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Biological Chemistry Department Ranwel Caputto
Faculty of Chemistry
Universidad Nacional de Córdoba
CIQUIBIC-CONICET, Córdoba Argentina

Academic Studies

Degree

2018– PhD in Chemistry
Universidad Nacional de Córdoba, Argentina
2011–2017 BSc. Chemistry
Universidad del Quindío, Colombia

Diploma

03.2023– Diploma in Data Science: Supervised Learning and its Applications
12.2023 FAMAF, Universidad Nacional de Córdoba, Argentina

Teaching Experience

Undergraduate

08.2019– Assistant Teacher: Biophysics and Biological Chemistry
Faculty of Chemistry, Universidad Nacional de Córdoba, Argentina

High Shool

10.2017– Science Teacher
11.2017 Fundación Caicedo González Riopaila Castilla, La Paila - Valle del Cauca, Colombia
06.2017– Science Teacher
11.2017 Instituto Técnico Diversificado Grajales, La Unión - Valle del Cauca, Colombia

Complementary Courses

Postgraduate courses

11.2023 Image processing in Python
FAMAF, *Universidad Nacional de Córdoba*; Hours: 16
11.2023 Computer vision with Python
FAMAF, *Universidad Nacional de Córdoba*; Hours: 16

- 11.2023 Time series analysis in Python. Introduction
FAMAF, *Universidad Nacional de Córdoba*; Hours: 16
- 10.2021 Protein structure and dynamic
Universidad Nacional de Córdoba; Hours: 40
- 08.2020– Introduction to python programming
11.2020 *Universidad Nacional de San Martín*; Hours: 64
- 06.2020– The research article in English. How to write in science
07.2020 *Universidad Nacional de Córdoba*; Hours: 20
- 04.2019 Epistemology for the teaching of natural sciences
Universidad Nacional de Córdoba; Hours: 40
- 07.2018 Quantum mechanical methods based on density functional theory - DFT
Universidad Nacional de Córdoba; Hours: 40
- 04.2018 Molecular biophysics of proteins
Universidad Nacional de Córdoba; Hours: 40
- 07.2015 International Summer Schools: Quantum Chemistry
PREFALC (Programme Régional France - Amérique Latine Caraïbe); Hours: 80

Other courses

- 09.2020 Introduction to data science in python
University of Michigan (Online-Coursera); Hours: 30
- 02.2016 Nanochemistry
Universidad del Quindío, Colombia; Hours: 80
- 04.2015 Introduction to the density functional theory - DFT
Universidad del Quindío, Colombia; Hours: 20
- 02.2015– Advanced spectroscopy methods
06.2015 *Universidad del Quindío, Colombia*; Hours: 80
- 02.2015– Computational chemistry
06.2015 *Universidad del Quindío, Colombia*; Hours: 80

Internships

- 02.2024– Department of Physics, King's College London, UK
Supervisor: Prof. Christian D. Lorenz (chris.lorenz@kcl.ac.uk)
- 01.2023– Department of Chemistry, King's College London, UK
05.2023 Supervisor: Prof. Martin Ulmschneider (martin.ulmschneider@kcl.ac.uk)
- 08.2022– Instituto Interdisciplinario de las Ciencias, Universidad Nacional de Cuyo, Mendoza, Argentina
09.2022 Supervisor: Dr. Vanesa V. Galassi (vanegalassi@gmail.com)

Fellowships and Rewards

- 2023 IUPAB bursaries to attend international conferences: “Physics of Life 2023”. International Union for Pure and Applied Biophysics (IUPAB); Harrogate, Yorkshire, UK
- 2022 IUPAB bursaries to attend international conferences: “L Annual Meeting of the Argentinian Biophysical Society - SAB”. International Union for Pure and Applied Biophysics (IUPAB); Rosario, Argentina
- 2021–2024 End of PhD Fellowships. National Scientific and Technical Research Council - CONICET; Argentina
- 2020–2023 Scholarship-Loan COLFUTURO. National Colombian Government; Colombia
- 2018–2021 Beginning PhD Fellowship. National Fund for Science and Technology - FONCyT; Argentina
- 2017 Meritorious mention for the degree work: “Some Structural, Electronic and Vibrational Properties of Phosphine Diphenyl[2-(2-Pyridylaminomethyl)-Phenyl] Oxide. A Quantum Chemical Study”. Facultad de Ciencias Básicas y Tecnologías, Universidad del Quindío; Colombia

