

CURRICULUM VITAE

PERSONAL INFORMATION

NAME: JOAN BAGARIA PIGRAU
DATE OF BIRTH: 08/17/1958 **CITY:** MANLLEU **COUNTRY:** CATALONIA
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CURRENT POSITIONS

POSITION: Research Professor **SINCE:** 03/10/2001
INSTITUTION: ICREA (Institució Catalana de Recerca i Estudis Avançats)
ADDRESS: Passeig Lluís Companys 23, 3r, 08010-Barcelona, Catalonia
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POSITION: ICREA Director's Scientific Advisor **SINCE:** 06/2004
INSTITUTION: ICREA (Institució Catalana de Recerca i Estudis Avançats)

POSITION: Associate Researcher **SINCE:** 12/2003
INSTITUTION: Universitat de Barcelona
DEPARTMENT: Matemàtiques i Informàtica
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RESEARCHER ID: L-5958-2014
FIELDS OF RESEARCH (UNESCO CODES): 120102 - 110208 - 720503

ACADEMIC DEGREES

- *Llicenciat en Filosofia* (B.A. in Philosophy), Universitat de Barcelona. 1981
- *Grau de Llicenciatura en Filosofia* (M.A. in Philosophy. Area: Logic), Universitat de Barcelona. 1984

DOCTORATE:

- Ph. D. in Logic and the Methodology of Science. University of California, Berkeley. 1991
 - Doctor of Mathematics (Validation of the Ph. D. degree in Spain). 1994
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PREVIOUS ACADEMIC AND RESEARCH POSITIONS

DATES	POSITION	INSTITUTION
01/1986-05/1986	Reader	University of California, Berkeley
08/1987-05/1988	Graduate Student Instructor (GSI I)	University of California, Berkeley
06/1988-07/1988	Junior specialist	University of California, Berkeley
06/1988-08/1988	Reader	University of California, Berkeley
08/1988-05/1989	Graduate Student Instructor (GSI I)	University of California, Berkeley
06/1989-08/1989	Summer Session Instructor	University of California, Berkeley
08/1989-05/1990	Graduate Student Instructor (GSI II)	University of California, Berkeley
06/1990-08/1990	Summer Session Instructor	University of California, Berkeley
08/1990-05/1991	Graduate Student Instructor (GSI III)	University of California, Berkeley
09/1991-05/1992	Post-Doctoral Researcher	University of California, Berkeley
06/1992-09/1992	Invited Researcher	Centre de Recerca Matemàtica, IEC

10/1992-09/1995	Professor Titular d'Universitat Interí	Universitat Autònoma de Barcelona
10/1995 09/1996	Invited Professor	Universitat Pompeu Fabra
10/1996 10/2001	Professor Titular d'Universitat Interí	Universitat de Barcelona

MAIN RESEARCH TOPICS (In chronological order)

- Set Theory of the Continuum.
 - Forcing and Descriptive Set Theory. The asymmetry between measure and category. Independence results on regularity properties of projective sets of real numbers.
 - Martin's Axiom and other Forcing Axioms.
 - The theory of Projective Forcing.
 - The Continuum problem.
 - Applications of Set Theory to General Topology. Thin-tall spaces.
 - Applications of Set Theory to Analysis, mainly in Banach spaces. Combinatorial problems in Analysis.
 - Generic Absoluteness.
 - Large cardinals in Category Theory and Algebra.
 - Partition properties in product spaces. Infinite Ramsey combinatorics.
 - Large cardinals as reflection principles. Principles of Structural Reflection.
 - Set-theoretic methods in infinite Abelian Group Theory and General Topology.
 - Hyperstationary sets. Applications to provability logic.
 - Large cardinals beyond the Axiom of Choice.
 - Large cardinals beyond HOD.
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PUBLICATIONS

Peer-Reviewed Research Articles

-
- Bagaria, J., Judah, H., *Amoeba forcing, Suslin absoluteness and additivity of measure*. In *Set Theory of the Continuum*. MSRI Publications. Springer-Verlag. Volume 26, 155-173 (1992).
-
- Bagaria, J., *Fragments of Martin's axiom and Δ^1_3 sets of reals*. *Annals of Pure and Applied Logic*, Vol. 69, 1-25 (1994).
-
- Bagaria, J., Bosch, R., *Projective Forcing*, *Annals of Pure and Applied Logic*, Vol. 86, 237-266 (1997).
-
- Bagaria, J., *A characterization of Martin's axiom in terms of absoluteness*. *The Journal of Symbolic Logic*, Vol. 62, Num. 2, 366-372 (1997).
-
- Bagaria, J., Woodin, W.H., *Δ^1_n -sets of reals*. *The Journal of Symbolic Logic*, Vol. 62, Num. 4, 1379-1428 (1997).
-
- Bagaria, J., *Generic absoluteness and forcing axioms*, In *Models, Algebras and Proofs*. Lecture Notes in Pure and Applied Mathematics. Marcel Dekker, Inc. Vol. 203, 1-12 (1999).
-
- Bagaria, J., *Bounded forcing axioms as principles of generic absoluteness*, *Archive for Mathematical Logic*, Vol. 39, 393-401 (2000).
-
- Bagaria, J., Friedman, S., *Generic absoluteness*. *Annals of Pure and Applied Logic*, Vol. 108, Num. 1-3, 3-13 (2001).
-
- Asperó, D., Bagaria, J., *Bounded forcing axioms and the continuum*. *Annals of Pure and Applied Logic*, Vol. 109, Num. 3, 179-203 (2001).
-
- Bagaria, J., López Abad, J., *Weakly-Ramsey sets in Banach spaces*. *Advances in Mathematics*, Vol. 160, 133-174 (2001).
-
- Bagaria, J., *Locally-generic Boolean algebras and cardinal sequences*. *Algebra Universalis*, Vol. 47, 283-302 (2002).

Bagaria, J., López Abad, J., *Determinacy and weakly-Ramsey sets in Banach spaces*. Transactions of the American Mathematical Society, Vol. 354, Num. 4, 1327-1349 (2002).

Bagaria, J., Bosch, R., *Solovay models and forcing extensions*. The Journal of Symbolic Logic, Vol. 69, Num. 3, 742-766 (2004).

Bagaria, J., Bosch, R., *Proper forcing extensions and Solovay models*. Archive for Mathematical Logic, Vol. 43, 739-750 (2004).

Bagaria, J., *Natural Axioms of Set Theory and the Continuum Problem*. In Hájek, P., Valdés-Villanueva, L., and Westertáhl, D., editors, *Logic, Methodology and Philosophy of Science: Proceedings of the Twelfth International Congress*, pages 43–64. King's College Publications, London (2005).

Bagaria, J., *Axioms of Generic Absoluteness*. In *Logic Colloquium, 2002. Association for Symbolic Logic, Lecture Notes in Logic series*, Vol. 27, 28-47 (2006).

Bagaria, J., Castells, N., Larson, P., *An Ω -Logic Primer*. In *Set Theory. Centre de Recerca Matemàtica, Barcelona 2003-2004*. Birkhäuser Verlag. Trends in Mathematics Series, 1-28 (2006).

Bagaria, J., Bosch, R., *Generic absoluteness under projective forcing*. Fundamenta Mathematicae, Vol. 194, 95-120 (2007).

Bagaria, J., Casacuberta, C., Mathias, A.R.D., *Epi-reflections and supercompact cardinals*. Journal of Pure and Applied Algebra, 213 (2009) 1208—1215.

Bagaria, J., Di Prisco, C., *Parameterized partition relations on the real numbers*. Arch. Math. Logic, Vol. 48, Issue 2 (2009), Pages 201-226.

Bagaria, J., Kanovey, V., *On coding uncountable sets by reals*. Mathematical Logic Quarterly, 56, No. 4, 409 – 424 (2010).

Bagaria, J., *$C^{(n)}$ -cardinals*. Archive for Mathematical Logic, (2012) 51:213-240.

Bagaria, J.; Brooke-Taylor, A., *On colimits and elementary embeddings*. The Journal of Symbolic Logic. Volume 78, Issue 2 (2013), 562-578.

Bagaria, J. Magidor, M., *Group radicals and strongly compact cardinals*. Transactions of the American Mathematical Society. **366** (2014), 1857-1877.

Bagaria, J., Magidor, M., *On ω_1 -strongly compact cardinals*. The Journal of Symbolic Logic. Volume 79 / Issue 01 / March 2014, pp 266-278.

Bagaria, J., Casacuberta, C., Mathias, A. R. D., Rosicky, J., *Definable orthogonality classes in accessible categories are small*. Journal of the European Mathematical Society. Volume 17, Issue 3, 2015, pp. 549–589. DOI: 10.4171/JEMS/511.

Bagaria, J.; Magidor, M.; and Sakai, H., *Reflection and indescribability in the constructible universe*. Israel Journal of Mathematics. September 2015, Volume 208, Issue 1, pp 1-11

Bagaria, J., Hamkins, J., Tsaprounis, K., Usuba, T., *Superstrong and other large cardinals are never Laver indestructible*. Archive for Mathematical Logic, September 2016, Vol. 55, Issue 1, pp 19-35. Special issue in honor of Richard Laver. DOI 10.1007/s00153-015-0458-3.

