



Ramona-Gabriela Cozan-Urbanec

ABOUT ME

I am currently pursuing a Ph.D. in Physics, focusing on optimizing Surface-Enhanced Raman Spectroscopy (SERS) liquid biopsy techniques for clinical applications.

Alongside my doctoral studies, I serve as the Secretary for the Doctoral Schools of Educational Sciences, a position that has provided me with substantial experience in academic administration, coordination, and institutional processes within higher education.

I have gained diverse experience across both the private and public sectors, which has helped me develop adaptability, problem-solving abilities, and strong organizational skills. I also have a deep passion for teaching and education, enabling me to work effectively in a variety of academic and learning environments.

Through my professional roles and academic projects, I have developed solid leadership, project coordination, and communication skills. I am an ambitious, diligent, and resilient individual, driven by curiosity and a strong commitment to continuous learning and professional growth.

WORK EXPERIENCE

Babeş-Bolyai University

City: Cluj-Napoca | **Country:** Romania

[05/2023 – Current]

University Secretary

- **Policy and Procedure Management:** I am responsible for maintaining and updating University policies and procedures, ensuring they are communicated effectively and adhered to across the institution.
- **Records Management:** I oversee the maintenance of important institutional records, including meeting minutes, legal documents, and other essential records.
- **Event Coordination:** I am involved in organizing special events, commencements, and other ceremonies related to the University.
- **Strategic Planning Support:** I assist in strategic planning efforts, helping to coordinate and implement institutional goals and initiatives.
- **Budget and Finance Oversight:** I am involved in financial planning and budget management, ensuring responsible financial practices within the University.
- **Faculty and Staff Support:** I support students and faculty staff in administrative matters, including contracts, appointments, and promotions.
- **Public Relations and Communications:** I am involved in crafting official communications from the university and maintaining positive relationships with the public.

Babeş-Bolyai University

City: Cluj-Napoca

[03/2021 – 10/2022]

Physics Technician

- Monitored physical processes.
- Performed technical tests for scientific purposes.
- Reported my results in a research program ("The detection of toxicological markers in renal transplant by SERS spectroscopy of blood and urine samples")

Logiscool

City: Cluj-Napoca

[09/2020 – 07/2022]

School Coordinator

- Coordinated Logischool's every-day activity.
- Organized specific Logischool events.
- Maintained connection and good communication with the parents' community.
- Assured a good environment for studying.
- Noted students' absences, their motives, and how to further proceed.
- Gave details regarding the curriculum and lesson schedule.
- Took part in Logischool's teacher recruiting process.
- Ensured the preparation and billing of invoices.

Mihai Eminescu School

City: Cluj-Napoca

[11/2021 – 06/2022]

Informatics and TIC Teacher

- Prepared appropriate and efficient informatics lessons.
- I ensured that an adequate teaching environment was established.
- Managed a classroom of 30 students independently using positive behavior management strategies.
- Maintained records of grades, absences, and achievements.

EDUCATION AND TRAINING

[09/2022 – Current]

Physics PhD

Babeş Bolyai University <https://www.ubbcluj.ro/ro/>

City: Cluj-Napoca | **Country:** Romania

My doctoral research focuses on *optimizing SERS liquid biopsy for clinical applications* and involves enhancing the detection and analysis of biomarkers in biofluids. The aim of the study is to improve early cancer detection and diagnosis, thereby enabling more effective and personalized treatment plans for patients.

[2020 – 2022]

Master's Degree

Babeş Bolyai University, Physics Faculty <https://www.ubbcluj.ro/ro/>

City: Cluj-Napoca | **Country:** Romania | **Field(s) of study:** Biophysics and Medical Physics | **Final grade:** 10 | **Thesis:** SERS liquid biopsy of biofluids in breast cancer

Analyzing the metabolic information provided by label-free SERS liquid biopsy on serum and urine samples from breast cancer patients and controls.

