

# UAB

Universitat Autònoma  
de Barcelona



**cibersam**  
Centro de Investigación Biomédica En Red  
de Salud Mental



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### Researcher Unique Identifiers

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[ResearchGate](#)

[LinkedIn](#)

### Education and Research Positions

- 2003 BS in Clinical Psychology.** Autonomous University of Barcelona (UAB, Spain).
- 2005 MSc in Psychobiology.** UAB.  
Mentor: Margalida Coll, PhD. UAB, School of Psychology.
- 2010 PhD in Neuroscience.** *Doctoral Extraordinary Prize.* UAB.  
Mentor: Antonio Armario, PhD. UAB, School of Biosciences.
- 2011 Postdoctoral Research Fellow.**  
Advisor: Kerry Ressler, MD, PhD. Emory University, Department of Psychiatry and Behavioral Sciences, Howard Hughes Medical Institute, Yerkes National Primate Research Center. Atlanta, GA, USA.
- 2014 Ramón y Cajal Investigator** (Declined for a position at Harvard). MICINN, Spain.
- 2015-2016 Instructor in Psychiatry** (Faculty position)  
McLean Hospital, Harvard Medical School, MA, USA.
- 2016-2020 Ramón y Cajal Investigator** (Tenure-Track Faculty Position)  
MICINN, Spain; UAB, Institute of Neurosciences.
- 2016 – 2017 Research Associate in Psychiatry**  
McLean Hospital, Harvard Medical School, MA, USA.
- Since 2018 CIBERSAM Researcher**, Group 29  
Instituto de Salud Carlos III, Madrid, Spain  
Parc Tauli Hospital Foundation, Sabadell, Barcelona, Spain.
- 2019-2023 Extraordinary Lecturer**  
Department of Early Childhood Education, Faculty of Education,  
University of Pretoria, South Africa.
- Since 2021 ICREA Research Professor – Full Professor** – at UAB, Institute of Neurosciences.

**Summary**

- **Selected publications:** *Science Advances*, *Nature Communications* (3), *Neuron* (2), *Science Translational Medicine*, *Molecular Psychiatry*, *Biological Psychiatry*, *eLife*, *The Journal of Neuroscience*.
- **>2900 citations** (Google Scholar).
- **>1900 citations** (Scopus).
- **h index** = 25 (Google Scholar); 24 (Scopus).
- Currently supervising **2 master theses**, **5 doctoral theses**, **2 Technicians**, **2 Postdocs** and **1 Marie Skłodowska-Curie Global Postdoctoral Fellowship**.

**Publications** (\*= Corresponding author)**Journals**

1. **Andero R**, Torras-Garcia M, Quiroz-Padilla MF, Costa-Miserachs D, Coll-Andreu M (2007). *Electrical stimulation of the pedunclopontine tegmental nucleus in freely moving awake rats: Time- and site-specific effects on two-way active avoidance conditioning*. **Neurobiology of Learning and Memory**. May; 87(4):510-21.
2. Muñoz-Abellán C, **Andero R**, Nadal R, Armario A (2008). *Marked dissociation between hypothalamus-pituitary-adrenal activation during exposure to immobilization or cat odors and their long-term behavioral effects*. **Psychoneuroendocrinology**. Sep; 33(8):1139-50.
3. Gagliano H, **Andero R**, Armario A, Nadal R (2009). *Repeated amphetamine administration in rats revealed consistency across days and a complete dissociation between locomotor and hypothalamic-pituitary-adrenal axis effects of the drug*. **Psychopharmacology**. Dec;207(3):447-59.
4. Jang SW, Liu X, Chan CB, France SA, Sayeed I, Tang W, Lin X, Xiao G, **Andero R**, Chang Q, Ressler KJ, Ye K (2010). *Deoxygedunin, a natural product with potent neurotrophic activity in mice*. **PLoS One**. Jul 13;5(7):e11528.
5. **Andero R**, Heldt SA, Ye K, Liu X, Armario A, Ressler KJ (2011). *Effect of 7,8-dihydroxyflavone, a small-molecule TrkB agonist, on emotional learning*. **American Journal of Psychiatry**. Feb;168(2):163-72.  
 Comment in: Monteggia LM (2011). *Toward neurotrophin-based therapeutics*. **American Journal of Psychiatry**. Feb;168(2):114-6.
6. **Andero R**, Daviu N, Escorihuela RM, Nadal R, Armario A (2012). *7,8-dihydroxyflavone, a TrkB receptor agonist, blocks long-term spatial memory impairment caused by immobilization stress in rats*. **Hippocampus**. Mar;22(3):399-408.
7. **Andero R** & Ressler KJ (2012). *BDNF and fear extinction: Translating PTSD molecular genetics research in animal models to the clinic*. **Genes, Brain and Behavior**. Jul;11(5):503-12.
8. **Andero R**, Brothers SP, Jovanovic T, Chen YT, Salah-Uddin H, Cameron M, Bannister TD, Almlı L, Stevens JS, Bradley B, Binder EB, Wahlestedt W, Ressler KJ (2013). *Opr1 regulation of amygdala-dependent fear in mice and humans with PTSD*. **Science Translational Medicine**. 5,188ra73.  
 Comment in: Seal KH & Stein MB (2013). *Preventing the pain of PTSD*. **Science Translational Medicine**. 5;5(188):188fs22.
9. **Andero R\***, Dias BG, Ressler KJ (2014). *A role for Tac2, NkB and Nk3 receptor in normal and dysregulated fear memory consolidation*. **Neuron**, Jul;16;83(2):444-54.
10. Dias B, Goodman JV, Ahluwalia R, **Andero R**, Ressler KJ (2014). *Amygdala-dependent fear memory consolidation via miR-34a and Notch signaling*. **Neuron**, Aug;20;83(4):1–13.

