ADVANCES IN SCIENCE



ALL OUT FOR RESEARCH

By Inés Elvira Ospina / Photos by Leonardo Parra

The Research and Innovation Council was set up in 2016 as a necessary step towards achieving the ambitious goals of a university with great potential, and in keeping with its 2020 Institutional Development Plan.

> Financing, support for scientific talent, help with dissemination, a structure to aid research management, and the development and implementation of a system for scientific integrity: the university's expanded research program depends on these five strategies to ensure the highest standards of quality, relevance, and rigor.

he Universidad del Rosario has increased its number of published articles over the last ten years by 297%. It increased the number of articles in Scopus-indexed journals from 69 in 2007 to 275 in 2016. Diana Carolina Velasco, head of the Research and Innovation Council says that these

increases stem from the consolidation of a research culture stimulated by implicit and explicit policies maintained consistently over the course of the last two decades.

Velasco says that promoting the existence of a research ecosystem not only requires increased investment of economic resources, but also means implementing strategies for attracting and retaining talent, positioning published work in the best journals in their specific topics and areas of research, identifying calls for papers, and opportunities for financing to develop high quality research projects. All this involves academic networks that help maximize the impact of the scientific knowledge produced.

"In other words, give all our professors incentives to carry out high-quality research, the results of which will nurture courses on offer, exposing young students at the Universidad del Rosario to state-of-the-art curricula that both critiques and reflects the state of the country and the world. This is all down to the implementation of a system wth scientific integrity that aims to promote a culture of academic rigor in research, one that prioritizes respect for research subjects and objects, as well as transparency in linking research methodologies to achieving results," she points out.

The head of the Research and Innovation Council explains how research is integrated within the different areas of the university.

Why is research important for the Universidad del Rosario?

(DV) Through its mission statement and national outlook, the Universidad del Rosario has made research a cornerstone. Our studies have an impact on the life of the country and on global problems through the improvement of quality of life and health, better public policies and, in general, by making the work of the State more effective. The production of knowledge contributing to the solving of theoretical and practical problems at local and global levels is at the core of our research. One recent example is the study run by the Center for Autoimmune Disease Research (CREA), which discovered the relation between the Zika virus and Guillain-Barré Syndrome. We produce such knowledge for the benefit of society, upon which it has an immediate impact.

We carry out studies nationwide through local entities in society and in cooperation

WE ARE A **MEDIUM-SIZED UNIVERSITY. BUT** THE VOLUME OF **OUR SCIENTIFIC PRODUCTION IS** LARGE FOR OUR SIZE. JUST OVER 12% OF OUR PUBLICATIONS WERE AMONG THE 10% MOST CITED WORLDWIDE, SO WE HAVE A SIGNIFICANT IMPACT ON THE WORLD'S SCIENTIFIC AGENDA

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with researchers from other universities. Although our facilities are concentrated in Bogotá and Cundinamarca, we do research in every region of the country. So the research results produced at the Universidad del Rosario circulate throughout the global scientific communities at the head of different knowledge areas, having a direct impact on the problems that trouble the country.

When were the different strategies for strengthening research initiated?

(DV) Research has been at the heart of the University since the Center for Research and Planning was established in 1975 and strengthened in 2005 with the establishment of the Center for the Promotion of Knowledge and Innovation. It was this capacity-building framework that made it possible for the Research and Innovation Council to be established in 2016 as a necessary step toward reaching the ambitious goals of a university with great potential, and in keeping with its 2020 Institutional Development Plan.

A new approach and structure were necessary for the university to reach its ambitious goals for scientific production and its intended impact on society through research results.

We needed a new vision. The Research and Innovation Council aims to promote and

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strengthen research in all the areas of knowledge developed in our different academic units.

What is the strategy behind this big push?

