8 ADVANCES IN SCIENCE



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José Manuel Restrepo Abondano has been president of the Universidad del Rosario for nearly four years, a period which has seen changes designed to harvest new fruits in the area of research. n September 22, 2014, the Universidad del Rosario's Aula Máxima was the scene for the official conferment of José Manuel Restrepo Abondano's title as president of this institution for the years 2014 to 2018. An economist, previous vice-president of the Universidad del Rosario and former director of the Economics PhD program, Restrepo is coming to the end of his term, one in which the university has been characterized by its role as a higher education center open to difference and making notable progress in its performance.

It has seen several achievements in the field of research. From 2014 to early 2018, more than one third of the Universidad del Rosario's academic output was included in 25% of the most cited journals internationally, and almost ten percent of the articles produced by its academic community were among the ten percent most cited worldwide. It has also held outstanding positions in rankings. In 2017, for example, it was

the fourth highest Colombian center in Scimago; in the same year it got into the top 40 of the *Times Higher Education* Latin America University rankings, also occupying 5th spot in the QS *World University Ranking* 2018 for Latin America.

These performance ladders clearly show advances in research, as do the interdisciplinary groups the University has these days, groups ranked A and A1 by Colciencias. And then there is the high number of its publications, among other signs.

How have you managed to put in practice the concept you mentioned on taking over as president about what university means: "unity in the midst of diversity"?

José Manuel Restrepo (JMR). That expression has to become a reality in different spaces within the University. In the world of research, it must be a university open to making the most of the diversity of disciplines it boasts, while also opening up new interdisciplinary spaces.

Unity in diversity from the perspective of knowledge is how—overcoming the tribal logic of faculties—we are able to generate dialogue between one and another based on creating knowledge, in other words how we get research groups to grow by creating new interdisciplinary spaces that nourish the University at large. This is how interdisciplinary research groups have emerged: in the case of peace and conflict through JANUS, in climate change, areas of equality and gender, the Tic Tank, which is the arrival of information technology, and in communication outreach to all disciplines and professions.

What is your appraisal of the research field over the last four years?

JMR. I base this on the idea that knowledge in a university is built along four roads. One: how to build life plans dedicated to academia. Two: how these projects lead to the construction of projects of knowledge. Three: how to propitiate a favourable habitat for the process of research. And four: how this translates into legitimacy in society.

Let us start with the life plan

JMR. We have been concerned with bolstering the life plans of lecturers devoted to research and, in this direction, an effort has been made to keep lifting the excellence of the academic teams working at the institution. It is not just a question of training levels; it means relying on professors showing active commitment to teaching and research. At the same time as this, the possibility of creating a professorial school needs to exist (research assistants, graduate assistance, young researchers), one that should work from the outset in such a way that it has outstanding people comprising the academic team, people with experience, and others with whom it is possible to build a long-term project. This means harvesting the great strength a university can have in line with its PhD and Master's degree programs.

This road is also associated with better conditions of all kinds. In this sense, the incentives policy was updated in line with a clearly historic moment for the University. Today we are pushing for professors to continue publishing in the most internationally acknowledged spaces. And we are working for a major increase in professors' PhD training.

What projects come in sight in the second road?

JMR. We are working as a team to lift the standard of research groups. We want them to reach the maximum Colciencias categories: Al and A, and we can now say that there has



been a significant proportional increase, so much that 49% are in A and Al Colciencias categories.

Similarly, we are set on continuing to strengthen doctorates and Master's degrees among different faculties, including those that did not offer PhDs. These programs enable the University to have a greater dynamic in research due the great possibility of human talent in this field.

This is added to by the strengthening of certain elements in our learning habitat, the first of these in the area of ethics. The bolstering and construction of the Research Ethics Committee is perhaps one of the most important advances since it lets us create a dialogue that was concentrated for years in the area of medicine, but which today is really just ethics regardless of the discipline or profession.

Furthermore, a second push concerns how to create more resources through the University's research fund. The idea is that we should make a sufficient sum available for groups and people to have enough for research. Naturally, there is pressure to draw resources from outside, but since it is important to look for them, the Universidad del Rosario must find "nourishing" resources from external sources.