Comment in: Yates D (2014). *Learning and memory: consolidation of fear*. **Nature Reviews Neuroscience**. Oct;15(10):630-1.

11. Daviu N, **Andero R**, Armario A, Nadal R (2014). *Sex differences in the behavioural and hypothalamic-pituitary-adrenal response to contextual fear conditioning in rats*. **Hormones and Behavior**, Nov;66(5):713-723.
12. **Andero R\*** (2015). *Nociceptin and the nociceptin receptor in learning and memory*. **Progress in Neuro-Psychopharmacology & Biological Psychiatry**. Oct 1;62:45-50.
13. Young MB, **Andero R**, Ressler KJ, Howell LL (2015). *3,4-Methylenedioxymethamphetamine facilitates fear extinction learning*. **Translational Psychiatry**. Sep 15;5:e634.
14. Rosas-Vidal L, Rodriguez-Romaguera J, **Andero R\*** (2015). *The role of BDNF in reconsolidation of fear memories and its potential clinical relevance*. **Molecular Psychiatry**. Nov;20(11):1264-5.
15. Sawamura T, Klengel T, Jovanovic T, Armario A, Norrholm S, Ressler KJ, **Andero R\*** (2016). *Dexamethasone enhances fear extinction and modulates FKBP5 in a PTSD-like model*. **Neuropsychopharmacology**. Feb;41(3):832-46.
16. **Andero R\***, Daniel S, Guo JD, Bruner R, Seth S, Marvar PJ, Rainnie D, Ressler KJ (2016). *Amygdala-dependent molecular mechanisms of the Tac2 pathway in fear learning*. **Neuropsychopharmacology**. Oct;41(11):2714-22.
17. Galatzer-Levy I, **Andero R**, Sawamura T, Jovanovic T, Papini S, Ressler KJ, Norrholm S (2017). *Abnormal Fear Extinction Phenotypes across Species: Association with FKBP5 and Amelioration through Modification of Amygdala FKBP5 mRNA Expression using Dexamethasone*. **Neuropharmacology**. Dec 23;116:188-195.
18. Wingo AP, Velasco ER, Florido A, Lori A, Choi DC, Jovanovic T, Ressler KJ, **Andero R\***. (2018). *Expression of PPM1F gene is regulated by stress and associated with anxiety and depression*. **Biological Psychiatry**. Feb 1;83(3):284-295.  
  
Comment in: Diehl MM (2018). *It's in the Genes: A New Marker for Sex Differences in Depression and Anxiety*. **Biological Psychiatry**. Feb 1;83(3):e35-e36.
19. Marín-Blasco I, Muñoz-Abellán C, **Andero R**, Nadal R, Armario A (2018). *Neuronal activation after prolonged immobilization: do the same or different neurons respond to a novel stressor?* **Cerebral Cortex**. Apr 1;28(4):1233-1244.
20. Flores Á, Fullana MÀ, Soriano-Mas C, **Andero R\*** (2018). *Lost in translation: how to upgrade fear memory research*. **Molecular Psychiatry**. Nov;23(11):2122-2132.
21. Saravia R, Ten-Blanco M, Julià-Hernández M, Gagliano H, **Andero R**, Armario A, Maldonado R, Berrendero F. (2019). *Concomitant THC and stress adolescent exposure induces impaired fear extinction and related neurobiological changes in adulthood*. **Neuropharmacology**. Jan;144:345-357.
22. Lori A, Maddox S, Sharma S, **Andero R**, Ressler KJ, Smith AK (2019). *Dynamic Patterns of Threat-Associated Gene Expression in the Amygdala and Blood*. **Frontiers in Psychiatry**. Jan 17;9:778.
23. Miron J, Goldberg X, López-Sola C, Nadal R, Armario A, **Andero R**, Giraldo J, Ortiz J, Cardoner N Palao D (2019). *Perceived Stress, Anxiety and Depression Among Undergraduate Students: An Online Survey Study*. **Journal of Depression and Anxiety**. Vol 8 Issue 1.
24. Palao D, Gómez N, Montoro M, Guinovart M, Isabel P, Cebrià A, Aguilar E, Merodio I, López-Solà C, Armario A, Nadal R, **Andero R**, Ortiz J, Giraldo J, Perez V, Alonso J, Cardoner N and CODIRISC group (2019). *Clinical Predictors and Biomarkers of Suicide Attempts in Patients Registered Under the Suicide Risk Protocol: The CODIRISC Project*. **Journal of Depression and Anxiety**. Vol 9 Issue 1.
25. Velasco ER, Florido A, Milad MR, **Andero R\*** (2019). *Sex differences in fear extinction*. **Neuroscience & Biobehavioral Reviews**. May 23;103:81-108.

