

## • HISTORICAL NOTE •

# University of Puerto Rico - School of Pharmacy: One Hundred Years of History and Service

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The University of Puerto Rico School of Pharmacy was initially established as the Department of Pharmacy at the Río Piedras Campus on September 22, 1913, being the first healthcare program founded in Puerto Rico. The history of the School of Pharmacy reveals a remarkable evolution over a 100 years period in order to respond to the patients' and societal needs. The programs offered by the school have adapted to the wealth of scientific knowledge, emerging technologies, patients' needs and changes in the healthcare system. This historical note highlights the most important milestones of this centennial institution. [*PR Health Sci J* 2013;4:206-208]

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The University of Puerto Rico School of Pharmacy was initially established as the Department of Pharmacy at the Río Piedras Campus on September 22, 1913, where a Department of Liberal Arts and a Normal School have already been established (1,2). The fact that this event took place only ten years after the establishment of the University is a testament to the prompt response by the institution to respond to the societal needs of the Island. Healthcare professionals were scarce, and there were no formal academic programs at the time to fulfill this need. This was the first higher education academic program offered in Puerto Rico for the education of a healthcare professional.

Dr. Luis Salivia was a young Puerto Rican physician, and a recent graduate from The Ohio State University School of Medicine. Upon his return to the Island in 1913 he was assigned the charge to start the pharmacy program at the University of Puerto Rico (2,3). He was appointed Department Director and along with 3 other faculty members (J. Federico Legrand, Cornelio Duffy and Luis Hernández) started the academic program which originally consisted of two years (2,3). In 1915, the first 12 pharmaceutical chemists received their degrees (1). These pharmacists, as well as many others that followed went to the towns in the Island to render much needed health services at a time when these were scarce. The pharmacies were gathering centers in the towns and a focal point for seeking advice related to numerous ailments, their corresponding remedies, and as centers for referral. The pharmacies were also centers of social and political gatherings.



**Figure 1.** Buildings that hosted the School of Pharmacy over the years. A) Original Building where the Department was housed at the UPR Río Piedras Campus (1913 to 1932); B) Agustín Stahl Building, at the UPR Río Piedras Campus (1932 to 1976); C) Deanships of Students and Pharmacy Building at the UPR Medical Sciences Campus (1977 to 2012); D) New School of Pharmacy Building at the UPR Medical Sciences Campus (2012 to present).

In 1916 the curriculum changed to a three year program (1,2). In 1918, Dr. Salivia had to resign in order to serve in the World War I, and Dr. Lucas Luis Vélez who had joined the faculty in 1916 is appointed Department Director. In 1925, the Department became a Deanship (the College of

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Pharmacy), and Dr. Vélez was appointed as its first Dean (2). As early as 1926, the School was incorporated as a member of the American Association of Colleges of Pharmacy, the national organization that gathered the approximately 55 pharmacy schools in existence in the Mainland at that time, and to which the School still belongs (1). In 1927, Dr. Vélez organized the Asociación de Farmacéuticos de Puerto Rico, a predecessor of the Colegio de Farmacéuticos de Puerto Rico. Dr. Vélez was responsible for having the pharmacy students qualify to be recipients of the Fairchild scholarships (1). He was also responsible for incorporating the Puerto Rico Board of Pharmacy to the National Association of Boards of Pharmacy. In 1928, the curriculum evolves to a 4 year program, and the degree granted changes to a Bachelor of Science in Pharmacy (2). In 1932, the College moves to its new installations at the Rio Piedras Campus, the Agustin Stahl Building, where it resided until 1976.

In 1936, with the objective of performing research about the chemical content and the pharmacologic effects of the plants commonly used in Puerto Rico, the Experimental Garden of Medicinal Plants is established at the Rio Piedras Campus (2,4). This garden became a very productive research scenario about medicinal plants, and it led to the discovery of an alkaloid by Dr. Esteban Núñez Meléndez, who for many years served as its Director. The Garden was transferred in 1949 to the University of Puerto Rico Botanical Garden, where it is actually located.

In 1949, and in response to the advances in the sciences, and positioning the School at the forefront in pharmaceutical education, the baccalaureate program became a five year program, 11 years before it became a requirement for accreditation (2,4). In 1952, the Bachelors Program was accredited by the American Council on Pharmaceutical Education (2), becoming the first health professional program of the University of Puerto Rico to receive such recognition.



