



**Name: José Luis Mascareñas**

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<http://www.researcherid.com/rid/A-1208-2015>  
<https://scholar.google.es/citations?user=Htmo8U0AAAAJ&hl=es>

**Education**

BSc: July 1984, University of Santiago de Compostela, Chemistry.

PhD: July 1988, University of Santiago de Compostela, Chemistry.

**Current Position**

- Full Professor (Catedrático), Department of Organic Chemistry, University of Santiago de Compostela, since may 2005.
- **Scientific Director** of the Research Center CIQUS, since 2014.

**Previous Positions**

- FPI. Fellow, University of Santiago de Compostela, 1985–1989.
- Postdoctoral Associate Researcher, **Stanford** University (USA), January 1989–October 1990.
- Postdoctoral Associate Researcher, **Harvard** University (USA), June 1992–October 1992
- Assistant Professor, University of Santiago de Compostela, 1991–1993.
- Associated Professor, University of Santiago de Compostela, 1993–May 2005.
- Visiting Scholar, **Harvard** University (USA), June–October 1995.
- Visiting Professor, University of **Cambridge** (UK), July–August 2009.
- Visiting Scientist, **MIT** (USA), July–August 2013.

**Major honors and awards**

- Habilitation to Full Professor (national competition), Sevilla 2003.
- Janssen Cilag **Organic Chemistry Award** of the Spanish Royal Society of Chemistry (2009).
- President, founder of the **Chemical Biology group** of the Spanish Royal Society of Chemistry (2012).
- **Gold medal** of the University of Santiago de Compostela (2013).
- **Advanced Grant award of the ERC** (2014).
- **Galician** of the year “Grupo Correo Gallego” (2014).
- **GDCh-lecturer**: Humboldt-Universität zu Berlin (January 2015) and Philips Marburg Universität (April 2015).
- **Gold Medal** of the Spanish Royal Society of Chemistry (RSEQ, 2015).
- **Felix Serratos** Lecturership 2015.
- Highlighted on *Angew. Chem. Int. Ed.* as “Personal Profile” (10.1002/anie.201503243), 2015.
- **Spanish representative of EuChemS** in organic chemistry (2015).
- **Selected member of the EURASC** (European Academy of Sciences), 2016.
- **Selected as member of the Kaerton** Foundation and the **Gadea** Foundation for Science (2017).
- **Galician Critic Award in research** (2018).
- **Gold medal of the Galician Royal Academy of Sciences** (2019).
- **Proof of Concept Grant award of the ERC** (2019).
- **ERC Proof-of-Concept Grant** (2020).
- Tech-transfer grants (2021): '**Prueba de concepto**' (AEI) and **CaixaResearch Consolidate** (“la Caixa” foundation).

**Membership and boards**

- Member of *American Chemical Society*, the *Spanish Royal Society of Chemistry*, and the *Spanish Society of Biochemistry and Molecular biology*.
- Member of national and international evaluation committees. Committee of ERC Advanced Grants Evaluation (Brussels, 2014 and 2016)

- Member of directing board of the Organic Chemistry group of the Spanish Royal Society of Chemistry, since 2009.
- Member of the steering committee of European Symposium on Bio-organic Chemistry (ESBOC, UK) since 2010, the Marcial Moreno Mañas School since 2008, the Iberian Peptide Meeting (EPI) since 2007 and the group of Chemical Biology of the RSEQ (since 2011).
- President and founder of the Chemical Biology group of the RSEQ.
- Member of the International editorial advisory board of *ChemBioChem* (since 2007), *Asian Journal of Organic Chemistry* (since 2011), and *ACS Omega* (since 2017).
- Scientific Director of the Center for research in Biological Chemistry and Molecular Materials (CiQUS), since 2014.
- Partner of the MB Use Innovations, S. L. technological company, 2015.
- Spanish representative of EuChemS in organic chemistry, since 2015.
- Member of the Scientific committee of the “*Centro de Estudios Avanzados*” (USC), since 2015.
- Member of the Scientific Assessment Committees: CINBIO (Vigo), CIQSO (Huelva) and IQAC (Barcelona).
- Member of the European Academy of Sciences (EurASc), since 2016.
- Honorary Member of the Argentinian Organic Chemistry Society, since 2017.
- Member of the scientific committee of the Kærtoer and Gadea Foundations, since 2017.
- Member of the Galician Royal Academy of Pharmacy, since 2020.
- Vice-president of the RSEQ, since October 2021.

