scanlon, Harvard University).
- (3) Governor General's Gold Medal for one of the two best doctorates at the University of Toronto, 1998.
- (4) The Canadian Association for Graduate Studies/University Microfilms International Distinguished Dissertation Award, for the best dissertation in engineering, medicine and the natural sciences in Canada, 1998.

5. SCHOLARLY AND PROFESSIONAL ACADEMIC ACTIVITIES

- (1) Co-organizing (with S.D. Friedman, University of Vienna, M. Magidor, Hebrew University and W.H. Woodin, UC Berkeley) a Mengenlehre Oberwolfach Workshop, 2014.
- (2) Co-organizing (with George Elliott, University of Toronto), East Coast Operator Algebras Symposium (ECOAS), 2014.
- (3) Chair of the programme committee, 2013 annual Association of Symbolic Logic meeting, University of Waterloo.
- (4) Co-organizing (with A.S. Kechris, Caltech and A.S. Toms, Purdue) a workshop on 'Applications of forcing to Operator Algebras,' Fields Institute, September 2012.
- (5) Co-organizing (with Edward Effros, UCLA, George Elliott, University of Toronto, and Andrew Toms, Purdue University), a meeting on Descriptive set theory and functional analysis, Banff Institute, June 2012.
- (6) Co-organizing (with David Kerr, Texas A&M), a meeting on C^* -algebras and set theory, American Institute of Mathematics, January 2012.
- (7) Organizing a special session in Set Theory at the Canadian Mathematical Society meeting in Toronto, December 2011.
- (8) Co-organizing (with David Kerr, Texas A&M) a concentration week on Set theory and Functional Analysis at the Texas A&M SUMIRFAS, August 2010.
- (9) Co-organized (with J.D. Hamkins, CUNY) special session in Set Theory at the European Logic Colloquium, Wrocław, July 2007.
- (10) Organized Toronto Set Theory Seminar 1997–1999 and 2003–2006.
- (11) Organized Mini-conference in Set Theory at the Fields Institute, March 2005.
- (12) Co-organized, with V. Pestov (University of Ottawa), special session in Gen. Topology and Top. Algebra at the CMS-CAIMS meeting, Dalhousie, June 2004.
- (13) Co-organized, with A. Dow (UNC Charlotte), special session in General Topology at the Spring Topology and Dynamical Systems Conference 2003.
- (14) Co-organized, with A.S. Kechris (Caltech) and G. Hjorth (UCLA), a conference on Descriptive Set Theory, Analysis, and Dynamical Systems, Fields Institute, Oct. 2002.

- (15) Organized a special subsession on the topology of $\beta\mathbb{N}$ at the Summer Topology Conference at CUNY–City College, July 2001.
- (16) Member of the Review Panel at the University Committee on Research Awards, CUNY, 2001/2002.

Invited addresses.

- (1) Invited speaker at the Oberwolfach C^* -Algebren meeting, November 2012.
- (2) Invited tutorial speaker at the Logic Colloquium 2012, Manchester, July 2012
- (3) Invited lecturer at summer school in logic, Institute of Mathematical Sciences of National University of Singapore, June 2012.
- (4) Invited speaker at the von Neumann conference, Münster, May/June 2012.
- (5) Invited speaker at the NSF/CBMS conference Topological and algebraic regularity properties of nuclear C^* -algebras, University of Louisiana at Lafayette, May 2012.
- (6) Invited tutorial speaker at the Young Set Theory workshop, Luminy, April 2012
- (7) Invited Advance Distinguished Lecture Series, Kansas State University, April 2012.
- (8) Invited speaker at a special session on Operator Algebras, Canad. Math. Soc. Winter Meeting, Ryerson University, December 2011.
- (9) Invited speaker at the University of Waterloo Department of Mathematics Colloquium, November 2011.
- (10) Invited speaker at Conference on C^* -algebras and related topics, RIMS, Kyoto University, September 2011
- (11) Invited speaker at IMS (Singapore) Program on Computational Prospects of Infinity II, Truth and Infinity Workshop, July 2011.
- (12) Invited speaker at IMS (Singapore) Program on Computational Prospects of Infinity II, Set Theory Workshop, July 2011.
- (13) Invited speaker at Third European Set Theory Conference, at ICMS, Edinburgh, July 2011.
- (14) Invited speaker at the Canadian Operator Algebra Symposium (COSy), Victoria, May 2011.
- (15) Invited speaker at the Oberwolfach meeting on Finite-dimensional approximations of discrete groups, May 2011.
- (16) Invited speaker at the VIG Logic Meeting at UCLA, February 2011.
- (17) Invited speaker at the Oberwolfach Mengenlehre meeting, January 2011.
- (18) Invited speaker at the Workshop on Concentration Phenomenon, Transformation Groups and Ramsey Theory, Fields Institute, October 2010.
- (19) Invited speaker at the 11eme Atelier international de theorie des ensembles, Luminy, France, October 2010.
- (20) Invited speaker at the workshop on Classification of amenable C^* -algebras, Banff International Research Station for Mathematical Innovation and Discovery (BIRS), September 2010.
- (21) Invited speaker at the London Math. Soc. meeting, Nottingham, September 2010.
- (22) Invited speaker at the workshop on Groups and group actions in operator algebra theory, University of Ottawa, July 2010.
- (23) Invited speaker at the Oberwolfach C^* -Algebren meeting, March 2010.