26. Tortella-Feliu M, Fullana MA, Pérez-Vigil A, Torres X, Chamorro J, Littarelli SA, Solanes A, Ramella-Cravaro V, Vilar A, González-Parra JA, **Andero R**, Reichenberg A, Mataix-Cols D, Vieta E, Fusar-Poli P, Ioannidis JPA, Stein MB, Radua J, Fernández de la Cruz L (2019). *Risk factors for posttraumatic stress disorder: An umbrella review of systematic reviews and meta-analyses*. **Neuroscience & Biobehavioral Reviews**. Dec;107:154-165.
27. Kreuzmann JC, Khalil R, Köhler JC, Mayer D, Florido A, Nadal R, Andero R, Fendt M (2019). *Neuropeptide-S-receptor deficiency affects sex-specific modulation of safety learning by pre-exposure to electric stimuli*. **Genes, Brain and Behavior**. Oct 29:e12621.
28. Domingo-Rodríguez L, Ruiz de Azua I, Dominguez E, Senabre E, Serra I, Kummer S, Navandar M, Baddenhausen S, Hofmann C, **Andero R**, Gerber S, Navarrete M, Dierssen M, Lutz B, Martín-García E, Maldonado R (2020). *A specific prelimbic-nucleus accumbens pathway controls resilience versus vulnerability to food addiction*. **Nature Communications**. Feb 7;11(1):782.
29. Marvar PJ, **Andero R**, Hurlmann R, Lago T, Zelikowsky M, Dabrowska J (2021). *Limbic neuropeptidergic modulators of emotion and their therapeutic potential for anxiety and post-traumatic stress disorder*. Invited Review to **The Journal of Neuroscience**. Feb 3;41(5):901-910.
30. Florido A, Velasco ER, Soto C, Gómez A, Perez-Caballero L, Molina P, Nadal R, Pozo O, Saura CA, **Andero R\*** (2021). *Sex differences in fear memory consolidation via Tac2 signaling in mice*. **Nature Communications**. May 3;12(1):2496.
- Comment in: Le Bras A (2021). *Sex-specific effects of Tac2 blockade on fear memory formation*. **Lab Animal**. 50, page 147.
31. Garcia-Esteve LI, Torres-Gimenez A, Canto M, Roca A, Velasco ER, Echevarria T, **Andero R**, Subira S (2021). *Prevalence and Risk Factors for Acute Stress Disorder in Female Victims of Sexual Assault*. **Psychiatry Research**. Dec; 306:114240.
32. Conde-Dusman MJ, Dey PN, Elía-Zudaire Ó, Rabaneda LG, García-Lira C, Grand T, Briz V, Velasco ER, **Andero R**, Niñerola S, Barco A, Paoletti P, Wesseling JF, Gardoni F, Tavalin SJ, Perez-Otaño I (2021). *Control of protein synthesis and memory by GluN3A-NMDA receptors through inhibition of GIT1/mTORC1 assembly*. **Elife**. Nov 17;10:e71575.
33. Porta-Casteràs D, Cano M, Steward T, **Andero R**, Cardoner N (2022). *The pituitary adenylate cyclase-activating polypeptide system as a sex-specific modulator of hippocampal response to threat stimuli*. **Neurobiology of Stress**. Apr 14;18:100448.
34. Florido A, Moreno E, Canela E, **Andero R\*** (2022). *Opposite-sex effects on recognition memory consolidation after Nk3R blockade mice*. **Biology of Sex Differences**. Jun 11;13(1):28.
35. Velasco ER, Florido A, Flores Á, Senabre E, Gomez-Gomez A, Torres A, Roca A, Norrholm S, Newman EL, Das P, Ross RA, Lori A, Pozo OJ, Ressler KJ, Garcia-Esteve LL, Jovanovic T, **Andero R\*** (2022). *PACAP-PAC1R modulates fear extinction via the ventromedial hypothalamus*. **Nature Communications**. Jul 28;13(1):4374.
36. Florido A, Velasco ER, Monari S, Cano M, Cardoner N, Sandi C, **Andero R**, Perez-Caballero L (2022). *Glucocorticoid-based pharmacotherapies preventing PTSD*. **Neuropharmacology**. Nov 17;224:109344.
37. Molina P, **Andero R**, Armario A. *Restraint or immobilization: a comparison of methodologies for restricting free movement in rodents and their potential impact on physiology and behavior* (2023). **Neuroscience & Biobehavioral Reviews**. May 6:105224.
38. Li Y, **Andero R**, Luchkina NV, Suh J, Ross RA, Lowell BB, Carlezon WA, Ressler KJ, Bolshakov VY (2023). *PACAP-mediated gating of anxiety-controlling circuits*. **bioRxiv**. May 2:2023.05.01.539007.
39. Cardoner N, **Andero R**, Cano M, Marin-Blasco I, Porta-Casteràs D, Serra-Blasco M, Via E, Vicent-Gil M, Portella M (2024). *Impact of Stress on Brain Morphology: Insights into Structural Biomarkers of Stress-related Disorders*. **Current Neuropharmacology**. 22, 935-962.

40. Florido A, Velasco ER, Romero LR, Acharya N, Marin Blasco IJ, Nabás JF, Perez-Caballero L, Rivero G, Olabarrieta E, Nuñez-delMoral A, González-Parra JA, Porta-Casteràs D, Cano M, Steward T, Antony MS, Cardoner N, Torrubia R, Jackson AC, Fullana MA, **Andero R\*** (2024). Sex differences in neural projections of fear memory processing in mice and humans. **Science Advances**. Jul 12;10(28):eadk3365.
41. Florido A, Velasco ER, Soto-Faguás CM, Gomez-Gomez A, Perez-Caballero L, Molina P, Nadal R, Pozo OJ, Saura CA, **Andero R\*** (2024). Author Correction: Sex differences in fear memory consolidation via Tac2 signaling in mice. **Nature Communications**. Jul 18;15(1):6051.
42. Perez-Caballero L, Guillot de Suduiraut I, Romero LR, Grosse J, Sandi C, **Andero R\*** (2024). Corticosterone administration immediately after peripuberty stress exposure does not prevent protracted stress-induced behavioral alterations. **Psychoneuroendocrinology**. Aug 6;170:107164.
43. **Andero R\***, Jovanovic T, Stein MB, Shalev AY (2024). What I was thinking/what I would do differently: Biological markers and mechanisms of mental health. **Journal of Traumatic Stress**. Oct;37(5):731-738.
44. Marin-Blasco I, Vanzo G, Rusco-Portabella J, Perez-Molina L, Romero L, Florido A, **Andero R\*** (2024). Sex differences in prelimbic cortex calcium dynamics during stress and fear learning. **Biology of Sex Differences**. Oct 16;15(1):79.
45. Fabregat-Safont D, Alechaga É, Haro N, Gomez-Gomez À, Velasco ER, Nabás JF, **Andero R**, Pozo OJ (2024). Towards the non-invasive determination of estradiol levels: Development and validation of an LC-MS/MS assay for quantification of salivary estradiol at sub-pg/mL level. **Analytica Chimica Acta**. Dec 1;1331:343313.

