

Sofía Fernández Lozano

PSYCHOLOGY B.A. · NEUROBIOLOGY M.S. · NEUROSCIENCES PHD CANDIDATE

☎ (438) 506 2094 | ✉ sofia.fernandezlozano@mail.mcgill.ca | 📱 soffiafdz | 🌐 so1.618e

Experience

RESEARCH

Neuroimaging & Surgical Technologies (NIST) Lab

PHD CANDIDATE

Montreal, QC, Canada

Aug. 2020 - PRESENT

- Working on developing and improving MRI tools that can improve prediction of progression to Alzheimer's disease.
- Developed a Quality Control application that heavily improved the efficiency of our QC processes.

McGill Journal of Medicine

PRODUCTION EDITOR

Montreal, QC, Canada

May. 2022 - July. 2024

- Manager of a team of production associates for the preparation of the articles' PDF and HTML galleys for their online publication.

Laboratorio Nacional de Imagen por Resonancia Magnética (LANIREM)

MASTER'S STUDENT RESEARCHER

Querétaro, Qro, México

Jul. 2019 - Jan. 2020

- Continued my research work at the new location of the lab.
- I implemented a Machine Learning Algorithm to classify cocaine-dependence using global metrics of topology from fMRI (Graph Theory Analysis).

Laboratory of Neuroimaging, National Institute of Alcohol Abuse and Alcoholism (NIAAA)

VOLUNTEER RESEARCH VISITOR

Bethesda, MD, USA

Mar. - May. 2019

- Got trained on the technique Functional Connectivity Density Mapping (FCDM) developed by Dr. Tomasi to be implemented in the ADDIMEX project.
- I presented my work on the intramural seminar of the NIAAA and NIDA at the NIH.

Instituto Nacional de Psiquiatría "Ramón de la Fuente Muñiz" (INPRFM)

MASTER'S STUDENT RESEARCHER

Ciudad de México, México

Aug. 2017 - June. 2019

- I collaborated in the *randomized clinical trial of rTMS in Cocaine Use Disorder* under the supervision of Eduardo Garza, PhD.
- rTMS administration; Database management; MRI data acquisition, preprocessing, and analysis.

Yaaj México, A.C.

RESEARCH COORDINATOR

Ciudad de México, México

Mar. 2017 - Jul. 2019

- I coordinated a project in collaboration with United Nations Office on Drugs and Crime (UNODC) to write a guide for Mental Health professionals against *Sexual Orientation and Gender Identity Change Efforts: "Nada que curar"*.
- I was in charge of science dissemination in the themes of sexual health and sex and gender diversity in youth populations.

Colegio de la Frontera Norte (COLEF)

RESEARCH INTERN

Tijuana, BC, México

Feb. - Sep. 2015

- I was an intern on the research project: Mexican parents' attitudes toward gender equality in family roles and leadership.
- Questionnaire administration to middle school parents and data capturing.

CLINICAL

Interpsique

PSYCHOMETRIST

Tijuana, BC, México

Jan. 2016 - Mar. 2017

- Clinical psychological evaluation (Test administration, scoring and supervised interpretation) under the guidance of a licensed Psychologist.

Hospital de Salud Mental de Tijuana (HSMT)

PSYCHOLOGY INTERN

Tijuana, BC, México

Dec. 2014 - Mar. 2015

- 240 supervised clinical hours at the Inpatient Psychiatric Care Unit: Occupational and group therapy, and clinical evaluations.

VOLUNTEERING

COPRED (Council to prevent and eliminate discrimination of Mexico city)

CONSULTANT

Ciudad de México, México

Apr. 2017 - Jul. 2019

- Offered expert consultation for the new policies and guidelines related to discrimination matters in the city.
- Member of the committee in charge of selection of the new President of the Council.

CAIPT (Integral Attention Center for Transgender People)

VOLUNTEER

Tijuana, BC, México

Jan. 2017 - Jul. 2017

- Designed and implemented workshops for the transgender women community of Baja California.

Education

Montreal Neurological Institute & McGill University

PHD IN NEUROSCIENCES

- Project: MRI biomarkers in Alzheimer's disease.
- Supervisor: D. Louis Collins, PhD

Montreal, QC, Canada
IN PROGRESS

Universidad Nacional Autónoma de México (UNAM) & Instituto de Neurobiología (INB)

MASTER OF SCIENCE IN NEUROBIOLOGY; GRADUATED WITH HONORS

- Thesis: Brain Connectivity in Cocaine-addicted Patients after Repetitive Transcranial Magnetic Stimulation Treatment.
- Supervisor: Eduardo Garza-Villarreal PhD

Ciudad de México, México
Jan 2020

Universidad Autónoma de Baja California (UABC)

BACHELOR OF ARTS WITH HIGHEST HONORS IN PSYCHOLOGY

- Scholar Merit (First in class)
- Focus on Neuropsychology and Psychometrics

Tijuana, BC, México
Jan 2016

Universidad de Salamanca

SEMESTER ABROAD

- Training in clinical and vocational evaluations

Salamanca, Spain
July 2014

Courses and workshops

Neuromatch Academy Deep Learning 2021

NEUROMATCH

Intensive 3-week course on advanced Deep Learning techniques.

