Constanza Ilarraz

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Education

- **PhD in Pharmacy and Biochemistry, Health Sciences specialization.** University of Buenos Aires. *In progress.*
  Dissertation project: Encoding of pain unpleasantness in cortico-striatal neurons of the anterior cingulate cortex.
  Advisor: Fernando Kasanetz, PhD.
- **Licenciate degree in Psychology (U.S. equivalency: bachelor's and master's degree).** University of Buenos Aires. *Concluded in March 2017.*
  GPA: 8.44/10
  Thesis project: Long lasting motivational effects of adolescent exposure to sweetened beverages. *Available online at* http://academica.psi.uba.ar/Psi/DescargarTesis.php?origen=1078&diginro=152037
  Advisor: Lucas Cuenya, PhD.

Research experience

- **Graduate research assistant.** *April 2018 – present day.* Systems Neuroscience Group, Institute of Physiology and Biophysics 'Bernardo Houssay', University of Buenos Aires and National Scientific and Technical Research Council (UBA-CONICET); Argentina.
  Supervisor: Fernando Kasanetz, PhD | fkasanetz@fmed.uba.ar
  Duties: Design of behavioral experiments, experimental surgery (sciatic nerve injury, viral vectors injections, brain implantations, etc.), data analysis, dissertation and participation in internal seminars, conference dissertations, collaboration in experimental designs, writing of scientific articles.
- **Research stay.** *July 2022 – September 2022.* Institute of Physiology. University of Bern, Switzerland.
  Supervisor: Thomas Nevian, PhD | thomas.nevian@unibe.ch
  Duties: Design of behavioral experiments, experimental surgery (sciatic nerve injury, viral vectors injections, brain implantations), assembling of optic fibers, drug preparation, opto and chemogenetics experiments, data analysis.
- **Research stay.** *February 2020 – March 2020.* Institute of Physiology. University of Bern, Switzerland.
  Supervisor: Thomas Nevian, PhD | thomas.nevian@unibe.ch
  Duties: Design of behavioral experiments, experimental surgery (sciatic nerve injury, viral vectors injections, brain implantations), assembling of miniature microscopes, recording of *in vivo* neuronal activity, data analysis.
- **Research intern.** *March 2016 – March 2018.* Laboratory of experimental and applied Psychology, Institute of medical research, University of Buenos Aires and National Scientific and Technical Research Council (UBA-CONICET); Argentina.
  Supervisor: Lucas Cuenya, PhD | lucascuenya@gmail.com
  Duties: Design of behavioral experiments, participation and dissertation in internal seminars, conference dissertations, collaboration in experimental design and writing of scientific articles.

Teaching positions

- **Guest teacher.** *October 2023.* Vivarium technique II. Assistant professor: Dra. Silvina Laura Diaz. School of Pharmacy and Biochemistry, University of Buenos Aires, Argentina.
- **Teaching assistant.** *March 2017 – June 2017.* Neuroscience II. Associate Professor: Jorge Mario Andreau. School of Psychology and Psychopedagogy, Salvador's University, Argentina.

Scientific publications

- Trujillo, M. J., **Ilarraz, C.,** & Kasanetz, F. (2023). Plasticity of Cortico-striatal Neurons of the Caudal Anterior Cingulate Cortex During Experimental Neuropathic Pain. *Neuroscience, 523*, 91-104.
- Serafini, M., **Ilarraz, C.**, Laurito, M., & Cuenya, L. (2022) Increment in the consummatory response induced by reward delay: An animal model of binge-like eating episodes. *Learning and motivation, 80,* 101842.
- **Ilarraz, C**., Serafini, M., Laurito, M., & Cuenya, L. (2019). Consumo adolescente de bebidas azucaradas y sus efectos motivacionales en la adultez: un modelo animal [Adolescent consumption of sweetened beverages and their motivational effects in adulthood: An animal model]. *Anuario de investigaciones, 25,* 465-472.

