



# Miguel Ángel Berrocal

Researcher in life sciences

## EDUCATION

### M.Sc. in Biophysics, Biochemistry and Biotechnology

Catholic University of Leuven (KUL).  
Graduated *Summa Cum Laude* (2017-19).

### B.Sc. in Biology

Autonomous University of Madrid (UAM).  
Graduated first class honours [>90%] (2013-16).

### ERASMUS+ exchange year

Imperial College London (ICL).  
Second class upper division honours (2015-16).

### Summer course in biotechnology initiation

Francisco de Vitoria University (UFV).  
Scholarship awarded (2012).

## PROFESSIONAL EXPERIENCE

### RESEARCH

#### Master's thesis in human neural organoid development (KUL)

Project developed in mechanical bioengineering involving 3D culture of human iPSC, immunostaining, microscopy in both epifluorescence and confocal microscopes, RNA extraction and qRT-PCR, statistical analysis using R and GraphPad and image analysis with ImageJ (2018-19).

#### Bachelor's thesis in D. melanogaster neurodevelopment (UAM)

Research regarding the developmental pathways of neurons in *Drosophila melanogaster*. Included fly maintenance and crossing dissection of fly embryos, immunostaining, Epifluorescent microscopy and lineage tracing (2016-17).

#### Internship in plant development and yield improvement (ICL)

Erasmus practicals internship using *Arabidopsis thaliana* to study the influence of certain proteins in plant growth. The techniques applied were plant culture, RNA extraction, qRT-PCR and statistical analysis (2016).

#### Internship in biophotography and database management

Generation and management of a database of the fossil collection of the university. This included photography and edition, database management using Microsoft Access and sample identification and categorization (2015).

### WORK

#### Vicepresident of Spanish researchers in Belgium (CEBE)

A non-profit organization that tries to improve the working conditions of researchers. Some of my duties were to negotiate learning agreements with universities, mentor students for internships and represent the member's interests before the government institutions (2019-20).

#### Deputy Ombudsman (UAM)

Our team was in charge of solving all conflicts between members of the university community and generating reports on the problems and difficulties the university could face, proposing future actions to solve them (2016-17).

#### Year representative/member of the Biology commission (UAM)

Elected as representative of the class and additionally elected between representatives as member of the Biology commission to improve the quality and organization of the biology B.Sc. (2013-17).

#### Personal tutor in Science (Colegios Ramón y Cajal)

External teacher for students from 14 to 18 years old in science related subjects (maths, chemistry, biology and physics) (2011-17).

## ACHIEVEMENTS

#### -Awarded La Caixa fellowship for postgraduate studies

Financial support for postgraduate studies and merit recognition (2017-19).

#### -Santander-Georgetown Social Innovation and Financial Inclusion grant

Using science and biotechnology to innovate in finance and inclusion (2017).

#### -Conceded the "Excellence scholarship" by the county of Madrid

Given to students that score higher than 90% in average (2013-14).

#### -3rd place in "Tu lata favorita" by the Polytechnical University of Madrid

Contest to generate ideas on circular economy and engineering (2011).

#### -Winner of the contest "Science in action" in the category of physics and society.

Project in science communication about 3D vision to the general public (2011).

## CONTACT

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Spain, 28043.  
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## INTERESTS

I am a research enthusiast interested in Developmental Biology, specially on the nervous system. I am interested in untangling the intricacy of such a complex system by increasing our knowledge on the generation of the cells and connections of this system.

I am also very driven by the application of science into society. I am highly motivated to make science more effective and bring it closer to the people, while improving the conditions of scientific research itself.

In my free time I enjoy photography, travelling, puzzles and computer gaming. I like to be challenged to enhance my imagination and creativity.

## TECHNICAL SKILLS

- R programming
- SPSS
- GraphPad
- MOE
- Microsoft Office
- ImageJ
- Zen 2.5 Pro (Zeiss)
- Felasa C animal handling certificate
- Cambridge C1 Advanced English title
- European Science Diplomacy Certificate

## PUBLICATIONS

Rubio-Ferrera I., Clambaux-Badell L., [Berrocal-Rubio MA.](#), Baladrón P., Niell N., Gabilondo H. & Benito-Sipos J. **From stem cells to unique neurons: Specification of the *Drosophila melanogaster* Orcokinin A neurons.** IBJ Plus 2018 (S2):e00127.

Fattah A., Daza B., Rustandi G., [Berrocal-Rubio MA.](#), Gorissen B., Poovathingal S., Davie K., Cao X., Rosenzweig DH., Lei Y., Finnell R., Verfaillie C., Sampaolesi M., Dedecker P., Van Oosterwick H., Aerts S., Ranga A. **Actuation Enhances Patterning in Human Neural Tube Organoids.** Nature Materials (Under Review).

## CONFERENCES IN WHICH THE RESEARCH WAS PRESENTED

**17th *Drosophila* Neurobiology Conference (Neurofly). Krakow, Poland (3-7/9/2018).** Orcokinin A neurons: A new model for studying neuronal specification. Rubio-Ferrera I., Clambaux-Badell L., Baladrón P., [Berrocal-Rubio MA.](#), Niell N., Gabilondo H. & Benito-Sipos J.

**1st Brainstorming Research Assembly for Young Scientists (BraYa). Genoa, Italy (29-30/6/2018).** Specification of the *Drosophila melanogaster* Orcokinin A neurons. Rubio-Ferrera I., Clambaux-Badell L., Baladrón P., [Berrocal-Rubio MA.](#), Niell N., Gabilondo H. & Benito-Sipos J.

**1st PhD Research Symposium in Health Sciences and Biomedicine of the Autonomous University of Madrid. Madrid, Spain (18/5/2018).** From Stem cells to unique neurons: Specification of the *Drosophila melanogaster* Orcokinin A neurons. Rubio-Ferrera I., Clambaux-Badell L., [Berrocal-Rubio MA.](#), Baladrón P., Niell N., Gabilondo H. & Benito-Sipos J.

**1st First Steps in the Biology Department of the Autonomous University of Madrid. Madrid, Spain (12/1/2018).** Specification of *Drosophila's* abdominal Orcokinin A neurons. Rubio-Ferrera I., Clambaux-Badell L., [Berrocal-Rubio MA.](#), Niell N., Estella C., Gabilondo H. & Benito-Sipos J.

**4th CNIC PhDay: State of the art. Madrid, Spain (24/11/2017). Best scientific poster award.** Specification of the Orcokinin A neurons: Identifying the progenitor Neuroblast. Rubio-Ferrera I., Clambaux-Badell L., [Berrocal-Rubio MA.](#), Baladrón P., Niell N., Gabilondo H. & Benito-Sipos J.

**Neurobiology of *Drosophila* Cold Spring Harbour Meeting. New York, USA (3-7/10/17).** Specification of *Drosophila's* abdominal Orcokinin A neurons. Rubio-Ferrera I., Clambaux-Badell L., [Berrocal-Rubio MA.](#), Niell N., Estella C., Gabilondo H. & Benito-Sipos J.

## OTHER INTERVENTIONS

**TEDx Youth@CRC. Madrid, Spain (29/10/2020)** El viaje para entender el proceso del aprendizaje. [Berrocal-Rubio, MA.](#)