Bagaria, J., Väänänen, J., *On the symbiosis between model-theoretic and set-theoretic properties of large cardinals*. The Journal of Symbolic Logic / Volume 81 / Issue 02 / June 2016, pp 584 – 604. DOI: 10.1017/jsl.2015.60

Bagaria, J., Shelah, S., *On partial orderings having precalibre- \aleph_1 and fragments of Martin's axiom*. Fundamenta Mathematicae, 232: 181–197. 2016. DOI: 10.4064/fm232-2-6

Bagaria, J., Gitman, V. & Schindler, R., *Generic Vopěnka's Principle, remarkable cardinals, and the weak Proper Forcing Axiom*. Arch. Math. Logic (2017) Vol. 56, Issue 1-2, pp 1-20. <https://doi.org/10.1007/s00153-016-0511-x>

Bagaria, J., *Derived topologies on ordinals and stationary reflection*. Trans. Amer. Math. Soc. **371** (2019), 1981-2002. DOI: <https://doi.org/10.1090/tran/7366>

Bagaria, J., Koellner, P., and Woodin, W.H., *Large Cardinals Beyond Choice*. Bulletin of Symbolic Logic. September 2019, Volume 25, Issue 3, 283-318. <http://dx.doi.org/10.1017/bsl.2019.28>

Bagaria, J., Magidor, M., and Mancilla, S., *The consistency strength of hyperstationarity*. Journal of Math. Logic. Vol. 20, No. 1, 35 pages (2020) <https://doi.org/10.1142/S021906132050004X>

Bagaria, J., Ternullo, C., *Steel's Programme: Evidential Framework, the Core and Ultimate-L*. The Review of Symbolic Logic, 1-25 (2023). doi:10.1017/S1755020321000447

Bagaria, J., Wilson, T. M., *The Weak Vopenka Principle for definable classes of structures*. The Journal of Symbolic Logic, 88(1), 145-168 (2023). doi:10.1017/jsl.2022.42

Bagaria, J., Poveda, A., *More on the preservation of large cardinals under class forcing*. The Journal of Symbolic Logic, 88(1), 290-323 (2023). doi:10.1017/jsl.2021.73

Bagaria, J., da Silva, S. G., *ω_1 -strongly compact cardinals and normality*. Topology and its Applications. Volume 323, 1 January 2023, 108276.

Bagaria, J., Lücke, P., *Huge Reflection*. Annals of Pure and Applied Logic. Volume 174, Issue 1, January 2023, 103171. <https://doi.org/10.1016/j.apal.2022.103171>

Bagaria, J., *Large Cardinals as Principles of Structural Reflection*. Bulletin of Symbolic Logic, 29(1), 19-70. 2023. doi:10.1017/bsl.2023.2

Bagaria, J., *The relative strengths of fragments of Martin's axiom*, Annals of Pure and Applied Logic, Volume 175, Issue 1, Part B, 2024, 103330, ISSN 0168-0072, <https://doi.org/10.1016/j.apal.2023.103330>.

Bagaria, J., Lücke, P., *Patterns of Structural Reflection in the Large Cardinal Hierarchy*. Trans. Amer. Math. Soc. **377** (2024), 3397-3447. DOI: <https://doi.org/10.1090/tran/9120>

Bagaria, J., Goldberg, G., *Reflecting measures*. Advances in Mathematics. January 2024. [Volume 443](https://doi.org/10.1016/j.aim.2024.109586), May 2024, 109586. <https://doi.org/10.1016/j.aim.2024.109586>

Bagaria, J., Ternullo, C., *Intrinsic Justification for Large Cardinals and Structural reflection*. Philosophia Mathematica. To appear.

Aguilera, J.P., Bagaria, J., and Lücke, P., *Large cardinals, structural reflection, and the HOD Conjecture*. Submitted.

Peer-Reviewed Survey Articles

Bagaria, J., *L'estructura del continu: resultats d'independència en anàlisi matemàtica*. Butlletí de la Societat Catalana de Matemàtiques. Institut d'Estudis Catalans. Vol. 11, Num. 1, 7-18 (1996).

Bagaria, J., *Paul J. Cohen y la técnica del forcing*. La Gaceta de la Real Sociedad Matemática Española. Real Sociedad Matemática Española. Vol. 2, Num. 3, 543-553 (1999).

Bagaria, J., *Sobre el estado actual de la teoría de Conjuntos*. Boletín informativo de la Sociedad de Lógica, Metodología y Filosofía de la Ciencia en España. Vol. 203, 48-51 (1999).

Bagaria, J., *Una petita excursió al paradís de Cantor*. In *Matemàtiques del segle XXI: dels fonaments a la tecnologia*. Manuel Castellet, Editor. Fundació Caixa Sabadell. Vol. 20, 21-40 (2003).

Bagaria, J., *A short guide to Gödel's Second Incompleteness Theorem*. Teorema, Vol. 22/3, 5-15 (2003).

Bagaria, J., *La teoria de Ramsey infinita. Una mica d'història i alguns resultats recents*. Butlletí de la Societat Catalana de Matemàtiques. Institut d'Estudis Catalans. Vol. 18, Num. 2, 7-24 (2003).

Bagaria, J., *Thin-tall spaces*. In *Open Problems in Topology II*. Elliot Pearl, Editor. Elsevier, 115-125 (2007).

Bagaria, J., *Set Theory*. Princeton Companion to Mathematics. Timothy Gowers, June Barrow-Green, and Imre Leader, Editors. Princeton. 2008.

Bagaria, J., *La Teoría de Conjuntos*. La Gaceta de la Real Sociedad Matemática Española. Real Sociedad Matemática Española. Vol. 15, Num. 2, 1-20 (2012).

Bagaria, J., *On Turing's legacy in mathematical logic and the foundations of mathematics*. ARBOR Vol. 189 (764): a79 (2013) doi: <http://dx.doi.org/10.3989/arbor.2013.764n6002>.

Bagaria, J., *Set Theory*. Stanford Encyclopedia of Philosophy (2014). Revised in 2022.
<http://plato.stanford.edu/entries/set-theory>

Bagaria, J., *Basic Set Theory*. Stanford Encyclopedia of Philosophy (2014). Revised in 2022.
<http://plato.stanford.edu/entries/set-theory/basic-set-theory.html>

Editor

Bagaria, J.; Mathias, A.R.D., *Techniques and Applications of Set Theory*. Quaderns del Centre de Recerca Matemàtica. Centre de Recerca Matemàtica (CRM). Institut d'Estudis Catalans. Num. 8 (1996).

Di Prisco, C.A.; Larson, J.A.; Bagaria, J.; Mathias, A.R.D., *Set Theory: Techniques and Applications*. Kluwer Academic Publishers (1998).

Bagaria, J., Workshop on the Ramsey theory of the Reals. Quaderns del Centre de Recerca Matemàtica. Centre de Recerca Matemàtica (CRM). Institut d'Estudis Catalans. Num. 12 (1998).

Bagaria, J., *Advanced Course on Ramsey Methods in Analysis*. Quaderns del Centre de Recerca Matemàtica. Centre de Recerca Matemàtica (CRM). Institut d'Estudis Catalans. Num. 27 (2004).

Bagaria, J.; and Todorčević, S., *Set Theory, Centre de Recerca Matemàtica, Barcelona 2003-2004*. Birkhäuser. Trends in Mathematics Series (2006).

Bagaria, J.; Moschovakis, Y.; Otero, M.; Soskov, I., Editors. Special Issue, Logic Colloquium 2009. Annals of Pure and Applied Logic. Vol. 162, issue 7. June/July 2011.

Klaus Ambos-Spies, Joan Bagaria, Enrique Casanovas and Ulrich Kohlenbach, Editors. Special Issue, Logic Colloquium 2011. Annals of Pure and Applied Logic, Volume 164, Issue 12, December 2013.

Reviews

Bagaria, J., Destruction or preservation as you like it, by Joel David Hamkins. Annals of pure and Applied Logic, 91 (1998), n. 2-3, 191-229. Mathematical Reviews, American Mathematical Society, Num. 99f:03071 (1999).

Bagaria, J., Review of: S. Shelah and W. H. Woodin, *Large cardinals imply that every reasonably definable set of reals is Lebesgue measurable*. Israel Journal of Mathematics, Vol. 70, No. 3, 381-394, (1990). Bulletin of Symbolic Logic, Association for Symbolic Logic, Inc., Vol. 8, Num. 4, (2002).

Bagaria, J., Review of: A. Kanamori, *The Higher Infinite. Second Edition*. Springer monographs in Mathematics. Springer-Verlag, 2003. La Gaceta de la Real Sociedad Matemática Española. Real Sociedad Matemática Española.

INVITED STAYS OF RESEARCH

Universidad Simón Bolívar (Venezuela). 1997.10 days.

Humboldt Universität, Berlin (Germany). 1998. 7 days.

Institut für Formale Logik, Vienna (Austria). 2000. 7 days.

Fields Institute, Toronto (Canada). 2002.15 days.