### Current research

Current research interests split between a synthesis program focused on the development of metal-catalyzed processes, and a chem-biomed program aimed at designing new nucleic acid and protein recognition and sensing tactics and developing cellular probes and biorthogonal metallocatalysts.

### Selected recent publications (out of more than 215)

“*Transition-Metal-Catalyzed Annulations Involving the Activation of C(sp<sup>3</sup>)-H Bonds*” M. Font, M. Gulías, J. L. Mascareñas. *Angew. Chem. Int. Ed.*, **2022**, 61 (6), e202112848

“*Exporting Metal-Carbene Chemistry to Live Mammalian Cells: Copper-Catalyzed Intracellular Synthesis of Quinoxalines Enabled by N-H Carbene Insertions*” S. Gutiérrez, M. Tomás, J. L. Mascareñas. *Angew. Chem. Int. Ed.*, **2021**, 60, 22017–22025

“*Bioorthogonal Azide-Thioalkyne Cycloadditions Catalyzed by Photoactivatable Ru(II) Complexes*” A. Gutierrez, P. Destito, José R. Couceiro, C. Pérez-González, F. López, J. L. Mascareñas. *Angew. Chem. Int. Ed.*, **2021**, 60, 16059–16066

“*Intracellular, Ruthenium-Promoted (2+2+2) Cycloadditions*” J. Miguel-Ávila, M. Tomás, J. L. Mascareñas. *Angew. Chem. Int. Ed.*, **2020**, 59, 17628–17633

“*Intracellular reactions promoted by bis-histidine miniproteins stapled with Pd(II) complexes*” S. Learte, C. Vidal, A. Gutierrez, J. L. Mascareñas. *Angew. Chem. Int. Ed.*, **2020**, 59, 9149–9154

“*Ruthenium-catalyzed redox isomerizations inside living cells*” C. Vidal, M. Tomás-Gamasa, A. Gutiérrez González, J. L. Mascareñas. *J. Am. Chem. Soc.*, **2019**, 141, 5125–5129

“*Palladium-Catalyzed, Enantioselective Formal Cycloaddition between Benzyltriflamides and Allenes: Straightforward Access to Enantioenriched Isoquinolines*” X. Vidal, J. L. Mascareñas, M. Gulías. *J. Am. Chem. Soc.*, **2019**, 141, 1862–1866

“*Gold(I)-catalyzed enantioselective annulations between allenes and alkene-tethered oxime ethers: A straight entry to highly substituted piperidines and aza-bridged medium-sized carbocycles*” D. Cagiao, I. Varela, J. Fernández, J. L. Mascareñas, F. López. *J. Am. Chem. Soc.*, **2018**, 140, 16821–16833

“*Intracellular Deprotection Reactions Mediated by Palladium Complexes Equipped with Designed Phosphine Ligands*” M. Martínez, J. R. Couceiro, P. Destito, J. Rodríguez, J. Mosquera, F. López, J. L. Mascareñas. *ACS Catal.*, **2018**, 8, 6055–6061

“*Rhodium(III)-Catalyzed Annulation of 2-Alkenyl Anilides with Alkynes through C-H Activation: Direct Access to 2- Substituted Indolines*” M. Font, B. Cendón, A. Seoane, J. L. Mascareñas, M. Gulías. *Angew. Chem. Int. Ed.*, **2018**, 57, 8255–8259

“*Concurrent and orthogonal gold(I) and ruthenium (II) catalysis inside living cells*” C. Vidal, M. Tomas-Gamasa, P. Destito, F. Lopez, J. L. Mascareñas. *Nature Communications*, **2018**, 9, 1913

“*Ruthenium-Catalyzed Azide-Thioalkyne Cycloadditions in Aqueous Media: A Mild, Orthogonal, and Biocompatible Chemical Ligation*” P. Destito, J. Couceiro, H. Ferreira, F. López, J. L. Mascareñas. *Angew. Chem. Int. Ed.*, **2017**, 56, 10766–10770