### Book chapters

1. **Andero R**, Choi DC and Ressler KJ (2014). *The brain derived neurotrophic factor: TrkB pathway in regulating distributed neural plasticity*. **PMBTS Book series "Molecular Biology of Memory"**.122:169-92.
2. Velasco ER, Florido A, Marin-Blasco I, Molina P, Perez-Caballero L, **Andero R\*** (2021). *Stress Immobilization Inducing Fear Extinction Deficits in Male and Female Mice*. **Springer protocols, Neuromethods**. "Translational Methods for PTSD Research". ISBN 978-1-0716-3217-8. 10.1007/978-1-0716-3218-5.
3. Velasco ER, Florido A, Perez-Caballero L, Marin I, **Andero R\*** (2023). *The Impacts of Sex Differences and Sex Hormones on Fear Extinction*. **Current Topics in Behavioral Neuroscience**. 64:105-132.

### Technical Reports

1. Florido A, Perez-Caballero L, Velasco ER, Molina P, Marín-Blasco I, **Andero R\*** (2021). *Direct and indirect hormonal measurements in fear procedures: rats and mice*. **Current Protocols**. May;1(5):e102.

### Lectures

1. **Hospital Clínic de Barcelona**. *Immobilization as a PTSD-like model in rodents and blockade of its deleterious effects by BDNF agonism*. Spain, 2011.
2. **University of Puerto Rico**. *PTSD animal models and BDNF as modulator of fear extinction*. San Juan, USA, 2012.
3. **Society of Biological Psychiatry**. *A Role for the Tac2 Gene and NK3 Receptor in Fear Memory Consolidation*. San Francisco, USA, 2013.
4. **Society for Neuroscience**. *A Role for the Tac2 Gene and NK3 Receptor in Fear Memory Consolidation*. San Diego, USA, 2013.
5. **Societat Catalana de Recerca i Teràpia del Comportament**. *Prevention of PTSD*. Barcelona, Spain, 2014.

- 6. International Narcotics Research Conference.** *Amygdala-Dependent Fear is Regulated by Oprl1 in Mice and Humans with PTSD.* Montreal, Canada, 2014.
- 7. Central European Institute of Technology.** *Molecular mechanisms in animal models of fear-based disorders.* Brno, Czech Republic, 2014.
- 8. Anxiety and Depression Association of America.** *Dexamethasone suppression enhances fear extinction and modulates FKBP5 in a PTSD-like mouse model.* Miami, USA, 2015.
- 9. Society of Biological Psychiatry.** *HPA Axis Suppression and Fkbp5 Regulation in Enhancing Fear Extinction: A Mouse Model of PTSD.* Toronto, Canada, 2015.
- 10. Gordon Research Seminar - Amygdala in Health & Disease.** *Amygdala-Dependent Molecular Mechanisms of the Tac2 Pathway in Fear Learning.* Easton, Massachusetts, USA, 2015.
- 11. Society for Neuroscience.** *Amygdala-Dependent Molecular Mechanisms of the Tac2 Pathway in Fear Learning.* Chicago, USA, 2015.
- 12. International Society for Traumatic Stress Studies.** *Amygdala-Dependent Fear is Regulated by Oprl1 in Mice and Humans with Posttraumatic Stress Disorder.* New Orleans, USA, 2015.
- 13. International Society for Traumatic Stress Studies.** *Transient Suppression of the Hypothalamic-Pituitary-Adrenal Axis leads to Enhanced Fear Extinction and Dynamic Fkbp5 Regulation in Amygdala.* New Orleans, USA, 2015.
- 14. Societat Catalana de Psiquiatria i Salut Mental.** *Posttraumatic Stress Disorder.* Sitges, Barcelona, Spain, 2016.
- 15. Parc de Recerca Biomèdica.** *Translational Mechanisms of Fear Memories.* Barcelona, Spain, 2016.
- 16. Societat Catalana de Biologia, X Simposi de Neurobiologia.** *Ppm1f is regulated by stress and associated with anxiety and depression.* Barcelona, Spain, 2016.
- 17. World Psychiatry Association International Congress.** *Molecular Mechanisms for the Prevention of Posttraumatic Stress Disorder.* Cape Town, South Africa, 2016.
- 18. Universidad Autónoma de Madrid.** *Translational Mechanisms of Fear Memories.* Madrid, Spain, 2017.  
[Video](#)
- 19. Society of Biological Psychiatry.** *PPM1F is Regulated by Stress and Associated with Anxiety and Depression.* San Diego, USA, 2017.
- 20. XI Annual Congress of Biotechnology – BAC 2017.** *Optogenetics.* Leon, Spain, 2017.
- 21. Annual Meeting of the Japan Neuroscience Society.** *PPM1F is Regulated by Stress and Associated with Anxiety and Depression.* Chiba, Japan, 2017.
- 22. University of Innsbruck.** *Sex differences in fear and anxiety.* Innsbruck, Austria, 2018.
- 23. Mediterranean Neuroscience Society.** *Sex-opposite behavioral and molecular mechanisms of fear memory.* Marrakech, Morocco, 2019.
- 24. National Meeting of the Spanish Society for Neuroscience.** *Novel mechanisms of traumatic stress eliciting anxiety, depression and fear dysregulations in both mice and humans.* Santiago de Compostela, Spain, 2019.
- 25. National Institute of Mental Health.** *Sex-opposite behavioral and molecular mechanisms of fear memory.* Bethesda, USA, 2019.