Center for Theoretical Study, Praha (Czech Republic). January 2003. 15 days.

University of California, Berkeley, Berkeley, USA. July 2003. 1 month.
Kobe University, Kobe (Japan). March, 2005. 12 days.
Instituto de Matemáticas, Morelia, Morelia (Mexico). July 2005. 8 days.
Institute for Mathematical Sciences, National University of Singapore (Singapore). August 2005. 10 days.
Kurt Gödel Research Center for Mathematical Logic, Vienna (Austria). November, 2005. 7 days.
Instituto Venezolano de Investigaciones Científicas (IVIC), Caracas (Venezuela). March-April 2006. 17 days.
Université Paris VII, Paris (France). July 2006. 7 days.
California Institute of Technology, Pasadena (USA). November 2006. 1 month.
Chubu University, Nagoya (Japan). November-December 2007. 15 days.
Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach (Germany). April 21-May 3, 2008.
Kiel University, Kiel (Germany). November 24-28, 2008.
Institut Mittag-Leffler, Djürsholm (Sweden). November 2009. 1 month.
Universität Bonn (Germany). January 21-25, 2011.
University of Bristol (UK). May 22-28, 2011.
University of Kobe (Japan). October 13-23, 2011.
Albert Einstein Institute of Mathematics. The Hebrew University of Jerusalem (Israel). April 24 – May 10, 2012.
University of California, Berkeley (USA). August 1 – 22, 2012.
University of California, Berkeley (USA). January 7 to February 28, 2013.
Participant of the research program on “Forcing, Large Cardinals, and Descriptive Set Theory”. Erwin Schrodinger International Institute for Mathematical Physics, Vienna (Austria). September 22-28, 2013.
Harvard University, Cambridge MA. (USA). October 26 to November 2, 2014.
Kobe University, Kobe (Japan). November 10-23, 2014.
Simons Foundation Fellow at Isaac Newton Institute. Co-organiser of the research programme on “Mathematical, Foundational and Computational aspects of the Higher Infinite” (HIF), Isaac Newton Institute for Mathematical Sciences, Cambridge University, UK, 19 August to 18 December 2015. <http://www.newton.ac.uk/event/HIF>
Universidad de los Andes, Bogotá (Colombia). 31 May to 4 June, 2017.
Universidade Federal da Bahia. Instituto de Matemática e Estatística, (Brazil). May 13-14, 2017.
Institute for Mathematical Sciences. National University of Singapore. June 1-16, 2019.
Kobe University (Japan). November 14-17, 2019.
Universidad de los Andes, Bogotá (Colombia). November 27 to December 4, 2019.
University of California, Berkeley (USA). April 28 to May 15, 2023.
Fields Institute, Toronto (Canada). June 1-15, 2023.
Kobe University (Japan). October 27 to November 4, 2023.
University of California, Berkeley (USA). January 9 to February 9, and again from August 5 to 27, 2024.

CONFERENCES

Invited Addresses

A theorem of Todorćević. Workshop on “The Set Theory of the Real Line”. December 21-22, 1988. Berkeley, California (USA).

Δ^1_n sets of reals: measure and category. 874 Meeting of the American Mathematical Society. 1992. Bethlehem, Pennsylvania (USA).

Δ^1_n sets of reals. Cantor’s Set Theory Meeting. March 21-22, 1993. Berlin (Germany).

Projective forcing. 3^{ème} Atelier International de Théorie des Ensembles. September 19-23, 1994. Luminy (France).

Generic absoluteness. Combinatorial Set Theory and its consequences. June 19-23, 1995. Curaçao (Dutch Antilles).

Forcing axioms and generic absoluteness (Plenary address). X Latin American Symposium on Mathematical Logic. July 24-29, 1995. Bogotá (Colombia).

Forcing axioms as generic absoluteness principles. Mengenlehre. January 7-13, 1996. Oberwolfach (Germany).

Locally-generic scattered spaces. 4ème Atelier International de Théorie des Ensembles. September 23-27, 1996. Luminy (France).

The theory of the reals and forcing extensions. The 3rd Barcelona Logic Meeting. January 31, 1997. Bellaterra (Catalonia).

Bounded forcing axioms and the continuum. 5ème Atelier International de Théorie des ensembles. September 21-25, 1998. Luminy (France).

Solovay models and forcing extensions. XI Latin American Symposium on Mathematical Logic. July 6-10, 1998. Mérida (Venezuela).

Weakly-Ramsey sets in Banach spaces. Mengenlehre. December 12-18, 1999. Oberwolfach (Germany).

Reflection and absoluteness in Set Theory (Plenary address). Logic Colloquium '99. August 2-6, 1999. Utrecht (The Netherlands).

Generic absoluteness and Descriptive Set Theory. 6ème Atelier International de Théorie des ensembles. September 18-22, 2000. Luminy (France).

Solovay models and ccc forcing extensions. 7th Kurt Gödel Colloquium. Mengenlehre. August 6-10, 2001. Vienna (Austria).

Solovay models. Workshop on Ramsey Theory. December 3-9, 2001. Caracas (Venezuela).

The absoluteness of $L(R)$ (Plenary address). Colloquium Logicum. August 9-10, 2002. Muenster (Germany).

Strong axioms of Set Theory. Second International Workshop on the History and Philosophy of Logic, Mathematics, and Computation HPLMC-02. November 7-9, 2002. Donostia - San Sebastián (Spain).

Natural Axioms for Set Theory that decide Cantor's Continuum Problem. 12th International Congress of Logic, Methodology, and Philosophy of Science. August 7-13, 2003. Oviedo (Spain).

Solovay's theorem inside out (Plenary address). XII Latin American Symposium on Mathematical Logic. January 12-16, 2004. San José (Costa Rica).

Reflections on the Continuum Hypothesis. Workshop on the Continuum Hypothesis. May 11, 2005. Helsinki (Finland).

On thin, very tall spaces (Plenary Address). VI Congreso Iberoamericano de Topología y sus Aplicaciones (CITA-05). July 5, 2005. Puebla (Mexico).

Generic absoluteness under projective forcing, I and II. Computational Prospects of Infinity. July 14, 2005. Singapore.

Recent results on the generic absoluteness programme (Plenary Address). AMS-DMV-ÖMV Joint Meeting. June 19, 2005. Mainz (Germany).

Absoluteness under projective forcing. 9th Kurt Gödel Colloquium. November 17, 2005. Vienna (Austria).

La Hipótesis del Continuo, 128 años después. Jornadas de la Asociación Matemática Venezolana. April 4, 2006. Cumaná (Venezuela).

Parameterized partition relations on the real numbers. Workshop on set theory. Université Paris VII. April 6, 2007. Paris (France).

Parameterized partition relations on the set of real numbers. Analysis and Set Theory. Set Theory and Its Neighbours, 15. April 20, 2007. University College London. London (UK).

The generic absoluteness program and the search for new axioms of Mathematics. Cantor, Husserl, Gödel, and the Philosophical Foundations of Set Theory. June 13-15, 2007. Wuppertal (Germany).

Partition properties in Solovay models. First European Set Theory Meeting. July 9-13, 2007. Bedlewo (Poland).

Homogeneous perfect sets in partition of products of Polish spaces. 22nd Summer Conference on Topology and its Applications. July 24-27, 2007. Castelló (Spain).

Epireflections and supercompact cardinals. RIMS Workshop on Set Theory. November 28-30, 2007. Kyoto (Japan).

Partition properties of products of Polish spaces. International Conference on Topology and its Applications. December 3-7, 2007. Kyoto (Japan).

On the role of large cardinals in category theory (Plenary Address). XIV Simposio Latinoamericano de Lógica Matemática. May 11-17, 2008. Paraty (Brazil).

Vopenka's Principle and categories of topological spaces. Advances in Set Theoretic Topology. June 9-19, 2008. Erice (Italy).

$C(n)$ -cardinals. ESI Workshop on Large Cardinals and Descriptive Set Theory. June 23-27, 2009. Vienna (Austria).

Strong large cardinals as reflection principles. Amsterdam Workshop in Set Theory. 1-2 June 2010. Amsterdam (The Netherlands).

Structural reflection and the hierarchy of $C(n)$ -cardinals. Conference on Mathematical Logic and Set Theory, 15-17 August 2010. Satellite Conference of the ICM 2010. Chennai (India).

Structural Reflection. Set Theory, Model Theory, Generalized Quantifiers and Foundations of Mathematics: Meeting in Honor of Jouko Väänänen's Sixtieth Birthday. University of Helsinki. 16-18 September 2010. Helsinki (Finland).

Large cardinals and the principle of Structural Reflection. Informal Meeting in Set Theory, 13 November 2010. Torino (Italy).

Principles of structural reflection and the hierarchy of large cardinals. Descriptive set theory in Paris. 13-14 December 2010. Paris (France).

Structural complexity, reflection, and topologies on ordinals. The Infinity Conference. July 2011. Bellaterra (Catalonia).

Structural reflection and topologies on ordinals. Set Theory and Higher-Order Logic: Foundational Issues and Mathematical Developments. Birkbeck College, 31 July – 7 August 2011. London (UK).