[2017 – 2020]

Bachelor's Degree

Babeş Bolyai University, Physics Faculty <https://www.ubbcluj.ro/ro/>

City: Cluj-Napoca | **Country:** Romania | **Field(s) of study:** Medical Physics | **Final grade:** 9.62 | **Thesis:** SERS analysis of filtrated blood for medical diagnosis

The applicability of SERS spectroscopy for breast cancer diagnosis using a portable instrument in a clinical environment.

[2013 – 2017]

High School Degree

"Ion Luca" Theoretical High School <http://ionlucavd.ro/>

City: Vatra Dornei | **Country:** Romania | **Field(s) of study:** Mathematics and computer science | **Final grade:** 9.06

I completed a curriculum in a science-focused program with an intensive programme in computer science.

CERTIFICATIONS

[European Patent Office, 06/2026]

Create - Protect - Innovate: Bringing Ideas to Market (Entry Level)

The program focused on innovation, intellectual property, and the journey from idea to market and provided valuable insights into intellectual property rights, patent systems, innovation management, and the role of IP in supporting research, entrepreneurship, and technology transfer.

Mode of learning: Work based

PMI Project Management Ready

Completed a certified training program focused on the fundamentals of project management, aligned with PMI standards. Gained knowledge in key areas such as project lifecycle, scope definition, scheduling, risk management, and stakeholder communication.

Developed practical competencies in planning and executing projects, applying structured methodologies, and using project management tools and best practices in professional and academic contexts.

Mode of learning: Work based

Link: <https://drive.google.com/file/d/1QnV8zNxqDqTKZoi3RI2zOITi3ve3rJPQ/view?usp=sharing>

PUBLICATIONS

- [2025] [Surface-enhanced Raman spectroscopy \(SERS\) metabolite profiling of pleural fluid by Ramona G. Cozan, Sorin Pop, Luminița M. Crețu, Mihaela Mocan, David Andraș, Dragoș A. Maniu, Iulia Mandrutiu, Zina Barabas-Cuzmici, László Szabó, Stefania D. Iancu and Nicolae Leopold](#)
- [2025] [SERS liquid biopsy in colorectal cancer detection and treatment response: Revealing metabolic memory post-radiochemotherapy by David Andras, Stefania D. Iancu, Ramona G. Cozan, Markus Zetes, George Crisan, Codruta F. Buldus, Iulia Andras, Vasile Bintintan, George C. Dindelegan, Nicolae Leopold](#)
- [2025] [Advancing Breast Cancer Diagnosis: Optimization of Raman Spectroscopy for Urine-Based Early Detection by David Andras, Ramona G. Cozan, Delia E. Muresan, Vlad Moisoiu, George Crisan, Vasile Bintintan, George C. Dindelegan, Nicolae Leopold and Stefania D. Iancu](#)
- [2022] [SERS Liquid Biopsy Profiling of Serum for the Diagnosis of Kidney Cancer by Tudor Moisoiu, Stefania D. Iancu, Dan Burghilea, Mihnea P. Dragomir, Gheorghita Iacob, Andrei Stefancu, Ramona G. Cozan, Oana Antal, Zoltán Bálint, Valentin Muntean, Radu I. Badea, Emilia Licarete, Nicolae Leopold and Florin I. Elec](#)
- [2022] [SERS liquid biopsy in breast cancer. What can we learn from SERS on serum and urine? by Stefania D. Iancu, Ramona G. Cozan, Andrei Stefancu, Maria David, Tudor Moisoiu, Cristiana Moroz-Dubenco, Adel Bajcsi, Camelia Chira, AncaAndreica, Loredana F. Leopold, Daniela Eniu, Adelina Staicu, Iulian Goidescu, Carmen Socaciu, Dan T. Eniu, Laura Diosan and Nicolae Leopold](#)
- [2022] [Combined miRNA and SERS urine liquid biopsy for the point-of-care diagnosis and molecular stratification of bladder cancer by Tudor Moisoiu, Mihnea P. Dragomir, Stefania D. Iancu, Simon Schallenberg, Giovanni Birolo, Giulio Ferrero, Dan Burghilea, Andrei Stefancu, Ramona G. Cozan, Emilia Licarete, Alessandra Allione, Giuseppe Matullo, Gheorghita Iacob, Zoltán Bálint, Radu I. Badea, Alessio Naccarati, David Horst, Barbara Pardini, Nicolae Leopold and Florin Elec](#)
- [2021] [SERS-based DNA methylation profiling allows the differential diagnosis of malignant lymphadenopathy by Andrei Stefancu, Vlad Moisoiu, Minodora Desmirean, Stefania D. Iancu, Adrian B. Tigău, Bobe Petrushev, Ancuta Jurj, Ramona G. Cozan, Liviuta Budisan, Bogdan Fetica, Andrei Roman, Gina Dobie, Cristina Turcas, Mihnea Zdrenghia, Patric Teodorescu, Sergiu Pasca, Doina Picu, Delia Dima, Zoltán Bálint, Nicolae Leopold and Ciprian Tomuleasa](#)