26. **George Washington University.** *Sex-opposite molecular and behavioral signatures of fear memory consolidation.* Washington DC, USA, 2019.
27. **Rutgers University.** *A drug with opposite sex effects in behavioral and molecular signatures of memory.* New Jersey, USA, 2019.
28. **XV National Meeting of the SECAL.** *Optogenetics and in vivo calcium imaging in freely moving mice.* Sevilla, Spain, 2019.
29. **Rosalind Franklin University.** *Sex-opposite effects of the Tac2 pathway in fear memory consolidation.* Chicago, USA, 2021 (Virtual).
30. **Society of Biological Psychiatry.** *A drug targeting the peptide Neurokinin B receptor with sex-opposite effects in memory,* 2021 (Virtual).
31. **Champalimaud Centre for the Unknown.** *Translational mechanisms of fear memory,* Lisbon, Portugal, 2021 (Virtual).
32. **World Association for Stress Related and Anxiety Disorders.** *PACAP-PAC1R system in females: contributions to fear learning and adaptations to stressors.* Vienna, Austria, 2021.
33. **XXIV National Meeting of Psychiatry.** *Sex differences in the translational mechanisms of fear memory.* València, Spain, 2021.
34. **Society for Neuroscience.** *Sex-opposite effects of the Tac2 pathway in fear memory consolidation.* 2021 (Virtual).
35. **Societat Catalana de Psiquiatria i Salut Mental.** *Sex-differences in fear processing.* Sitges, Barcelona, Spain, 2021.
36. **H2020 ERANET JTC 2019 Midterm Symposium.** *Translational biomarkers of traumatic stress.* 2022 (Virtual).
37. **Instituto de Investigación Sanitaria y Biomédica de Alicante.** *Un fármaco da valentía a los machos y miedo a las hembras.* Alicante, Spain, 2022 (Virtual).
38. **Societat Catalana de Biologia, XII Simposi de Neurobiologia.** *PACAP-PAC1R modulates fear extinction via the ventromedial hypothalamus.* Barcelona, Spain, 2022.
39. **30<sup>th</sup> European Congress of Psychiatry (EPA).** *The Role of PACAP/PAC1R in PTSD: Effects on Fear Extinction via the Ventromedial Hypothalamus.* 2022 (Virtual).
40. **International Traumatic Stress Societies (ISTSS).** *PACAP-PAC1R modulates fear extinction via the ventromedial hypothalamus,* Atlanta, USA, 2022.
41. **Center for OCD, Anxiety & Fear Related Disorders (COARD), University of Florida.** *Translational Mechanisms of Fear Memories.* Gainesville, FL, USA, 2023 (Virtual).
42. **8<sup>th</sup> Congress of Pharmacy, Bulgarian Pharmaceutical Union.** *Sex differences, pharmacology, and memory formation.* Rila, Bulgaria, 2023.
43. **European Meeting of Human Fear Conditioning.** *The neurokinin 3 receptor system and fear modulation in both mice and humans.* Salzburg, Austria, 2023.
44. **Amygdala Gordon Conference (GRC).** *Sex Differences in Neural Projections of Fear Processing in Mice and Humans.* Barcelona, Spain, 2023.
45. **Mediterranean Neuroscience Society (MNS).** *Sex Differences in Neural Projections of Fear Processing in Mice and Humans.* Carthago, Tunisia, 2023.

46. **National Meeting of Psychiatry.** *Animal models of Posttraumatic Stress Disorder.* Salamanca, Spain, 2023.
47. **1st Meeting of the Spanish Stress Network.** *Translational Mechanisms of Fear Memory Lab.* València, Spain, 2023.
48. **American College of Neuropsychopharmacology (ACNP).** *The Tac2 Pathway and Sex Differences in Memory Formation.* Tampa, USA, 2023.
49. **INc-UAB External Advisory Board - Universitat Autònoma de Barcelona.** *Translational Mechanisms of Fear Memory.* Barcelona, Spain, 2024.
50. **Stress and Resilience: Exploring New Horizons in Science and Applications. Global Stress Network. École Polytechnique Fédérale de Lausanne (EPFL).** *Sex differences in neuronal activity of stress and fear.* Lausanne, Switzerland, 2024.
51. **30th International Symposium Controversies in Psychiatry.** *Fear memory mechanisms underlying posttraumatic mental disorders.* Barcelona, Spain, 2024.
52. **Societat Catalana de Biologia, XIII Simposi de Neurobiologia.** *Sex differences in fear memory processing in mice and humans.* Barcelona, Spain, 2024.
53. **Neurobiology of Stress 2024.** *Exploring the Potential of Glucocorticoid Administration During Adolescence to Prevent Stress-Induced Effects.* Boston, United States, 2024.
54. **Seminar on the Use of Human Brain Samples in CIBER Projects.** *Sex differences in neural projections of fear memory processing in mice and humans.* 2024 (Virtual).
55. **National Meeting of Psychiatry.** *Sex differences in brain connectivity of fear in humans and animal models.* San Sebastian, Spain, 2024.
56. **Harvard Bioscience, DSI, European User Group Meeting.** *Behavioral mechanisms of fear memories in mice.* Barcelona, Spain, 2024.

### Plenary Lectures

1. **University of Pretoria.** *Fear.* Pretoria, South Africa, 2018.
2. **InsideScientific** *Sex Differences in Fear Memory.* (Virtual) 2022. [Video](#)
3. **8<sup>th</sup> Congress of Pharmacy – Bulgarian Pharmaceutical Union.** *Sex differences, pharmacology and memory formation.* Rila, Bulgaria, 2023.
4. **International Traumatic Stress Societies (ISTSS).** *What I was thinking/what I would do differently.* Los Angeles, USA, 2023.
5. **Parc de Recerca Biomèdica (PRBB).** *Differential neural projections of memory formation in males and females.* Barcelona, Spain, 2023.
6. **Institute for Neurosciences in Alicante.** *Sex Differences in Neural Projections of Fear Processing in Mice and Humans.* Alicante, Spain, 2024.
7. **Northeastern University.** *Tac2 circuits.* Boston, United States, 2024.
8. **Belgium Campus iTversity.** *Technology and Neuroscience.* Pretoria, South Africa, 2024.
9. **Max Delbrück Center for Molecular Medicine.** *Neural Pathways and Translational Mechanisms in Fear Memory.* Berlin, Germany, 2024.