On strongly compact cardinals. RIMS Set Theory Workshop 2011. University of Kyoto. October 2011. Kyoto (Japan).

Structural reflection. Maximalist and Minimalist Perspectives on Infinity: A meeting on set theory and its philosophy. University of Sevilla. November 2011. Sevilla (Spain).

Topologies on ordinals and stationary reflection. Amsterdam Workshop in Set Theory. University of Amsterdam. February 2012. Amsterdam (The Netherlands).

Reflection in the Universe of Sets. Reflection Principles in Set Theory. University of Oxford, 19-20 March 2012. Oxford (UK).

Large cardinals and topological completeness of polymodal provability logics. Proof Theory and Modal Logic (the Wormshop). IMUB, University of Barcelona, 16-19 April 2012. Barcelona (Catalonia).

On Turing's legacy in mathematical logic and the foundations of mathematics. International Symposium; The legacy of Alan Turing. Fundación Ramón Areces, 23-24 October 2012. Madrid (Spain).

Topologies on ordinals and stationary reflection. 50 Years of Seminar for Analysis and Foundations of Mathematics. Mathematical Logic and General Topology, 5-8 September 2012. Novi-Sad (Serbia).

Strongly compact cardinals. Workshop in Memory of Alejandro Fernández Margarit. Universidad de Sevilla, 20 September 2012. Sevilla (Spain).

The logic of the topological structure of the ordinal numbers. Interactions between Logic, Topological structures and Banach spaces theory. 18-24 May 2013. Eilat (Israel).

El programa de Gödel de recerca de nous axiomes. I Jornada del Grup de Lògica i Filosofia de la Ciència, Kurt Gödel: De la incompletabilitat de les matemàtiques a la cerca de nous axiomes matemàtics. 15 May 2013. Barcelona (Catalonia).

Topologies on Ordinals and Hyper-Stationary Reflection. Logic Meeting at the UCLA Logic Center. 1-3 February 2013, Los Angeles (USA).

Large cardinals: the Logic vs. the Set-Theoretic perspective. LMS Lectures. University of East Anglia. 14-17 April 2014. Norwich (UK).

Adding a random real number and its effect on Martin's axiom. INFTY Final Conference. University of Bonn. 4-7 March 2014. Bonn (Germany).

On hyper-stationary sets. Colloquium and Workshop on the Occasion of the 60th Birthdays of Peter Koepke and Philip Welch. University of Bonn. 23-25 May 2014. Bonn (Germany).

On n -stationary sets. Joint Meeting of the German Mathematical Society (DMV) and the Polish Mathematical Society (PTM). 17-20 September 2014. Poznan (Poland).

On Alpha-stationary sets. 13ème Atelier International de Théorie des Ensembles. CIRM, September 28 to October 4, 2014. Luminy (France).

Set-theoretic reflection phenomena. Workshop on Mathematical Logic on the Occasion of Sakaé Fuchino's 60th Birthday. November 17 – 19, 2014. Kyoto University. Kyoto (Japan).

On two questions involving posets with the precalibre- \aleph_1 . Arctic Set Theory Workshop. 13-17 February 2015. Kilpisjärvi (Finland).

On the consistency strength of n -stationarity. Menachem Magidor 70th Birthday Conference. 17-19 February 2016. Einstein Institute of Mathematics, Hebrew University, Jerusalem (Israel).

On simplicity and truth, a case study in the theory of large cardinals. Crossing Worlds: Mathematical logic, philosophy, art 3-4 June 2016, Helsinki (Finland).

Reflection phenomena in the set-theoretic universe. Keynote speaker at the Set Theoretic Pluralism Symposium. 12-17 July 2016. Aberdeen (Scotland).

Generalized Provability Logics and Large Cardinals. Keynote speaker at the XVIII Brazilian Logic Conference. 8-12 May 2017. Pirenópolis (Brazil).

Large cardinals as reflection principles. A survey. XXI Congreso Colombiano de Matemáticas. 5-9 June 2017. Bogotá (Colombia).

Symmetries in the Set-Theoretic Universe and the Higher Infinite. Keynote speaker at Symmetry 2017. The First International Conference on Symmetry. Barcelona, 16 - 18 October 2017.

Strong Reflection Principles and the Hierarchy of Large Cardinals. British Logic Colloquium 2017. University of Sussex, Brighton. 8-9 September 2017.

Large Cardinals beyond Choice. 6th European Set Theory Conference. Alfréd Rényi Institute of Mathematics, Budapest. 3-7 July 2017.

Large Cardinals beyond Choice. XXVI incontro dell'Associazione Italiana di Logica e sue Applicazioni. Padova (Italy). 25-28 September 2017.

Symmetries of Infinity. On the Infinite. Institut Henri Poincaré and Sorbonne, Paris. 18 - 21 October 2017.

The role of Large Cardinals in the semantics of Generalized Provability Logics. The First Mexico/USA Logic Fest, ITAM, Ciudad de México. 9 Jan, 2018

La Hipótesis del Continuo, 140 años después. Jornada principal del año Cantor Instituto de Matemáticas de la Universidad de Sevilla (IMUS), 14 Feb. 2018

Some considerations around the Weak Vopěnka Principle. Accessible categories and their connections. School of Mathematics, University of Leeds, Leeds (UK). 17-20 July 2018

Preserving the reflection properties of the set-theoretic universe under forcing. Cantor meets Robinson – Set Theory, Model Theory, and their Philosophy. University of Campinas. Campinas (Brazil). 12-15 December 2018.

The true universe of sets, Woodin's HOD Conjecture, very large cardinals, and class forcing. Joint Quest for Absolute Infinity and the Continuum – From Cantor to Woodin. Turku (Finland), 9-11 May 2019.

On the preservation of very large cardinals under class forcing. Higher Recursion Theory and Set Theory. IMS, National University of Singapore (Singapore). 20 May to 14 June 2019.

Philosophical implications of some recent breakthroughs in Set Theory. Set Theory: Bridging Mathematics and Philosophy. University of Konstanz, Konstanz (Germany). July 29-31, 2019.

On Woodin's HOD-Conjecture, large cardinals beyond Choice, and class forcing. 12th Panhellenic Logic Symposium. Anogia, Crete (Greece). June 26-30, 2019.

Some more applications of \aleph_1 -strongly compact cardinals in General Topology. Third Pan Pacific International Conference on Topology and Applications (3rdPPICTA). Chengdu (China). 8-13 November 2019.

The Weak Vopenka principle for definable classes of structures. RIMS Set Theory Workshop. Set Theory and Infinity. RIMS, University of Kyoto (Japan). 18-22 November 2019.

The Weak Vopenka principle for definable classes of structures. Di Prisco Fest (A celebration of Carlos Di Prisco's 70th Birthday. Set Theory, Combinatorics, Logic and more...). Universidad de los Andes, Bogotá (Colombia). November 28-29, 2019.

Structural Reflection: from Strong to Woodin cardinals. Catania Set Theory and Topology Conference. Catania (Italy). 18-21 February 2020.

Superstrong and Huge Reflection. Kobe Set Theory Workshop, on Sakaé Fuchino's Retirement. Kobe (Online). 9-11 March 2021.

Hyperstationary sets. Keynote address at the conference "Logical Perspectives 2021". Moscow (Online). June 7 – July 8, 2021.

Kurt Gödel y el Problema del Continuo. Jornada principal del Año Gödel. IMUS, Facultad de Matemáticas, Universidad de Sevilla. 2 March 2022.

Large cardinals in set theory and beyond. Recent advances in Mathematics and related areas. Kerala School of Mathematics. Kozhikode, Kerala, India (Online). 21-24 April 2022.

Self-similarity in the Higher Infinite. Berkeley Logic Colloquium. 5 May 2023.

Self-similarity in the Higher Infinite: a philosophico-mathematical justification of the existence of large cardinals. Stanford lecture series on Logic and Formal Philosophy. Stanford University. 31 January 2024.

Invited Courses and Tutorials given in Conferences

Set Theory of the Continuum (1 week). XI Latin American Symposium on Mathematical Logic. June 29-July 3, 1998. Mérida (Venezuela).

Generic absoluteness (1 week). 31th Winter School in Analysis. January 25-February 1, 2003. Litice (Czech Republic).

An introduction to Omega-Logic. Mini course consisting of 3 sessions of 90 minutes each. Set Theory and Higher-Order Logic: Foundational Issues and Mathematical Developments. Birkbeck College, 31 July – 7 August 2011. London (UK).

A gentle introduction to the theory of large cardinals. Mini course consisting of 5 sessions of 90 minutes each. Workshop on Large Cardinal methods in Homotopy. University of Barcelona. September 2011. Barcelona (Catalonia).

Set Theory: an introduction to the world of large cardinals. Mini course consisting of 4 sessions of 90 minutes each. Nordic Spring School in Logic, May 27 - 31, 2013. Sophus Lie Conference Center. Nordfjordeid (Norway).

An Introduction to Hyperstationary Sets. Tutorial consisting of 3 one-hour lectures. Winter School in Abstract Analysis (WS2017). 28 January – 4 February 2017. Hejnice (Czech Republic).

