



CURRICULUM VITAE

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Personal Details

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Reversed chronological timeline

- Assistant Professor at UU, Utrecht, Netherlands.

01/10/2025 - present

- Postdoc at Janelia Research Campus, Ashburn, VA, USA.

04/01/2021-29/09/2025

- Postdoc at Queensland Brain Institute, Brisbane, Australia.

21/04/2020-31/12/2020

- PhD at University of Queensland, School of Biomedical Sciences, Brisbane, Australia.

01/10/2015-20/04/2020

- Research assistant at Instituto de Fisiología Celular, UNAM, Mexico City, Mexico.

14/08/2014-07/11/2014

- Research assistant at INCyL. Universidad de Salamanca, Salamanca, Spain.

15/08/2013-15/07/2014

- Master in Neurosciences at Universidad de Salamanca, Salamanca, Spain.

01/08/2012-15/07/2013



- Bachelor in Psychology at Universidad de Salamanca, Salamanca, Spain.

01/09/2007-22/06/2012

Educational qualifications

– PhD at The University of Queensland (Australia). 01/10/2015-20/04/2020.

PhD Thesis: Visual learning and its underlying neural substrate in two species of teleost fish (Zebrafish and Ambon damselfish). Supervisor: Associate Professor Ethan Scott.

– Master in Neurosciences: University of Salamanca (Spain). 15/07/2013

Master Thesis: The posterior limitans nucleus of the thalamus as target of midbrain auditory centers. Supervisor: Prof Enrique Saldaña.

– Bachelor degree in Psychology: University of Salamanca (Spain). 22/06/2012

Traineeship. Institute of Neurosciences of Castilla y León (INCyL). Laboratory 6 of Neurohistology. Supervisor: Prof Enrique Saldaña.

Attended courses

- Laboratory animal science -basic course and species-specific course rodents and rabbit. December 2025. Utrecht University, Utrecht, Netherlands.
- Interacting with Neural Circuits, from the FENS CAJAL advanced Neuroscience Training Programme. 14 July - 3 August 2019, Champalimaud Centre for the Unknown, Lisbon, Portugal.
- “Training course for researchers in laboratory animal science”. Salamanca, Spain. February of 2013. This course provides official accreditation to perform research with laboratory animals.

Research publications

- Chen AB, Duque M, Rymbek A, Dhanasekar M, Wang VM, Mi X, Tocquer L, Narayan S, Marquez-Legorreta E, Eddison M, Yu G, Wyart C, Prober DA, Engert F, Ahrens MB. (2025). Norepinephrine changes behavioral state through astroglial purinergic signaling. *Science* 388,769-775(2025).DOI:10.1126/science.adq5233
- Zocchi D, Nguyen M, Marquez-Legorreta E, Siwanowicz I, Singh C, Prober DA, Hillman EMC, Ahrens MB. (2024). Days-old zebrafish rapidly learn to recognize threatening agents through noradrenergic and forebrain circuits. *Current Biology*, 35(1):163-176.e4. doi: 10.1016/j.cub.2024.11.057.



- Marquez-Legorreta E, Constantin L, Piber M, Favre-Bulle IA, Taylor MA, Blevins AS, Giacomotto J, Bassett D, Vanwalleghem GC, and Scott EK. (2022). Brain-wide visual habituation networks in wild-type and *fmr1* zebrafish. *Nat Commun* 13, 895; doi: <https://doi.org/10.1038/s41467-022-28299-4>
- *Mancienne, T., *Marquez-Legorreta, E., Wilde, M., Piber, M., Favre-Bulle, I., Vanwalleghem, G., & Scott, E. K. (2021). Contributions of Luminance and Motion to Visual Escape and Habituation in Larval Zebrafish. *Frontiers in neural circuits*, 15, 748535. <https://doi.org/10.3389/fncir.2021.748535>. *Denotes equal contribution
- Isa, T., Marquez-Legorreta, E., Grillner, S., & Scott, E. K. (2021). The tectum/superior colliculus as the vertebrate solution for spatial sensory integration and action. *Current biology: CB*, 31(11), R741–R762. <https://doi.org/10.1016/j.cub.2021.04.001>
- Favre-Bulle, IA, Taylor, MA, Marquez-Legorreta, E, Vanwalleghem G, Poulsen, RE, Rubinsztein-Dunlop, H and Scott, EK. Sound generation in zebrafish with Bio-Opto-Acoustics. *Nat Commun* 11, 6120 (2020). <https://doi.org/10.1038/s41467-020-19982-5>
- Marquez-Legorreta E, Constantin L, Piber M, Favre-Bulle IA, Taylor MA, Vanwalleghem GC, and Scott EK. Brain-wide visual habituation networks in wild-type and *fmr1* zebrafish. *bioRxiv* 722074; doi: <https://doi.org/10.1101/722074>
- Marquez-Legorreta E, Piber M, and Scott EK. (2020) Visual Escape in Larval Zebrafish: Stimuli, Circuits, and Behavior. In: *Behavioral and Neural Genetics of Zebrafish*. Elsevier.
- Marquez-Legorreta E, Horta-Junior JAC, , Berrebi AS, Saldaña E (2016) Organization of the Zone of Transition between the Pretectum and the Thalamus, with Emphasis on the Pretectothalamic Lamina. *Frontiers in Neuroanatomy*. doi: 10.3389/fnana.2016.00082