**Figure 2.** Left: Faculty of the College of Pharmacy, Right: Faculty of the School of Pharmacy (2012).

During these decades, faculty with expertise and advanced degrees in Pharmaceutical and Organic Chemistry (Dr. Leo Lathroum) (5,6) and Industrial Pharmacy & Pharmaceutical Manufacturing (Dr. Rodolfo Escabí, Dr. Héctor Lozada) were recruited, the pharmaceutical manufacturing and pharmaceutical research laboratories were established, and became state of the art facilities (5,6). Dr. Esteban Núñez, became a well renowned expert in pharmacognosy and medicinal plants used in Puerto Rico. Three pioneer women joined the faculty of the College (Dr. Nydia M. King – Pharmaceutical Chemistry and History of Pharmacy, Prof. Iraida Negroni de Martin and Prof. Julia García de Andreu), and became an integral part of the faculty body in their areas of expertise, receiving recognition by various local and national scientific and professional associations for the contributions made in their fields (6,7,8).

Under the leadership of Dean Luis Torres Díaz, the Museum of Pharmacy is established in 1954, also at the Rio Piedras Campus (4). The structure of the Museum represented a replica of a nineteenth century pharmacy and the original collection displayed belonged to J. Federico Legrand, one of the original faculty members when the program was established in 1913 (2,7). The Museum concept evolved, and in 2009 became the Museum of Pharmacy and Medicinal Plants Garden, which incorporates the Dr. Luis Torres Diaz Historical Collection located at the Medical Sciences Campus as well as the Medicinal Plants Herbarium and Medicinal Plants Collection, located in the new Medicinal Plants Garden Pavillion.

In 1973, the Drug Information Center was established at the College of Pharmacy, as a new and unique type of service in Puerto Rico, aimed at providing drug information services to health professionals and became well renowned in Latin America as well (4). In 2009, it became the Center for Drug Information and Research and its scope was expanded to promote collaborative research on pharmacoepidemiology and drug use by individuals and populations.

The 1970's brought about a significant transition to the College of Pharmacy. During the academic year 1976-1977 the College was transferred to the Medical Sciences Campus (4). This fostered the integration of pharmacy students to clinical scenarios during their formative years. It also incorporated the faculty to the research facilities at the Medical Sciences Campus. A widespread curricular revision emphasizing a more clinical focus and practice experiences in clinical scenarios was approved in 1978 (9). Faculty development in the clinical area was also enhanced in order to develop clinical practice models by the faculty in settings that also served as newly established teaching and service scenarios.

In 1981 the new curriculum with a broader clinical basis was implemented (4,9,10). This program,

besides providing the foundational knowledge about the pharmacologic and chemical properties of drugs, emphasizes the therapeutic and clinical aspects of drug use, communication and clinical interaction skills with patients and other health professionals.

The College of Pharmacy established a close relationship with the pharmaceutical industry in Puerto Rico, and in 1988 developed a graduate program aimed at meeting the needs of the industry for skilled professionals in the field, as well as to develop scientists that could eventually join the academia. The Master of Science in Pharmacy Program was developed with specialties in industrial pharmacy and pharmaceutical sciences. In 1989, the College becomes the School of Pharmacy.

The history of the School of Pharmacy demonstrates how the academic programs have evolved over a 100 years period in order to respond to the patients' and societal needs. The programs have adapted to the wealth of scientific knowledge, emerging technologies, patients' needs and changes in the healthcare system. As a result, in 2001 the Doctor of Pharmacy is implemented as the only entry-level professional degree. This program consists of an abilities based curriculum, in which theory and practice experiences are integrated throughout the four years of the program. It also emphasizes the development of professional abilities and the patient-centered concept and philosophy of practice of pharmaceutical care.

The School of Pharmacy also offers a residency program in collaboration with the San Juan Veterans Administration Medical Center, and a community pharmacy residency in collaboration with partnering community pharmacies. Recently, the faculty has started offering medication therapy management services with the goal of optimizing drug therapy regimens in patients with complex medication therapies. This in turn aims to impact the high morbidity associated with the inappropriate use of medications, and should contribute to the achievement

of desired therapeutic outcomes in collaboration with the other clinicians.

The School of Pharmacy graduates have had a significant impact in the profession and in academia in Puerto Rico and abroad. Since 1913, over 5,000 pharmacists have graduated from its professional programs, and over 140 scientists from the graduate program. These graduates have fulfilled a much needed service to patients and society in general for the past 100 years.

Many other faculty have played a significant role in the development of the School's programs and initiatives and its success during the past century, and to all the School is deeply grateful for their commitment.

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