Large Cardinals as Reflection Principles: A General Framework. 4 one-hour lectures. New directions in the Higher Infinite ICMS, Edinburgh. 10-14 July 2017.

Strong axioms of infinity as reflection principles. Mini course consisting of 3 sessions of 90 minutes each. Cantor meets Robinson – Set Theory, Model Theory, and Their Philosophy. Instituto de Matemática e Estatística, Universidade de São Paulo. 3-7 December 2018.

Vopenka's Principle, the Weak Vopenka Principle, and large cardinals. A tutorial. Mini course consisting of 3 sessions of 90 minutes each. IPM Set Theory Conference. IPM (Tehran). 5 October 2019 to 10 October 2019.

Large cardinals as reflection properties of the set-theoretic universe. A tutorial consisting of four 1-hour lectures. RIMS Workshop on Large cardinals and the continuum. RIMS, Kobe University (Japan). October 23-27, 2023.

Communications

Bagaria, J., and Bosch, R., Definable fragments of Martin's axiom. Logic Colloquium '94. July 21-30, 1994. Clermont-Ferrand (France).

Bagaria, J. and Bosch, R., Definable posets on the reals and Martin's axiom. The 3rd Barcelona Logic Meeting. February 1-2, 1997. Bellaterra (Catalonia).

Bagaria, J. and López-Abad, J., Determinacy and weakly-Ramsey sets in Banach spaces. Logic Colloquium, 2000. July 23-31, 2000. Paris (France).

Bagaria, J., Natural axioms of Set Theory. Workshop on the Foundations of Set Theory. June 9-12, 2004. Barcelona (Catalonia).

Bagaria, J., On n -stationary sets. XVI Latin American Symposium in Mathematical Logic. July 28 – August 1, 2014. Buenos Aires (Argentina).

Bagaria, J., Large cardinals and the ordinal topological completeness of GLP. Logic Colloquium 2015. 3-7 August 2015. Helsinki (Finland).

Aguilera, J., Bagaria, J., and Lücke, P., Large Cardinals, Structural Reflection, and the HOD Conjecture. European Set Theory Conference. 16-20 September 2024. Muenster (Germany).

Conference Organization and Management

- Organization Assistant. International Congress of Mathematicians. August 3-11, 1986. Berkeley, California (USA).
- Member of the Scientific and Organizing Committees. Meeting on Mathematical Logic. January 27-29, 1994. Bellaterra (Catalonia).
- Member of the Scientific and Organizing Committees. The 2nd Barcelona Logic Meeting. June 29-July 1, 1995. Bellaterra (Catalonia).
- Member of the Scientific and Organizing Committees. Techniques and Applications of Set Theory. June 10-14, 1996. Bellaterra (Catalonia).
- Organiser. Workshop on the Ramsey theory of the reals. December 12-13, 1997. Bellaterra (Catalonia).
- Member of the Scientific and Organizing Committees. The 4th Barcelona Logic Meeting. February 5-7, 1998. Bellaterra (Catalonia).
- Member of the Scientific and Organizing Committees. Euroconference: The 6th Barcelona Logic Meeting. July 6-9, 2000. Barcelona (Catalonia).
- Coordinator and Chair of the Organizing Committee. Barcelona Conference on Set Theory. September 16-20, 2003. Bellaterra (Catalonia).
- Coordinator and Chair of the Organizing Committee. Advanced Course on Ramsey Methods in Analysis. January 19-28, 2004. Bellaterra (Catalonia).
- Organizer. Workshop on the Foundations of Set Theory. June 9-12, 2004. Barcelona (Catalonia).
- Organizer. Kurt Gödel, 100 years. May 5, 2006. Barcelona (Catalonia).
- Member of organizing committee. Workshop on Set Theory. September 28-30, 2007. Paris (France).
- Coordinator. Philosophical Reflections on Set Theory. October 7, 2008. Barcelona (Catalonia).
- Chairman of the Program Committee. Logic Colloquium 2009. July 31 – August 5, 2009. Sofia (Bulgaria).
- Chairman of the Organizing Committee. Logic Colloquium 2011. July 22 – 27, 2011. Barcelona (Catalonia).
- Organizer of the Special Session on Set Theory. Logic Colloquium 2011. July 22 – 27, 2011. Barcelona (Catalonia).
- Member of the Organizing Committee of The third European Conference on Set Theory. International Centre for Mathematical Sciences. University of Edinburgh. July 4 – 8, 2011. Edinburgh (Scotland).
- Member of Program Committee. Modern Set Theory: Foundations & Applications. Workshop held at ESSLLI 2011. Ljubljana (Slovenia). August 2011.
- Member of the Organizing Committee. Workshop on Large Cardinal methods in Homotopy. University of Barcelona. September 2011. Barcelona (Catalonia).
- Member of the Organizing Committee. Proof Theory and Modal Logic (the Wormshop). IMUB, University of Barcelona, 16-19 April 2012. Barcelona (Catalonia).
- Member of the Program and Organizing Committee of the Special Session on Mathematical Logic. 1st Joint Conference of the Belgian, Royal Spanish, and Luxembourg Mathematical Societies. 6-8 June 2012. Liège (Belgium).
- Member of the Program Committee. European Congress of Mathematics (ECM), July 2-7, 2012. Krakow (Poland).
- Chairman of the Organizing Committee. 4th European Set Theory Conference (4ESTC), July 15-18, 2013. Món Sant Benet, Barcelona (Catalonia).
- Member of the Program Committee. XVI Latin American Symposium in Mathematical Logic (SLALM). July 2014. Buenos Aires (Argentina).
- Member of the Program Committee. INFTY Final Conference. 4-7 March 2014. Bonn (Germany).
- Member of the Program Committee. Novi Sad Conference in Set Theory and General Topology. August 18-21, 2014. Novi-Sad (Serbia).
- Chairman of the Program Committee. 5th European Set Theory Conference (5ESTC). August 24-28, 2015. Isaac Newton Institute. Cambridge (UK).
- Organizing and Scientific Committee member. Workshop on “Independence results in mathematics and challenges in iterated forcing” (HIF programme). University of East Anglia (UEA), 2-6 November 2015. Norwich (UK).
- Organizing and Scientific Committee member. Workshop on “The role of the Higher Infinite in mathematics and other disciplines”(HIF programme). Isaac Newton Institute (INI), 14-18 December 2015. Cambridge (UK).
- Member of the Program Committee. Novi Sad Conference in Set theory and General Topology” (SETTOP 2016). June 20-24, 2016, Novi-Sad (Serbia).

Chairman of the organizing and scientific committees of the CRM Intensive Research Programme on Large Cardinals and Strong Logics. September 6 to December 16. Bellaterra (Barcelona). http://www.crm.cat/en/Activities/Curs_2016-2017/Pages/IRP-Large-Cardinals-and-Strong-Logics.aspx (Resigned in June 2016.)

Member of the Program Committee. “Novi Sad Conference in Set theory and General Topology” (SETTOP 2018). July 2-5, 2018, Novi-Sad (Serbia).

Member of the Organizing Committee. Workshop on Proof Theory, Modal Logic and Reflection Principles. November 5-8, 2019. Universitat de Barcelona, (Catalonia).

Co-organizer (with C. Brech). Set Theory section, Logic Colloquium 2020. July 13-18, 2020. Poznan (Poland). (Postponed due to Covid19. Held July 19-23, 2021.)

Chairman of the Program Committee. European Set Theory Conference (ESTC). August 29-September 2, 2022. Torino (Italy).

Co-cordinator (with C. Ternullo) of the workshop “What can Philosophy do for Set Theory?”. Universitat de Barcelona. March 29-31, 2023.

Invited Participant (meetings and conferences with restricted participation)

II Reunión de científicos españoles en el extranjero. March 1987. Madrid (Spain).

Mengenlehre. January 20-26, 2002. Oberwolfach (Germany).

7ème Atelier International de Théorie des Ensembles. September 16-20, 2002. Luminy, Marseille (France).

Singular cardinal combinatorics. May 1-6, 2003. Banff (Canada).

8ème Atelier International de Théorie des Ensembles. September 20-24, 2004. Lumin, Marseille (France).

Mengenlehre. December 4-10, 2005. Oberwolfach (Germany).

9ème Atelier International de Théorie des Ensembles. October 2-6, 2006. Luminy, Marseille (France).

Mengenlehre. January 13-17, 2008. Oberwolfach (Germany).

The Second European Set Theory Meeting. In honor of Ronald Jensen. July 5-9, 2009. Bedlewo (Poland).

10ème Atelier International de Théorie des Ensembles. October 4-8, 2010. Luminy, Marseille (France).

Mengenlehre. January 9-13, 2011. Oberwolfach (Germany).

11ème Atelier International de Théorie des Ensembles. October 4-8, 2012. Luminy, Marseille, (France).

Workshop on Set Theory. September 15-17, 2014. Bedlewo (Poland).

Conference in honour of Hugh Woodin’s 60th Birthday. Harvard University. 27-29 March 2015. Cambridge, MA (USA).

