

**Susanna Molas Casacuberta, Ph.D.**

Assistant Professor, Department of Psychology and Neuroscience  
 Faculty Fellow, Institute for Behavioral Genetics  
 University of Colorado Boulder  
 Boulder, CO



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**Education and Training**

<b>Postdoctoral Researcher</b>	2014 – 2021
Dept. of Neurobiology/Brudnick Neuropsychiatric Research Institute (BNRI) UMass Chan Medical School, Worcester, MA Supervisor: Dr. Andrew R Tapper	
<b>Ph.D. Biomedicine</b> ( <i>with highest distinction, Excellent Cum Laude</i> )	2008 – 2012
Pompeu Fabra University, Barcelona, Spain Thesis Title: <i>Nicotine addiction phenotypes in a BAC transgenic mouse model overexpressing the CHRNA5/A3/B4 genomic cluster</i> Supervisor: Dr. Mara Dierssen	
<b>M.S. Biomedical Research</b> , Pompeu Fabra University, Barcelona, Spain	2007 – 2008
<b>B.S. Biotechnology</b> ( <i>with Honors</i> ), Autonomous University of Barcelona, Spain	2003 – 2007

**Professional Appointments**

<b>Assistant Professor</b>	2023 – Present
Dept. of Psychology and Neuroscience, University of Colorado Boulder, Boulder, CO	
<b>Faculty Fellow</b>	2023 – Present
Institute for Behavioral Genetics (IBG), University of Colorado Boulder, Boulder, CO	
<b>Faculty Member</b>	2023 – Present
Center for Neuroscience, University of Colorado Boulder, Boulder, CO	
<b>Member</b>	2023 – Present
Linda Crnic Institute for Down Syndrome Research, CO	
<b>Instructor (NTT Faculty)</b>	2021 – 2022
Dept. of Neurobiology/BNRI, UMass Chan Medical School, Worcester, MA	
<b>Senior Research Scientist</b>	2012 – 2014
Prous Institute for Biomedical Research, Barcelona, Spain	

**Funding Support****Ongoing Research Funding**

Colorado Clinical and Translational Sciences Institute (CCTSI)	2024 – 2025
CO-Pilot Diversity Grant (CO-D-14-111)	
<i>Principal Investigator:</i> Susanna Molas	Total: \$40,000
<i>Title:</i> Neuronal basis of sociability deficits during nicotine withdrawal	
Brain & Behavior Research Foundation (BBRF)	2022 – 2025
2021 BBRF Young Investigator Grant-30616	
<i>Principal Investigator:</i> Susanna Molas	Total: \$70,000
<i>Title:</i> Interpeduncular-tegmentum circuit function analysis in anxiety	

**Training Grants**

NIMH-NATIONAL INSTITUTE OF MENTAL HEALTH	2020 – 2025
T32 MH016880-41 “Research Training: Mental Health Behavior Genetics”	
<i>Principal Investigators:</i> Matthew Keller & Naomi Friedman	<i>Role:</i> Co-Investigator

## Completed Research Funding

NIMH-NATIONAL INSTITUTE OF MENTAL HEALTH  
1R21 MH129040-01

2022 – 2024

Principal Investigator: Andrew R Tapper

Role: Co-I

Title: A role for the interpeduncular nucleus in innate defensive behaviors

Research and Innovation Office (RIO), University of Colorado Boulder  
Core Facility Voucher Program (CFVP FY24)

