



Contents lists available at ScienceDirect

Journal of Pharmaceutical Sciences

journal homepage: www.jpharmsci.org

Special Topic Cluster

Professor Rodolfo Pinal: A man of the Tao

I have had the privilege of knowing Professor Rodolfo Pinal for over two decades. Yet, it is only in the past two months that I have come to fully appreciate the depth of our acquaintance and the significance of his actions. He embodied the ideals and principles that I strive to embrace in my own actions each day.

Professor Rodolfo Pinal obtained his Ph.D. in 1988 under the guidance of distinguished Professor Samuel Yalkowsky at the University of Arizona, a highly respected figure in the study of aqueous solubility for various pharmaceutical compounds. His doctoral research focused on assessing the water solubility of organic compounds, laying a solid foundation for his lifelong dedication to unraveling the complexities of drug solubility and diffusion.

During his impactful tenure at Hoffmann-La Roche, Dr. Pinal established himself as a leading expert in the physicochemical characterization of novel drug candidates, particularly in injectable formulations, as well as in the physical characterization of solid materials and particle technology. Despite a clear path to corporate ascendance, he made the profound decision to settle in a small Midwestern town, where he could inspire and guide the next generation of scholars at Purdue University. This choice reflects not only his commitment to education but also his belief in nurturing talent and fostering innovation in academia. It was only recently that I began to grasp the deep implications of his decision.

Since joining Purdue University in 2003, Professor Pinal has addressed some of the most significant challenges in pharmaceutical drug development, particularly in developing innovative drug delivery systems designed to enhance the water solubility of poorly soluble drugs. I had the distinct pleasure of collaborating with him on research into the solubilization of hydrophobic drugs using hydrotropic agents. During this collaboration, we co-advised graduate student Ji Young Kim and successfully published two high-impact research papers. The caliber of these publications was markedly enhanced by Professor Pinal's extensive expertise and insightful perspective on the subject matter, which greatly surpassed what I could have accomplished independently.

In addition to our research collaborations, I had the privilege of engaging with Professor Pinal on numerous occasions. Reflecting on these experiences over the years, I am convinced that he truly embodied the principles of the Tao. He lived in harmony with these values, showcasing their essence in his everyday life. Professor Pinal maintained a profound respect for nature and simplicity, never seeking to elevate himself above others. His authenticity and grace made him a role model, with his actions consistently reflecting his values. He possessed a kind and gentle demeanor, complemented by a remarkable strength manifested in his adaptability and willingness to yield when necessary.

In 2005, Professor Pinal was invited to speak at an international conference in South Korea, where he had the pleasure of reuniting with Professor Sung-Joo Hwang, who had previously spent a sabbatical at Purdue's College of Pharmacy several years earlier. Following a delightful Korean dinner, the two, along with others, enjoyed an evening of karaoke. When it was his turn to perform, Professor Pinal cleverly chose a traditional Mexican song, anticipating that the karaoke machine might lack selections from his homeland. To his surprise, the machine featured an extensive selection of songs from around the world, prompting him to sing several Mexican tunes. He admitted that he was initially nervous, but after the first song, he found himself genuinely enjoying the experience.

During the Peck Symposium at Purdue University in 2015, I found myself the subject of light-hearted teasing during the banquet for no specific reason other than the fact that I was 60 years old a few years earlier. Professor Pinal was seated at the adjacent table. During the banquet, someone jokingly suggested that I partake in a boilermaker, a concoction of whiskey and beer. (To be clear, not all Purdue Boilermakers drink it). I stood up and expressed my willingness, but pointed out the absence of whiskey. At that moment, Professor Pinal chimed in, revealing a small bottle of whiskey from his bag. This unexpected appearance of whiskey led to my attempt at a boilermaker, something I could certainly repeat without issue. However, this particular instance was rather awkward, as all eyes were on me during the act. There was little time to catch my breath before Professor Pinal announced that he had several more bottles stashed away.