Online
Jul. 2021

Women-led BioData Science Hackaton

NATIONAL CENTER FOR BIOTECHNOLOGY INFORMATION

Week-long Hackaton for women in Bioinformatics at the NIH

Bethesda, MD, USA
May 2019

Neurohackademy 2019

UNIVERSITY OF WASHINGTON

Neuroimaging and Data Science summer school and hackaton.

Seattle, WA, USA
Jul. - Aug. 2019

Bayesian Modeling of Brain Imaging Data

MICHELE GUINDANI, PHD; MEXICAN ASSOCIATION OF STATISTICS

Two-day intro course about Bayesian methods in fMRI analysis

Ciudad de México, México
Sep. 2017

Basic Course of Applied Neuroscience

AUTONOMOUS UNIVERSITY OF BAJA CALIFORNIA

Two-week course of diverse neuroscience themes for psychology students and recent graduates

Mexicali, BC, México
Aug. 2016

International Course of Neuropsychological Evaluation

JUAN-CARLOS ARANGO, PHD; SINAPSIS

Bases of application and evaluation of neuropsychological testing in cultures and languages other than those in North America and Western Europe

Mexicali, BC, México
Oct. 2015

Honours & Grants

FELLOWSHIPS & AWARDS

2020 – AWARD Montréal, QC, Canada	IPN Entrance Award 6K CAD
2019 – AWARD Ciudad de México, México	CONACYT Mobility Fellowship ≈1.9K CAD
2019 – AWARD Ciudad de México, México	UNAM Support for Mobility ≈1.3K CAD
2017-2019 – FELLOWSHIP Ciudad de México, México	CONACYT Graduate Fellowship ≈19K CAD

HONOURS

2020 – RECOGNITION Querétaro, México	"Alfonso Caso" Medal
2016 – SPEAKER Tijuana, BC, México	Ceremony for Honor Students
2016 – HONOREE Guadalajara, Jal., México	ECEL-CENEVAL Excellence Award

Skills

Programming & Markup Languages

- R
- Python
- SQL
- Javascript
- Shell
- Perl
- \LaTeX
- Markdown
- HTML

General Tools

- UNIX systems
- Neuroimaging processing
- HPC cluster systems
- Git & GitHub
- Docker & Docker compose

Languages

- Spanish (Native)
- English (Fluent)
- French (Intermediate)

Publications and Presentations

ARTICLES AND BOOK CHAPTER

- FERNANDEZ-LOZANO, S., Fonov, V., Schoemaker, D., Pruessner, J., Potvin, O., Duchesne, S., Collins, D.L., and for the Alzheimer's Disease Neuroimaging Initiative (2024). **Automatization and validation of the hippocampal-to-ventricle ratio in a clinical sample.** *BIORxiv*. 10.1101/2024.04.12.588928.
- FERNANDEZ-LOZANO, S., Dadar, M., Morrison, C., Manera, A., Andrews, D., Rajabli, R., Madge, V., St-Onge, E., Shafiee, N., Livadas, A., Fonov, V., Collins, D.L., and for the Alzheimer's Disease Neuroimaging Initiative (2024). **QRATER: a collaborative and centralized imaging quality control web-based application.** *APERTURE NEURO*. 10.52294/001c.118616.
- Garza-Villarreal, E. A.; Alcalá-Lozano, R.; FERNANDEZ-LOZANO, S., Morelos-Santana, E., Dávalos, A., Villicaña, V., Alcauter, S., Castellanos, F.X., and Gonzalez-Olvera, J.J. (2021). **Clinical and Functional Connectivity Outcomes of 5-Hz Repetitive Transcranial Magnetic Stimulation as an Add-on Treatment in Cocaine Use Disorder: A Double-Blind Randomized Controlled Trial.** *BIOLOGICAL PSYCHIATRY: COGNITIVE NEUROSCIENCE AND NEUROIMAGING*. 10.1016/j.bpsc.2021.01.003.
- Pando-Nauade, V., Toxto, S., FERNANDEZ-LOZANO, S., Parsons, C.E., Alcauter, S., and Garza-Villarreal, E.A. (2021). **Gray and white matter morphology in substance use disorders: a neuroimaging systematic review and meta-analysis.** *TRANSLATIONAL PSYCHIATRY*. 10.1038/s41398-020-01128-2.
- FERNÁNDEZ-LOZANO, S. (2019). *Derechos sexuales y reproductivos; reflexiones para terapeutas* (Sexual and reproductive rights; reflections for therapists). In Gómez-Lamont, M.F. & Silva-Aragón, A. (Eds.), *Terapia familiar sistémica y la comunidad LGBT+ (Systemic family therapy and the LGBT community)*. Ciudad de México, México: Pax & Leed.