CONFERENCES AND SEMINARS

- [30/11/2025 – 05/12/2025] **13th International Conference on Advanced Vibrational Spectroscopy (ICAVS) & 5th International Conference on Enhanced Spectroscopy (ICES)**
Xiamen, China

I participated in the 13th International Conference on Advanced Vibrational Spectroscopy (ICAVS) & 5th International Conference on Enhanced Spectroscopy (ICES) entitled *Experimental parameters optimization for reliable urine SERS analysis* and a flash talk on the same theme.

Link: https://icavs.xmu.edu.cn/Program/Detailed_Program.htm

[15/09/2025 – 17/09/2025] **EUTOPIA HEALTH on-site hackathon** Ljubljana, Slovenia

I participated in an international, interdisciplinary hackathon organized by the University of Ljubljana and the Ljubljana University Incubator, focused on developing innovative solutions for real-world challenges in health, food, and sustainability. Collaborated with researchers, entrepreneurs, and industry partners (including Roche Slovenia and Juicy Marbles) to design data-driven ideas promoting preventive healthcare and sustainable food practices. Gained valuable experience in cross-sector collaboration, problem-solving, and innovation within the EUTOPIA_HEALTH research community.

[18/07/2025 – 22/07/2025] **EUTOPIA Doctoral Summer School 2025** Convento da Arrábida, Portugal

The EUTOPIA Doctoral Summer School is an immersive and interdisciplinary experience that challenges PhD students to expand their research horizons. Through teamwork, expert mentoring, and innovative dynamics, participants develop projects that bridge different fields of knowledge, exploring new perspectives and solutions.

Link: <https://www.unl.pt/en/eutopia-doctoral-summer-school/>

[01/06/2025 – 05/06/2025] **Women in Photonics 2025** Jena, Germany

I participated in the Women in Photonics 2025 event with an oral presentation entitled *Refining the SERS Protocol for Urine Analysis in Cancer Diagnostics*.

Link: <https://www.biophotonics4future.com/wip-2025/>

[02/06/2024 – 06/06/2024] **13th International Conference on Clinical Spectroscopy** Ioannina (Greece)

I participated in the 17th National Conference of Biophysics with a poster entitled *SERS liquid biopsy of serum and urine for breast cancer detection*.

Link: <https://www.spec2024.com/scprogram>

[17/07/2023 – 21/07/2023] **CLIRSPEC Summer School 2023** <https://clirspec.org/summer-school/>

The CLIRSPEC Summer School was a blend of fundamental spectroscopy with cutting-edge clinical practice. Topics include:

- Infrared and Raman spectroscopies, instrumentation and experimental workflow
- Deep- and stimulated Raman spectroscopy
- Experimental design, multivariate statistics, machine learning and deep learning
- Tissue, cellular and biofluids analysis
- Pathology, including digital pathology and image analysis
- Health economics and translation into the clinic

[03/07/2023 – 07/07/2023] **The International Science and Technology Week of the University of Zaragoza 2023** <https://eventos.unizar.es/97550/detail/v-international-science-and-technology-week-zaragoza.html>

The International Science and Technology Week of the University of Zaragoza (ISTWZ) is a free program of activities aimed at inviting foreign science and technology students and exchange coordinators to get acquainted with the Faculty of Science and the School of Engineering and Architecture, as well as the university and the city of Zaragoza.

