

## Benjamín Alarcón Heredia

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- CONTACT INFORMATION Avenida 25 de abril 9, 3<sup>o</sup> andar  
2800-300 Almada  
Portugal
- Tel:* +351 918 11 32 58  
*E-mail:* matesico@gmail.com  
*Web:* <http://www.ugr.es/~baheredia/pages/indexeng.html>
- EDUCATION **Ph.D. in Mathematics**, Universidad de Granada. **2015**  
Supervisor: Antonio M. Cegarra  
Cum Laude distinction.
- FisyMat Master Degree**, Universidad de Granada. **2011**  
Average Mark: 9 over 10, (2.8 over 4).
- Mathematics Degree**, Universidad de Granada. **2004 – 2010**  
Average Mark: 9.409 over 10, (3.484 over 4).  
Special distinction.  
Erasmus student in Paris XIII University (France).
- GRANTS **Bolsa de Investigação**, **2015 to present**  
*Fundação para a Ciência e a Tecnologia*  
Universidade Nova de Lisboa/Centro de Matemática e Aplicações.
- FPU**, **2011 – 2015**  
*Ministerio de Educación*.  
Thesis supervisor: Antonio Martínez Cegarra.
- Beca de Colaboración**, **2010**  
*Ministerio de Educación*.  
Realized in the Algebra department of Universidad de Granada.
- Iniciación a la investigación**, **2009**  
*Plan Propio de la Universidad de Granada*.  
Supervised by professor Antonio Martínez Cegarra.
- RESEARCH PROJECTS AND GROUPS **Research Project MTM2011-22554**, **01/01/2012-31/12/2014**  
Leading Researcher: Pilar Carrasco Carrasco  
Contribuciones a la clasificación algebraica de tipos de homotopía.
- Research Group FQM 168**  
Categorías, Álgebra Homológica, Teoría de homotopía  
Coordinator: Antonio Martínez Cegarra
- RESEARCH STAYS **Centre of Australian Category Theory**, **July–September 2013**  
Sydney, Australia.
- The University of Sheffield**, **September–November 2014**  
United Kindom.
- Universitat Politècnica de Catalunya**, **April 2016**  
Barcelona, Spain.

- TEACHING EXPERIENCE Computer classes for **Lógica y Métodos Discretos 2013/14 -2014/15**  
Grado en Ingeniería Informática. (Computer Science)  
Universidad de Granada.
- COMMITTEES Member of the organising committee and webmaster of the “Jornadas en  
Métodos Categóricos y Homotópicos en Álgebra Geometría y Topología”.  
<http://www.ugr.es/~jornadasmchagt/>
- PAPERS **Homotopy colimits of 2-functors,** **2016**  
*Journal of Homotopy and Related Structures* (Online)  
AUTHORS: A.M. Cegarra, B.A. Heredia.  
DOI: 10.1007/s40062-016-0150-2
- On the representations of 2-groups in Baez-Crans  
2-vector spaces,** **2016**  
*Theory and Applications of Categories* 31, pp 907–927  
AUTHORS: B.A. Heredia, J. Elgueta.  
WEB: <http://www.tac.mta.ca/tac/volumes/31/32/31-32abs.html>
- On the third cohomology group of commutative monoids,** **2016**  
*Semigroup Forum* 92, pp 511–533  
AUTHORS: M. Calvo-Cervera, A.M. Cegarra, B.A. Heredia.  
DOI: 10.1007/s00233-015-9696-2
- Bicategorical homotopy pullbacks,** **2015**  
*Theory and Applications of Categories* 30, pp 147–205  
AUTHORS: A.M. Cegarra, B.A. Heredia, J. Remedios.  
WEB: <http://www.tac.mta.ca/tac/volumes/30/6/30-06abs.html>
- Bicategorical homotopy fiber sequences,** **2014**  
*Journal of Homotopy and Related Structures* 9, pp 125–173  
AUTHORS: M. Calvo, A.M. Cegarra, B.A. Heredia.  
DOI: 10.1007/s40062-013-0059-y
- Geometric realizations of tricategories,** **2014**  
*Algebraic & Geometric Topology* 14, pp 1997–2064  
AUTHORS: A.M. Cegarra, B.A. Heredia.  
DOI: 10.2140/agt.2014.14.1997
- Structure and classification of monoidal groupoids,** **2013**  
*Semigroup Forum* 87, pp 35–79  
AUTHORS: M. Calvo, A.M. Cegarra, B.A. Heredia.  
DOI: 10.1007/s00233-013-9470-2
- Double groupoids and homotopy 2-types,** **2012**  
*Applied Categorical Structures* 20, pp 323–378.  
AUTHORS: A.M. Cegarra, B.A. Heredia, J. Remedios.  
DOI: 10.1007/s10485-010-9240-1
- PREPRINTS **Parametrizing Arf numerical semigroups,** **2016**  
AUTORES: P.A. García-Sánchez, B.A. Heredia, H.I. Karakas,  
J.C. Rosales.  
ArXiv: <https://arxiv.org/abs/1604.08929>

**Apéry sets and Feng-Rao numbers over telescopic numerical semigroups,** **2016**  
AUTORES: P.A. García-Sánchez, B.A. Heredia, M.J. Leamer.  
ArXiv: <http://arxiv.org/abs/1603.09301>

TALKS

**Homotopy theory of 2-categories.**  
Encontro Nacional da Sociedade Portuguesa de Matemática.  
Barreiro, July 11–13, 2016.

**Apéry sets and Feng-Rao numbers over telescopic numerical semi-groups.**  
International meeting on numerical semigroups with applications.  
Levico Terme, July 4–8, 2016.

**(Co)límites homotópicos de 2-funtores.**  
Jornadas sobre “Métodos categóricos y homotópicos”.  
Murcia, October 2–3, 2015.

**Bicategorical homotopy pullbacks.**  
97th Peripatetic Seminar on Sheaves and Logic.  
Louvain-la-Neuve, January 31 – February 1, 2015.

**Fibras homotópicas de funtores laxos entre bicategorías.**  
Métodos Homotópicos en Álgebra , Geometría y Topología.  
Barcelona, May 31 – June 1, 2013.

**Le comportement homotopique de la construction de Grothendieck pour bicatégories.**  
Seminaire Algèbre et Topologie Homotopiques.  
Institut de Mathématiques de Jussieu, Paris, April 10, 2013.

**Geometric realizations of tricategories.**  
Workshop on Category Theory.  
Coimbra, July 9–13, 2012.

COURSES

**Itinerario de Especialización IV: Herramientas de colaboración en la web 2.0** **2014**  
Centro de enseñanzas virtuales de la Universidad de Granada.  
Vicerrectorado para la Garantía de la Calidad de la Universidad de Granada.

**La Web Social en la universidad: culturas digitales de lo abierto para aprender en el siglo XXI** **2014**  
Vicerrectorado para la Garantía de la Calidad de la Universidad de Granada.

OTHER SKILLS

**Languages:** High level in Spanish, and English. Intermediate level in Portuguese, and French. Basic level in German.

**Programming:** Extensive knowledge of  $\text{\LaTeX}$ . Fair knowledge of Python, SageMath, Maxima and Prolog. Basic knowledge of GAP, C++, Javascript and Haskell.  
Experience with Git.