

Institutional context

The Universidad del Rosario is one of the oldest in Colombia. It has been characterized by its leading role in the accompaniment of the economic, political, social and cultural development of the country since its foundation in 1653. Since then, it has been the cradle of national critical thought and has been a standard bearer of the historical evolution of Colombia. In this sense, its history and long tradition support learning processes that adapt, in an innovative way, to the challenges of an increasingly changing and globalized society.

In relation to its composition, the University has five faculties and four schools, namely: Faculty of Economics, Faculty of Jurisprudence, Faculty of Creative Studies, Faculty of Natural Sciences, Faculty of International, Political and Urban Studies; School of Medicine and Health Sciences, School of Business Administration, School of Human Sciences and School of Engineering, Science and Technology.

Mission of the University

The institutional mission of the Universidad del Rosario, which includes the definition given by its founder and is maintained throughout its 368 years of history, is defined as follows: "Provide a solid ethical and humanistic training that, together with research and suitable and demanding teaching, allows this educational community to fully train distinguished people and act for the benefit of society, with a maximum sense of responsibility."

Vision of the University

We will be a University that transforms ideas into innovations at the service of the common good, with global recognition and a benchmark in Colombia and Latin America for its academic offerings and research of excellence, as well as, for its commitment to building the country in conjunction with the regions.

We will be a sustainable university that promotes knowledge-generating experiences for all members of its community, that forms leaders with social commitment and a humanistic, international and intercultural vocation that extends beyond borders.

Institutional Recognitions

Institutional Accreditation

The Universidad del Rosario has the High Quality Institutional Accreditation by the National Accreditation Council (CNA) for 8 years. It also has Institutional Accreditation for 5 years by the European Quality Assurance Agency (EQA), highlighting its strengths in terms of policies and strategies to guarantee academic and administrative processes of the highest quality.

Family Responsible Entity (EFR)

The University is accredited as a Family Responsible Entity (EFR). It is certified for its efforts to ensure that the quality of life of employees and students effectively serves their family, well-being and life project. A reconciliation of work, personal, academic and family life is sought.

GreenMetric World University Rankings

In order to raise awareness in university institutions, the UI GreenMetric World University Rankings of the University of Indonesia produces an annual publication that ranks the sustainable actions of world universities. In the UI GreenMetric 2020 sustainability ranking, the Universidad del Rosario ranked first nationally, third in Latin America and 34th in the world with a historical result in Colombia of 8,070 as it is the highest score obtained in the country.

Times Higher Education World University Ranking

Times Higher Education World University Ranking (THE World), specialized in higher education and internationally recognized for its annual university ranking, revealed the global ranking of universities for 2021. In this edition, the Universidad del Rosario ranked fourth among the most outstanding higher education institutions in Colombia.

QS Latin America Ranking

Finally, in the QS Latin America 2021 Ranking, Universidad del Rosario is among the 10% of the best universities in the region. It is in position 40 and ranks number 26 in Latin America in reputation with employers, this being one of the most relevant indicators in the ranking.

URSTEAM context

The URSTEAM program responds to the STEAM educational model (acronym in English for Science, Technology, Engineering, Art and Mathematics), an evolution of the STEM model and which provides a framework to connect the growing network of educational disciplines, companies and communities to create adaptable programs, based on reality, globally responsible and committed to citizenship. UR STEAM convenes the areas of science, technology, mathematics and engineering (through the School of Engineering, Science and Technology), arts and design (through the Faculty of Creative Studies) and management and entrepreneurship (through the School of Administration and UR Entrepreneurship). It seeks the integration of these areas in comprehensive training and research processes that contribute to the identification of real problems and the creation of pertinent and innovative solutions.

UR STEAM generates a space for the convergence of various knowledges, allowing students, teachers and the productive sector to adopt, appropriate and empower themselves with new knowledge, technologies, innovations, methods and tools, through creative and integrated co-constructions that respond to the new industrial challenges and environmental changes both quickly and effectively. The intention is to promote, through this training model, the growth and well-being of the population, and the sustainable development of the region and the country, promoting a society based on knowledge management generated by the integration of science, technology, engineering, art, design, mathematics and management.