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Reviewing

-BMC Biology 2021

-Neuroscience 2021



-Current Biology, 2020

Presentations

Oral presentations

- Marquez-Legorreta E, Constantin L, Piber M, Favre-Bulle IA, Taylor MA, Blevins AS, Giacomotto J, Bassett D, Vanwalleghem GC, and Scott EK. Brain-wide visual habituation networks and escape responses to looming stimuli, and the effects of saliency, timing, luminance and motion. International Congress of Neuroethology, Lisbon, Portugal, 2022.
- Marquez-Legorreta E, Constantin L, Piber M, Favre-Bulle IA, Taylor MA, Blevins AS, Giacomotto J, Bassett D, Vanwalleghem GC, and Scott EK. Brain-wide visual habituation networks. Australasian Neuroscience Society Online Conference, 2020.
- Marquez-Legorreta E, Constantin L, Piber M, Favre-Bulle I, Taylor M, Vanwalleghem G, Scott E. Brain-wide visual habituation networks in wild-type and *fmr1* zebrafish. 38th Annual Conference of the Australasian Neuroscience Society, Adelaide, 2019.
- Marquez-Legorreta E, Constantin L, Piber M, Favre-Bulle I, Taylor M, Vanwalleghem G, Scott E. Brain-wide visual habituation networks in wild-type and *fmr1* zebrafish. Zebrafish Neural Circuit and Behaviour, Cold Spring Harbor Laboratories, 2019.
- Marquez-Legorreta E, Favre-Bulle I, Taylor M, Heap, L, Vanwalleghem G, Scott E. Habituation to looming stimuli in zebrafish larvae. 38th Meeting of the Australasian Neuroscience Society, Brisbane, 2018.
- Marquez-Legorreta E, Favre-Bulle I, Taylor M, Heap, L, Vanwalleghem G, Scott E. Habituation to looming stimuli in zebrafish larvae. 9th SBMS International Biomedical Postgraduate Symposium. The University of Queensland, Brisbane, 2018.
- Marquez-Legorreta E, Favre-Bulle I, Taylor M, Heap, L, Vanwalleghem G, Scott E. Habituation to looming stimuli in zebrafish larvae. 19th Australia and New Zealand Zebrafish Meeting, Wollongong, Australia, 2018.
- Marquez-Legorreta E, Bender D, Parker AN, Rosinski C, Siebeck UE. Visual learning in a changing climate. Heron Island Research Station Research Seminars. 9th of June 2017.
- Marquez-Legorreta E, Bender D, Parker AN, Rosinski C, Siebeck UE. Fish visual discrimination and learning in a changing world. 43rd Annual Conference of the Australasian Society for the Study of Animal Behaviour. Katoomba, July of 2016.



Poster presentations

- Marquez-Legorreta E, Favre-Bulle I, Taylor M, Heap, L, Vanwalleghem G, Scott E. Habituation to looming stimuli in zebrafish larvae. International Congress of Neuroethology, Brisbane, Australia, 2018.
- Marquez-Legorreta E, Favre-Bulle I, Taylor M, Heap, L, Vanwalleghem G, Scott E. Zebrafish larvae habituation to looming stimuli. 8th SBMS International Biomedical Postgraduate Symposium. The University of Queensland, 2017.
- Marquez-Legorreta E, Bender D, Parker AN, Rosinski C, Siebeck UE. Fish visual discrimination and learning in a changing world. 7th SBMS International Biomedical Postgraduate Symposium. The University of Queensland, 2016.
- Márquez E, Gómez M, Saldaña E. The posterior limitans nucleus is the main thalamic target of the external cortex and the nucleus of the brachium of the inferior colliculus. 2nd INCyL Local Scientific Event. Salamanca (Spain), October of 2013.
- Márquez E, Bernardo FJ, Jin Y, Gómez-Álvarez M, Aparicio MA, Sloan D, Berrebi AS, Saldaña E. Cajal was right! Multiple direct projections from subcollicular auditory nuclei to the thalamus. 15 Congreso Nacional de la Sociedad Española de Neurociencia (SENC). Oviedo (Spain), September of 2013.
- Márquez E, Gómez M, Saldaña E. The posterior limitans nucleus is the main thalamic target of the external cortex and the nucleus of the brachium of the inferior colliculus. 50th Inner Ear Biology Workshop, Alcalá de Henares (Spain), September of 2013.
- Márquez E, Saldaña E. Sources of projections to the auditory thalamus in the rat. III. Projections of the external cortex of the inferior colliculus. 8th FENS Forum of Neuroscience. Barcelona (Spain), July of 2012.

