

Molecular diagnostics

Molecular diagnostics are increasingly being developed to help guide treatment choice of targeted therapies, as well as to help optimize treatment outcomes and reduce the risk of serious adverse events associated with the presence or absence of genetic mutations in individual patients. Our two interviewees this month discuss their complementary roles in this field.



Michael Nohaile, Ph.D.
Head, Molecular Diagnostics, Novartis, Basel, Switzerland.

Towards the end of 2008, Novartis established a molecular diagnostics unit to focus exclusively on innovative clinical diagnostics. According to Michael Nohaile, Head of the new unit, the aim is to "...create a new business in diagnostics that are companion with our drugs — that would help to stratify patients and help improve efficacy and safety — and stand-alone diagnostics." Nohaile will build on Novartis' long-term experience in targeted therapies and biomarkers. "The new capability is to take those biomarkers and develop commercially viable, clinically useful tests," he explains.

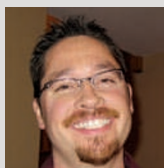
Nohaile's career path began following his Ph.D. on nuclear magnetic resonance spectroscopy with David Wemmer at the University of California, Berkeley, USA. For his

postdoctoral work he moved from Berkeley to the Massachusetts Institute of Technology to research protein design and engineering with Robert Sauer. It was during this time that Nohaile realized he would need additional skills to achieve his personal goal of working in the clinical application of research. He says, "Protein design and engineering is scientifically fascinating but in the late '90s it was far away from clinical application. This opportunity is what most excited me."

To broaden his experience, Nohaile applied to consulting firms and was offered a position at McKinsey. "I wanted to develop my business skills to have the ability to make decisions about which therapeutics would move forward," he says. Over the next six and a half years he rose to the position of partner, specializing in health care with particular focus on pharmaceuticals and diagnostics. He now considers his experience at McKinsey invaluable for his current position. "Building a business based on new diagnostics requires the integrative leadership skills I developed while I was leading complex global consulting projects."

Before his current position, Nohaile was Head of Pharma Strategy and then Head of Corporate Strategy for Novartis. When the company decided to build the molecular diagnostics unit it was too good an opportunity to miss. "This is a dream position as I love this area and have a technical background in it. This is the next generation — delivering really improved patient outcomes." He was also attracted by the chance to build something new within Novartis. "Not only do I have the support structure of an existing company but also the entrepreneurial opportunity," he says.

Creating a new business obviously also presents fresh challenges, particularly as the regulatory and reimbursement landscapes for molecular diagnostics are unsettled. Nohaile is working closely with his pharmaceutical colleagues as the landscape and diagnostics portfolio evolves. "We have to jointly decide what to add to the clinical trials to deliver value." Despite the challenges, Nohaile is excited by the potential of his current position. "If we can deliver tests that can detect cancers earlier, for example, the implications for patient treatment and outcomes are potentially transformational."



Bryan Dechairo, Ph.D.
Senior Director, Development Head, Personalized Medicine, Medco Health Solutions, Bethesda, Maryland, USA.

In the United States, prescription benefit management (PBM) companies are third-party administrators of prescription drug programmes. Medco Health Solutions is an independent PBM company that processes and pays prescription drug claims for more than 60 million Americans. Bryan Dechairo is Development Head of Medco's Personalized Medicine R&D division responsible for developing a broad range of personalized medicine products. "The aim is to develop products that drive down the cost of health care, improve drug efficacy and safety for the individual patient, and are cost effective for implementation," says Dechairo.

Following his degree in Biology from the University of California, Berkeley, USA, while working as a laboratory assistant, a collaborative project led to a placement opportunity for Dechairo at Roche, in Alameda, California.

From there, he moved to Sequana Therapeutics, a biotechnology company in La Jolla, California, but quickly realized that he would need a Ph.D. to avoid the career ladder glass ceiling. "I moved to Oxford, UK, to work for a biopharmaceutical company, Oxagen, in Abingdon, while simultaneously completing a 3-year Ph.D. in Human Genetics at the Institute of Child Health, University College London," he says.

After his Ph.D., he continued to work for Oxagen for 4 more years as the head of their genetics laboratory. "At this point, personalized medicine was beginning to take hold as a concept that would drive my future career," explains Dechairo, "and after searching for almost a year, I found the perfect opportunity as the Neuroscience Lead for Molecular Medicine at Pfizer Global R&D in New London, Connecticut, USA. In this role, I was responsible for bringing strategic innovation to the drug development process, focusing on personalized medicine and biomarkers using molecular biology tools, including a broad range of 'omic platforms, and neuroimaging and health technologies," he says.

While at Pfizer, Dechairo learnt a valuable lesson from a professional coaching programme. "I learned many ways to understand viewpoints

from other people's perspective and how our styles may impact on successful collaboration in a team setting," he says. Today, he applies this to maximize the benefit of merging differing perspectives into the development of a superior product.

Although he found his role at Pfizer exciting, Dechairo's desire to see the promise of personalized medicine fully realized made him look at other companies that he felt may be better positioned to make the promise a reality. "Medco came to Pfizer for a meeting on personalized medicine," says Dechairo, "and I realized that PBM companies are well placed to conduct personalized medicine R&D without the natural bias of a drug manufacturer." Now, Dechairo has a sense that Medco is creating the future of personalized medicine. "There is a fantastic feeling of freedom to harness inspiration from internal and external influences and to implement novel concepts immediately for the benefit of the patient," he says.

WEBSITE

Career snapshots:

http://www.nature.com/drugdisc/nj/nj_dd_arch.html