UR STEAM identifies four areas of direct impact: 1) training through formal academic programs at all academic levels, 2) experimentation in existing and future laboratories within the University and in the allied business sector, 3) research and applied creation, as a product of a collaborative work that favors interdisciplinary processes and projects, and 4) projection, which allows identifying technological trends and cutting-edge knowledge that nurtures training and research processes.

Curricular approach

The UR STEAM curricular approach is based on three scenarios: a meta-disciplinary approach to teaching and learning processes, a permanent link with the external sector, and the integration of innovation and technology.

Meta-disciplinarity

UR STEAM proposes the integration of disciplines, with relevant epistemological development, proposing to look beyond a study plan, so that students may have the possibility to connect concepts and theories from different disciplines in order to achieve a greater understanding of issues and problems, through projects and solutions. Likewise, the student develops skills to combine practices from two or more disciplines in order to solve a problem. As the prefix

“meta” indicates, it is about proposing interactions that go beyond disciplinary contributions, to fully articulate methods and cognitive schemes inherent to the different areas involved.

The STEAM approach of the Universidad del Rosario articulates Science, Technology, Engineering, Arts, Design, Mathematics and Management in its first axis, areas that contribute to the strengthening of transformative, innovative and creative thinking and strengthens skills to advance towards sustainable development, in addition to the strengthening of skills to become better citizens who participate in dealing with the problems that currently affect businesses and society in the region.

Permanent context relations

To ensure meaningful learning and relevance to the real context that the student faces, the UR STEAM pedagogical approach proposes joint work with external interest groups that consider Universidad del Rosario as an ally to solve their current and future requirements, where government, organizations, business and society are integrated.

These interest groups include:

- National and international universities that can bring students from different disciplines together to jointly develop challenges.
- Centers, institutes, and organizations dedicated to scientific and applied research.
- National unions: ANDI, ASOCAMARAS, ACOPI, among others.
- National Government: MinTIC, MinCiencias, MinCIT, MEN, DNP, National Science and Technology System, DANE, Procolombia, among others.
- Productive and business sector of all economic fields, national, multinational and international.

Another strategy that enables a direct link with the environment is the triple helix model. This model implies an integration between the state, companies and the university. Currently, the country, through the Ministry of Science and Technology, has been making efforts to develop programs that promote this integration. This favors a significant change in the relations between the three institutions and society, thus favoring processes of innovation and technological and social transfer. This model opens the possibility of designing programs in dialogue with companies that respond to the needs of the social, cultural and economic context in Colombia.

On the other hand, the university Spin-Off strategy; companies based on scientific and technological knowledge developed by teachers and researchers, are considered as an important possibility of leverage for research transfer to society; a favorable innovative, competitive and widely accepted potential has been demonstrated at the time of market implementation (Monge et. al., 2011). This is related, among other things, to the academia's credibility in society and to the leverage of entrepreneurship contextual policies by educational

institutions (Bermúdez, Castañeda & Valencia, 2014). In the Colombian case, working from the regions makes special sense since it allows the generation of focused solutions to each problem that arises.

In accordance with the above, the UR STEAM proposal promotes the global construction of society based on a greater communication between the local, regional, national and international entities, in order to formulate and execute projects that generate a greater impact and that can benefit the greatest number of citizens possible, integrating all the actors and generating an impact on training, research, the economy and society.

Innovation and Technology

An important distinctive aspect in learning guided by the UR STEAM approach is the integration of innovation and technology as essential drivers. Through the combination of science, technology, the arts, design and management, creative processes and the applied use of science and technology at the service of transformation and innovation are promoted.

UR STEAM Research areas

A. Trade, industry and technology

Commerce, Industry and Technology is an applied research area that seeks solutions to major problems in the business world and its different economic sectors, generating technological solutions for small, medium and large companies, using tools such as Artificial Intelligence, Data Analytics, Data and Machine Learning in order to significantly contribute to the advancement of companies' sustainability. Problems of interest in this research area are: efficiency improvement in the use of resources in companies through the introduction of innovations in processes and products, as well as in the development of new business models that allow the alignment of companies with the fulfillment of the 2030 Agenda and the Sustainable Development Goals.