POSTER PRESENTATIONS

- FERNANDEZ-LOZANO, S., Fonov, V., Theriault, J., Rahmouni, N., Servaes, S., Stevenson, J., Poltronetti, N. M., Rosa-Neto, P., and Collins, D. L. (2024, August). *Tau accumulation mediates β -amyloid effects on hippocampal atrophy and memory in early Alzheimer's disease.* Poster session presented at the AAIC, Philadelphia, PA, USA.
- FERNANDEZ-LOZANO, S., Fonov, V., Dadar, M., Collins, D. L. (2023, August). *Hippocampal-to-ventricle ration (HVR) is better related to age and cognition than hippocampal volume.* Poster session presented at the AAIC, Amsterdam, Netherlands.
- FERNANDEZ-LOZANO, S., Fonov, V., Dadar, M., Collins, D. L. (2023, August). *Do we really need to normalize hippocampal volume?.* Poster session presented at the AAIC, Amsterdam, Netherlands.
- FERNANDEZ-LOZANO, S., Dadar, M., Morrison, C., Manera, A., Fonov, V., Collins, D. L. (2022, August). *Qrater: collaborative imaging quality control tool..* Poster session presented at the AAIC, California, United States.
- FERNANDEZ-LOZANO, S., Dadar, M., Morrison, C., Manera, A., Fonov, V., Collins, D. L. (2022, June). *Qrater: centralized web application for image quality control..* Poster session presented at the OHBM, Glasgow, United Kingdom.
- FERNÁNDEZ-LOZANO, S., Alcalá-Lozano, R., Morelos-Santana, E. D., Villicaña-Muñoz, V., González-Cantú, H., González-Olvera, J. J., Garza-Villarreal, E.A. (2018, Oct). *Análisis de teoría de grafos en redes funcionales después de un tratamiento doble ciego de EMTr en pacientes adictos a cocaína (Graph theory analysis on functional networks after double-blinded rTMS on cocaine-addicts).* Poster session presented at the ANNUAL MEETING OF RESEARCHERS OF THE INSTITUTO NACIONAL DE PSIQUIATRÍA "RAMÓN DE LA FUENTE MUÑOZ", Ciudad de México, México.
- FERNÁNDEZ-LOZANO, S., Alcalá-Lozano, R., Morelos-Santana, E.D., Villicaña-Muñoz, V., González-Cantú, H., González-Olvera, J.J., Garza-Villarreal, E.A. (2018, Oct). *Effects of rTMs on the small-worldness of crack-cocaine addicts' functional connectivity networks.* Poster session presented at the XX REUNION OF NEUROIMAGE AT THE RESEARCH CENTER IN MATH (CIMAT), Guanajuato, México.

ORAL TALKS

Dec 2019 (INVITED TALK)	<i>Transcranial Magnetic Stimulation: Neuromodulation techniques as a neuropsychiatric treatment</i> MONTHLY SEMINAR; Baja California College of Psychologists	Tijuana, BC, México
Oct 2019 (ORAL TALK)	<i>Classification of cocaine dependence using topology of functional connectivity networks</i> NEUROIMAGE REUNION XXI; CIMAT (Center of research in mathematics)	Guanajuato, México
May 2019 (INTERNAL SEMINAR)	<i>Functional connectivity network changes after rTMS treatment in cocaine addiction</i> NIAAA & NIDA INTRAMURAL SEMINAR; National Institutes of Health	Bethesda, MA, USA
Nov 2018 (SCIENCE TALK)	<i>Brain connectome: studying the most complex network system</i> BRAIN WEEK; National High school #9 "Pedro de Alba"	Ciudad de México, México
Oct 2018 (INVITED TALK)	<i>Conversion therapy: a psychology and human rights' perspective</i> 2ND ENCOUNTER ABOUT SEXUALITIES AND GENDER; UNAM (National Autonomous University of Mexico)	Ciudad de México, México
Jun 2018 (CONVERSATORIOUM)	<i>The right to an identity of transgender children and adolescents</i> Supreme Justice Tribunal of Mexico city	Ciudad de México, México