We can also underline that the increase in the research fund responds to a different philosophy to that in operation earlier, which fell into line with different times for the URosario. Today, it is not just aimed at small and seedbed projects but also supports medium and large-sized projects. It makes no sense for funding to only go into starting things; it must also be for advancing them.

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Likewise, we have resources and strategies for attracting lecturers from outside and for sending people on research stays, something that did not exist before at the University and which proves so valuable in allowing us to build up our academic community as well as dialogue with peer authorities at international level, creating shared publications, and fostering new research projects.

There has also been a conscious effort to support professors in the translation of their articles, and this has meant a significant increase in Q1 publications. While in 2014 we had 78, 2017 brought 157. The University set itself the big target of doubling its scientific publication figure, and we are on the way to meeting it. This means our having presence in international debate.

We complement this effort through our publishing project. The University is among those with the highest annual publishing output, and this has won it recognition. It has also perfected its publishing project in key communication areas, assuring quality in diversity and dialogue with other national and international projects for joint publications. Finally, in our own institutional terrain we have boosted our library, especially its virtual side, since this is the center through which professors access the frontiers of knowledge. We have also sought a way to create more dialogue between research communities, hence the emphasis on information, as in PURE, the research information system adopted by the Universidad del Rosario. Through the latter, researchers have access to tools through which they may connect up to international networks and make their works available, thus making it easier to carry out evalutions of how their scientific production is faring.

So, what about the fourth road, legitimacy in society?

JMR. The results of the work we have done in research are certainly noticeable along this road. The University would not have made the progress it has in international indicators such as QS, Times, and Scimago if there had not been research. These international rankings are held up by research, and all show that the University has made significant progress despite



not covering all areas of knowledge. We do not have a key area for further growth, namely engineering, which could easily contribute a more important portion of future scientific production for such a University as ours.

Let us talk about an important area of research and growth for the University...what is the thinking of the Universidad del Rosario at a regional level?

JMR. Historically, the Universidad del Rosario has been a regional university, with a great many of our students once working in the New Kingdom of Granada, but also in other regions of America: Mérida, Guatemala, Chapas. At national level it has been a center open to receiving students from other parts of the country, something that happened when it was not normal for students to travel to study in Bogotá.

The Universidad del Rosario has had this culture and character but also a different form of regionalization. It is very common for universities to reach a region and absorb other higher education institutions. The country needs us to share our academic experience with the regions so that they can upgrade and, in this sense, our pathway has been through training programs allowing the region to move forward thanks to key local agents.

Based on this, the Universidad del Rosario has entered different cities in the country through undergraduate higher education centers, chambers of commerce, labor unions, and other local agents through which it has built training programs and improved human talent. The same has occurred in research. We have been involved in joint work on interesting subjects. And we have added our capacity in research to that of particular regions.

So what are the challenges coming up in the area of research?

JMR. To have new areas of knowledge. The University must move forward in areas of Engineering, and we are working on this with what I calculate will soon be a presentation of a first proposal to the *Consiliatura* (University Board of Gover-

The Learning and Research Resource Center (CRAI), Universidad del Rosario, Entrepreneurship and Innovation Center.

we have already been working. Obviously, the programs will be at undergraduate level, but there must be a research effort nourished by the other research groups. There cannot be innovation to the fullest capacity without Engineering, otherwise this would have to done with another institution. A thorough investment in innovation goes hand in hand with Engineering.

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A second big challenge in research is that the transition from knowledge generation to innovation must become more effective, and this includes more emphasis on patents, technological development, and in giving added value to society through new knowledge.

It is essential that the advances in knowlege leading to patents also turns into profitable opportunities for business in society, and we are still at an early stage on this.

We must keep up our investment at the level of Master's degrees and PdDs. We have made a great leap forward but still lack several Master's and doctoral programs. And I am also of the opinion that we need to make a big effort in research resources at international level. We must find financing sources for research through international partners.

Finally, there is a general challenge facing the University, namely how to integrate the research agenda into a fourth industrial revolution. We will be able to deepen our involvement in the concerns of a fourth industrial revolution with our domestic contribution for the good of the country and humanity.