Dr. Cecilia T. Herbert

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PhD in experimental neuroscience

- Extracellular electrophysiology, miniature microscopy and behavior
- Open science technology education and dissemination

SELECTED WORK EXPERIENCE

Open Ephys Production Site — *Scientific Director*

JULY 2022 – PRESENT, Lisbon, Portugal

- Leader of the team that provides Training, Support and Outreach, interfacing between users and developers of open source tech for Neuroscience research
- Course director of the Extracellular Electrophysiology Acquisition Course
- Training, promotional and documentation materials creator
- Remote and on-site trainer for labs and advanced training courses
- Exhibitor at Neuroscience conferences (FENS, ICN, SfN, Cosyne)

TEACHING EXPERIENCE

PLANNED SEPTEMBER 2025, **Transatlantic Behavioral Neuroscience Summer School**, Remote — *Speaker*

PLANNED JUNE 2025, **Cajal Advanced Neuroscience Training Programme** Course Interacting with neural circuits, Portugal — *Speaker*

PLANNED JUNE 2025 – "Neuroscience needs makers: Introduction to Bonsai" **satellite workshop of the European Social Club meeting**, Portugal — *Teaching assistant*

PLANNED MAY 2025 – **Paris Neuro Course**, Remote — *Speaker*

JANUARY 2025 – "Open Source Tools for Behavioral Neuroscience" workshop at the **Euron PhD Days**, Germany — *Instructor*

NOVEMBER 2024 – "Integrating Open Source Tools into Behavioral Neuroscience" talk and practicals at the **Cajal Advanced Neuroscience Training Programme** The Brain Prize Course: Movement and motor control in health and disease, France — *Speaker, instructor*

SEPTEMBER 2023, **Transatlantic Behavioral Neuroscience Summer School**, Poland — *Speaker and Teaching Assistant*

MAY 2024 – "Miniscopes and animal behavior with open tools" talk and practicals at the **Paris Neuro Course**, France — *Instructor*

MARCH 2024 – "Open Ephys Acquisition Board and GUI" talk and practicals at the **Single-unit EMG Workshop**, Germany — *Instructor*

OCTOBER 2023, Open Ephys Extracellular Electrophysiology Acquisition **Cajal NeuroKit Course**, Remote — *Course director*

SEPTEMBER 2023, **Transatlantic Behavioral Neuroscience Summer School**, Argentina — *Speaker and Teaching Assistant*

MAY 2023 – "Miniscopes at Open Ephys" talk and practicals at the **Paris Neuro Course**, France — *Instructor*

MAY 2023 – "Open Source Tools for Behavioral Neuroscience" talk and interactive stations at **NeuroDoWo**, Germany — *Instructor*

NOVEMBER 2022, Modern Approaches to Behavioral Analysis **Cajal NeuroKit Course**, Remote — *Teaching assistant*

NOVEMBER 2022, Hands-on module "Closed-loop behavior with Bonsai" of the **SfN Latin American Training Program** in Montevideo, Uruguay — *Teacher*

MAY 2022, DECEMBER 2021, Open Ephys Extracellular Electrophysiology Acquisition **Cajal NeuroKit Course** — *Teaching assistant*

2020 – 2021, Spanish Open Source Workshops — *Co-founder, organizer, trainer*

NOVEMBER 2021, IBRO funded workshop Insights into neural signal acquisition: an open, hands-on approach — *Organizer, instructor*

SELECTED TRAINING

2022 – **Miniscope Workshop** in Buenos Aires, Argentina (1 week).

2022 – **Transylvanian Experimental Neuroscience Summer School** in Pike Lake, Romania (3 weeks).

2021 – **Cajal NeuroKit Course**: Extracellular Electrophysiology Acquisition organised by The CAJAL Advanced Neuroscience Training Programme by Open Ephys (1 week).

2018 – **Neural Systems and Behavior at the Marine Biological Laboratory** in Woods Hole, MA, USA (2 months).

2014 – **Undergraduate Summer Research Program at EPFL (BioRob lab)**, Lausanne, Switzerland (2 months).

POSTGRADUATE COURSES

2019 – Electronics Laboratory by Prof. Miguel Larotonda (96 hours) in the Physics Dept., FCEN, UBA

2018 – Machine Learning by Prof. Agustín Gravano (64 hours) in the Computing Dept., FCEN, UBA

2017 – Seminar on Advanced tools in Statistical Analysis by Profs. Andrés Farall and Marina Valdora (54 hours) in the Maths Dept., FCEN, UBA

2017 – Data Science in R: Fundamentals by Profs. Mariela Sued and Ana Bianco (54 hours) in the Institute of Calculus, FCEN, UBA

2016 – Systems Neuroscience by Prof. Rodrigo Quian Quiroga (30 hours) in the Physics Dept., FCEN, UBA

GRANTS AND AWARDS

2016–2022 **Doctoral grant** from CONICET (National Research Council)

2022 **Travel grant** from Boehringer Ingelheim Fonds and **Financial aid award** to attend TENSS in Pike Lake, Romania.