- (24) Invited speaker at the Penn State University Department of Mathematics Colloquium, January 2010.
- (25) Invited mini-course at the workshop on Combinatorial set theory and forcing theory, Research Institute for Mathematical Sciences, Kyoto, November 11–16, 2009.
- (26) Invited speaker at the MAMLS meeting, Rutgers University, October 2009.
- (27) Invited plenary speaker, Logic Colloquium 2009, Sofia. Bulgaria, August 2009.
- (28) Invited plenary speaker at the 11th Asian Logic Conference, Singapore, June 22-27
- (29) Invited speaker at the 2009 Vienna Set Theory Workshop, Erwin Schrödinger International Institute, June 14–21, 2009
- (30) Invited speaker at a special session on Dynamics of Large Groups and Semigroups, Canad. Math. Soc. Winter Meeting, December 2008, Carlton University, Ottawa.
- (31) Invited three-lecture tutorial at the 10eme Atelier international de theorie des ensembles, Luminy, France, October 2008
- (32) Invited speaker at the Concentration Week on Operator Algebras, Dynamics and Classification, Texas A&M University, August 2008
- (33) Invited speaker at a mini-conference in Set Theory, Institut Henri Poincaré, July 11, 2008
- (34) Invited speaker at the Canadian Operator Algebra Symposium (COSy), Fields Institute, May 2008
- (35) Invited speaker at the Fields workshop on Connes embedding problem, University of Ottawa, May 2008
- (36) Invited speaker at the Cornell University Department of Mathematics Colloquium, May 2008
- (37) Invited speaker at the Logic and Mathematics 2008 meeting, University of Illinois Urbana–Champaign, April 2008
- (38) Invited speaker at a conference on C*-algebras and set theory, ¹ University of Florida, Gainesville, March 2008.
- (39) Invited workshop leader at the Fifth Appalachian Set Theory workshop at Carnegie Mellon University, February 2008.
- (40) Invited plenary speaker at the Association for Symbolic Logic Winter meeting, San Diego, January 2008.
- (41) Invited speaker at the Oberwolfach Mengenlehre meeting, January 2008²
- (42) Invited speaker at a special session at the Amer. Math. Soc. sectional meeting, Rutgers University, October 2007.
- (43) Invited speaker, First European Set Theory Meeting, Bedlevo, Poland, July 2007.
- (44) Invited tutorial at the 6th Panhellenic Logic Symposium, Volos, Greece, 5-8 July 2007
- (45) Invited speaker, Workshop on Set Theory of the Reals, Gainesville, FLA, May 2007.
- (46) Invited speaker at the Mathematics Department colloquium, Washington University in St. Louis, February 2007.