2024

Principal Investigator: Susanna Molas

Total: \$2,500

Title: Identifying neuronal ensembles of threat processing

## Highlighted Publications

- 1) Williams EW, Snively L, O'Meara B, Jacobs H, Kolb M, Zhao-Shea R, Baratta MV, Tapper AR and **Molas S**<sup>✉</sup>. Interpeduncular GABAergic function controls threat processing and innate defensive adaptive learning. (*This manuscript is currently in revision in Molecular Psychiatry, 2024MP001351*)
- 2) Gimenez-Gomez P, Lee T, Zinter M, M'Angale P, Laforet-Duran V, Freels TG, Pavchinskiy R, **Molas S**, Schafer DP, Tapper AR, Thomson T, Martin GE. An orbitocortical-thalamic circuit suppresses alcohol binge-drinking. (*Nature Neuroscience, Accepted*). PM 39005328
- 3) Keppler E & **Molas S**<sup>✉</sup>. Prompting social investigation. *eLife*. (2024). PMID: 38865180.
- 4) **Molas S**<sup>✉</sup>, Freels TG, Zhao-Shea R, Lee T, Gimenez-Gomez P, Barbini M, Martin GE, Tapper AR<sup>✉</sup>. Dopamine control of social novelty preference is constrained by an interpeduncular-tegmentum circuit. *Nat Commun*. 15(1):2891(2024). PMID:38570514.
- 5) Klenowski PM, Zhao-Shea R, Freels TG, **Molas S**, Zinter M, M'Angale P, Xiao C, Martinez-Nunez L, Thomson T, Tapper AR. A neural coping mechanism linking stress-induced anxiety to motivation for reward. *Sci Adv*. 9(49):eadh9620(2023). PMID: 38055830.
- 6) **Molas S**<sup>\*</sup>, Zhao-Shea R<sup>\*</sup>, Freels TG, Tapper AR. Viral Tracing Confirms Paranigral Ventral Tegmental Area Dopaminergic Inputs to the Interpeduncular Nucleus Where Dopamine Release Encodes Motivated Exploration. *eNeuro*. 10(1):ENEURO.0282-22.2022 (2023). PMID: 36599671.
- 7) Klenowski PM, Zhao-Shea R, Freels TG, **Molas S**, Tapper AR. Dynamic activity of interpeduncular nucleus GABAergic neurons controls expression of nicotine withdrawal in male mice. *Neuropsychopharmacology*. 47(3):641-651(2022). PMID:34326477.
- 8) Tapper AR, **Molas S**<sup>✉</sup>. Midbrain circuits of novelty processing. *Neurobiol Learn Mem*. 176:107323 (2020). PMID: 33053429
- 9) **Molas S**, Zhao-Shea R, Liu L, DeGroot SR, Gardner PD, Tapper AR. A circuit-based mechanism underlying familiarity signaling and the preference for novelty. *Nat Neurosci*. 20 (9):1260-1268 (2017). PMID:28714952.
- 10) **Molas S**, DeGroot SR, Zhao-Shea R, Tapper AR. Anxiety and Nicotine Dependence: Emerging Role of the Habenulo-Interpeduncular Axis. *Trends Pharmacol Sci*. 38(2): 169-180 (2017). PMID:27890353

## Completed list:

<https://www.ncbi.nlm.nih.gov/myncbi/susanna.molas%20casacuberta.1/bibliography/public/>

## Fellowships, Honors and Awards

ACNP Travel Award	2024
ACNP Travel Award (Award not received but my application was highly valued and obtained a waive registration to attend the 2023 ACNP Meeting in Tampa, FL)	2023
BBRF Young Investigator Grant	2021
Best Poster Award, CRG Symposium (Barcelona, Spain)	2012
JAE Predoctoral Fellowship (CSIC, Spain)	2008
B.S. Extraordinary Award (Autonomous University of Barcelona, Spain)	2007

## Peer-Review Responsibilities

### Grant Reviewer (National/International)

French National Research Agency (ANR), AAPG Projects, France

Spring 2024

RIO Seed Program Grant, University of Colorado Boulder	Spring 2024
AB Nexus Research Collaboration Grant Program, University of Colorado	Spring 2023
Agencia Estatal de Investigación, Proyectos RETOS de Investigación, Spain	Spring 2022
“Subdivisión de Coordinación y Evaluación de la Agencia Estatal de Investigación”	
Swiss National Science Foundation (SNSF), SNSF Advanced Grants, Switzerland	Fall 2022
Agencia Estatal de Investigación, Programa Juan de la Cierva Formación, Spain	Spring 2021
“Subdivisión de Coordinación y Evaluación de la Agencia Estatal de Investigación”	

### **Member in Panels/Boards (National/International)**

IBG Undergraduate Research Opportunity (IURO) Chair Committee, CU Boulder	Fall 2024
Cluster Hire Search Committee, Dept. PSYC NEURO/MCDB/IPHY, CU Boulder	Fall 2024
Faculty Hiring Search Committee IBG, CU Boulder	Spring 2024
Honor Council Representative, Committee Member in 7 Honor Thesis, CU Boulder	Spring 2024
External Dissertation Committee Member, Autonomous University of Barcelona, Spain	2023
External Dissertation Committee Member, Pompeu Fabra University, Spain	2023
Abstract Reviewer, Society for Research on Nicotine and Tobacco	2022
External Dissertation Committee Member, Complutense University of Madrid, Spain	2020

### **Reviewer in Peer-Reviewed Journals**

Communications Biology ♦ Nature Communications ♦ eLife ♦ Trends in Neuroscience ♦ Neuroscience and Biobehavioral Reviews ♦ BMC Biology ♦ Frontiers in Learning and Memory ♦ Behavioural Brain Research

## **Contribution to Scientific Conferences and Meetings**

### **Organization of Symposiums**

Co-Chair, Symposium “Habenula function: from neurobiology to psychiatric implications”	06/2025
Mediterranean Neuroscience Society Conference, Greece	
Organizer and Co-Chair, Symposium “Brain Circuits for Novelty and Familiarity”	2022
International Behavioral Neuroscience Society (IBNS) Meeting	

