**DESCRIPTION**

**Principles of Biomedical Sciences and Industry**

**Improve your product development skills to bring new ideas to biomedicine**

The development of innovative healthcare products, such as biodegradable implants, biopharmaceuticals, or companion diagnostics, requires a multi-disciplinary approach that incorporates scientific evidence with novel and innovative ideas to create new and improved products and treatments. Indeed, product development and the integration of science with commercial aspects have become key challenges for scientists working in the pharmaceutical, biotech, and medtech industries.

Using a multi-pronged approach to development, *Principles of Biomedical Sciences and Industry* combines ideas and methodologies from four of the central areas of focus in the biomedical arena: pharmaceuticals, diagnostics, biomaterials, and medical devices. In doing so, the book covers the entire product lifecycle, from translating a scientific idea into a prototype to product development, launch, and management.

*Principles of Biomedical Sciences and Industry* readers will also find:

- Several case studies from the most important product categories (pharmaceuticals, diagnostics, medical devices, combination products)
- Chapters dealing with toxicology and safety risks in development, as well as regulatory approval
• Key business aspects including how to secure funding, managing intellectual property, and price regulation in the market

• An ideal resource for teachers and students that conveys the information in an easily-digestible format

Ideal for advanced students and young professionals pursuing a career in the biomedical and healthcare industries, *Principles of Biomedical Sciences and Industry* is an essential reference for those in pharmaceutical industry, biotechnologists, medicinal chemists, bio-engineers, pharma engineers, and management consultants.

About the Author

Markus Hinder studied medicine at the Universities of Heidelberg, Paris and Zürich and obtained a doctoral degree in pharmacology from Heidelberg University. After graduation he trained in clinical pharmacology, cardiology and emergency medicine. He underwent postgraduate training in clinical trial methodology and statistics at the Universities of Basel and Brussels. He joined the pharmaceutical industry more than 20 years ago and held senior leadership positions in clinical pharmacology, translational medicine, clinical development, medical affairs and project management. He has been lecturing pharmacology and pharmaceutical R&D since 2004. In 2010 he was appointed professor at Cardiff University/ Hochschule Fresenius. He serves as a reviewer for several journals and associate editor for the Journal of Translational Medicine.

Alexander Schuhmacher graduated in biology from the University of Konstanz (Germany), in pharmaceutical medicine at the University of Witten/Herdecke (Germany) and did a Ph.D. in molecular biology at the University of Konstanz; he is also a graduate of the Executive MBA program at the University of St. Gallen (Switzerland). Alexander holds a full professorship in life science management at the Technische Hochschule Ingolstadt (Germany). His research focus is on biopharmaceutical innovation management with a specialization on R&D efficiency, artificial intelligence and open innovation. Prior to that, Alexander worked 9 years as professor at Reutlingen University (Germany) and 14 years in various R&D leadership positions in the pharmaceutical industry.

Jörg Goldhahn received his M.D. 1997 from the Friedrich-Schiller University in Jena, Germany, finished a postgraduate course (MAS) in Medical Physics and Biomechanics at the ETH Zurich in 2000, received the postdoctoral lecture qualification (Habilitation) in 2008 and became a faculty member of the department for health sciences and technology (D-HEST) as adjunct professor 2014. He worked as a translational medicine expert at the Novartis Institutes for Biomedical Research (NIBR) in Basel in addition to more than 15 years in clinical research. He is currently the head of the Institute for Translational Medicine and medical director of the bachelor in medicine at ETH in Zurich, Switzerland.
Dominik Hartl studied Medicine at the Universities of Regensburg, Munich and Melbourne and obtained his doctoral degree in Immunology from Munich/LMU University. He is board certified in Pediatrics and Infectious Diseases and worked as Physician Scientist/Post-Doc Scholar at Yale University. He joined the pharmaceutical industry more than 6 years ago and gained extensive experience in his positions in Drug Discovery, Translational Medicine, Biomarkers and Precision Medicine/Personalized Healthcare in Biotech and Big Pharma. In addition to working in the pharmaceutical industry, Dominik is a Professor for Pediatric Immunology/Infectious Diseases at the University of Tübingen.

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