The ISTWZ included technical presentations, visits to labs and research institutes, meetings with researchers, other science and technology related activities, cultural activities, tours of the city and an excursion to the Pyrenees.

Link: [https://www.youtube.com/watch?](https://www.youtube.com/watch?v=pHXOfgxgqVo&pp=ygUpaW50ZXJuYXRpb25hbCBzY2llbmNIIGFuZCB0ZWNObm9sb2d5IHdlZW5%3D)

[v=pHXOfgxgqVo&pp=ygUpaW50ZXJuYXRpb25hbCBzY2llbmNIIGFuZCB0ZWNObm9sb2d5IHdlZW5%3D](https://www.youtube.com/watch?v=pHXOfgxgqVo&pp=ygUpaW50ZXJuYXRpb25hbCBzY2llbmNIIGFuZCB0ZWNObm9sb2d5IHdlZW5%3D)

[23/09/2022 – 25/09/2022] **17th National Conference of Biophysics (CNB)** Târgu Mureș, România

I participated in the 17th National Conference of Biophysics with a poster entitled *SERS liquid biopsy in breast cancer. What can we learn from SERS on serum and urine?*.

Link: https://biofiz.umfst.ro/uploads/AMM_2022_S5_web.pdf

[19/06/2022 – 23/06/2022] **Metabolomics** Valencia, Spain

I participated in the Metabolomics conference with a poster entitled *Metabolic composition of serum and urine in breast cancer provided by SERS liquid analysis*.

Link: <https://drive.google.com/file/d/1I7VsQ-XBh32f7eqyYBatFdQL7xENGcxs/view>

NETWORKS AND MEMBERSHIPS

[26/04/2024 – Current] **Acta Didactica Napocensia** Cluj-Napoca

As a reviewer for Acta Didactica Napocensia Journal, I hold a position of responsibility in evaluating scholarly contributions within my areas of expertise. My role involves assessing submissions across various themes, including the didactics of sciences (physics, biology, chemistry, geography, health, and environmental education), mathematics, computer science, ICT, educational technology, and media education. I contribute to maintaining the quality and integrity of the journal by providing constructive feedback to authors, helping them refine their work, and advancing the discourse in their respective fields.

Link: <https://adn.teaching.ro/>

[05/2023 – Current] **The International Society for Clinical Spectroscopy** <https://clirspec.org/>

The International Society for Clinical Spectroscopy (CLIRSPEC) is a non-profit organisation, founded in 2015. The Society exists to act as a platform for those individuals, teams and organisations wishing to promote the translation of spectroscopy into the clinical environment, for the general benefit of patients; for example, to improve patient diagnosis and prognosis.

PROJECTS

[10/2021 – 06/2022] **Special scholarship for scientific activity granted by Babeș-Bolyai University**

[03/2021 – 10/2021] **Profiling and concentration of cancer DNA and quantification of the oncometabolite 2-hydroxy-glutarate in IDH-mutant malignancies**

[2018 – 2019] **Project competent CFB - consolidating the process of adapting the competencies of students from the Faculties of Chemistry and Chemical Engineering, Physics, Biology and Geology to the requirements of the labor market**

SKILLS

Microsoft Office, Microsoft Word, Microsoft Excel, Outlook, Facebook, Google | Basic Knowledge in MATLAB and Octave | Quasar | Database: SQL, Oracle | C++ programming | Python Language - Basic knowledge

LANGUAGE SKILLS

Mother tongue(s): Romanian **Other language(s):** Spanish , French

English - CAE Certificate (C1 level)

LISTENING C1 **READING** C1 **WRITING** B2

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user