

✉ [ubeiden-samboni@unc.edu.ar](mailto:ubeiden-samboni@unc.edu.ar)  
i [www.ciquibic.org.ar](http://www.ciquibic.org.ar)  
in [linkedin.com/in/samboni-0812b1196](https://www.linkedin.com/in/samboni-0812b1196)  
☎ +54 9351 687 3459

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  
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: *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

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- 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

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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–	<a href="#">Jóvenes Biofísicos: The Young Initiative on Biophysics - YIB</a>
2018–	<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                      English (Pearson PTE: B1)

## 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