

EDUCATION

MSc. in Physics <i>Universidad de Chile</i>	2021–Current Santiago, Chile
BSc. in Physics <i>Universidad Católica del Maule</i> (91.4% GPA)	2017–2021 Talca, Chile

FELLOWSHIPS AND AWARDS

National Master Fellowship <i>Agencia Nacional de Investigación y Desarrollo (ANID)</i> Full tuition funding and salary for MSc. degree	2022–2023
DFI Scholarship <i>Departamento de Física, FCFM, Universidad de Chile</i> Tuition funding for MSc. degree	2021
Outstanding Student <i>Universidad Católica del Maule</i> Award for outstanding academic performance in undergraduate degree	2021
Honors Scholarship <i>Universidad Católica del Maule</i> Full funding of undergraduate tuition for outstanding academic performance	2018–2020

RESEARCH EXPERIENCE

Other Projects <i>Laboratory of Matter Out-of-Equilibrium, Universidad de Chile</i> Research funded by <i>Millennium Nucleus Physics of Active Matter</i> <ul style="list-style-type: none">– Numerical and experimental study about the bio-convection patterns formed by magnetotactic bacteria– Experimental study about the collective dynamics of active agents with inertia (Hexbugs) in confined systems– Numerical study about the motility induced phase separation in an inflationary space	2023–Current
MSc. Thesis Project <i>Universidad de Chile</i> Research funded by <i>Millennium Nucleus Physics of Active Matter</i> and <i>Agencia Nacional de Investigación y Desarrollo (ANID)</i> <ul style="list-style-type: none">– Experimental study about the effects of confinement on the motility of soil bacteria in synthetic porous media (microfluidics devices that simulate soil porosity)– Experimental study about the effects of shear stresses on the motility and self-agglutination of soil bacteria– Experimental and numerical study (simulations) about the effective diffusion of soil bacteria in disordered porous media	2021–Current
Undergraduate Project <i>Universidad Católica del Maule</i> Research funded by <i>Vicerrectoría de Investigación y Postgrado (VRIP)</i> <ul style="list-style-type: none">– Numerical study (simulations) about the entropy production by transmembrane ionic flows in electrically excitable cells	2020–2021

TEACHING EXPERIENCE

Teacher Assistant <i>Universidad de Chile</i> <ul style="list-style-type: none">– Courses:<ul style="list-style-type: none">* FI6030 Introduction to Microfabrication Techniques	2023
Teacher Assistant <i>Universidad de Chile</i> <ul style="list-style-type: none">– Courses:<ul style="list-style-type: none">* FI2003 Experimental Methods	2021–2022
Teacher <i>Universidad Católica del Maule</i> <ul style="list-style-type: none">– Courses:<ul style="list-style-type: none">* PBM-423 Physics and Chemistry II	2021
Teacher Assistant <i>Universidad Católica del Maule</i> <ul style="list-style-type: none">– Courses:<ul style="list-style-type: none">* PCI-111 Natural Sciences (physics module)* CCI-123 Physics I* IND-212 Physics I* PCI-123 General Physics I* PCM-321 Physics* TME-124 Physics in Medical Technology (laboratory)* QYF-125 Physics Applied to the Pharmaceutical Sciences* PCM-311 Electromagnetism	2018–2020

SCHOOLS AND WORKSHOPS

XI GEFENOL Summer School on Statistical Physics of Complex Systems <ul style="list-style-type: none">· Organized by <i>GEFENOL & UBICS, Universitat de Barcelona</i>· Presented a talk titled “Measuring motility of soil bacteria in a microfluidic porous media model”	2023
XXIII Simposio Chileno de Física <ul style="list-style-type: none">· Organized by <i>Sociedad Chilena de Física</i>· Presented a poster titled “<i>Effects of shear on the motility of soil bacteria Bradyrhizobium diazoefficiens</i>”	2022
School and Conference Physics of Active Matter <ul style="list-style-type: none">· Organized by <i>Millennium Nucleus Physics of Active Matter</i>· Presented a poster titled “<i>Effects of shear on the motility of soil bacteria Bradyrhizobium diazoefficiens</i>”	2022
WE-Heraeus Summer School 2022 Active Matter and Complex Media <ul style="list-style-type: none">· Organized by <i>Université Grenoble Alpes, Universität Bayreuth, Institut d’Etudes Scientifiques de Cargèse</i>· Talk titled “<i>Measuring motility of soil bacteria in a microfluidic porous media model</i>”	2022
XXI Meeting of Surfaces and Nanostructured Materials (NANO2022) <ul style="list-style-type: none">· Organized by <i>Universidad Nacional de Río</i>· Talk titled “<i>Soils on a chip: new tools for sustainable agronomy</i>”	2022

APS March Meeting 2022

2022

- Organized by *American Physical Society*
- Talk titled “*Visualization and modeling of soil bacteria under confinement*”

107a Reunión de la Asociación Física Argentina

2022

- Organized by *Asociación Física Argentina*
- Poster titled “*Analysis of the motility parameters of soil bacteria in artificial microdevices*”

The Physics of Life Online Summer School

2020

- Organized by *Princeton University*
- Introduction frontiers topics in biological physics and active matter

SKILLS

- **Languages:** Spanish, English.
- **Coding:** Python, MATLAB, C, LaTeX.
- **Software:** FIJI (ImageJ), BioTracker, AutoCAD, Fusion360, Adobe Illustrator, Adobe Photoshop.
- **Experimental:** Optical maskless lithography, Soft lithography, Bright-field and fluorescence optical microscopy, Bacterial culture, Particle tracking.

INTERESTS

- **Academic Interests:** Biophysics, Active Matter, Microfluidics.

REFERENCES

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