B. Materials design, Creative and cultural industries

Regarding materials, this area tends towards (A) an applied research work with the creative and cultural industry in the search for new and innovative approaches to traditional materials and processes and (B) an applied research work with natural materials and ancestral technologies based on traditional ecological knowledge in order to contribute to Colombia's productive sector attending to context. Regarding CCIs, this line of work promotes applied research that provides advanced, relevant, innovative and specific solutions to the challenges that Colombia faces in terms of management, entrepreneurship, policies, programs and specific transversal projects in areas and industries such as audiovisual, publishing, digital, architecture, design, fashion, music, performing arts, crafts, material heritage, plastic and visual arts and cultural training.



C. Inclusive models, gender equity and women's empowerment

The challenges that the Sustainable Development Goals (SDGs) bring us, especially those aimed at gender equity and women's empowerment, require technology and innovation to make transformative changes, generate innovative solutions and integrated contexts in this field. For this reason, the creation of new technologies offers an opportunity to develop markets that promote gender equality, develop innovations and technology-based enterprises that respond to the needs of women and girls. According to UN Women, one of the pillars on which society must focus in the coming years is to accelerate the development of tools and methodologies to improve the representation of women at all levels, in order to achieve gender parity and promote gender equality and the empowerment of women, and examine gender-based discrimination, harassment and stereotyping, as well as own unconscious bias among others.

D. Circular economy, sustainable consumption and production:

The crises around the world and more recently the one generated by the Covid19 pandemic, have highlighted the need to reflect on sustainable production, distribution and consumption, from the notion of circular economy. In this context, this line of research promotes the development of applied research around the elimination of waste, the reduction of pollution, and the increase in clean production. Similarly, from this line of work, applied research projects that promote the rational use of natural resources by organizations and the development of resilient supply chains will be privileged, all of the above through the use of new technologies and forms of supply and provision of services.

E. Urban technology, smart and sustainable cities and communities

The world population continues to increase, and it is expected that by 2050, 70% of the world population will live in cities and urban centers, and therefore the demand for resources will continue to increase. Cities need to transform and respond to global challenges: energy efficiency, interconnection, sustainability, food security, water management, pollution, etc. This line of research focuses on the application of information and communication technologies (ICTs) such as artificial intelligence, robotics, data analytics, the Internet of Things (IoT), in the construction of Smart cities or Cities 4.0. The development of these technologies will make it possible to manage resources efficiently and change the normal flow of how things are done, thus contributing to the construction of smart, sustainable and resilient cities and communities.

Recruitment Applications

This document sets out the parameters for the URSTEAM 2022 call for 4 researchers, which seeks to identify and select professionals suitable for the challenges and current demand of interdisciplinary and frontier research, prepared to face situations that imply applied and



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articulated knowledge with the sciences, technology, engineering, arts, design, administration and mathematics, and for which increasingly recursive and innovative methodologies and experiences are required.

Position to provide

Two (2) URSTEAM Senior Researchers with interdisciplinary skills, experience and vocation to develop applied frontier research

Two (2) full time researchers at URSTEAM with a competitive monthly salary for local and international standards. Researchers will work in one of the following applied areas:

- Trade, Industry and technology
- Materials innovation and design, creative and cultural industries
- Inclusive models, gender equity and empowerment of women
- Circular economy, sustainable consumption and production
- Urban technology, smart and sustainable cities and communities

Minimum required academic qualifications:

- Undergraduate degree in STEAM areas (science, technology, engineering, arts, design, administration, mathematics)
- Master's or PhD in STEAM areas (science, technology, engineering, arts, design, administration, mathematics)
- Second language B2 certified. In the following link you can see the minimum levels required according to each language: <https://www.urosario.edu.co/Profesores/Vida-academica/idiomas/> Non-Spanish-speaking foreign candidates may apply and will be given two years to Strengthen communication skills in Spanish. They must present the exam of the Multicultural Center of the Universidad del Rosario or an international DELE exam and obtain B2.