XIV Atelier International de Théorie des Ensembles. October 9-13, 2018. CIRM, Luminy, Marseille (France).

Reflections on Set-Theoretic Reflection. Set Theory Conference, organised in partnership with the Clay Mathematics Institute, in celebration of Joan Bagaria’s 60th Birthday. Sant Bernat, Montseny (Catalonia). 16-19 November 2018.

XV Atelier International de Théorie des Ensembles. September 22-26, 2019. CIRM, Luminy, Marseille (France).

XVI Atelier International de Théorie des Ensembles. September 13-17, 2021. CIRM, Luminy, Marseille (France).

Choiceless Elementary Embeddings of Sets. University of Leeds. 12-14 September 2022. Leeds (UK).

XVII Atelier International de Théorie des Ensembles. October 9-13, 2023. CIRM, Luminy, Marseille (France).

Other Conference Participation

Workshop on Set Theory of the Continuum. 1989. Berkeley, California (USA).

Association for Symbolic Logic Annual Meeting. 1990. Berkeley, California (USA).

Model Theory: Stability and its relationship to Algebraic Geometry. September 5-10, 1994. Manchester (UK).

Joint Conference of The 5th Barcelona Logic Meeting and the 6th Kurt Gödel Colloquium. June 16-19, 1999. Barcelona (Catalonia).

Workshop on Banach spaces and Ramsey Theory. November 12-16, 2002. Toronto (Canada).

European Congress of Mathematics (ECM). July 2-7, 2012. Krakow (Poland).

Other Invited Talks

- Un teorema de Todorcevic. Universidad Autónoma de Madrid. 1989. Madrid (Spain).
- What can you prove about sets of reals? Universität Freiburg. October 29, 1993. Freiburg (Germany).
- How fat is the Mathematical Universe? Universität Freiburg. January 12, 1996. Freiburg (Germany).
- The theory of the reals and forcing extensions. Universidad Simón Bolívar. 1997. Caracas (Venezuela).
- The structure of the continuum. Universidad Simón Bolívar. 1997. Caracas (Venezuela).
- Bounded forcing axioms and the continuum. Humboldt Universität. January 19, 1999. Berlin (Germany).
- Natural axioms of Set Theory that decide the size of the Continuum. Institut für Formale Logik. December 11, 2000. Vienna (Austria).
- Soluciones de la Teoría de Conjuntos a problemas de Análisis. Universidad Central. December 8, 2001. Caracas (Venezuela).
- Axioms of generic absoluteness. Center for Theoretical Study. January, 2003. Praha (Czech Republic).
- Una petita excursió al paradís de Cantor. Auditori Caixa Sabadell. February, 2003. Sabadell (Catalonia).
- La Hipòtesi del Continu. Segon Taller de Fonaments de les Matemàtiques (2WFM). 2-4 July 2003. Barcelona (Catalonia).
- La meva experiència com a investigador ICREA. Palau de la Generalitat. December 29, 2003. Barcelona (Catalonia).
- Una invitació a la Lògica Matemàtica i la Teoria de Conjunts. Universitat Autònoma de Barcelona. March 24, 2004. Bellaterra (Catalonia).
- Quin és el nombre més gran? Respostes i preguntes sobre l'infinit matemàtic. IES Serra de Marina. November 10, 2004. Vilassar de Mar (Catalonia).
- Classifying the axioms of Set Theory: the generic absoluteness programme. Université de la Réunion. December 2004. Saint Denis, La Réunion (France).
- Natural axioms of Set Theory and the Continuum Problem. Università di Pisa. March, 2005. Pisa (Italy).
- Classifying the axioms of Set Theory: the generic absoluteness programme (three 90-minutes sessions). Kobe University. March 2005. Kobe (Japan).
- Explorant l'Infinit. IES Joan Miró. November 10, 2005. Cornellà de Llobregat (Catalonia).
- Atraure i retenir el talent científic a Catalunya: el programa ICREA. Palau de Pedralbes. December 14, 2005. Barcelona (Catalonia).
- Atraer el talento científico: el programa ICREA. Academia de Ciencias. March 30, 2006. Caracas (Venezuela).
- Kurt Gödel's life. Jornadas de la Asociación Matemática Venezolana, Cumaná. April 13, 2006. Cumaná (Venezuela).
- Some consequences of generic absoluteness. Departamento de Matemáticas, Universidad Central. March 29, 2006. Caracas (Venezuela).
- The preservation of Solovay models under projective forcing extensions. University of California, Irvine. November 13, 2006. Irvine, CA (USA).
- Generic absoluteness and combinatorial properties of projective sets of reals. University of California, Los Angeles. November 17, 2006. Los Angeles, CA (USA).
- Un viatge per l'infinit. Setmana de la Ciència, Dia de la Ciència a les Escoles. IES La Garrotxa, Olot (Catalonia). 14 November 2007.
- The Generic Absoluteness of $L(R)$. Chubu University. November 24, 2007. Kasugai, Aichi (Japan).
- Some applications of generic absoluteness in infinite Ramsey theory. Kiel University. November 26, 2008. Kiel (Japan).
- Reflection and absoluteness in set theory. Kiel University. November 28, 2008. Kiel (Germany).
- Large cardinals and accessible categories. Mittag-Leffler Institut. November 18, 2009. Djärsholm (Sweden).
- Omega-logic, the Omega-conjecture, and the Continuum Hypothesis. University of Kobe. Kobe (Japan). 18/10/2011.
- Large cardinals in infinite Abelian group theory. University of Bristol. Bristol (UK). 23/05/2011.
- Structural reflection and large cardinals. Universität Bonn. Bonn (Germany). 24/01/2011.

Large Cardinals in Abelian Group Theory. Université de Paris VII. Paris (France). 12/03/2012.

Topologies on ordinals and hyper-stationary reflection. The Hebrew University. Jerusalem (Israel). 4/05/2012.

Reflection Phenomena in the set-theoretic universe. Harvard Logic Colloquium. Harvard University, Cambridge MA (USA). 20/10/2014.

Mathematical consequences of the existence of very large infinite cardinal numbers. Università della Calabria, Rende (Italy). 12 March 2015.

Structural Reflection and Remarkable Cardinals. Università di Torino (Italy). 27 June 2016.

Un viatge per l'infinit. Setmana de la Ciència, Dia de la Ciència a les Escoles. IES Sant Quirze del Vallès (Catalonia). 19 November 2016.

L'infinit i les seves paradoxes. DITMAE 2017. Figueres (Catalonia). 4 February 2017.

Desarrollo y estado actual de la fundamentación conjuntista de las matemáticas. Jornada Filosofía de las Matemáticas. Universidad de Málaga. 5 May 2017. Málaga (Spain)

L'infinit mathematic i les seves paradoxes. Setmana de la Ciència. Badia del Vallès (Catalonia). 15 November 2017.

L'infinit mathematic i les seves paradoxes. Setmana de la Ciència. Sant Cugat (Catalonia). 14 November 2018.

Symmetry and Self-similarity in the Higher Infinite. University Paris VII. 4 March 2019.

Preserving extendible cardinals under class forcing. Kobe University (Japan). 15 November 2019.

Cardinales muy grandes y la estructura del universo matemático. Bogotá (Colombia). 2 December 2019.

From Strong to Woodin cardinals. A level-by-level analysis of the Weak Vopenka principle. CUNY Set Theory Seminar (Online). 1 May 2020.

Some recent results on Structural Reflection. Bristol Logic and Set Theory Seminar / Oxford Set Theory Seminar (Online). 16 July 2021.

Huge Reflection, and Beyond. New York Set Theory seminar (Online). 3 September 2021.

Explorando el infinito: los cardinales transfinitos y su papel en la matemática. Colegio Mayor Albayzín, Granada (Spain). 4 May 2022.

Structural Reflection on the edge and beyond. Invited talk at the joint Kobe-Waseda Set Theory Seminar. Kobe University, Kobe (Japan). 1 November 2023.

La Teoria de conjunts: els fonaments de la matemàtica i la matemàtica de l'infinit. Bojos per les matemàtiques. Universitat de Barcelona. 20 April 2024.

The Higher Infinite and Its Role in Mathematics. Joint Mathematics Colloquium (ICMAT-UAM-UC3M-UCM) Madrid, 15 April 2024.

On the truth of large cardinal axioms of set theory. Philosophy of Set Theory Group, 11 November 2024 (Online).

Large cardinals beyond HOD. Institute for Research in Fundamental Sciences (IPM), 7 November 2024 (Online), Tehran (Iran).

DOCTORAL STUDENTS

Jordi López Abad

Title of dissertation: *Weakly-Ramsey sets in Banach spaces*
Universitat de Barcelona. Faculty of Mathematics
Graduation date: 5 May 2000
Qualification: Excellent cum laude, by unanimity
Current position : *Catedrático* (Full Professor), UNED (Madrid).

David Asperó i Herrando

Title of dissertation: *Bounded Forcing Axioms and the Continuum*
Universitat de Barcelona, Faculty of Mathematics
Graduation date: 6 July 2000
Qualification: Excellent cum laude, by unanimity
Current position : Associate Professor in Pure Mathematics. University of East Anglia, Norwich, UK.