Poster presentations

- **Ilarraz, C.**; Trujillo, M. J.; Acuña, M.; Presta, A.; Nevian, T.; & Kasanetz, F. (2023, October). *Instrumental role of cortico-striatal neurons of the Anterior Cingulate Cortex in the manifestation of pain-related unpleasantness.* Poster presented at the XXXVIII Annual Conference of the Argentine Society of Neuroscience Research; San Luis, Argentina.
- Trujillo, M.J.; **Ilarraz, C.**; Unger J.; Kasanetz F. (2022, October). *Plasticity of Cortico-Striatal neurons of the Anterior Cingulate Cortex during experimental neuropathic pain.* Poster presented at the Annual meeting of Bioscience Societies; Mar del Plata, Argentina.
- **Ilarraz, C**.; Acuña, M.; Nevian, T.; & Kasanetz, F. (2022, July). *Encoding of the unpleasantness of pain in cortico-striatal neurons of the Anterior Cingulate Cortex.* Poster presented at FENS Forum; Paris, France.
- **Ilarraz, C**.; Acuña, M.; Nevian, T.; & Kasanetz, F. (2020, October). *Nociceptive responses of cortico-striatal neurons of the Anterior Cingulate Cortex in an animal model of chronic pain.* Poster presented at the XXXV Annual Conference of the Argentine Society of Neuroscience Research; online presentation.
- Trujillo, M. J.; **Ilarraz, C** & Kasanetz, F. (2019, October). *Functional Plasticity of cortico-striatal neurons of the Anterior Cingulate Cortex during the transition to chronic pain.* Poster presented at the XXXIV Annual Conference of the Argentine Society of Neuroscience Research; Córdoba, Argentina.
- **Ilarraz, C**.; Trujillo, M. J. & Kasanetz, F. (2018, October). *Mood disorders in animal models of neuropathic pain.* Poster presented at the XXXIII Annual Conference of the Argentine Society of Neuroscience Research; Córdoba, Argentina.
- Serafini, M.; **Ilarraz, C**.; Laurito, M.; Cuenya, L. (2018, June). *Increased intake of palatable reinforcers due to previous frustration events: an animal model of binge eating episodes.* Poster presented at the VI Research Seminar of the Faculty of Psychology and Psychopedagogy, Salvador's University; Buenos Aires, Argentina.
- **Ilarraz, C**.; Serafini, M.; Laurito, M.; Cuenya, L. (2017, November). *Adolescent consumption of sugary drinks and its motivational effects in adulthood: an animal model.* IX International Conference of Research and Professional Practice in Psychology, XXIV Research Meeting and XIII MERCOSUR Psychology researchers meeting; Buenos Aires, Argentina.

- Serafini, M.; Laurito, M.; **Ilarraz, C.**; Cuenya, L. (2017, October). *Waiting for reward: An animal model for studying binge like behavior.* Poster presented at the XXII Annual Conference of the Argentine Society of Neuroscience Research; Mar del Plata, Argentina.

Oral communications

- **Ilarraz, C**.; Serafini, M.; Laurito, M.; Cuenya, L. (2017, August). *Long-lasting motivational alterations due to adolescent exposure to sucrose in rats.* Presented at the I Behavioral Biology meeting; III Argentine Conference of Behavioral Biology; VI Uruguayan meeting of Animal Behavior; Buenos Aires, Argentina.

Symposia

- Cuenya, L.; **Ilarraz, C**.; Serafini, M.; Laurito, M. (2017, September). *Adolescent exposure to sucrose in rats: an animal model for the study of the propensity to overweight in adulthood.* XXVI National meeting and V International meeting of the Argentine association for Behavioral Sciences, San Luis, Argentina.

Complementary education

- **Data analysis of calcium imaging signals from neural circuits.** National University of San Luis. Approved. Duration: 20 hours. *October 2023.*
  Topics: Data acquisition, toolboxes, analysis pipelines, big data analysis, introduction to PCA, linear regression, clustering.
- **Modern approaches to behavioral analysis.** Cajal advanced neuroscience training. Certificate of attendance. *November 2022.*
  Topics: Use of Deep Lab Cut software for behavior analysis.
- **Behavioral analysis of models of psychiatric disorders.** Department of biodiversity and experimental biology, School of Exact and Natural Sciences, University of Buenos Aires. Approved (7/10). Duration: 110 hours. *October 2022.*
  Topics: Strategies for behavior analysis (animal models, motor and sensory functions, social and reproductive behaviors, emotional behavior, reward and addiction), animal models of psychiatric diseases (anxiety, depression, schizophrenia, autism spectrum, fragile X, obsessive-compulsive behaviors).
- **Research methodology**. School of Pharmacy and Biochemistry, University of Buenos Aires. Approved (9/10). Duration: 100 hours. *July - December 2022.*
  Topics: Theme selection, project and grant writing, statistical analysis, results writing.
- **Statistics applied to the Health Sciences.** School of Pharmacy and Biochemistry, University of Buenos Aires. Approved (8/10). Duration: 96 hours. *March - July 2022.*
  Topics: Experimental design, exploratory analysis, parameter estimation, hypothesis testing, analysis of variance, regression and correlation, study of categorical variables.
- **Python programming.** School of science and technology, National University of San Martin. Approved (10/10). Duration: 96 hours. *March - July 2021.*
  Topics: Introduction to Python, structures and functions, working with data, algorithms, lists and list comprehension, randomness, program complexity and organization, style and documentation, Pandas, classes and objects, generators and iterators, recursion and regression, ordering.
- **Pharmacology.** School of Pharmacy and Biochemistry, University of Buenos Aires. Approved (8/10). Duration: 128 hours. *August - December 2019.*

