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## A conference on interdisciplinary research and education in Latin America<sup>1</sup>

THERE IS an increasing number of scientists who recognize that their research questions cannot be answered from a single discipline. “The best interdisciplinary science” comes from this recognition, since it allows recognizing the limitations of disciplinary approaches to address some research questions (*Nature* 2015; Repko, 2008; Repko *et al.* 2011). Several interdisciplinary studies have analyzed the difficulties of interdisciplinary entrepreneurship in academic settings (Bruce *et al.* 2004; Klein 1990; Bruun *et al.* 2005). In this line, the latter define seven barriers that constitute a good summary of the challenges faced by those who decide to immerse themselves in this enterprise: structural, cultural barriers, epistemological problems, methodological and psychological knowledge barriers and evaluation barriers (Bruun *et al.* 2005). However, beyond the barriers, researchers and teachers all over the world face the risks and do interdisciplinary. It is true that this is not a simple path, but with the right incentives it is possible to multiply this type of experience in the academic field.

*Nature*, one of the most prestigious scientific journals at the international level, dedicated a special issue to interdiscipline in September 2015.<sup>2</sup> In particular, Von Noorden’s article brings significant data of a growing trend since 1980 in scientific articles incorporating references foreign to the discipline itself, constituting this an indicator of the crossing of boundaries between disciplines. Also, between 1950 and 2010, there is a growing trend in the use of the word interdiscipline in the titles of scientific publications (Von Noorden 2015). Taking this background into account, we reviewed the Regional Online Information System for Scientific Journals of Latin America, the Caribbean, Spain and Portugal (Latindex) and found that there are currently 71 journals indexed in this system that have the word interdiscipline in their title.<sup>3</sup> Although these data do not result from a thorough review or an attempt to quantify the growth of interdisciplinary studies in the academic world, they are indicative of the existence of a

<sup>1</sup> Web site of the Conference: [www.congresoiei2016.ei.udelar.edu.uy](http://www.congresoiei2016.ei.udelar.edu.uy)

<sup>2</sup> Available at <http://www.nature.com/news/interdisciplinarity-1.18295>

<sup>3</sup> <http://www.latindex.org>

dispersed academic community that thinks and makes interdisciplinary efforts in Latin America and the Caribbean world. This feeling of community, of a shared “something” is what led us to dream, to propose and to concretize a Latin American meeting on interdiscipline.

The proposal of a first Latin American Conference on interdisciplinary emerged in 2015, within the Interdisciplinary Space (EI) of the University of the Republic (UDELAR) in Uruguay. Since 2009, more than 750 teachers and researchers have integrated cores or interdisciplinary centers of the IE.<sup>4</sup> To this is added a contingent of teachers, researchers, students and non-academic actors who make multi, inter or transdisciplinary efforts in different spaces of the university or other spaces somehow linked to it. Initially, the Conference was conceived as a local meeting to share experiences and research results, as well as interdisciplinary higher education at the national level. As the idea of the Conference grew, the need to interact and to address shared concerns with other interdisciplinary academic spaces in the region became clear. It was then that we challenged ourselves to think of a greater dimension: Why not think of a space that would allow to visualize scattered experiences in the different academic areas of the continent?

Thus, the Latin American Conference of Interdisciplinary Research and Higher Education (IEI) emerged, with the idea of initiating a regional and Latin American biennial exchange on the specificities of interdisciplinary work, considering that the view from different academic contexts enriches and strengthens the local and regional perspectives. Appealing to the construction of a community that transcends borders and that allows building and consolidating areas where to dump and collect experiences, knowledge and shared concerns was—and is—one of its main motivations.

In this first edition of the IEI Congress there were four academic institutions that convened: The Interdisciplinary Space of the University of the Republic of Uruguay, the Center for Interdisciplinary Research in Sciences and Humanities of the National Autonomous University of Mexico, the Institute of Sciences of the Nature, Territory and Renewable Energies of the Pontifical Catholic University of Peru, and the Doctorate in Interdisciplinary Studies of the University of Valparaiso of Chile.

The initial objectives were:

- Give visibility to interdisciplinary groups of diverse academic contexts of the continent.

**4** The EI has different funding programs for interdisciplinary proposals: nuclei, centers, seedlings, events, students, among others. The two strongest and most successful programs are centers and nuclei, which consist of the consolidation of interdisciplinary groups that fulfill all three university functions in a 2, 3 or 5 year development plan. For more information: [www.ei.udelar.edu.uy](http://www.ei.udelar.edu.uy)

- Expand the network of groups conducting interdisciplinary research and higher education.
- Give international visibility to the work carried out by different groups of the Interdisciplinary Space.
- Encourage the formation of international evaluation teams of interdisciplinary work.
- Encourage the creation of a network of interdisciplinary centers in Latin America that encourages rotation in the organization of the Conference.
- Establish the periodicity of an international event with which the academic community counts on presenting processes and results of interdisciplinary research and teaching.

A good part of the objectives were fulfilled. We received in Montevideo participants from more than 50 academic institutions throughout the Americas, including: Argentina, Brazil, Canada, Chile, Colombia, Costa Rica, United States, Guatemala, Mexico, Peru and Uruguay.

