Contents

List of contributors vi
Preface ix

1 History of CNS drug development 1
Sheldon Preskorn

2 Regulatory issues 14
Gwen L. Zornberg

3 Essential CNS drug development – pre-clinical development 31
Alan J. Cross and Frank D. Yocca

4 Phase I trials: from traditional to newer approaches 55
Matthew Macaluso, Michael Krams, and Sheldon Preskorn

5 Phase II development and the path to personalized medicine in CNS disease 70
Douglas E. Feltner and Kenneth R. Evans

6 CNS drug development – Phase III 92
Judith Dunn, Penny Randall, and Amir Kalali

7 Statistics issues relevant to CNS drug development 100
Craig H. Mallinckrodt, William R. Prucka, and Geert Molenberghs

8 Clinical trials management at company level 127
Nuala Murphy

9 Clinical trials management at the site level 148
Joseph Kwentus

10 Medical writing for CNS indications 156
Ginette Nachman

11 Dissemination of clinical trial information: multiple audiences, multiple formats 169
Leslie Citrome

12 The importance of treating cognition in schizophrenia and other severe mental illnesses: background, strategies, and findings to date 177
Philip D. Harvey and Richard S. E. Keefe

13 Leveraging disruptive technologies to drive innovation in CNS clinical drug development 192
Penny Randall, Judith Dunn, and Amir Kalali

Index 200
Color plates found between pages 118 and 119.
Contributors

Leslie Citrome, MD, MPH
Professor of Psychiatry, New York University School of Medicine, Pomona, NY, USA

Alan J. Cross, PhD
Chief Scientist CNS & Pain Innovative Medicines Unit, AstraZeneca Research & Discovery, Wilmington, DE, USA

Judith Dunn, PhD
CNS Site Head, Product Development, Roche Inc., Nutley, NJ, USA

Kenneth R. Evans, PhD
President and CEO, Ontario Cancer Biomarker Network, MaRS Centre, Toronto, Canada

Douglas E. Feltner, MD
Adjunct Clinical Professor, Department of Psychiatry, University of Michigan, Ann Arbor, MI, USA

Philip D. Harvey, PhD
University of Miami Miller School of Medicine, Miami, FL, USA

Amir Kalali, MD
Vice President, Medical and Scientific Services, and Global Therapeutic Team Leader (CNS), Quintiles Inc., and Professor of Psychiatry, University of California San Diego, San Diego, CA, USA

Richard S. E. Keefe, PhD
Duke University Medical Center, Durham, NC, USA

Michael Krams, MD, PhD
Janssen Pharmaceutical Companies of Johnson & Johnson, Titusville, NJ, USA

Joseph Kwentus
Clinical Professor at the University of Mississippi Medical Center, Jackson, MS, USA

Matthew Macaluso, DO
Department of Psychiatry and Behavioral Sciences, University of Kansas School of Medicine-Wichita, and KU-Wichita Clinical Trials Unit, KS, USA

Craig H. Mallinckrodt, PhD
Eli Lilly & Co., Lilly Corporate Center, Indianapolis, IN, USA

Geert Molenberghs, PhD
I-BioStat, Hasselt University, Diepenbeek, Belgium, and Katholieke Universiteit Leuven, Leuven, Belgium

Nuala Murphy, PhD
Vice President and Global Unit Head, CNS and Internal Medicine, Quintiles, Inc., Levallois-Perret, France

Ginette Nachman, MD, PhD
Medical Writing Scientist, Global Regulatory Affairs and Medical Writing, Quintiles, Inc.

Sheldon Preskorn, MD
Professor of Psychiatry, Kansas University School of Medicine, Wichita (KUSM-W), and Chief Science Officer, KUSM-W Clinical Trial Unit, Wichita, KS, USA

William R. Prucka, PhD
Eli Lilly & Co., Lilly Corporate Center, Indianapolis, IN, USA

Penny Randall, MD, MBA
Quintiles, Inc. and Assistant Professor of Psychiatry, University of California, San Diego, CA, USA