Roger Bosch i Bastardes

Title of dissertation: *Projective Forcing*
Universitat de Barcelona, Faculty of Philosophy
Graduation date: 12 April 2002

Qualification : Excellent cum laude, by unanimity. UB Doctorate Extraordinary Prize.
Current position: *Professor Titular*. Department of Philosophy, Universidad de Oviedo (SPAIN).

Miguel Angel Mota Gaytán (jointly supervised with Dr. David Asperó Herrando)
Title of dissertation: *Forcing strong combinatorial properties and cardinal arithmetic*
Universitat de Barcelona, Faculty of Philosophy
Graduation date: 23 September 2009
Qualification : Excellent cum laude, by unanimity. European doctorate.
Current position: Professor of Mathematics. ITAM, Mexico.

Konstantinos Tsaprounis
Title of dissertation: *Large cardinals and resurrection axioms*
Universitat de Barcelona, Faculty of Philosophy
Graduation date: 14 December 2012
Qualification : Excellent cum laude by unanimity. UB Doctorate Extraordinary Prize.
Current position: Invited Professor. Univ. of the Aegean (Samos). Greece.

Luz María García Avila
Title of dissertation: *Forcing arguments in infinite Ramsey theory*
Universitat de Barcelona, Faculty of Philosophy
Graduation date: 12 July 2013
Qualification : Excellent cum laude by unanimity
Current position: Professor of Mathematics. UDLAP, Mexico.

Salvador Mancilla
Title of dissertation: *A Generalization of Stationary Reflection and Large Cardinals*
Universitat de Barcelona, Faculty of Philosophy
Graduation date: 22 April 2016
Qualification : Excellent
Current position: *Profesor*. Instituto Tecnológico de Estudios Superiores de Monterrey (Mexico)

Alejandro Poveda
Title of dissertation: *Contributions to the theory of Large Cardinals through the method of Forcing*
Universitat de Barcelona, Faculty of Mathematics
Graduation date: 9 November 2020
Qualification : Excellent cum laude by unanimity. European Doctorate. UB Doctorate Extraordinary Prize.
Current position: Postdoctoral Fellow, CMSA, Harvard University. Previous postdoctoral position: Postdoctoral researcher at Einstein Institute of Mathematics, Hebrew University (Jerusalem)

Zhixing You
(PhD joint training program, Chinese Academy of Sciences, Beijing. Co-supervised with Prof. Liuzhen Wu)
Title of dissertation: *On the δ -strong compactness*
University of Chinese Academy of Sciences
Graduation date: 30 June 2022
Qualification : Outstanding
Current position: Postdoctoral Fellow (with Asaf Rinot), Bar-Ilan University, Israel

Current doctoral students: Marwan S. Mohammd, Martha Catalina Torres. Co-supervisor of Cesare Straffelini (University of Trento, Italy)

POST-DOCS AND MASTERS STUDENTS

6 postdoctoral fellows supervised at CRM (2), and University of Barcelona (4). 14 master students supervised at University of Barcelona.

Recent post-docs:

Philipp Lücke (U. Bonn). Marie Skłodowska Curie Postdoctoral Grant (EU). Period: 2 years, starting in April 2020. Extension to September 2023. Project: "Strong Axioms of Infinity: Frameworks, Interactions and Applications", GA-Nr 842082.

Claudio Ternullo (Rome). Beatriu de Pinós Postdoctoral Grant (Catalan Government). Period: 3 years starting in February 2020. Project: "Mathematical and Philosophical Aspects of a Multiversist Foundations of Set Theory".

VISITORS (Last 10 years)

Samuel Gomes Da Silva. Departamento de Matemática, Universidade Federal da Bahia (Brazil). 10 January to 15 February 2024. Funded by the Brazilian Government.

Pratulananda Das (Jadavpur University, India). 6-20 September 2023.

Carlos A. Di Prisco (Universidad de los Andes, Bogotá, Colombia). From January 10 to July 31, 2023.

Joel D. Hamkins (Notre-Dame University, Indiana, USA). 14-20 March, 2023.

Peter Holy (Vienna). 23-27 May 2022.

Christopher Turner (University of Leeds). 17-21 October 2022.

Jiachen Yuan. UEA (Norwich). From 10 November to 10 December 2021, and from 7 November to 10 December 2022.

Asaf Karagila (University of Leeds). 4-7 February 2020.

Samuel Gomes Da Silva. Departamento de Matemática, Universidade Federal da Bahia (Brazil). 1 November 2018 to 30 June 2019. Funded by the Brazilian Government under the regulations of the call Edital CAPES 45/2017.

Peter Koellner (Harvard). 3 February to 5 March 2017. 23 April to 1 May 2017. 9-12 May 2017.

Samuel Gomes Da Silva (Universidade Federal da Bahia. Instituto de Matemática, Brazil). 20 February to 3 March 2017.

Wieslaw Kubis (Cardinal Stefan Wyszyński University, Warsaw, Poland). 2 weeks, June 2016.

W. Hugh Woodin (Harvard). 25-30 September 2016.

Konstantinos Tsaprounis (Univ. Of Athens, Greece). 18-23 September 2016.

Menachem Magidor (The Hebrew Univ. Of Jerusalem). 2-6 June 2015.

GRANTS (as PI)

INSTITUTION: Ministerio de Ciencia y Tecnología

PROGRAM: Proyectos I+D

TITLE: *Set Theory and its Applications*

Project number: BFM2002-03236 Amount: 47000 €. Years: 2002-2005

PI: Joan Bagaria

INSTITUTION: Generalitat de Catalunya

PROGRAM: Suport a grups de recerca consolidats (SGR)

TITLE: *Grup de Lògica*

Project number: 2002SGR 00126 Amount: 22923 €. Years: 2002-2004

PIs: Joan Bagaria and Enrique Casanovas

INSTITUTION: Ministerio de Ciencia y Tecnología

PROGRAM: Acciones Integradas, Austria

TITLE: *Set Theory*

Amount: 10800 €. Years: 2004,2005

PIs: Joan Bagaria and Sy Friedman

INSTITUTION: Ministerio de Ciencia y Tecnología

PROGRAM: Acciones especiales

TITLE: *Set Theory*

Amount : 30000 €. Years: 2004

PI: Joan Bagaria

INSTITUTION: Ministerio de Educación y Ciencia

PROGRAM: Proyectos I+D

TITLE: *Foundations and Applications of Set Theory*

Project number: MTM2005-01025 Amount: 41000 €. Years: 2006-2008

PI: Joan Bagaria

INSTITUTION: Generalitat de Catalunya
PROGRAM: Suport a grups de recerca consolidats (SGR)
TITLE: *Grup de Lògica*
Project number: 2005SGR-00738 Amount: 28000 €. Years: 2006-2008
PIs: Joan Bagaria and Enrique Casanovas

INSTITUTION: Ministerio de Educación y Ciencia
PROGRAM: Acciones Integradas, Francia
TITLE: *Set Theory*
Project number: HF2005-0044 Amount: 10000 €. Years: 2006, 2007
PIs: Joan Bagaria and Boban Velickovic

INSTITUTION: Ministerio de Educación y Ciencia
PROGRAM: Acciones Integradas, Alemania
TITLE: *Cantor, Husserl, Godel and the Philosophical Foundations of Set Theory*
Project number: HA2006-0108 Amount: 10000 €. Years: 2007, 2008
PIs: Kai Hauser and L. Tengelyi

INSTITUTION: Generalitat de Catalunya
PROGRAM: Accions de Comunicació I Divulgació Científica (ACDC)
TITLE: *Sciencert*
Amount: 5000 €. Years: 2007
PI: Joan Bagaria

INSTITUTION: Ministerio de Ciencia e Innovación (Spanish Government)
PROGRAM: Proyectos I+D+I
TITLE: *Teoría de Conjuntos: perspectivas matemáticas, filosóficas y computacionales*
Project: MTM2008-03389/MTM Amount: 57.700 €. Years: 2009-2011
PI: Joan Bagaria

INSTITUTION: Generalitat de Catalunya
PROGRAM: Suport a grups de recerca consolidats (SGR)
TITLE: *Grup de Lògica*
Project: 2009SGR-00187 Amount: 36.000 Euro. Years: 2010-2014
PIs: Joan Bagaria and Enrique Casanovas

INSTITUTION: ESF
PROGRAM: Research Networking Programmes
TITLE: *New Frontiers of Infinity. Mathematical, Philosophical, and Computational Prospects*
Amount: 500.000 €. Years: 2009-2014
Chairman of the Steering Committee: Joan Bagaria

INSTITUTION: Generalitat de Catalunya
PROGRAM: Accions de Comunicació I Divulgació Científica (ACDC)
TITLE: *Sciencert*
Amount: 6.000 €. Years: 2009
PI: Joan Bagaria

INSTITUTION: Generalitat de Catalunya
PROGRAM: ARCS
TITLE: *Young Researchers in Set Theory Workshop 2009*
Amount: 5.700 €. Years: 2009
PI: Joan Bagaria