Congress and Conferences

- 11.2023 Congress: *LI Annual Meeting of the Argentinian Biophysical Society - SAB*
Attendance; Córdoba, Argentina
- 11.2023 Meeting: *VII Meeting of Jóvenes Biofísicos: The Young Initiative on Biophysics - YIB*
Member of the organizing committee; Córdoba, Argentina
- 03.2023 Conference: *Physics of Life 2023*
Poster; Harrogate, Yorkshire UK
- 11.2022 Congress: *L Annual Meeting of the Argentinian Biophysical Society - SAB*
Attendance; Rosario, Argentina
- 11.2022 Meeting: *VI Meeting of Jóvenes Biofísicos: The Young Initiative on Biophysics - YIB*
Member of the organizing committee; Rosario, Argentina
- 12.2021 Congress: *IL Annual Meeting of the Argentinian Biophysical Society - SAB (Virtual)*
Attendance; Argentina
- 11.2021 Meeting: *V Meeting of Jóvenes Biofísicos: The Young Initiative on Biophysics - YIB (Virtual)*
Member of the organizing committee; Argentina
- 12.2018 Congress: *XLVII Annual Meeting of the Argentinian Biophysical Society - SAB*
Poster; La Plata, Argentina

Science Communication

- 10.2020 Social media: *YIB-TALKS (YouTube YIB)*. IUPAB Sponsorship
Member of the organizing committee; Argentina
- 07.2019 Science Fair: *International Year of the Periodic Table*
Poster; Córdoba, Argentina

Skills and Abilities

Methodologies

Protein expression and purification	Bacterial transformation, plasmid extraction, bacteria lysis, production of recombinant proteins and peptides.
Biophysics	Preparation of multilamellar vesicles (MLV's) and unilamellar vesicles (SUV's)

Techniques

Chromatography:	ÄKTA FPLC, size exclusion, HPLC, SDS-PAGE electrophoresis
Biophysics:	Brewster angle microscopy (BAM), differential scanning calorimetry (DSC), Langmuir monolayers, time-correlated single photon counting (TCSPC): fluorescence spectroscopy, dynamic light scattering (DLS), UV/Vis spectroscopy, ATR-FTIR spectroscopy, silver protein staining

Software and Tools Skills

Scripting	Python, Bash, Pandas, Numpy, Matplotlib, Scikit-learn, TensorFlow, JupyterLab, Google Colab, Conda
Molecular Dynamic Simulation	Gromacs, Visual Molecular Dynamic (VMD), CHARMM-GUI, MDAnalysis, Gaussian 16, NBO 6.0
Others	L ^A T _E X, Linux, Windows OS, GitHub, Fiji, Inkscape, GIMP, Microsoft Office: Word, Excel, PowerPoint

Miscellaneous

Membership Scientific Society

2020–	Jóvenes Biofísicos: The Young Initiative on Biophysics - YIB
2018–	Argentinian Biophysical Society - SAB

Student Project Supervision

Undergraduate Research Assistantship (URA) undergraduates work about 6-8 hours/week for a term on a research project.

06.2023– 12.2023	Alexander García. <i>Molecular Dynamic Simulation: Transmembrane Proteins</i> . URA student. Universidad Nacional de Córdoba, Argentina
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Languages

Spanish English

Hobbies

Sport: Running, Hiking
Art: Wildlife photography
Mix: Travel, personal finance, multimedia editing

References

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 Av. Haya de la Torre, 5000; Córdoba Capital-Córdoba, Argentina

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Galiano Faculty of Chemistry, Universidad Nacional de Córdoba
 Av. Haya de la Torre, 5000; Córdoba Capital-Córdoba, Argentina

MSc. Alberto Undergraduate supervisor. Email: asanchezl@uniquindio.edu.co Phone: +54 9351 802 8691
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 Quindío, Colombia. Carrera 15 con calle 12 norte; Armenia-Quindío, Colombia