


LOST IN TRANSLATION

 **Barriers to Incentives for
Translational Research in
Medical Sciences**



Editors

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Wojciech Maksymowicz
Wlodek Lopaczynski

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LOST IN TRANSLATION

**Barriers to Incentives for Translational Research
in Medical Sciences**

Foreword

It is a great privilege to write a Foreword for this important book evaluating the state of the art in translational research. With 28 chapters and over 600 pages, *Lost in Translation — Barriers to Incentives for Translational Research in Medical Sciences* presents for the first time all the contributions from scientists and clinicians active in various areas of translational research in one volume.

The chapters cover the aspects of translational research in cancer, infectious diseases, nutrition (endocrinology), neuroscience, stem cells and its role in public health and behavioral sciences, clinical practice, its organization and funding in the U.S. and in the world, resources as well as outcomes. Other topics include translational epidemiology, biostatistics and informatics, health services and economics, ethics and legal regulations in the U.S. and internationally. The barriers to incentives for translational research are expertly discussed by the editors, Dr. R. Srivastava, Professor of Pharmacology, University of Kansas; Prof. W. Maksymowicz, Dean of the Faculty of Medical Sciences, University of Olsztyn, Poland; and Dr. W. Lopaczynski, Health Sciences Administrator, NCI, NIH, who are also co-authors of other chapters. The book is enriched by numerous color figures.

This volume brings together many of the world's top experts who have made major contributions to their particular fields. The contributors represent some of the most sophisticated investigators working in basic as well as clinical areas, each contributor having been involved in research in his or her particular area of expertise. Additionally, every chapter is well documented with suitable references.

With their wide circle of acquaintances and international reputations, the editors have been able to bring together a highly distinguished group of individuals. Indeed, we are indebted to them for this book, its excellent planning, systematic organization, and the coverage of so many areas. The book identifies the current state of translational research, and some chapters, such as that by Dr. Terry Moody on cancer, include the currently available therapies and future treatment.

In conclusion, the book provides a comprehensive overview of translational work. It will be most useful as an advanced textbook not only for graduate students, but also for scientists and even clinicians, to continually update their scientific and medical education or simply to get an overview of translational work. A famous Spanish endocrinologist, Gregorio Marañón, once said, "Many books are written, and they come and go and are forgotten if they are not significant." This book, however, will be the gold standard of our time. A seminal contribution to science and medicine, it is destined to become a classic. I hope readers enjoy it as much as I did.

Andrew V. Schally
Nobel Prize in Physiology or Medicine for 1977

From the Editors

This book aims to define translational research and find ways to prioritize and accelerate translational research in the biomedical sciences in order to rapidly turn new knowledge into first-in-human studies. Although translational research means different things to different people, the book represents an effort to bring together international scientists, active in various areas of science driven by translation, to share their opinions and, hopefully, generate new ideas and potential collaborations.

Medical research agencies worldwide have had similar experiences: while there has never been a shortage of basic science discoveries, the perception of divergent ecosystems of basic and clinical research has created a significant gap between basic research achievements and the appearance of new drugs or therapies. However, the obstacles and difficulties in making bench-to-bed translation have not been adequately described.

This book has a simple goal: to provide a comprehensive overview of translational work that includes significant discoveries and pioneering contributions in areas such as immunology, gene therapy, stem cells, and population sciences. It may be used as an advanced textbook by graduate students, and even ambitious undergraduates, in the biomedical sciences. It is also suitable for non-experts, such as medical doctors who wish to have an overview of some of fundamental models in translational research.

Managing the translational enterprise remains a work in progress. The world is changing rapidly, and the scientific field needs to seek new ways to ensure that discoveries get translated for patients efficiently and as quickly as possible. In addition, the expectation is that investment in biomedical research should pay dividends through effective therapeutic solutions. This

unique project provides a broad collaborative approach by the international scientific community to present its views and opinions on how to cross barriers to incentives for translational research in the medical sciences.

The studies have been done and the data are in — yet we struggle to understand why it takes so long to translate genome-era discoveries into practice. To this end, the contributors to this book, representing a diverse group of international experts, have attempted to provide a historical perspective on how biomedical science has been driven by translation while progress on the clinical front in disease management has been slower than desired.

The book covers a large variety of topics, from general approaches to integrating emerging science into clinical practice; through organization, prioritization, and review of translational research; to translational science in cancer, infectious diseases, and neuroscience, including stem cells and endocrinology; and to translational epidemiology, biostatistics and informatics, economics, and behavioral sciences.

We would like to thank all of the people who have contributed to this book. Their efforts reflect their commitment to the field of translational research in biomedical sciences.

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