

Cosmetic Science Program – a unique Program for Professionals

A conversation with K.P. Ananthapadmanabhan (Ananth),
Professor and Director of Cosmetic Science Program, University of Cincinnati



K. P. Ananth

EURO COSMETICS: *You have moved from an FMCG company to College of Pharmacy at University of Cincinnati. What made you make this move?*

K. P. Ananth: After spending 26+ in a personal care corporate R & D and about 7 years in a chemicals company R & D, I joined the College of Pharmacy, Univ. of Cincinnati, in Cincinnati Ohio in the States. I just simply did not want to retire, but wanted to continue to contribute to the field. I thought the best way I could do this is by trying to train the next generation of cosmetic and personal care scientists. Cosmetic science being multidisciplinary in nature, typical university degrees do not prepare the students adequately for such industrial positions. For example, the science involved in developing, testing and marketing cosmetic and personal care products involves such widely different areas of science such as bioscience, materials science, Colloid and polymer science, measurement and modeling science and clinical and consumer science. With my industrial experience in R & D settings for

3 + decades, I thought I could bring a different perspective to the academic program in this area. Fortunately, Univ. of Cincinnati has an excellent program in cosmetic science and they were looking for someone with industrial R & D experience to strengthen their program. I took this as an opportunity and decided to join the team at UC.

EURO COSMETICS: *Ananth, tell us about your current position at the University.*

K. P. Ananth: I am a professor and academic director of our cosmetic science program at the James L. Winkle College of Pharmacy at Univ. of Cincinnati. This unique multidisciplinary program in cosmetic science offers opportunities to obtain a MS or PhD degree in Pharmaceutical Science with a specialization in Cosmetic Science. Prof. Leon Lichtin started the MS program in 1973. Later in the early 90's Prof. Randy Wickett established a PhD degree in Pharmaceutical science with emphasis in Cosmetic science. This program has grown significantly under the leaderships of Profs. Randy Wickett, Jerry Kasting and Gary Kelm over the past several years. Specifically, in 2008, a **Distance Learning (DL)** MS degree was established to meet the needs of professionals, who are not able to attend traditional educational programs due to work and personal constraints. The degree will give them an opportunity to develop new knowledge, skills and abilities to advance in their careers. In addition, we also have a Graduate Certificate Program in Cosmetic Science. It is a real pleasure for me to join this well-established and successful group at UC. My responsibilities as the director of the Cosmetic science program will include managing and growing the program, teaching subjects such as skin care science and formulation science, establishing our new cosmetic lab and coordinating cap-

stone projects for our online students. I hope to maintain regular contact with relevant industries to ensure that the program is tuned to meet their needs. My industrial background will be very useful in ensuring that the program remains relevant to meet the industrial needs in this multidisciplinary field.

EURO COSMETICS: *We understand that the Cosmetic science program is a combination of on-line and in-person program. What is your vision regarding this combination? How do you plan to advance the Cosmetic science program at UC?*

K. P. Ananth: Our on-line programs have grown tremendously during the past 3–4 years. In 2013, we had about 4 or 5 on-line students. Now we have about 100 students in our program. The uniqueness of our program comes from our unique faculty. Our world-renowned faculty consists of current and emeritus professors in the College of Pharmacy and current and retired industrial scientists. This provides our students with a unique opportunity to interact with professors with extensive academic and industrial research experience and gives them exposure to both theoretical and pragmatic aspects of product development within the cosmetic and personal care industries. The on-line format allows us to bring experts from any part of the world to teach classes and share experience with our students. I would like to see more involvement of cosmetic and personal care industries in our capstone projects and academic research. I will not be surprised if we get many foreign students in our DL program. Big companies have R & D operation all around the globe and our certification and MS DL classes may help train their teams in different parts of the world.

We are also expanding our in-person/on-site program. We are in the process of es-



search and thesis based MS and PhD degrees. Research areas of interest include living skin models, deposition, delivery and penetration through skin, nano materials in cosmetics, surfactant mildness, predictive in-vitro model development, product skin interactions, and biomarker assays for skin and scalp. Obviously, the number of students that can be accommodated in such programs will be limited by the availability of research funds, lab availability etc. Such students are supported by either industrial funding or other research grants.

EURO COSMETICS: *What are some of the challenges facing the personal care and cosmetic industries in the coming years? How can universities help?*

K. P. Ananth: Cosmetics and personal care area continues to be a strong and vibrant market with novel technological innovations, advanced in-vivo imaging and measurements techniques, increased consumer awareness of products and technologies, and greener and sustainable ingredients. Advances in proteomics and lipidomics have increases opportunities for personalized cosmetic and personal care technologies. Microbiome area is exploding with activity with potential for natural ways of protecting and boosting one's own defenses, sensitive biomarkers for early diagnostics of skin, scalp and hair health. While these exciting advances are taking place, our world population is ageing significantly. Personal care is major component of healthy ageing. Note, however, that our understanding of very elderly skin (65–90) is rather limited. On the other side of the ageing scale, we are faced with increased occurrence of conditions such as atopic dermatitis and several allergic reactions among infants. All these problems require personal care solutions that are affordable with efficacious solutions. In these rapidly changing areas, it makes sense for universities and industry work together to find new solutions.

EURO COSMETICS: *Thank you for the conversation.* ■

establishing joint programs with our Chemistry and Chemical Engineering departments to establish BS-MS programs whereby the students can obtain a BS in chemistry or chemical engineering and a MS degree in Pharmaceutical science with emphasis in cosmetic science. Most likely this will be in place by 2018 fall.

Details of our program can be obtained from our website: <http://pharmacy.uc.edu/>

EURO COSMETICS: *How will personal care, cosmetic and chemical companies benefit by hiring students from the cosmetic science program at UC?*

K. P. Ananth: Our students are trained in a variety of subjects relevant to cosmetic and personal care. They also have a wide range of electives that they can choose from for specialization in different areas. Courses include skin care science, hair care science, formulation science, fundamentals of colloid, polymer and emulsion science, color cosmetics, safety and regulatory affairs, cosmetic microbiology, safety and toxicology, consumer understanding, statistics, and clinical and instrumental methods. With such broad background, companies will have to spend much less time in training the students internally. I have been on the industrial side for many years and I know how much time is needed to train new hires. This will indeed save their time as they will be hiring well-trained professionals.

EURO COSMETICS: *We understand that*

there is a part of the program that addresses consumers. What differences do you envision between the consumer portion and the scientific portion and how do you see the online consumer science program expanding in the coming years?

K. P. Ananth: Consumers evaluate and judge products based on multiple sensory modalities. Trying to predict consumer acceptability of a product from laboratory measures is a major challenge in the consumer and personal care industry. Similarly, creating cosmetic formulations that are consumer acceptable often remains as an art as experts pass on the recipe to their new hires. The learning at the College of pharmacy will help develop a scientific basis for choice of ingredients, creating formulations and their testing for safety and efficacy. Similarly, in the classroom, we will be discussing methodologies to predict functional and sensory performance of products with a focus on improving their predictive capabilities. Sensory cues during product use can signal end benefits to consumers. Increasing consumer awareness on new product technologies is an important part of consumer communication these days. Latest research in areas of predictive modeling of consumer benefits will be discussed in the classrooms.

EURO COSMETICS: *Do you also have conventional thesis based doctoral programs at UC?*

K. P. Ananth: We do have conventional re-