### **Interdisciplinary experiences in Latin America**

In the dossier of this volume are collected important papers presented during the IEI 2016 Conference. The selection of these met two criteria of structuring the IEI: The representation of interdisciplinary groups from various points of the American continent and the balance between proposals with emphasis on research and / or interdisciplinary higher education.

From Argentina, the article by Monica Gruden, brings us a novel experience in higher education that consists of the application of a simulator of alfajores factory as a didactic resource to represent models of systems dynamics. A technical resource in this case, enables the simulation of scenarios for the resolution of real and complex problems.

Augusto Castro, from Peru, proposes the challenge of thinking about an interdisciplinary ethics especially associated with the management and resolution—or transformation, as the author proposes—of social and environmental conflicts. This is an especially valuable tool in the evaluation of policy associated with these and other issues.

The work of Ricardo Mansilla, from Mexico, warns about the most powerful potentialities and edges in the use of social networks, as well as their social and political implications. The use of what is now known as big data presents a scenario that involves a reconversion of the instruments for data analysis, multiplying the challenges that the social sciences must face today.

This issue also includes articles of some of the teams that have worked in the Interdisciplinary Space since its creation in 2009 within the UDELAR, Uruguay. This is the case of the Interdisciplinary Center for Children and Poverty (CIIP), the Interdisciplinary Center for Aging (CIEN) and the Interdisciplinary Center for Response and Change to Climate Variability (CIRCVC), which present results from years of interdisciplinary work.

In the CIIP article by Canetti *et al.*, we find one of the substantive contributions made by this Center for the elaboration and monitoring of public policies for children in Uruguay, which consists of the elaboration of a multidimensional tool for measuring growth, development integral and child welfare, resulting in a significant experience in the articulation of academic knowledge and decision makers in this area of public policy.

The CIEN reflects on the link between the Center and political spaces, where decisions that affect one of the most vulnerable populations in society are put into play. It also presents the difficulties and challenges involved in the collaboration between academic and non-academic knowledge, which are added to the very formation of an interdisciplinary center in which different disciplines, perspectives and approaches coexist on a theme of common interest.

The authors of the CIRCVC share many of the concerns and interests of the aforementioned centers, but on a different thematic ground, unanimously recognized as an interdisciplinary terrain: change and climate variability. In his paper, Cruz *et al.* place special emphasis on aspects related to strengthening the science–society interface, which puts on the table many shared concerns and suggests shortcuts for other groups that travel through similar experiences.

Finally, Ana Corbacho's article on interdisciplinary higher education is part of the efforts that are being carried out in the UDELAR Interdisciplinary Space to promote teaching and learning initiatives aimed at undergraduate university students. This initiative stems from Corbacho's nearly ten years of experience in designing, implementing and evaluating this type of course at the University of California at Davis. The development and implementation of *Minicursos 3i*—for the three initials of interdisciplinary, integrated and intensive—is currently expanding, seeking to form interdisciplinary teaching teams and diversifying the issues they address from a problem-based learning methodology.

This volume includes three other sections. The first allows us to know the trajectory of Hugo Melgar Quiñónez, through the interview conducted by Verónica Fernández. Melgar's voice and Fernández's pen mix to take us on a journey as rich as it is surprising. Hugo Melgar is currently one of the most prominent figures in the world on food security and challenges us to reflect on interdisciplinary and inter-sectoriality in the field of food security, but also beyond it.

In the independent communications section, Yuri Aguilar and Luis Soto reflect on the limits of the disciplines and their implications for a collaborative and interdisciplinary work. Problematizing from the perspective of an artist / designer and a sociologist, the authors propose a common epistemic framework.

Finally, two bibliographical reviews are collected in this volume; the first, made by María Inés Márquez from Brazil on Dante Galeffi's article "Creativity as a proper and appropriate human transformativity", published on the book *Criação e devir em formação: mais-vida na educação*. Secondly, Ricardo Mansilla makes a critical review on the book of Lands, Nyhan and Vanhoute *Defining digital humanities*.

The second edition of the Latin American Conference of Interdisciplinary Research and Higher Education will take place in 2018, this time in Lima, and on the initiative of colleagues from the Catholic University of Peru. The Latin American interdisciplinary community already has a biennial space where to dump and collect experiences and results.

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## References

- Bruce, A., Lyall, C., Tait, J. & Williams, R. «Interdisciplinary integration in Europe: The case of the Fifth Framework programme.» *Futures*, 36(4): 457-470, 2004.
- Bruun, H., Hukkinen, J., Huutoniemi, K. & Klein, J. *Promoting interdisciplinary research: The case of the Academy of Finland*. Oy, 2005.
- Klein, J. T. *Interdisciplinarity: History, theory, and practice*. Wayne State University Press, 1990.
- Nature*. Mind Meld. *Interdisciplinary science must break down barriers between fields to build common ground*. Editorial del Special Issue, 525(7569), 2015.
- Repko, A. F. *Interdisciplinary research: Process and theory*. Sage, 2008.

Repko, A. F., Newell, W. H. & Szostak, R. *Case studies in interdisciplinary research*. Sage Publications, 2011.

Van Noorden, R. «Interdisciplinary research by the numbers.» *Nature*, 525(7569): 306-307, 2015.