Teaching

- Co-organizing and teaching for the Course in Computational Neuroscience and Machine Learning Basics in July 2024 in Kigali, Rwanda.
- Co-organizing and teaching for the Course in Computational Neuroscience and Machine Learning Basics in June 2023 in Accra, Ghana.
- Organization, planning and teaching of a practical part of the BIOL 444 : Neurophysiology course in March-April 2023 at Howard University with Dominique Pritchett.



- Tutor at the Janelia-Meyerhoff Undergraduate Summer Program in 2021
- Tutoring for BIO2015: Physiology and Pharmacology of Human Disease, practical classes. School of Biomedical Sciences. Semester 1 2018
- Co-supervision of Master and undergrad students 2018-2020

Outreach

- Co-organizing and teaching for the Course in Computational Neuroscience and Machine Learning Basics in July 2024 in Kigali, Rwanda. <https://trendinafrica.org/trend-camina/>
- Co-organizing and teaching for the Course in Computational Neuroscience and Machine Learning Basics in June 2023 in Accra, Ghana. <https://trendinafrica.org/computational-neuroscience-basics/>
- 2022 and 2023. Volunteer for science classes with Raising Excitement for Science, Engineering and Technology (RESET) and Sugarland elementary school. <https://www.resetonline.org/>
- Volunteer at the Open day of the Moreton Bay Research Station Scholarship. The University of Queensland, Australia. 2015

Grants, scholarships, awards and honours

Grants and scholarships

- ANS support grant, 2019
- UQ HDR International travel scholarship, 2019.
- UQ Career Development Award (CDA), 2019.
- UQ HDR domestic travel scholarship, 2018.
- Terry Walker Award. Australian Coral Reef Society, Australia, 2017.
- Heron Island Research Station Scholarship. The University of Queensland, Australia. 09/2016
- Moreton Bay Research Station Scholarship. The University of Queensland, Australia. 09/2016



- Top Up Assistance Scholarship. Tuition fee award. Granted by The University of Queensland, Australia. From 01/10/2015 to 30/09/2019.
- University of Queensland International Scholarship (UQI). Tuition fee award. Granted by The University of Queensland, Australia. From 01/10/2015 to 30/09/2019
- Scholarship for a PhD abroad (Doctorate degree at The University of Queensland, Australia). Granted by the National Council for Science and Technology of Mexico (CONACyT). From 01/10/2015 to 30/09/2019.
- Scholarship for a Master abroad (Master in Neurosciences of the University of Salamanca, Spain). Granted by the National Council for Science and Technology of Mexico (CONACyT). From 01/09/2012 to 31/07/2014.
- Scholarship for a research assistantship. Institute of Neurosciences of Castilla y León, University of Salamanca (Spain). Granted by the Spanish Ministry of Education. From 15/11/2011 to 30/06/2012

Awards and Prizes

- Oral Presentation Prize, 19th Australia and New Zealand Zebrafish Meeting, Wollongong, Australia, 2018.
- Poster presentation award, 8th SBMS International Biomedical Postgraduate Symposium. The University of Queensland, 2017.
- Master in Neuroscience with Outstanding Achievement Award (which recognizes the best academic performance for the year 2012-2013). University of Salamanca. 12/03/2014.

Research skills

Experimental techniques

- Surgery: Stereotactic surgery, perfusion and dissections.
- Neuroanatomy: Track-tracing techniques, histochemistry, immunolabeling, expansion microscopy, *in situ* hybridization
- Behavioural experiments: Operant conditioning, animal tracking.
- Microscopy: Calcium imaging, confocal, 2-photon.
- Data analysis: Image analysis, MATLAB, R, Python, ImageJ
- Scientific diving

Animal models:



– Rat, mice, Ambon damselfish, zebrafish