Topics: Absorption, distribution, metabolism and excretion, pharmacokinetics, pharmacodynamics, molecular action mechanisms, drug interaction, agonists and antagonists, receptors, neurotransmission, pharmacology of sympathetic and parasympathetic systems, pharmacogenetics, specific drugs and their use: kidney disease, antihypertensives, cardiac ischemia and insufficiency, antiarrhythmic, anxiolytics, antiepileptics, CNS stimulants, drug addiction, antiparkinsonian, antipsychotics, proton pump inhibitors, non-steroid anti-inflammatories, corticosteroids, opioids, anticoagulants, lipid-lowering drugs, synthetic sexual hormones, hypoglycemic drugs, antibiotics, antiparasitic, antimycotics, antineoplastics, antivirals, immunopharmacology.

- **Laboratory animals.** School of Pharmacy and Biochemistry, University of Buenos Aires. Approved (8/10). Duration: 28 hours. *May - June 2019.*
  Topics: Macro and microenvironment, anesthesia, euthanasia, animal welfare, environmental enrichment, sanitary control, safety and prevention, handling, surgical instrumentation, surgical techniques, unconventional animal models.

- **Neurobiology of drug addiction.** School of Chemical Sciences, National University of Cordoba. Approved (10/10). Duration: 20 hours. *October 2018.*
  Topics: Addiction theories; stress and vulnerability to drug addiction; neurobiology and animal models of motivation, cocaine, nicotine and opioid addiction; links between obesity and drug addiction; aspects of sucrose consumption; neural mechanisms of reinforcement learning.

- **Introduction to cellular and molecular biology.** School of Exact and Natural Sciences, University of Buenos Aires. Approved (8/10). Duration: 260 hours. *March - July 2018.*
  Topics: Structure and replication of DNA, protein synthesis, genetic engineering, regulation of genetic activity, procaryotic and eukaryotic cell, immunology, neurons, cell signaling mechanisms.

- **Practical statistics for psychological research.** Association for the advancement of psychological science. Approved (10/10). Duration: 16 hours. *June 2017.*
  Topics: Use of IBM SPSS software, hypothesis contrast techniques, group comparison tests, assessment of associations between variables.

- **Training in university teaching**. National Technological University. Approved. Duration: 18 hours. *August 2017.*
  Topics: Pedagogy, social aspects of teaching, course planification.

Scholarships and awards

- **Honor diploma.** Awarded by the University of Buenos Aires in recognition of outstanding GPA. *December 2018.*
- **Doctoral scholarship.** Awarded by the National Scientific and Technical Research Council (CONICET) of Argentina. *December 2017.*
- **Poster award.** Awarded by the School of Psychology of the University of Buenos Aires in recognition of research communication. *December 2017.*
- **Young researcher award.** Awarded by the Argentine Association of Behavioral Sciences in recognition of novel findings in behavioral science. First place. *August 2017.*

Languages

- *Spanish.* Native.
- *English.* EF Standardized English Test: Advanced (EFSET 61/100). 2017. Certificate available at: https://www.efset.org/cert/95EDiN

Software skills

- Statistics and data analysis software: IBM SPSS, GraphPad Prism, InfoStat.
- Behavioral tracking software: Any-maze, Python based programs (Ez track).
- Programming languages: Python and its scientific stack (Pandas, NumPy, Matplotlib).
- Deep learning: Deep Lab Cut.