### **Invited Talks**

Society for Neuroscience Annual Meeting, Chicago, IL, US	10/2024
Rocky Mountain Psychological Association, keynote speaker, Denver, CO, US	04/2024
Behavioral Neuroscience Program Annual Retreat, keynote speaker, CO, US	08/2023
International Behavioral Neuroscience Society (IBNS) Meeting, Glasgow, Scotland	06/2022
Institut Hospital del Mar d’Investigacions Biomediques (IMIM), Barcelona, Spain	04/2022
University of Colorado Boulder, Institute for Behavioral Genetics (IBG), Colorado, US	02/2022
Rutgers University, Center for Molecular and Behavioral Neuroscience, New Jersey, US	01/2022
Harvard Medical School, INCEPT Program, Boston, MA, US	02/2021
Eunice Kennedy Shriver Center, UMass Chan Medical School, MA, US	02/2020
Autonomous University of Barcelona, Neurosciences Institute, Spain	06/2019
Achucarro Basque Center for Neuroscience, Leioa, Spain	06/2019
University of Bourgogne Franche-Comte, Dept. of Neurosciences, France	04/2018
Centre for Psychiatry and Neurosciences, Paris, France	04/2018
McGill University, Centre for Research in Neuroscience, Montreal, Canada	02/2018
Yale University, Dept. of Neuroscience, New Haven, Connecticut, US	01/2018

### **Poster Presentations**

Winter Brain Conference Meeting, Lake Tahoe, CA, US	01/2025
American College of Neuropharmacology (ACNP) Meeting, Phoenix, AZ, US	12/2024
Society for Neuroscience Annual Meeting, Chicago, IL, US	10/2024
Winter Brain Conference Meeting, Breckenridge, CO, US	01/2024
American College of Neuropharmacology (ACNP) Meeting, Tampa, FL, US	12/2023
46 <sup>th</sup> Annual Research Society on Alcohol (RSA) Scientific Meeting, Bellevue, WA	06/2023
IBG Mini-Conference, CU Boulder, CO, US	05/2023
Undergraduate Research Day, CU Boulder, CO, US	05/2023
20 <sup>th</sup> Department of Neurobiology Anniversary, UMass Chan Medical School	11/2022
51 <sup>st</sup> Society for Neuroscience Annual Meeting, Virtual Format	11/2022

50 <sup>th</sup> Society for Neuroscience Annual Meeting, Virtual Format	11/2021
49 <sup>th</sup> Society for Neuroscience Annual Meeting, Chicago (IL), US	10/2019
18 <sup>th</sup> National Meeting of the Spanish Society of Neuroscience, Sant. Comp, Spain	09/2019
47 <sup>th</sup> Society for Neuroscience Annual Meeting, Washington (DC), US	11/2017
45 <sup>th</sup> Society for Neuroscience Annual Meeting, Chicago (IL), US	10/2015
8 <sup>th</sup> FENS Forum of Neuroscience, Barcelona, Spain	07/2012
7 <sup>th</sup> FENS Forum of Neuroscience, Amsterdam, The Netherlands	07/2010
8 <sup>th</sup> National Meeting of the Spanish Society of Neuroscience, Tarragona, Spain	09/2009
7 <sup>th</sup> Neurobiology Symposium, Catalan Society of Biology, Barcelona, Spain	10/2008
4 <sup>th</sup> Cajal Winter Conference, Benasque, Spain	02/2008

### Leadership and Teaching Experience

PSYC 7102-801 Sem-Behavioral Genetics (Graduate level), CU Boulder, CO	Fall 2024
NRSC/PSYC 4545 Neurobiology of Addiction (Undergraduate level), CU Boulder, CO	Spring 2024 & 2025
NRSC/PSYC 7102 Special Topics: Circuits and Genetics of Motivation and Emotional Behaviors in Mental Health (Graduate level), CU Boulder, CO	Spring 2023& 2025
IBG DEI Committee Member, IBG, CU Boulder, CO	2023 - Present
Career Development Lecture, “Españoles Científicos en USA, ECUSA)	2023
Neuro Foundation Sessions, Discussion Leader, UMass Chan, Worcester, MA	2021
Dissertation Committee Member, Complutense University of Madrid, Spain	2020
Teaching Assistant, Master Course of Neurosciences, Barcelona, Spain	2011-2013

### Diversity, Equity and Inclusion Commitment

Member, IBG Diversity Equity and Inclusion (DEI) Committee	2023 – Present
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**Personal Statement:** *As a Hispanic woman coming from a rural, low socioeconomic status -I am a first generation of scientists with parents lacking a college degree; the first member of my family (150+ direct relatives) that obtained a Ph.D. and the only one living abroad my country to pursue a research career- I feel strongly committed to support underrepresented minorities, based on my own background, past experiences, and my expectations. For the last years, I have been advocating and mentoring students preferentially from undeserved groups (see below). As a member of the IBG DEI Committee, I continue to foster DEI principles and give an opportunity to minorities to follow a successful professional career.*