¹I missed the conference because my flight was cancelled

²I could not attend the conference

- (47) Invited speaker at the workshop on Set Theory of the Reals, Gainesville, FLA, May 2007.
- (48) Invited speaker at the 8eme Atelier international de theorie des ensembles, Luminy, France, October 2006.
- (49) Invited speaker at the German Mathematical Society meeting mini-symposium on Set Theory, Bonn, Sept. 18–22, 2006.
- (50) Invited speaker at 10th Prague Topological Symposium, Prague, August 2006.
- (51) Invited speaker at the workshop “Set Theory and Analysis” Torino, 10–12 July, 2006.
- (52) Invited Speaker at the Departmental Colloquium, Miami University, Ohio April 2006.
- (53) Invited speaker, special session on Set Theory, Canadian Mathematical Society meeting, June 2006.³
- (54) Invited speaker, South Eastern Logic Symposium, University of Florida, March 2006.
- (55) Invited speaker at the conference in the honour of Menachem Magidor’s 60th birthday, UC Irvine, February 2006.
- (56) Invited speaker at the Oberwolfach Mengenlehre meeting, December 2005.
- (57) Invited Speaker at the Logic Colloquium at McMaster University, October 4, 2005.
- (58) Invited talk, Logic seminar, University of Illinois at Urbana–Champaign, May 2005.
- (59) Invited plenary speaker, Association for Symbolic Logic Annual Meeting, Stanford, CA, March 2005.
- (60) Invited semi-plenary speaker at the Spring Topology and Dynamical Systems Conference Berry College, GA, March 2005.
- (61) Invited talk, Erwin Schrödinger International Institute for Mathematical Physics, Vienna, December 2004.
- (62) Invited talk, Kurt Gödel Institute for Mathematical Logic, Vienna, December 2004.
- (63) Invited speaker, special session, Univ. of North Texas Logic Conference, Oct. 2004.
- (64) Invited speaker at the 8eme Atelier international de theorie des ensembles, Luminy, France, September 2004.
- (65) Invited speaker, special session, L.V. Keldysh Centennial, Moscow, Aug. 2004.
- (66) Invited speaker at the Barcelona Conference on Set Theory, September 2003.
- (67) Invited speaker at the Set theory conference, University of Florida, March 2003.
- (68) Invited speaker at the 7eme Atelier international de theorie des ensembles, Luminy, France, September 2002.
- (69) Invited speaker, special session, Logic Colloquium 2002, Münster, Germany, July 2002.
- (70) Invited speaker, special session, Assoc. Symb. Logic annual meeting, Las Vegas, June 2002.
- (71) Invited speaker at the MAMLS meeting, Rutgers University, October 2001.
- (72) Invited speaker at 9th Prague Topological Symposium, Prague, August 2001
- (73) Invited speaker, MSRI Workshop on the Continuum Problem, Berkeley, June 2001.
- (74) Invited speaker at the 6eme Atelier international de theorie des ensembles, Luminy, France, September 2000
- (75) Invited speaker at the Logic Colloquium 2000, Paris, France, July 2000

³I could not attend the conference and my talk was delivered by my coauthor, S. Solecki.

- (76) Invited speaker at a special session of the Canadian Math. Soc. Meeting, Hamilton, Ontario, June 2000
- (77) Invited speaker at the Oberwolfach Mengenlehre meeting, December 1999
- (78) Invited speaker at the Rutgers University MAMLS meeting, October 1999
- (79) Invited speaker at a special session of the Summer Topology Conference, Long Island, August 1999
- (80) Invited speaker at the Boise Set theory conference, March 1999
- (81) Invited speaker at the Spring Topology conference, Salt Lake City, March 1999
- (82) Invited speaker at a special session of the Canadian Math. Soc. Meeting, Kingston, Ontario, December 1998
- (83) Prize address at the CAGS/CGS/UMI conference, Vancouver, December 1998
- (84) Invited speaker at a special session of the regional Amer. Math. Soc. meeting, Winston–Salem, October 1998
- (85) Invited speaker at the 5eme Atelier international de theorie des ensembles, Luminy, France, September 1998
- (86) Invited speaker at the Set Theory, Analysis, and Their Neighbours Meeting, London, September 1998
- (87) Invited speaker at a special session of the Prague Logic Colloquium, August 1998
- (88) Invited speaker at a special session of the XI Latinoamerican Logic Conference, Merida, Venezuela, July 1998
- (89) Invited speaker at a special session of the XII Summer Topology Conference, Mexico City, June 1998
- (90) Invited speaker at the UCLA Logic Meeting, January 1998
- (91) Invited speaker at the 50th Anniversary of the Mathematical Institute Conference, Belgrade, December 1996

6. PUBLICATIONS

Scholarly books.

- (1) *Analytic quotients: theory of liftings for quotients over analytic ideals on the integers*, Memoirs of the American Mathematical Society, **148**, number 702, (2000) 177 pp.
- (2) *Some Applications of the Method of Forcing*, Yenisei, Moscow (1995) (146 p.) (coauthored with Stevo Todorcevic)

Papers in refereed journals.