He regularly traveled to Shenyang, China, as part of our international collaboration with Shenyang Pharmaceutical University. During one of his visits, he brought me a beautifully crafted bottle of baijiu, one of the most highly regarded and strongest distilled spirits in the world. He transported the bottle, large and reminiscent of porcelain, all the way from China to West Lafayette, Indiana. I expressed my heartfelt appreciation on multiple occasions, to which he cheerfully replied that he would bring me more in the future. Now, I feel a profound sense of double loss, as that anticipated future will no longer come to pass. I lament the lost opportunity to craft a distinctive new boilermaker with him, scientifically substituting baijiu for whiskey. We would have named it "Boilermaker-Extra Strength."

On one occasion, he invited me to deliver a lecture on protein delivery systems for his Biotechnology and Advanced Parenteral Products class. Staying true to my usual approach, I encouraged the students to take a deep breath, relax, and focus on understanding rather than becoming preoccupied with note-taking and examination. I confidently assured them that everyone would receive an A at the end of the semester for their effort in just listening to my lecture. To my surprise, instead of refuting my bold assertion, he elegantly

interjected to clarify that all the students would indeed receive an A, but the grade was just for my guest lecture and does not extend to the entire course. It was a masterful and enlightening demonstration of expectation management.

His serenity is a quality I often aspire to emulate. During our department meetings, which can occasionally become quite contentious, I occasionally found myself interrupting him mid-sentence during heated discussions. With remarkable patience, he would respond, "Please hear me out," and proceed to articulate his thoughts with clarity and composure. In those moments, I often felt a sense of embarrassment, recognizing my lapse in judgment. Since then, I have strived to adopt his approach, incorporating a greater sense of calm - and even a touch of humor - into my contributions to all subsequent meetings.

Reflecting on my interactions with Professor Pinal, I have come to appreciate his exceptional qualities. Understanding him was akin to solving a Rubik's Cube—complex and occasionally perplexing. Yet, it was precisely in those challenging moments that I acquired invaluable insights into both our shared research interests and the broader human experience. Over the past two decades, he demonstrated how to navigate life with a grace that was both admirable and inspiring. Rather than struggling against his circumstances, he approached life's challenges with remarkable composure, consistently wearing a smile that suggested he held secrets we could only desire to uncover. Though he spoke sparingly, I now recognize that the echoes of his silent wisdom resonate powerfully through the stories he shared. It is indeed interesting how some individuals manage to convey profound truths with only a few words.

In retrospect, Professor Pinal was much like water - humble, adaptable, and generously flowing. This analogy is not merely a nod to his lifelong research in drug solubility in water but rather a reflection of his embodiment of the Tao. The Tao Te Ching teaches that a truly fulfilling life involves attuning oneself to the universe's rhythm,

embracing the present moment, expressing gratitude, and freeing oneself from attachments. Former student Professor Andrew Otte fondly recalls how Professor Pinal would traverse the campus on his trusty 25-year-old bicycle and cruise the town in his stick-shift car, which proudly boasted over 200,000 miles. Despite his seemingly simple lifestyle, his mind brimmed with profound knowledge and life wisdom, a treasure trove of insights I wish I had explored more deeply with him. Accumulating material excess was never his inclination; rather, he found true fulfillment in his authentic self, never striving to be someone he was not or coveting the possessions of others. Simultaneously, he consistently seized every opportunity to honor and acknowledge the accomplishments of others.

Professor Pinal was undoubtedly an enlightened individual. As I strive to embody his essence, I wish to inspire others to embrace his fluidity and grace. If we could all match his accommodating and versatile nature, the world would surely be a much better place, especially in 2025. Professor Rodolfo Pinal was truly a man of the Tao.

Declaration of competing interest

I have no conflict of interest in publishing the submitted manuscript.

Kinam Park
Department of Industrial and Molecular Pharmaceutics, and Weldon
School of Biomedical Engineering, Purdue University, West Lafayette,
IN 47907, USA
E-mail address: kpark@purdue.edu

Received 24 April 2025

Accepted 25 April 2025