“Anion Recognition as a Supramolecular Switch of Cell Internalization” J. Rodríguez, J. Mosquera, J. Couceiro, Jonathan R. Nitsche, E. Vázquez Sentís, J. L. Mascareñas. *J. Am. Chem. Soc.*, **2017**, *139*, 55–58

“Metal-dependent DNA recognition and cell internalization of designed, basic peptides” S Learte-Aymami, N. Curado, J. Rodríguez, M.E. Vázquez, J.L. Mascareñas. *J. Am. Chem. Soc.* **2017**, *139*, 16188–16193

“Transition metal catalysis in the mitochondria of living cells” M. Tomás Gamasa, M. Martínez, J. Couceiro, J. L. Mascareñas. *Nature Communications*, **2016**, *7*, 12538

“Rhodium-Catalyzed (5+1) Annulations Between 2-Alkenylphenols and Allenes: A Practical Entry to 2, 2-Disubstituted 2H-Chromenes” N. Casanova, A. Seoane, J. L. Mascareñas, M. Gulías. *Angew. Chem. Int. Ed.*, **2015**, *54*, 2374–2377

“Rhodium(III)-Catalyzed Dearomatizing (3+2) Annulation of 2-Alkenylphenols and Alkynes” A. Seoane, N. Casanova, N. Quinones, J. L. Mascareñas, M. Gulías. *J. Am. Chem. Soc.*, **2014**, *136*, 7607–7610

“Straightforward Assembly of Benzoxepines by Means of a Rhodium(III)-Catalyzed C-H Functionalization of *o*-Vinylphenols” A. Seoane, N. Casanova, N. Quinones, J. L. Mascareñas, M. Gulías. *J. Am. Chem. Soc.*, **2014**, *136*, 834–837

“Rhodium(III)-catalyzed intramolecular annulations involving amide-directed C-H activations: synthetic scope and mechanistic studies” N. Quinones, A. Seoane, R. García-Fandino, J. L. Mascareñas, M. Gulías. *Chem. Sci.*, **2013**, *4*, 2874–2879

“Axially Chiral Triazoloisoquinolin-3-ylidene Ligands in Gold(I)-Catalyzed Asymmetric Intermolecular (4+2) Cycloadditions of Allenamides and Dienes” J. Francos, F. Grande-Carmona, H. Faustino, J. Iglesias-Sigüenza, E. Diez, I. Alonso, R. Fernandez, J. M. Lassaletta, F. Lopez, J. L. Mascareñas. *J. Am. Chem. Soc.*, **2012**, *134*, 14322–14325

“Gold-Catalyzed [4C+2C] Cycloadditions of Allenedienes, including an Enantioselective Version with New Phosphoramidite-Based Catalysts: Mechanistic Aspects of the Divergence between [4C+3C] and [4C+2C] Pathways” I. Alonso, B. Trillo, F. Lopez, S. Montserrat, G. Ujaque, L. Castedo, A. Lledos, J. L. Mascareñas. *J. Am. Chem. Soc.*, **2009**, *131*, 13020–13030

## 23 patent applications

### Major on-going funding

- PDC2021-121508-I00 (AEI, MICINN, Spain). Start: January 2021, End: December 2022
- PID2019-108624RB-I00 (AEI, MICINN, Spain). Start: June 2020, End: December 2023
- ED431C 2021/25 (Xunta de Galicia, Spain). Start: January 2021, End: November 2024
- CaixaResearch Consolidate (“la Caixa” foundation, Spain). Start: March 2022, End: March 2024