- (1) Countable saturation of corona algebras, with Bradd Hart, arXiv:1112.3898, submitted.
- (2) The descriptive set theory of C^* -algebra invariants, with Andrew S. Toms and Asger Törnquist, arXiv:1112.3576, submitted
- (3) Trivial automorphisms, with Saharon Shelah, arXiv:1112.3571, submitted
- (4) *Model theory of operator algebras III: Elementary equivalence and II_1 factors*, with Bradd Hart and David Sherman, submitted, November 2011.
- (5) *Turbulence, orbit equivalence, and the classification of nuclear C^* -algebras*, (with Andrew Toms and Asger Törnquist), accepted for publication in Journal für die reine und angewandte Mathematik (Crelle's journal), December 2011.

- (6) *All automorphisms of the Calkin algebra are inner*, *Annals of Mathematics*, **173** (2011) 619–661.
- (7) *All automorphisms of all Calkin algebras*, *Math. Research Letters* **18** (2011) 489–503.
- (8) *Model theory and operator algebras II: Model Theory*, with Bradd Hart and David Sherman, submitted, April 2010.
- (9) *A dichotomy for the number of ultrapowers*, with Saharon Shelah, *Journal of Mathematical Logic*, **10** (2010), 45–81.
- (10) *Graphs and CCR algebras*, *Indiana University Mathematics Journal*, **59**, No. 3 (2010), 1041–1056.
- (11) *Model theory and operator algebras I: Stability*, with Bradd Hart and David Sherman, submitted, August 2009.
- (12) *Nonseparable UHF algebras I: Dixmier’s problem* (with Takeshi Katsura), *Advances in Mathematics*, **225** (2010), 1399–1430.
- (13) *The relative commutant of separable C^* -algebras of real rank zero*, *Journal of Functional Analysis* **256** (2009), 3841–3846.
- (14) *The relative commutant of $L(H)$ in its ultrapower may or may not be trivial*, (with N.C. Phillips and J. Steprāns), *Mathematische Annalen*, **347** (2010), 839–857.
- (15) *Nonhomogeneity in products of $\beta\mathbb{N}$ -spaces*, *Top. Appl.* **155** (2008) 273–276.
- (16) *Extreme amenability of L_0 , a Ramsey theorem, and Lévy groups*. (with S. Solecki), *Journal of Functional Analysis* **255** (2008) 471–493.
- (17) *Maharam algebras and Cohen reals*, (with Boban Veličković), *Proc. Amer. Math. Soc.*, **135** (2007) 2283–2290.
- (18) *Absoluteness for universally Baire sets and the uncountable I* , (with Paul B. Larson), *Quaderni di Matematica* **17**, (2006) *Set Theory: Recent Trends and Applications*, A. Andretta, ed., 47–92.
- (19) *Von Neumann’s problem and large cardinals*, (with Boban Veličković), *Bulletin of the London Math. Society* **38** (2006) 907–912.
- (20) *Borel subgroups of Polish groups*, (with S. Solecki), *Adv. Math.*, **199** (2006), 499–541.
- (21) *A countable dense homogeneous set of size \aleph_1* , (with M. Hrušák and C.A. Martínez Ranero), *Fund. Math.* **186** (2005), 71–77.
- (22) *Four and more*, (with J. Zapletal), *Ann. Pure Appl. Logic* **140** (2006), 3–39.
- (23) *Analytic Hausdorff gaps II: the density zero ideal*, *Israel J. Math.* **154** (2006), 235–246.
- (24) *Between Maharam’s and von Neumann’s problems*, (with J. Zapletal), *Math. Research Letters* **11** (2004), no. 5-6, 673–684.
- (25) *Examples of ϵ -exhaustive submeasures*, *Fund. Math.* **181** (2004), 257–272.
- (26) *Is $\mathcal{P}(\omega)$ a subalgebra?*, (with A. Dow), *Fund. Math.*, **183** (2004), 91–108.
- (27) *Luzin gaps*, *Trans. Amer. Math. Soc.* **356** (2004), 2197–2239.
- (28) *Two $F_{\sigma\delta}$ ideals*, (with S. Solecki), *Proc. Amer. Math. Soc.*, **131** (2003), 1971–1975.
- (29) *How many Boolean algebras $P(N)/I$ are there?*, *Illinois J. Math.*, **46** (2003) 999–1033.
- (30) *Partition theorems for layered partial semigroups*, (with N. Hindman and J. McLeod), *Journal of Combinatorial Theory, Ser. A*, **98** (2002) 268–311.
- (31) *Powers of \mathbb{N}^** , *Proc. Amer. Math. Soc.*, **130** (2002) 1243–1246.
- (32) *Dimension phenomena associated with $\beta\mathbb{N}$ spaces*, *Top. Appl.*, **125** (2002) 279–297.

