Juan Santiago – President, Colegio de Químicos de Puerto Rico

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Lcdo. Juan Santiago - EIT, President of the Colegio de Químicos Puerto Rico, explains the far-reaching role of chemists in Puerto Rico's industry, their current challenges and the goal of making chemistry appealing for the younger generations.

Can you explain for our international readers what the Colegio de Químicos de Puerto Rico (Puerto Rico College of Chemists) does and what is its main purpose?

Since 1941, the main objective of the Colegio de Quimicos de PR, is to provide technical and safety orientation to the industry, government and society. Also, to develop and defend the Profession, maintain excellence and professional ethics, and enhance its image locally and internationally. We have representation on the government, the pharmaceutical industry, the food industry, academy among many others.

I'm proud to say that our membership have grown professionally, because we bet on our strong continuous education and training program. These programs are orientated to all levels, from basic chemistry applied to data science, investigations, manufacturing technology, to R&D used by the

government, local and international companies.

The Colegio is a member of the International Union of Pure and Applied Chemistry (IUPAC) and founding member of the Latin American Federation of Chemical Associations (FLAQ), so our reach goes beyond Puerto Rico. We were founded in 1941 and have been contributing to the safety of the people and to the quality of our products and services ever since.

We have several Memo of Understanding (MOU) with different professional organizations like: American Chemical Society (ACS), Inter-American Association of Sanitary and Environmental Engineering (AIDIS), American Society for Quality (ASQ), Puerto Rico Society of Microbiologists (PRSM), Puerto Rico Water & Environment Association (PRWEA), *Solid Waste Association of North America* (*SWANA*), and Industry University Research Center, Inc. (INDUNIV).

We are in a unique position within Latin America and the world, because most of those countries don’t have as many opportunities for training, development and learning for chemists as Puerto Rico. The Colegio, through their professional integration and annual conferences, provides high degree of professional development. We bring together scientists and professionals who have bachelor’s, master’s or doctoral degrees in chemistry, biochemistry, analytical, organic, etc. Our current membership is around 1,200 people, from active members, associates, emeritus and affiliates.

Your organization is often consulted in important matters and situations related to the health and wellness of the population. Could you provide some examples?

One of those moments coincided with my election as president in 2017. It was in the fall, when Hurricane Maria hit the island. It was a hard time for everyone, and the Colegio was no exception. Our members were consulted by other organizations on issues related to health and safety, wellness, chemistry and chemical products. At the time since the country didn’t have electricity, our main concern was, how to provide orientation to the people related to the issues mentioned before. Infectious diseases were a concern and we need to provide our knowledge on that matter as well. Our small intervention in the local TV news channels gave us the opportunity to inform the country about, water management, food management, pool water treatment in order to avoid contamination, the impact of the Carbon energy generation process residues (coal) in the public health, etc.

Another good example of the value of having associations like ours occurred about three years ago, when the authorities planned to use a chemical called Naled to eradicate mosquitoes. The idea was to spray the chemical around the island. The Colegio started a large campaign to avoid the use of Naled due to its link to cancer and we succeeded.

It is the duty of the Colegio to speak up when there's a threat to the health of the population. We also focus on the quality of the water, the activities of recycling companies, cannibal drugs and the prevention of wildfires.

There is an ongoing debate in Puerto Rico about the compulsory character of membership to the colegios, reignited by a recent Supreme Court decision. Why should the membership to the College of Chemists of Puerto Rico remain mandatory?

The ultimate objective is to contribute to the economic and social development of Puerto Rico. The health of the people of the island is our main concern. That's what we have in mind at all times. The issue with eliminating compulsory registration to associations like ours is that it may open the door for people that do not have the necessary knowledge or expertise, doing the job of certifying any analysis or products. We work towards making sure that the medicines and products that go into the production line are of the highest quality and don't affect the health of the population. Take the water as an example, if a certified chemist is not involved, we could end up with infections and diseases. Through our work, we save the government hundreds of thousands of dollars. The abolishment of mandatory membership to professional associations could open the gate to anyone certifying crucial processes.

Could you elaborate on the contributions of chemists to the industry?

The job of chemists in the industry is vital. Personally, I have experience in the pharmaceutical, medical device, government and food industry, having worked for Novartis and Johnson and Johnson in Puerto Rico. I believe that the advantage of being a chemist is the molecular knowledge help you understand the internal science of the elements forming the materials and solutions in order to create comestibles or consumer products. This is a cross-functional subject with Chemical Engineers to have a wider knowledge from mechanical fluids, pumps, utilities, transportation of materials up to project management. That means that our contributions to the industry come in many forms. Even though the private sector is hiring microbiologists and biochemists, Chemists are

still key to the quality assurance of the products.

What is your vision for the Colegio?

Our vision is to demonstrate to the scientific, neighboring and general community that our institution is ready to provide guidance on several topics like environmental, safety, health and industrial processes. Online presentations were used to deliver our expertise and knowledge related to different day to day situations. Also, through our Chemistry in the Community Committee program we visit schools, do live presentations and provide materials so they can learn and practice chemistry.

Our vision also is to expand our membership to other scientific based professionals such as microbiologists, biochemists, physicists, chemistry technicians, etc. By law, you need a degree in chemistry or chemical engineering to be part of the Colegio, but we created a new category last year called collaborators. All these colleagues from other professions studying something related to the science of chemistry, are welcome to join us.

Any final message to our international readers?

Puerto Rico is open for business. We, as Colegio de Quimicos de Puerto Rico, want to contribute to the bright future of the island. We as Chemists and Chemical Engineers are ready to present and share our expertise and knowledge in lab-science analysis, manufacturing, academy, quality, food safety, project management, GMP, etc., to anyone who wants to start doing business in Puerto Rico.

We are the professionals trying to ensure the products produced here are of the highest quality. Any type of industry can count on our experience and technology.

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