### Supervision and training

- **41 PhD thesis** supervised, and 15 ongoing.
- More than 85 master and undergrad students supervised.
- 26 postdoctoral associates, 6 currently in the group.
- 5 PhD students of the group gained a **Ramón y Cajal** position, and 3 the award of the RSEQ for young investigators.
- 1 PhD student of the group got the **ERC Starting Grant** (Elena Pazos, 2019).
- 1 PhD student of the group received the Thimie Chemistry Award (M. Gulías), another one the Human Frontier Science Program Career Development Award (E. Vázquez), and another, O. Vazquez got the silver medal European Chemistry Award
- The following former PhD or postdoctoral students have established academic careers as professors: T. Knoerzer (USA), V. Dodero (Argentina, Germany), M. Araya (Chile), G. Bhargava (India), J. Pérez-Sestelo (Spain), A. Rumbo (Spain), M. E. Vázquez (Spain), F. López (Spain), M. Gulías (Spain), O. Vázquez (Marburg), J. B. Blanco (Spain), E. Pazos (Spain), C. Comanezcu (Bucharest), J. Mosquera (Spain), M. Martínez (Spain), M. Tomás-Gamasa (Spain), R. Nelson (Chile), F. Verdugo (Chile).
- The following former PhD or postdoctoral students have joined industrial companies: A. M. Collazo (Gain Therapeutics), S. Vázquez (LEITAT Tech. Center, Barcelona), C. Portela (Lilly), J. R. Garrido (Galchimia), A. Caamaño (Galchimia), A. Delgado (Italfarmaco), N. Quiñones (Galchimia), L. Saya (Eurofins Villapharma Res.), P. Destito (Galchimia), J. Fernández (Zara, Inditex), J. Francos (DuPont Asturias SL), C. Vidal (MSL, Medical Scientific Liaison at Janssen, J&J), J. Couceiro (cofounder of Arnigal Cultivos SL), D. Fernández (Pfizer, US), M. Font (grant consultant, ThePaperMill), B. Cendón (Agomab Therapeutics), S. Learte (MSL, Medical Scientific Liaison at Janssen, J&J), S. Gutiérrez (Lilly Pharm.).
- The following former PhD or postdoctoral students hold postdoctoral positions: H. Faustino (BLC3, PT), M. Sánchez (Imperial College, UK), N. Casanova (Cambridge, UK).
- 7 PhD students of the group were granted with a MSCA fellowship. Many others got postdoctoral and research grants.
- 9 PhD students got the Lilly Award to the best doctoral thesis.

- 1 PhD student among the **10 finalists of Reaxis international award** (Jéssica Rodríguez).
- 1 PhD student among the EYCA 2018 finalist (Jéssica Rodríguez).
- 1 PhD student got the Suschem Predoc Mestrelab Award (Noelia Casanova).
- 1 PhD student got the Chemical Biology Award of the RSEQ (Jéssica Rodríguez).

#### Lectures

- Over 160 invited and plenary lectures in **Symposiums** and in **Research Centers and Universities**

#### Organization of international conferences

- 5th Spanish-Italian Symposium on Organic Chemistry (Santiago, 2004). Member of the organizing committee.
- International Iberian Peptide Meeting (Santiago, 2008). **President** of the organizing committee.
- Prospects in Chemical Sciences (Santiago, 2009). **President** of the organizing committee.
- 4th School on Organometallic Chemistry, Marcial Moreno Mañas (Santiago, 2011). **President** of the organizing panel.
- 1st Biennial Meeting of the Chemical Biology Group (RSEQ) (Santiago, 2012). **President** of the organizing committee.
- Biological Applications of Supramolecular Chemistry, (ESBOC 2013, Gregynog, UK, 16-18th may 2014). **President** of the scientific committee.
- XXV Reunión Bienal De Química Orgánica (Alicante, 4-6th June 2014). Member of the scientific committee.
- VIII International School on Organometallic Chemistry Marcial Moreno Mañas (Sevilla, June 2015). Member of the steering and scientific committee.
- 8th IUPAC International Symposium on Organometallic Chemistry (OMCOS 18; Sitges-Barcelona, June 28th-July 2<sup>nd</sup> 2015). Member of the scientific committee
- XXXV Biennial meeting of Spanish Society of Chemistry (Coruña, 19-23th July 2015). **President** of the scientific committee.
- Euchems Organic Chemistry division, 8th Young Investigator's workshop (Huelva, 16-17th september 2016). Member of the organizing committee.
- Prospects in Chemical Sciences II (Santiago, 2018). **President** of the organizing committee.
- XXXVII Biennial meeting of Spanish Society of Chemistry (San Sebastian, 26-30 May 2019). Member of the scientific committee.