(DV) Our obsession is on providing our researchers with all possible support mechanisms in line with the best research

OUR FIVE STRATEGIES TO SUPPORT RESEARCH



Support for research projects (financing)

- Various funding sources, almost all through tenders.
 Financing from small initiatives (through seed capital funds) to those requiring large investments in high-cost equipment.
 Support for research incubators where undergraduate students participate voluntarily.
- Financing of products and prototypes that result from this research.
- Support for the formation of academic networks by financing the organization of conferences on topics that the University considers relevant.

Support for scientific talent

- Various instruments and entities that support the development of research.
- Support for involvement with the university by individuals widely recognized in their fields for the purpose of consolidating lines of research.
- Involvement of recent Ph.D. graduates for the consolidation of their scientific research and careers.
- Involvement of associate professors, lecturers, and researchers with positions in more than one department, and who help in building collaborative networks.
- Instruments for the retention of senior teaching staff and others with a solid history of research.
- Identification of undergraduate students with an interest, talent, and a personal calling for research, to encourage and support them on this path from their incubation until their integration in research groups on master's degree and Ph.D. programs.
- · Different incentives for publishing articles.

practices, so that they can develop their skills in just the right environment.

Research products result from a process and from constant research cycles, so to make the most impact we must provide our professors with the mechanisms they need to develop more and better project proposals in their areas of study. Thus, we define five different strategies to support the research cycle through its different stages, and we also guarantee that academic units can meet their research agendas. The strategies

are: internal financing of research projects and initiatives; support for scientific talent, thus creating better research teams and partners; ongoing support work including the search for the most appropriate journal for publication, plus editing assistance; a system of scientific integrity that promotes scientific quality and rigor; and support for research proposals and management, whereby we help in finding opportunities, calls for papers, and external financing, among other things. We are already seeing results: In 2016, 50% of our scientific articles were published in Q1 journals, which are the most highlyranked and widely circulated in the world.

When the quantity of production is increased, sometimes quality suffers. How do you get round this problem?

(DV) It's not just a question of getting published in indexed journals, but of knowing whether the the material is being read

THE PRODUCTION **OF KNOWLEDGE** CONTRIBUTING TO THE SOLVING OF THEORETICAL AND PRACTICAL PROBLEMS AT LOCAL AND GLOBAL LEVELS IS AT THE CORE OF OUR RESEARCH

and proving useful to others. Quantity is very important to the university but it must be high quality. This effort shows up in our firstplace position in the Scimago 2016 ranking, which takes an overall balance of quantity and quality in scientific publications.

We are a medium-sized university, but we have a large volume of scientific production for our size, and it is generally of high quality. A little more than 12% of our publications were among the 10% most cited worldwide, so the knowledge that is being produced at the University has a significant impact on the world's scientific agenda.

Why is the number of publications important to someone who is choosing a university?

DV) If our professors play important roles in the scientific community, the University offers an assurance that it has teaching staff of the highest quality, acknowledged by the scientific community, and who are producing new results in their fields. So we can certainly be more confident that what they impart in class will reflect the latest knowledge in their fields, thus guaranteeing that our students will acquire the best tools for learning how to do research, and that they have access to the latest trends in their subject areas.



Supporting publication

• Help for professors in selecting the best journal in which to publish, keeping in mind that the rate of rejection in some journals may reach 80-90%

- Editing help for texts in English to increase the chances of acceptance by journals.
- · Payment for openaccess publications. The university covers the costs and the research is available on the Internet for all who want to read or download it.



Supporting proposals and management • A team of project

managers works with professors to keep them abreast of opportunities for external financing and calls for articles.

• A help portal for researchers with eight services, covering 24 categories, and with answers provided to any question in less than 24 hours (on work days).



Implementation of a scientific integrity

- Two sections of the Institutional Ethics Committee (a social sciences section and a life sciences section) to guarantee due respect for research subjects and objects.
- •Membership of the Committee on **Publication Ethics** (COPE).
- Coordination of research ethics in research methodology classes.