2021 **Meetings Support** from IBRO-LARC and the Metropolitan Fund of the City of Buenos Aires to hold the IBRO-LARC workshop on neural signal acquisition.

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OPEN SOURCE DISSEMINATION AND SPEAKING ENGAGEMENTS

MARCH 2025 – "Open Ephys: Miniscope Acquisition Systems" lectudemo for the **Open Science Office Hours**, remote — *Speaker*

NOVEMBER 2023 – "Open Ephys Acquisition Systems" talk and demo at the **pre-SfN Workshop on Open Source Research Tools**, Washington DC, USA — *Speaker*

DECEMBER 2022 – "Open Tools for Neuroscience" talk and demo about Open Ephys at IFIBYNE, Buenos Aires, Argentina — *Speaker*

2021 – 2022, Open Source Neuro Seminar Series about open source tools and methods for Neuroscience in open-neuroscience.com — *Organizer, host*

DECEMBER 2022 – Guest speaker at **Open Hardware Makers**.

APRIL 2022 – Invited speaker at **Open Hardware Makers**.

AUGUST 2021 – Invited to talk about the Open Neuroscience project in the **IBRO-LARC/PEDECIBA Neuroscience and AI for all Virtual Associate School**.

JULY 2021 – Talk about "Talleres Open Source" for the **reGOSH circuit**.

MARCH 2021 – Invited to talk in an event of the **BA City Government** that showcased women in technology.

MENTORING EXPERIENCE

MARCH 2020 – MARCH 2021, Licenciatura student Fiamma Liz Leites at the University of Buenos Aires. Advisor: Dr. Amador — *Assistant advisor*

MARCH 2016 – DECEMBER 2016, Physiology and Molecular Biology Department of the University of Buenos Aires — *Undergraduate teaching assistant*

EDUCATION AND RESEARCH EXPERIENCE

University of Buenos Aires, Physiology and Molecular Biology Department and Physics Institute of Buenos Aires (IFIBA), CONICET — *PhD in Biology*

APRIL 2016 – MAY 2022, Buenos Aires, Argentina

- Thesis: Study on the neural coding of song production in oscine birds. Advisor: Dr. A. Amador in the Mindlin Dynamical Systems Lab.
- Extracellular microwire tetrode recordings with custom designed microdrives during bird vocal behavior.

University of Buenos Aires — *Licenciatura in Biological Sciences (Master's degree equivalent)*

APRIL 2009 – MARCH 2016, Buenos Aires, Argentina

- Thesis: An automatic method for the identification of significant motor instances in birdsong. Advisor: Dr. G. Mindlin, Dynamical Systems Lab.
- Specialized in Animal Physiology and Neuroscience.

PUBLICATIONS AND POSTERS List on Google Scholar

2020 – Herbert, C. T., Boari, S., Mindlin, G. B., & Amador, A. "Dynamical model for the neural activity of singing *Serinus canaria*". Chaos 30, 053134. https://doi.org/10.1063/1.5145093

2019 – Lassa Ortiz, J. N., Herbert, C. T., Mindlin, G. B., & Amador, A. "Significant instances in motor gestures of different songbird species". Frontiers in Physics, 7, 142. https://doi.org/10.3389/fphy.2019.00142

2019–2022 six conference presentations in the Annual Meeting of the Argentine Neuroscience Society, the Neuromatch Conference and the Regional Congress of Statistical Physics and Applications to Condensed Matter (TREFEMAC).

2018 **Travel grant** from Boehringer Ingelheim Fonds and **Financial aid scholarship** sponsored by IBRO, NIH Grant for NS&B and Lola Ellis Robertson Endowed Scholarship to attend the course Neural Systems and Behavior in Woods Hole, MA, USA.

2014 **Financial aid scholarship** to participate in the Undergraduate Summer Research Program in EPFL, Lausanne, Switzerland.

2013 **Academic Merit Award** from Santander Río Universidades

SKILLS

- Extracellular electrophysiology
- Microwire tetrode fabrication and microdrive assembly
- Stereotaxic surgery on small animals
- Ephys, miniscope and behavioral data acquisition (Open Ephys GUI, Bonsai)
- Spike sorting, data analysis and visualization (Matlab, Python, R)
- Scientific reporting and technical documentation
- Public speaking and seminar host
- Graphic design (Illustrator) and CAD modeling (FreeCAD, Fusion360)
- Management, organization and team coordination

PROFESSIONAL AFFILIATIONS

- 2016-2022 Argentine Neuroscience Research Society (SAN)
- reGOSH – Latin American network of Global Open Science Hardware
- Certified Carpentries instructor with MetaDocencia
- 2021 Open Life Science cohort 4 team lead. Graduation call.
- 2021-2022 contributor to Open-neuroscience.com

LANGUAGES

Spanish (native speaker)

English (bilingual, AICE diploma)

Portuguese (advanced)

French (conversational, A2)