- 10. Achucarro - Basque Foundation for Science.** *Novel Fear Mechanisms in Humans and Mice.* Bilbao, Spain, 2024.
- 11. University of Coimbra.** *Translational Mechanisms of Fear Memory.* Coimbra, Portugal, 2024.
- 12. Institute for Bioengineering of Catalonia (IBEC).** *Translating fear mechanisms between humans and mice.* Barcelona, Spain, 2024.

### Funding

- 2013 – 2015** **NIH-NIMH** grant R21; \$223,000.  
*Functional dissection of the Tac2-Nk3R pathway to prevent fear consolidation.*  
**PI:** Kerry Ressler. **Co-Investigator:** Raul Andero.
- 2015 – 2018** **NARSAD** Young Investigator Grant; \$65,000.  
*The Tac2 pathway as modulator of fear memories.*  
**PI:** Raul Andero.
- 2016 – 2021** **Ramón y Cajal** Programme, MICIN; 308.600€.  
*Translational Neuroscience.*  
**PI:** Raul Andero.
- 2017 – 2020** **SGR**, Direcció General de Recerca de la Generalitat de Catalunya; 40.000€  
*Neurobiology of stress and vulnerability to psychopathology.*  
**PI:** Antonio Armario. **Investigator** (among others): Raul Andero.
- 2017 – 2020** **RETOS** MCIN; 181.000€.  
*Tac2 microcircuits and macrocircuits in fear learning.*  
**PI:** Raul Andero.
- 2020 – 2023** **ERANET Neuron JTC 2019 H2020**; 825.090€  
*Translational biomarkers of traumatic stress*  
**Coordinator and PI:** Raul Andero 159.780€. **PI's:** Carmen Sandi, Torsten Klengel, and Narcis Cardoner.
- 2022 – 2024** **Fundación BBVA, Beca Leonardo**; 40.000€  
Biomarcador traslacional de la experiencia de estrés traumático. **PI:** Raul Andero.
- 2021 – 2024** **Fundación Alicia Koplowitz**; 45.000€  
*Tratamiento preventivo e identificación de biomarcadores de diagnóstico precoz para el trastorno de estrés postraumático en adolescentes.*  
**PI:** Raul Andero.

### Current Funding

- 2021 – 2025** **Proyectos de Generación de Conocimiento 2023**, MCINN; 284.350€  
*Sex differences in fear memory*  
**PI:** Raul Andero.
- 2022 – 2025** **La Caixa Foundation**; 1.000.000€  
*Involvement of the gut microbiota-brain cross talk in the loss of eating control.*  
Coordinator: Elena Martin, **PI's:** Raul Andero 250.392,75€, José Manuel Fernández-Real.
- 2023 – 2026** **SGR**, Direcció General de Recerca de la Generalitat de Catalunya; 40.000€  
*Neurobiology of stress and vulnerability to psychopathology.*  
**PI:** Roser Nadal. **Investigator** (among others): Raul Andero.

- 2023 – 2025** **Redes de Investigación**, MCINN; *Spanish Network of Stress Research*; 30.000€  
PI: Juan Nacher. **Investigator** (among others): Raul Andero.
- 2023 – 2026** **Proyectos «Europa Excelencia» 2023**, MCIN; 100.000€  
*The Tac2 pathway in memory formation.*  
PI: Raul Andero.
- 2024 – 2027** **Proyectos I+D+i 2020**, MCINN; 325.000€  
*Hypothalamic regulation of fear memory and sex hormones.*  
PI: Raul Andero.
- 2024 – 2027** **European Commission. Marie Skłodowska-Curie Actions**; 285.140,64€  
*PnocMDDSex*  
PI: Raul Andero. Beneficiary: Antonio Florido.

### Ad-hoc reviewer

- **Journals:** Science, Nature Communications, Molecular Psychiatry, Biological Psychiatry, Neurobiology of Stress, Cerebral Cortex, eLife, Neuropsychopharmacology, Journal of Neuroscience, Learning and Memory, European Neuropsychopharmacology, Genes Brain and Behavior, Neuroscience, Biology of Mood & Anxiety Disorders, Epigenomics, Journal of Anxiety disorders, Cognitive Affective & Behavioral Neuroscience, Frontiers in Behavioral Neuroscience, Frontiers in Psychiatry, Frontiers in Molecular Neuroscience, PLOS ONE, Journal of Neural Transmission.
- **Grants:** William Harvey Research Institute Academy - Marie Curie grants (London, UK), Agencia Nacional de Evaluación y Prospectiva (ANEP, Spain), Agencia Española de Investigación (AEI, Spain), Human Frontier Science Program (HFSP, France), French National Research Agency (ANR, France), German Research Foundation (DFG, Germany), ETH Zürich (Switzerland).
- Since 2021 **Editorial board member of Neurobiology of Stress.**
- 2023. **Co-guest editor** with Joanna Dabrowska (Rosalind Franklin University, USA) in **Neuropharmacology** on the Special Issue "*Fear, anxiety and PTSD: from cellular mechanisms to translational approaches*".

### Technology Transfer & Patents

- "*Freezing program for Startle and freezing box control version 1.2.0*" and related hardware in collaboration with Panlab, Harvard Apparatus, 2007.
- "*Video-tracking system SMART versions 2.5.15 and 2.5.16*" in collaboration with Panlab, Harvard Apparatus, 2007.
- **International Patent** Methods of managing conditioned fear with neurokinin receptor antagonists (2015). R. Andero & Kerry J. Ressler. PCT/US2015/037629. Priority country: International Application (PCT).

