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

## Academic Studies

### Degree

2024      PhD in Chemistry  
            Universidad Nacional de Córdoba, Argentina

2017      BSc. Chemistry  
            Universidad del Quindío, Colombia

### Diploma

2023      Diploma in Data Science: Supervised Learning and its Applications  
            FAMAF, Universidad Nacional de Córdoba, Argentina

## Teaching Experience

### Undergraduate

08.2019–    Assistant Teacher: Biophysics and Biological Chemistry  
04.2024    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

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- 02.2024– Department of Physics, King's College London, UK
- 05.2024 Supervisor: Prof. Christian D. Lorenz ([chris.lorenz@kcl.ac.uk](mailto: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](mailto: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](mailto:vanegalassi@gmail.com))

## Fellowships and Rewards

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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

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

## Science Communication

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

## Skills and Abilities

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### 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

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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 <sup>A</sup> T <sub>E</sub> X, Linux, Windows OS, GitHub, Fiji, Inkscape, GIMP, Microsoft Office: Word, Excel, PowerPoint

## Miscellaneous

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### Membership Scientific Society

2020–2023	<a href="#">Jóvenes Biofísicos: The Young Initiative on Biophysics - YIB</a>
2018–2024	<a href="#">Argentinian Biophysical Society - SAB</a>

### 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: native      English: B1 Pearson PTE

## Hobbies

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

## References

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Dr.      Guillermo      PhD supervisor. Email: [guillermo.montich@unc.edu.ar](mailto:guillermo.montich@unc.edu.ar) Phone: +54 9351 383 9235  
Montich                  Faculty of Chemistry, Universidad Nacional de Córdoba  
Av. Haya de la Torre, 5000; Córdoba Capital-Córdoba, Argentina

Dr.      Maricio      Researcher. Email: [mauricio.galiano@unc.edu.ar](mailto:mauricio.galiano@unc.edu.ar) Phone: +54 9351 802 4397  
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](mailto:asanchezl@uniquindio.edu.co) Phone: +54 9351 802 8691  
Sánchez López                  Chemistry Department, Facultad de Ciencias Básicas y Tecnologías, Universidad del  
Quindío, Colombia. Carrera 15 con calle 12 norte; Armenia-Quindío, Colombia