INSTITUTION: Generalitat de Catalunya
PROGRAM: ARCS
TITLE: *Logic Colloquium 2011*
Amount: 6.000 €. Years: 2010
Chairman of Organizing Committee: Joan Bagaria

INSTITUTION: MICINN
PROGRAM: Consolider I-MATH
TITLE: *Logic Colloquium 2011*
Amount: 9.000 €. Years: 2010
Chairman of Organizing Committee: Joan Bagaria

INSTITUTION: University of Barcelona. Faculty of Philosophy
PROGRAM: Conference organization grants
TITLE: *Logic Colloquium 2011*
Amount: 1.600 €. Years: 2010
Chairman of Organizing Committee: Joan Bagaria

INSTITUTION: University of Barcelona
PROGRAM: Conference organization grants
TITLE: *Logic Colloquium 2011*
Amount: 1.400 €. Years: 2010
Chairman of Organizing Committee: Joan Bagaria

INSTITUTION: MICINN
PROGRAM: Acciones complementarias
TITLE: *Logic Colloquium 2011*
Amount: 17.600 €. Years: 2011
Chairman of Organizing Committee: Joan Bagaria

INSTITUTION: ASL-NSF
PROGRAM: Travel grants
TITLE: *Logic Colloquium 2011*
Amount: 19.200 €. Years: 2011
Chairman of Organizing Committee: Joan Bagaria

INSTITUTION: Ministerio de Ciencia e Innovación (MICINN)
PROGRAM: Proyectos de investigación fundamental no orientada
TITLE: *Teoría de conjuntos. Fundamentos y aplicaciones de la combinatoria infinita y los cardinales grandes.*
Amount: 47.553 €. Years: 2011-2014
PI: Joan Bagaria

INSTITUTION: University of Barcelona. Faculty of Philosophy
PROGRAM: Conference organization grants
TITLE: *The 4th European Set Theory Conference*
Amount: 1.000 €. Years: 2012-2013
Chairman of Organizing Committee: Joan Bagaria

INSTITUTION: ESF-INFTY RNP
PROGRAM: Conference organization grants
TITLE: *The 4th European Set Theory Conference*
Amount: 15.000 €. Year: 2013
Chairman of Organizing Committee: Joan Bagaria

INSTITUTION: Clay Mathematics Institute
PROGRAM: Conference organization grant
TITLE: *The 4th European Set Theory Conference*
Amount: 18.000 €. Year: 2013
Chairman of Organizing Committee: Joan Bagaria

INSTITUTION: Generalitat de Catalunya
PROGRAM: Suport a grups de recerca consolidats (SGR)
TITLE: Grup de Lògica
Project: 2014SGR-437 Amount: 21.600 Euro. Years: 2015-2017
PIs: Joan Bagaria and Enrique Casanovas

INSTITUTION: Clay Mathematics Institute
PROGRAM: Conference organization grant
TITLE: *Workshop on Large Cardinals and Strong Logics*
Amount: 5.000 €. Year: 2016
Chairman of Organizing Committee: Joan Bagaria

INSTITUTION: Generalitat de Catalunya
PROGRAM: Suport a grups de recerca consolidats (SGR)
TITLE: Grup de Lògica
Project: 2017SGR-270 Amount: 38.400 Euro. Years: 2018-2020
PIs: Joan Bagaria

INSTITUTION: Ministerio de Economía y Competitividad (Spanish Government)

PROGRAM: Programa Estatal de Fomento de la Investigación Científica y Técnica de Excelencia.
TITLE: *Lógica Matemática*.
Project number: MTM2017-86777-P
Amount: 28.100 €. Years: 2018-2021
PIs: Joan Bagaria and Enrique Casanovas

INSTITUTION: Ministerio de Economía y Competitividad (Spanish Government)
PROGRAM: Programa Estatal de Fomento de la Investigación Científica y Técnica de Excelencia.
TITLE: *Lógica Matemática*.
Project number: MTM-PID2020-116773GB-I00
Amount: 22.869 €. Years: 2021-2023
PIs: Joan Bagaria and Enrique Casanovas

INSTITUTION: Ministerio de Ciencia e Innovación (Spanish Government)
PROGRAM: Europa Excelencia.
TITLE: *Set Theory at a Crossroads: Proving the HOD Conjecture*.
Project number: EUR2022-134032
Amount: 89.646,15 €. Years: 2023-2024
PIs: Joan Bagaria

INSTITUTION: Generalitat de Catalunya
PROGRAM: Suport a grups de recerca consolidats (SGR)
TITLE: Grup de Lògica
Project: 2021 SGR 00348 Amount: 40.000 €. Years: 2022-2024
PIs: Joan Bagaria

INSTITUTION: Ministerio de Ciencia, Innovación y Universidades (Spanish Government)
PROGRAM: Proyectos de generación de conocimiento 2023. Investigación no orientada Tipo B.
TITLE: *Lógica Matemática*.
Project number: PID2023-147428NB-I00
Amount: 43.125 €. Years: 2024-2027
PIs: Joan Bagaria and Enrique Casanovas

GRANTS (as team member)

INSTITUTION: European Union
PROGRAM: Research networks
TITLE: Model Theory
Project: RESMOD Amount: 750.000 Pta. Years: 1994 -1996
PI: Felipe Cucker

INSTITUTION: Ministerio de Ciencia y Tecnología (Spain)
PROGRAM: Ayudas a la Investigación
TITLE: Model Theory
Project number: PB98-1231 Amount: 2.500.000 Pta. Years: 2000-2002

INSTITUTION: Ministerio de Educación y Ciencia
PROGRAM: Acciones Integradas, Alemania
TITLE: *Cantor, Husserl, Godel and the Philosophical Foundations of Set Theory*
Project number: HA2006-0108 Amount: 10.000 €. Years: 2007, 2008
PIs: Kai Hauser and L. Tengelyi

INSTITUTION: Ministerio de Economía y Competitividad (Spanish Government)
PROGRAM: Programa Estatal de Fomento de la Investigación Científica y Técnica de Excelencia.
TITLE: *Lógica Matemática*.
Project number: MTM2014-59178-P
Amount: 47.311 €. Years: 2015-2017
PIs: Enrique Casanovas and Joost Joosten (UB)

Other Grants and Fellowships

Fulbright-La Caixa Fellowship. Courses 1985-86 and 1986-87.

Tuition Waivers. University of California, Berkeley. Courses 1987-88, 1988-89, 1989-90 y 1990-91.

Fellowship CIRIT. Generalitat de Catalunya. Courses 1989-90 y 1990-1991.

National Science Foundation, USA. Fall Semester, course 1991-92

Fellowship CIRIT. Generalitat de Catalunya. Spring semester, course 1991-92.

OTHER RELEVANT SCIENTIFIC AND ACADEMIC ACTIVITIES

Member of the Institute of Mathematics of the Universitat de Barcelona (IMUB) (Since 2016).

Organizer (with E. Casanovas and R. Farré) of the Barcelona Logic Seminar (Since 1992).

Member of the Faculty Counsel. Faculty of Philosophy, Universitat de Barcelona (1999 – 2000).

Secretary of the Studies Counsel. Faculty of Philosophy, Universitat de Barcelona (2000 – 2001).

Coordinator of the ICREA Colloquium, the ICREA Workshops (2002-2004), and the ICREA Conferences Awards (2005-2016). Coordinator of the activities ICREA-FCR for the *Science Week*.

Coordinator of the program on Set Theory and its Applications held at the Centre de Recerca Matemàtica (CRM) during the academic year 2003-04, involving 35 visiting researchers from 15 countries, two international conferences and one advanced course, and two weekly seminars.

Member of the Scientific Advisory Board of the Centre de Recerca Matemàtica (CRM), 2004-2007.

Member of the Association of Symbolic Logic (ASL) Nominating Committee. 2004.

Member of the *Comissió Permanent* of the *Consell Català de la Comunicació Científica* (C4), 2004-2016.

Member of the Scientific Policy Committee, University of Barcelona, 2005-2009.

First President of the *European Set Theory Society*. July 2007-December 2011.

Chairman of the ESF Research Networking Programme “New Frontiers of Infinity: Mathematical, Philosophical, and Computational Prospects”. March 2009-March 2014.

Member of the Editorial Board of the European Encyclopedia of Mathematics.

Member of the Executive Committee of the Association for Symbolic Logic. 2014-2017.

Member of the ASL Committee on Logic in Europe. 2015-2020.

Responsible Person of the International Relations Office. Faculty of Philosophy, University of Barcelona. June-December, 2014.

Organiser (with M. Dzamonja and B. Loewe) of the research programme on “Mathematical, Foundational and Computational aspects of the Higher Infinite” (HIF), held at the Isaac Newton Institute, Cambridge University, from 19th August 2015 to 18th December 2015. <http://www.newton.ac.uk/event/HIF>

Simons Fellow. Isaac Newton Institute, Cambridge University, from 19th August 2015 to 18th December 2015.

Member of the Joint Editorial Board of the Bulletin and the Journal of the London Mathematical Society. Since January 2023.

Member of the Scientific Advisory Board of the Catalan Mathematical Society. Since June 2023.

DATE: December 2024