- (33) *Functions essentially depending on at most one variable*, Journal of Combinatorial Theory, Ser. A, **94** (2001) 169–177.
- (34) *Basis problem for turbulent actions II: c_0 -equalities*, Proceedings of The London Mathematical Society, **82** (2001) 1–30.
- (35) *Basis problem for turbulent actions I: Tsirelson submeasures*, Annals of Pure and Applied Logic, **108** (2001) 189–203.
- (36) *Approximate homomorphisms II: Group homomorphisms*, Combinatorica **20** (2000) 47–60.
- (37) *Ideals induced by Tsirelson submeasures*, Fund. Math., **159** (1999) 243–258,
- (38) *Approximate homomorphisms*, Combinatorica, **18** (1998), 335–348.
- (39) *Completely additive liftings*, The Bulletin of Symbolic Logic, **4**, (1998), 37–54.
- (40) *Semiselective coideals*, Mathematika, **45**, (1998), 79–103.
- (41) *OCA and towers in $\mathcal{P}(\mathbb{N})/fin$* , Comm. Math. Univ. Carolinae, **37** (1996), 861–866.
- (42) *Embedding partially ordered sets into ${}^\omega\omega$* , Fund. Math., **151**, (1996), 53–95.
- (43) *A coherent family of partial functions on \mathbb{N}* , Proc. Amer. Math. Soc. **124**, (1996), 2845–2852.

Invited book chapters.

- (1) *The extender algebra and Σ_1^2 absoluteness*, The Cabal Seminar, volume IV (A.S. Kechris, B/ Löwe and J.R. Steel, editors), to appear.
- (2) *The fourth head of $\beta\mathbb{N}$* , in ‘Open Problems in Topology II,’ E. Pearl, ed., Elsevier, (2007) 135–142.

Papers in refereed conference proceedings.

- (1) *A dichotomy for the Mackey Borel structure*, to appear in Proceedings of the Asian Logic Colloquium 2009.
- (2) *Set theory and operator algebras*, (with E. Wofsey) Appalachian Set Theory Workshop (J. Cummings and E. Schimmerling et al, eds), 40pp, to appear.
- (3) *Absoluteness for universally Baire sets and the uncountable II*, (with Richard Ketchersid, Paul B. Larson and Menachem Magidor), Computational Prospects of Infinity, part II (Chong, C. et al. eds.) (2008) World Scientific, 163–192.
- (4) *A proof of the Σ_1^2 absoluteness theorem*, Advances in Logic (S. Gao, S. Jackson and Y. Zhang, eds.), *Contemporary Mathematics*, **425** (2007) American Mathematical Society, RI., 9–22.
- (5) *Rigidity conjectures*, In: Proceedings of Logic Colloquium 2000, R. Cori et al., editors. (2005), 252–271.
- (6) *Reductions between meager ideals*, Fund. and Applied Math. **11** (2005), 213–219.
- (7) *Analytic Hausdorff gaps*, Set Theory, *Dimacs Series* **58**, (2002) 65–72.
- (8) *Liftings of homomorphisms between quotient structures and finite combinatorics*, In: Logic Colloquium ’98, S. Buss, et al., editors. A.K. Peters, Lecture notes in logic, **13**, (2000) 173–196.
- (9) *Cauchy nets and open colorings*, 50th anniversary of the Mathematical Institute, Serbian Academy of Sciences and Arts (Belgrade, 1996), Publications de l’Institut Mathématique, **64** (1998), 146–152.

Papers in preparation.

- (1) *Nonseparable UHF algebras II: Classification* (with Takeshi Katsura).

Editorial boards.

- Canadian Journal of Mathematics (2011–2015)
The Bulletin of Symbolic Logic (2006–2011)

Reviews:

- (1) Review of seven papers by G. Debs and J. Saint-Raymond, *Bull. Symb. Logic* **10** (2004), 430–434.
- (2) Review ‘Topics in Topology’ by S. Todorčević, *Bull. Symb. Logic*, **8**, (2002), 526–528.