

ROSALIND FRANKLIN UNIVERSITY OF MEDICINE AND SCIENCE

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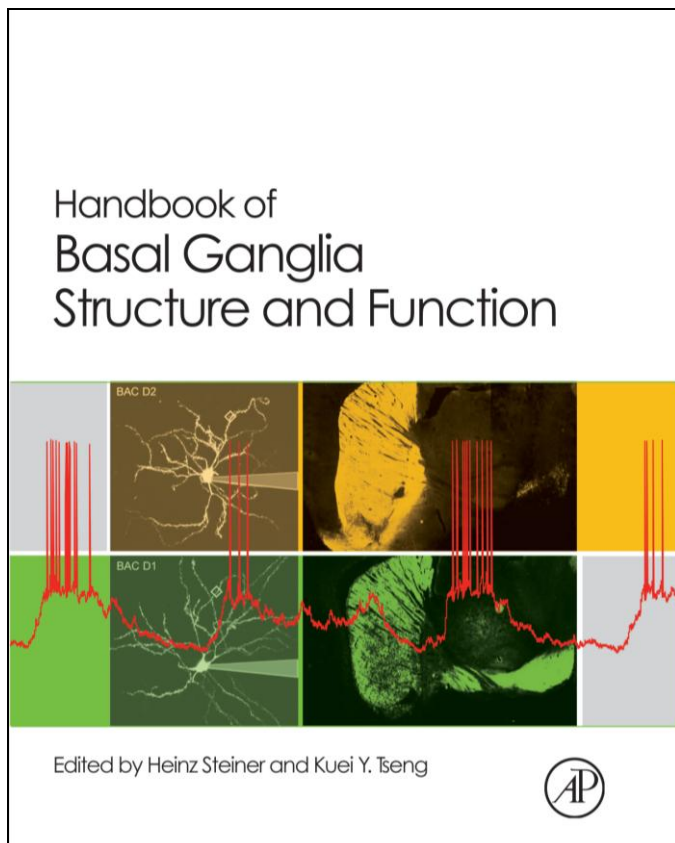
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Life in Discovery

For Immediate Release:

Landmark Publication on Brain Research Produced by Heinz Steiner, PhD, and Kuei Tseng, MD, PhD, at Rosalind Franklin University



Heinz Steiner, PhD



Kuei Y. Tseng, MD, PhD

NORTH CHICAGO, IL – Two scientists at Rosalind Franklin University of Medicine and Science have published a landmark publication on brain research.

Heinz Steiner, PhD, and Kuei Y. Tseng, MD, PhD, who are on the faculty of the Chicago Medical School's Department of Cellular and Molecular Pharmacology, are editors of the "Handbook of Basal Ganglia Structure and Function."

The first-of-its-kind handbook gathers the knowledge of the world's top experts on the basal ganglia, a set of interconnected nuclei in the forebrain that helps manage movement, learning, reward and cognition.

The basal ganglia also play a central role in neurological conditions, including Parkinson's disease and Huntington's disease, which strike an estimated 700,000 Americans, according to the National Institutes of Health and Tourette syndrome which, in its milder forms, affects one in every 100 people in the U.S.

New research suggests that dysfunction in the neural circuitry of the basal ganglia may also be to be involved in obsessive-compulsive disorder and drug addiction.

Recently published by Elsevier, a leading producer of health science journals and textbooks, the "Handbook of Basal Ganglia" presents a comprehensive overview of the structural and functional organization of the basal ganglia. The book is organized in six sections, from the molecular to the behavioral level, with a total of 39 chapters, each written by leading researchers who have made major contributions to the field over the past decade.

"The idea was not just to produce an update on research, but a compendium of basal ganglia knowledge," Dr. Tseng said. "The information presented in this book is the accepted scientific knowledge – what is known around the world about the basal ganglia."

Dr. Steiner, who first became interested in basal ganglia function during his studies at the Swiss Federal Institute of Technology in Zurich, Switzerland and then continued his research to earn his PhD from the University of Dusseldorf, Germany, has studied the basal ganglia for 25 years. He authored a chapter for this new book titled "Psychostimulant-Induced Gene Regulation in Corticostriatal Circuits," a review of research that finds that drugs, including cocaine and amphetamines, cause molecular changes in areas of the basal ganglia that control learning and motivation, and that those changes may fuel addiction.

Dr. Tseng, a graduate of the medical school at University of Buenos Aires, Argentina, and a former postdoctoral fellow at the Center for Neuropharmacology and Neuroscience, Albany Medical College in Albany, New York, said he became interested early on in the temporal aspect of brain activity and its relationship with brain disorders.

"The temporal aspect of a syndrome, I noticed, looked like the primary problem in many brain disorders," Tseng said. "The basal ganglia manage the temporal structure of motor and cognitive patterns."

The handbook also includes chapters by Chicago Medical School faculty members Gloria Meredith, PhD, Dean of Rosalind Franklin University's College of Pharmacy, and Anthony West, PhD, Department of Neuroscience. Dr. Meredith reviews research that finds a link between environmental toxins and Parkinson's Disease. Dr. West discusses findings on how the basal ganglia use nitric oxide.

The editors capitalized on their extensive personal and professional contacts to recruit nearly 100

internationally respected contributors. Dr. Steiner focused on molecular and anatomical areas of research while Dr. Tseng attended to neurophysiology.

“Between us, we covered the whole spectrum,” said Dr. Steiner. “We invited the researchers to contribute and we found that often, they were very enthusiastic. They recognized there was really no book that brought everything together. We needed this kind of comprehensive book.”

Dr. Steiner and Dr. Tseng worked on the handbook for more than two years, organizing, writing, editing and circulating drafts between expert reviewers, many who also wrote chapters. Steiner compared the editing process to a game of chess.

“How can we do this to achieve our goal of covering all the main topics of the field?” he said he constantly asked.

The handbook is more than a review of accepted research.

“It summarizes most of the new tools we have,” Dr. Tseng said. “It’s important in the basic sciences to develop new tools so we can look at the mechanics of XYZ type of disorders. It’s important for educating the profession and understanding how mechanisms work.”

The handbook will be used by researchers, physicians, students and medical professionals who seek an overview of basic scientific research on the basal ganglia.

“This gives doctors a better mechanistic understanding of a disease,” said Dr. Tseng. “And thereby they can treat and serve their patients better.”

About Rosalind Franklin University of Medicine and Science

Rosalind Franklin University of Medicine and Science is a national leader in interprofessional medical and healthcare education, comprising the Chicago Medical School, College of Health Professions, Dr. William M. Scholl College of Podiatric Medicine and School of Graduate and Postdoctoral Studies.

There are more than 16,000 RFUMS dereed graduates in the United States and worldwide.