### Awards / Honors Total >20.000€

- **Postdoctoral Poster Award.** The Atlanta Chapter of the Society for Neuroscience (2010).
- **Extraordinary Doctoral Prize.** UAB (2011).
- **New Investigator Award.** NCDEU: American Society of Clinical Psychopharmacology (2013).
- **Outstanding Postdoc Award.** Emory University, School of Medicine (2013).
- **Career Development Leadership Award.** American Association of Anxiety & Depression (2015).
- **Best Innovation of 2014:** *Repurposed Drug for PTSD.* Emory University (2015).

**- Postdoctoral Travel Awards:**

- Federation of European Neuroscience Societies (2012, 2014).
- Society of Biological Psychiatry's Annual Meeting (2013)
- Wisconsin Symposium on Emotion (2013).
- International Narcotics Research Conference (2014).

**- Faculty Travel Awards:**

- American College of Neuropsychopharmacology (2015).
- Japan Neuroscience Society (2017).

**PhD & Master Theses and TFG (Triball de Fi de Grau)****PhD in Neuroscience**

1. Patricia Molina. **FPU Scholarship** FPU16/05416, MECED. Antonio Armario, PhD (UAB) and Dr. Andero are co-directors. Title: *Identification and manipulation of neural populations in the medial prefrontal cortex by specifically activated by stressful stimuli*. July 2022. Excellent *cum laude*.
2. Antonio Florido. **FI Scholarship** 2018 FI\_B00030, Generalitat de Catalunya. Title: *Macrocircuity and microcircuity of Tac2 pathway in Fear Conditioning*. July 2022. Excellent *cum laude*.
3. Eric Velasco. **FPI Scholarship** BES-2017-080870, MINECO. Title: *Nociceptin and Tac2 pathway as modulators of fear memories*. February 2023. Excellent *cum laude*.

**Master Theses in Neuroscience**

1. Eric Senabre. Title: *Impaired Fear Extinction in Female Mice Previously Exposed to Traumatic Stress*. 13/07/2017. Grade: 8. UAB.
2. Eric Velasco. Title: *Expression of PPM1F gene is regulated by stress and associated with anxiety and depression*. 14/09/2017. Grade: 8.7. UAB.
3. José Antonio González. Title: *Sex dependent effects of silencing the Tac2-CeM neuronal subpopulation on fear memory*. 14/06/2019. Grade: 8.3. UAB.
4. Neha Acharya. Title: *Sex-based differences in CeM-Tac2 projections to the BNST during fear memory consolidation*. 01/07/2022. Grade: 9.48. Programme - Erasmus Mundus Joint Master Degree Biosciences and Bioengineering Innovations for Biohealth Engineering. Precision Medicine (BeinPM). Institutes: University of Grenoble Alpes (France), University of Naples Federico II (Italy), University of Barcelona (Spain). Research work performed at the AnderoLab, UAB.
5. Leire Rodríguez Romero. Title: *Behavioural consequences caused by a PTSD-like model applied in juvenile mice and evaluation of its prevention by corticosterone administration shortly after*. 20/07/2022. Grade: 8.2. UAB.
6. Joaquin Rusco Portabella. Title: *Deciphering the Prelimbic Circuitry in Post-Immobilisation Fear Memory Learning*. 28/06/2023. Grade: 8.1. UAB.
7. Jaime Fabregat Nabás. Title: *Fear conditioning, expression, and extinction: exploring the influences of sex and the menstrual cycle*. 12/07/2023. Grade: 7.9. UAB.
8. Giorgia Vanzo. Title: *Corticosterone as a preventive treatment for PTSD-like model in mice*. 21/03/2024. Grade: 110 *cum laude*. Programme: Master in Molecular and Cell Biology, Alma Mater University of Bologna (Italy) with an internship at Autonomous University of Barcelona (UAB). Research work performed at the AnderoLab, UAB. Grants: Study Grant for Preparation of the Thesis Abroad – University of Bologna, ERASMUS + Mobility for Traineeship Grant.
9. Sonia Marín Wong. Title: *A chemogenetic approach to study the role of the centromedial amygdala in fear learning*. 09/07/2024. Grade: 8.2. UAB.
10. Marta Torrent Bonilla. Title: *Sex-differences in NkB and Nk3R expression in a PTSD mouse model*. 16/09/2024. Grade: 8.3. UAB.
11. Manuel Eduardo Novelo Soto. Title: *Implication of menstrual cycle phase in fear Conditioning, expression, and extinction*. 16/09/2024. Grade: 6.0. UAB

**TFG in Psychobiology**

1. Maria Castillo. Title: *What neural circuits of fear are implicated in anxiety disorders? A systematic revision*. May 2018.
2. Carlos Garcia. Title: *Menstrual cycle, trauma, and the probability to develop PTSD*. May 2019.
3. Ruth Pascual. Title: *The memorization and retrieval of traumatic events in PTSD patients*. May 2019.
4. Noemy Salerno. Title: *Neurobiology of PTSD related to fear and anxiety in both animal models and humans*. May 2020.
5. Julia Carrasco. Title: *El cannabidiol com a tractament del trastorn d'ansietat social, una revisió sistemàtica*. May 2021.
6. David Zamorano. Title: *Epigenetics and PTSD: Psychology changing molecular biology*. May 2021.

**Teaching**

- 2004 – 2005**    **Lecturer of the Psychobiology Department** (4 hours a week)  
School of Psychology, National University of Distance Education (UNED), Spain.
- Since 2017**    **Assistant Professor.**  
Department of Psychobiology and Methodology of Health Sciences; UAB, Spain.
- 2020 - 2024**    **How the Brain Works** (27,5 hours per year). UAB Summer School.  
Instructor at the Summer School with Dr. Elena Martin, UAB, Spain.