### Supervision and Mentorship of Students

#### Current Students

Elora Williams, Graduate student, Behavioral Neuroscience (BN) program, CU Boulder	01/2023 – Present
Emma Keppler (**), Graduate student, IQ-Bio Program and BN Program, CU	08/2023 – Present
Leshia Snively, Research Assistant, CU Boulder	08/2023 - Present
Miranda Kolb (**), Undergraduate student, CU Boulder	03/2023 – Present
June Means, Undergraduate student, CU Boulder	01/2024 - Present
Patrick Simpson, Undergraduate student, CU Boulder	09/2024 – Present
Fiona Hoehl, Undergraduate student, CU Boulder	09/2024 – Present
Aisha Chugh, Research Assistant, CU Boulder	12/2024 – Present

#### Former Students

Melissa Brito Nunez (**), Undergraduate student, CU Boulder	06/2024 – 09/2024
Benjamin O’Meara, Undergraduate student, CU Boulder (Honor Thesis April 2024)	01/2023 – 05/2024
Hannah Jacobs (**), Undergraduate student, CU Boulder (Honor Thesis April 2024)	03/2023 – 05/2024
Ashanti J Cannon-Turner (**), Undergraduate student, CU (Honor Thesis April 2024)	03/2023 – 05/2024
Lila Mosberger, High School student, Fairview High School Science Program.	11/2023 – 03/2024
Nicholas Johnson, MCDB Graduate student, CU Boulder	03/2024 – 04/2024
Yessenia Ivette Mancha (**), Summer intern, CU Boulder (currently a PRA in the Anschutz Medical Campus, since 10/2023)	06/2023 – 09/2023
Jaden Stillman, Summer intern, Berkeley University, CU Boulder	06/2023 – 07/2023
Carissa Bruno, Rotation student, UMass Chan Medical School (currently a PhD student at the UMass Chan)	10/2022 – 12/2022
Melanie Barbini, Rotation student, UMass Chan Medical School	06/2021 – 07/2021

(currently a PhD student at the UMass Chan)	
Pablo Gimenez, Graduate student, Complutense University of Madrid, Spain	09/2019 – 12/2019
(currently a postdoctoral fellow at the UMass Chan)	
Ian Lane (**), Research coordinator, UMass Chan Medical School	01/2019 – 04/2019
Amy Cheung, Rotation student, UMass Chan Medical School	10/2017 – 12/2017
Benjamin Cerel, Undergraduate student, Trinity College-Hartford, MA, US	06/2016 – 08/2016
Stefania Khoda (**), Undergraduate student, Holy Cross College, MA, US	06/2015 – 08/2015
Júlia Albaigès, Graduate student, Center for Genomic Regulation, Spain	09/2013 – 03/2014

**\*\*Denotes individuals from underrepresented minorities**

### **Students Honors and Awards (Since January 2023)**

WCBR Travel Award (Elora Williams)	10/2024
SfN Trainee Professional Development Award (Elora Williams)	08/2024
ARCS Scholarship (Elora Williams)	07/2024
Psychology and Neuroscience Leadership Award, CU Boulder (Benjamin O'Meara)	04/2024
Summer Undergraduate Research Fellowship (SURF), CU Boulder (Melissa Brito Nunez)	04/2024
Undergraduate Research Opportunities Program (UROP), CU Boulder (Miranda Kolb)	04/2024
ARCS Scholarship (Elora Williams)	05/2023
Jacob Van Ek Scholar Award (Benjamin O'Meara)	04/2023
Imogene Jacob Award (Benjamin O'Meara)	04/2023
Interdisciplinary Quantitative Biology Fellowship (Emma Keppler)	02/2023

### **Educational/Outreach Activities**

Outreach Program to High School Students, Boulder, CO, US	2023
Central MA Regional Brain Bee, Dept. of Psychiatry, UMass Chan, Worcester, MA, US	2019
Neurodesconferencia, Centre Cívic la Sedeta, Barcelona, Spain	2013
General Talk of Neurosciences, Brain Awareness Week, CRG, Spain	2010
VI Brain Fair "The illusions of the brain", Fabra i Coats, Barcelona, Spain	2009
V Brain Fair "The illusions of the brain", Razzmatazz, Barcelona, Spain	2008
V Brain Fair "The illusions of the brain", Razzmatazz, Barcelona, Spain	2008

### **Career Breaks**

COVID-19 Global Pandemic	2020
Maternity leave (childbirth)	2018
Maternity leave (childbirth)	2017