CAREER PATH

Paul L. Herrling

Paul Herrling's journey to become Head of Corporate Research at Novartis started when his interest in biology developed after he and his schoolmates were made to classify the head teacher's collection of crickets as a punishment when they misbehaved. After a passing interest in oceanography and gaining a diploma in zoology, he reverted back to insects, researching sensory physiology in the laboratory of Rüdiger Wehner. There, he enjoyed the marriage of behavioural studies, electrophysiology, anatomy, physiology and biochemistry but eventually decided it was time to move on. "It became clear that Switzerland was too small for two professors studying insect navigation," he recalls, "and I wanted to do more applied research, which, in Switzerland, means moving into the pharmaceutical industry."

Switzerland had no pharmacological sciences curriculum at this time, and most of the industry's *in vivo* pharmacology expertise came from the UK. The Swiss government therefore called for the pharma industry to employ more Swiss scientists, but as Herrling points out he had inappropriate training. "They obviously couldn't just take a Swiss who was studying insect navigation and say 'develop a drug!'" So he went on to retrain as a post-doctoral scientist in the Sandoz Research Laboratories in Basel, Switzerland, and at the University of California, Los Angeles (UCLA), USA, where several people influenced him greatly. "One senior professor at UCLA, Chester Hull, spent days, nights and weekends teaching me everything he knew about electrophysiology, generously tutoring this young guy from Switzerland, and the absolute integrity of his work was very inspiring." Garage seminars were another source of inspiration, complete with Nobel laureate guests. "On Wednesdays, Arnold Scheibel, Professor of Neuroanatomy at UCLA, would invite Nobel prize-winners who were in Los Angeles to relay their life stories to about 15 postdocs in his garage — that kind of thing really motivates you."

Herrling subsequently returned from the United States to set up his own neuroscience laboratory at Sandoz and go on to an illustrious career in pharma. But having experienced the gap between academic and industry research expertise, he is keen to educate students about drug discovery. "When I was educated there was no formal course that taught you the difference between basic science and drug discovery. By making contributions to a drug discovery project you gradually understand the whole process — especially when your projects fail — but that's a timely and costly way of learning."

Herrling is trying to overcome this gap in his role as Professor of Drug Discovery Science at the University of Basel. "One important aspect of the students' education is to ensure that they enter industry for the right reasons. Although you can generate hypotheses, there will be more ideas than the company can follow up, and a researcher is likely to have to give up their own research and focus on the ideas of others. That can be very tough for scientists who are trained as individuals. Those who are successful are the ones who are ultimately motivated towards treating people."

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In addition to training a new generation of drug discoverers, Herrling oversees Novartis' experiments in new research models, such as the one launched in California in which car industry engineers were recruited to work alongside biologists as a new model for drug discovery, and the recently created not-for-profit Novartis Institute for Tropical Diseases (NITD) in Singapore. "The idea," Herrling says, "is that these projects are separate but still interact and profit from the mainstream activities of Novartis." It's a role he enjoys because it exposes him to new disciplines both scientifically and culturally. "I'm working with tropical disease research institutes, and philanthropic and government organizations and it's a world that is completely different to anything I have done before." Part of his current role is as a scientific ambassador for Novartis and the industry as a whole. "The public has a strange perception about how we make drugs. Some people think we steal ideas from academia, put them into a pill and sell them at great cost. They have no idea about the real scientific contribution that pharmaceutical scientists make." Herrling therefore spends a significant amount of time communicating to industry stakeholders, and 30 years of experience in drug discovery means he is ideally placed to do so.

When Sandoz Pharmaceuticals merged with Ciba-Geigy in 1996 to form Novartis, Herrling had the responsibility of integrating the two research organizations. This taught him two things: the need for globalization and the importance of leadership. "Science is global", he says, "and while you want diversity in approaching a problem, an affinity constant is the same in London as it is in Tokyo. So the first thing we did was replace national research directors with global heads for different therapeutic areas and scientific platforms." Naturally, such a situation creates mistrust and fear, and Herrling says it was vital to decide early on who would have which role in the merger and to select people by ability and not by company. But how does one judge the ability of unknown employees? "You have to take some risks and you will make mistakes. But if you leave things to be fought out you'll lose years in productivity."

Herrling has most enjoyed being able to work in a field he likes throughout his career. "Even though in drug discovery you lose 99 out of 100 projects, some will regularly succeed and you can see that without these drugs, many people wouldn't be alive today. That is what really keeps you going." He believes it is important to choose a job that you can do with total enthusiasm, to give you the ability to overcome all the frustrations and adversities you will encounter, and not to get too hung up on the next step in your career path, "Do what you are doing now as if you are going to do it for the rest of your life," he says, "and then you'll do it well."