Requirements

- You are expected to be a proactive person with excellent interpersonal relationships, willing to work in a team, motivated for interdisciplinary work and with a vocation for applied research.
- Demonstrate a minimum of three (3) years of experience, recognized nationally or internationally, in applied research in the areas mentioned above.
- Demonstrate at least one (1) year of teaching experience in undergraduate and/or postgraduate studies.
- Demonstrate applied research expertise through a portfolio of products or processes.
- Desirable to have recent bibliographical production (last 5 years) in scientific publications indexed and evaluated by peers.
- Desirable to have an active participation in networks, associations, or international scientific communities.

Responsibilities



- Programming and developing applied research projects at URSTEAM
- Assume the role of tutor for postgraduate students.
- Coordinate an area of URSTEAM according to their specialty, experience and professional training.
- Participate in the formulation and implementation of undergraduate and graduate educational projects associated with their area of expertise.
- Lead and advise applied research projects that may emerge within the framework of the URSTEAM model.
- Work in an articulated and joint manner in projects, calls and consultancies of URSTEAM and integration of URSTEAM with other units of the University.
- Articulate relationships with the public and private sectors, with organizations and with both regional and international academic communities on issues associated with their area of expertise.
- Others assigned by the immediate boss, according to the nature of their position, the area of their specialty, their experience and professional training.

Expected research outcomes

- The research results are expected to be framed in the category of "Research, Development and Innovation Products", favoring the development of patents, registrations, licenses, spin-offs, start ups, technological cooperation.

Deliverables

1. **Detailed resume**
2. **Undergraduate and postgraduate titles** in PDF format (maximum 10 MB in size)
3. **Research portfolio** in PDF format (maximum 10 MB in size) containing products or processes that demonstrate applied research expertise. It is important to specify in the portfolio the participation that the applicant had in the development of each of the products highlighted.
4. **Certificate of proficiency in a second language** other than the native one in PDF format. In the following link you can find the valid certificates required according to each language: <https://www.urosario.edu.co/Profesores/Vida-academica/idiomas/>
5. **Research proposal** in PDF format (maximum 10 MB in size) detailing how the research will be carried out within the UR STEAM ecosystem (see attached format to present the proposal)
6. **Audiovisual presentation of research proposal.** Link to an instructional video on YOUTUBE or VIMEO of a maximum duration of 5 minutes in which the person applying for the position presents the applied research proposal that they would like to develop at URSTEAM. The link to the YOUTUBE or VIMEO video must be inserted at the beginning of the research proposal form.

Selection process and criteria

The call consists of two stages. In the first stage of the call, the following aspects will be assessed:

- Resume, research proposal and portfolio 70% (training, applied research, career, awards)
- Video tutorial 30%

Minimum score required in the first stage to go on to the second: 80%. In a second stage of the call, the following aspects will be assessed:

- Interview with the URSTEAM selection committee 70%
- Online technical test 30%

Important dates

Description	Dates
Open applications	May 16 th - June 12 th 2022
Evaluation of the applications in their first stage	June 13 th - 19 th 2022
Candidate's preselection	June 20 th - 24 th 2022
Interviews and technical tests of those who pass to the second stage	July 12 th - 22 th - 2022
Notification of the results of the call for participants	July 25 th - 29 th 2022
Work begins	August 1 2022

Email to which all complete deliverables should be sent:

Viviana.villamil@urosario.edu.co

Please do not apply if you do not meet the qualifications, second language and requirements established in this call.



Research Proposal Format

Please insert here link to instructional video on youtube or vimeo presenting your proposal

1. Title
2. Research area:
 - () Trade, Industry and technology
 - () Materials Design, Creative and Cultural Industries
 - () Inclusive models, Gender equity and women's empowerment
 - () Circular economy, sustainable consumption and production
 - () Urban technology, smart and sustainable cities and communities
3. Introduction
4. Research problem and question
5. A brief evaluation of the existing scholarly literature on your proposed research question
6. General and specific aims
7. Research design and method(s): participants, and data collection techniques you plan to employ to answer your research question
8. Implications for your field
9. Proposal timeline
10. Limitations of the project
11. A reference list or bibliography of scholarly sources