**Accreditations for the Spanish and Catalan System**

- 2012**            **“Profesor Ayudante Doctor”**  
ANECA, Spain.
- 2016**            **“Professor Lector”**  
AQU, Generalitat de Catalunya, Spain.
- 2018**            **“Professor Agregat”**  
AQU, Generalitat de Catalunya, Spain.
- 2020**            **“Programa I3”**  
AEI, Spain.
- 2021**            **“Profesor Titular”**  
ANECA, Spain.

**Organization of Scientific Meetings**

- 2011 – 2013**    **Organizer**, Amygdala Social at Society for Neuroscience, ~250 participants, USA.
- 2015**            **Chair**, Symposium at Society of Biological Psychiatry.  
*Understanding Fear Circuits to Identify Effective Treatments*. Toronto, Canada.
- 2016**            **Scientific Committee**, B-Debate.  
*Early Life Experience. Vulnerability or Resilience?* Barcelona, Spain.
- 2017**            **Chair**, Symposium at Society of Biological Psychiatry.  
*New Perspectives for Understanding Networks in Anxiety and Fear-Based Disorders*. San Diego, USA.

- 2017**            **Chair**, Symposium at the National Congress of the Spanish Society for Neuroscience. *Gene Expression in Learning and Memory*. Alicante, Spain.
- 2018 – 2020**    **FENS Programme Officer** for the FENS Forum 2020.
- 2019 – 2021**    **FENS Programme Officer** for the Regional FENS Forum 2021.
- 2020**            **Chair**, 27<sup>th</sup> International symposium on controversies in Psychiatry. *Violence-Induced Psychopathology: Victimization and Stress* (Virtual).
- 2021**            **Chair**, Symposium at the Congress of the World Association for Stress-Related and Anxiety Disorders. *Novel mechanisms and predictive responses in posttraumatic stress disorder and mouse models*. Vienna, Austria.
- 2022**            **Chair**, Symposium at Societat Catalana de Biologia, XII Simposi de Neurobiologia. *Mental and behavioral disorders*. Barcelona, Spain.
- 2023**            **Co-Chair**, Panel at the American College of Neuropsychopharmacology. *The Neuropeptide Tac2 Pathway Regulating Behavior Across Species*. Tampa, USA.

**Selected media coverage** (From > 30 countries) [Full list](#)

[Los Angeles Times](#) [US News](#) [La Vanguardia](#) [Scientific American](#) [Forbes](#) [National Geographic](#)

[El País](#) [Wisconsin Public Radio](#) [Catalunya Radio](#) [SER](#) [BBC](#)

### **Membership to Scientific Societies**

- Molecular and Cellular Cognition Society (MCCS). Since 2008.
- Society for Neuroscience (SfN). 2010-2014 and 2019-2020.
- Spanish Society for Neuroscience (SENC). 2016-2021.
- Federation of European Neuroscience Societies (FENS). 2016-2021.
- Spanish Society of Psychobiology. Since 2016.
- The Japan Neuroscience Society (JNS). 2017-2018.

### **PhD Thesis Jury**

1. *Glutamatergic vestibular neurons sustain motion-induced autonomic and aversive responses*. Pablo Machuca. Directors: Dr. Albert Quintana & Dr. Elisenda Sanz (UAB, Spain). July 2020.
2. *Involvement of pre-proenkephalin and Sigma-1 receptors in nicotine addiction*. Sami Kummer. Directors: Dr. Rafael Maldonado & Dr. Elena Martín-García (UPF, Spain) and Dr. Ana Montero (Esteve Laboratories). September 2020.
3. *Unraveling the role of dopamine signaling in the extended amygdala during defensive behaviors*. Laia Castell. Director: Emmanuel Valjent (University of Montpellier, INSERM, France). December 2020.
4. *Characterization of the pathological role of the cerebellum in a mouse model of autism*. Marta Fernández. Director: Dr. Olga Peñagarikano (UPV, Spain). November 2021.
5. *Study of molecular targets and neurobiological mechanisms involved in compulsive overeating*. Ana Maria Gallego Román. Directors: Rafael Maldonado López, Elena Martín García, Miquel Martín Sánchez (UPF, Spain). May 2022.
6. *Characterization of a mouse model of autism: focus on the excitatory/inhibitory and dopaminergic pathways*. Directors: Dr. Olga Peñagarikano and Dr. Shira Knafo (UPV, Spain). October 2023.

### **Outreach Activities**

- 2011**            **Judge** at Gwinnett Science & Engineering Fair (High School), GA, USA.

- 2011 - 2014** **Guest Scientist** at Brain Awareness Outreach (Atlanta Chapter of the SfN, GA, USA):
- Montgomery Elementary School, 2011 and 2012.
  - Holy Innocents Episcopal School, 2013.
  - Georgia Dome, both Elementary and High school students, 2014.
- 2014** **Guest Scientist** at [Goose Pumps! The Science of Fear](#). Fernbank Museum, Atlanta, GA, USA.
- 2016** **Teacher**, *El cervell: l'última frontera del coneixement*. Institut de Ciències de l'Educació, UAB, Spain.
- 2016 to 2019** **Promotion and Outreach** of the UAB in high schools.
- 2017** **Instructor**. *La neuroestimulación en psicopatologías*. Institut de Ciències de l'Educació, UAB, Spain.
- 2017** **Guest Scientist** at [YoMo: The Youth Mobile Festival](#). Barcelona, Spain.
- Since 2019** **EscoLab**. Engaging through neuroscience with local high school students.
- Since 2021** **Barcelona International Youth Science Challenge**, Fundació Catalunya la Pedrera. [The neurobiology of trauma: effects on behavior and brain function](#). International high school students visiting my lab.
- 2024** **Instructor**. How the Brain Works. School Jesús, Maria i Josep. Barcelona, Spain. **Catalonian Researchers' Night 2024-2025 ISGlobal**.