



ANNUAL REVIEW OF NEUROSCIENCE

VOLUME 23, 2000

W. MAXWELL COWAN, *Editor*
Howard Hughes Medical Institute

ERIC M. SHOOTER, *Associate Editor*
Stanford University School of Medicine

CHARLES F. STEVENS, *Associate Editor*
Salk Institute for Biological Studies

RICHARD F. THOMPSON, *Associate Editor*
University of Southern California

www.AnnualReviews.org science@annurev.org 650-493-4400

ANNUAL REVIEWS

4139 El Camino Way • P.O. Box 10139 • Palo Alto, California 94303-0139

CONTENTS

CORTICAL AND SUBCORTICAL CONTRIBUTIONS TO ACTIVITY-DEPENDENT PLASTICITY IN PRIMATE SOMATOSENSORY CORTEX, <i>Edward G. Jones</i>	1
MICROTUBULE-BASED TRANSPORT SYSTEMS IN NEURONS: THE ROLES OF KINESINS AND DYNEINS, <i>Lawrence S. B. Goldstein and Zhaohuai Yang</i>	39
APOPTOSIS IN NEURAL DEVELOPMENT AND DISEASE, <i>Deepak Nijhawan, Narimon Honarpour, and Xiaodong Wang</i>	73
GAIN OF FUNCTION MUTANTS: ION CHANNELS AND G PROTEIN-COUPLED RECEPTORS, <i>Henry A. Lester and Andreas Karschin</i>	89
THE KONIOCELLULAR PATHWAY IN PRIMATE VISION, <i>Stewart H. C. Hendry and R. Clay Reid</i>	127
EMOTION CIRCUITS IN THE BRAIN, <i>Joseph E. LeDoux</i>	155
DOPAMINERGIC MODULATION OF NEURONAL EXCITABILITY IN THE STRIATUM AND NUCLEUS ACCUMBENS, <i>Saleem M. Nicola, D. James Surmeier, and Robert C. Malenka</i>	185
GLUTAMINE REPEATS AND NEURODEGENERATION, <i>Huda Y. Zoghbi and Harry T. Orr</i>	217
CONFRONTING COMPLEXITY: STRATEGIES FOR UNDERSTANDING THE MICROCIRCUITRY OF THE RETINA, <i>Richard H. Masland and Elio Raviola</i>	249
ADAPTATION IN HAIR CELLS, <i>Ruth Anne Eatock</i>	285
MECHANISMS OF VISUAL ATTENTION IN THE HUMAN CORTEX, <i>Sabine Kastner and Leslie G. Ungerleider</i>	315
THE EMERGENCE OF MODERN NEUROSCIENCE: SOME IMPLICATIONS FOR NEUROLOGY AND PSYCHIATRY, <i>W. Maxwell Cowan, Donald H. Harter, and Eric R. Kandel</i>	343
PLASTICITY AND PRIMARY MOTOR CORTEX, <i>Jerome N. Sanes and John P. Donoghue</i>	393
GUANYLYL CYCLASES AS A FAMILY OF PUTATIVE ODORANT RECEPTORS, <i>Angelia D. Gibson and David L. Garbers</i>	417
NEURAL MECHANISMS OF ORIENTATION SELECTIVITY IN THE VISUAL CORTEX, <i>David Ferster and Kenneth D. Miller</i>	441

NEURONAL CODING OF PREDICTION ERRORS, <i>Wolfram Schultz and Anthony Dickinson</i>	473
MODULAR ORGANIZATION OF FREQUENCY INTEGRATION IN PRIMARY AUDITORY CORTEX, <i>Christoph E. Schreiner, Heather L. Read, and Mitchell L. Sutter</i>	501
CONTROL OF CELL DIVISIONS IN THE NERVOUS SYSTEM: SYMMETRY AND ASYMMETRY, <i>Bingwei Lu, Lily Jan, and Yuh-Nung Jan</i>	531
CONSCIOUSNESS, <i>John R. Searle</i>	557
THE RELATIONSHIP BETWEEN NEURONAL SURVIVAL AND REGENERATION, <i>Jeffrey L. Goldberg and Ben A. Barres</i>	579
NEURAL REPRESENTATION AND THE CORTICAL CODE, <i>R. C. deCharms and A. Zador</i>	613
SYNAPTIC PLASTICITY AND MEMORY: AN EVALUATION OF THE HYPOTHESIS, <i>S. P. Martin, P. D. Grimwood, and R. G. M. Morris</i>	649
MOLECULAR GENETICS OF CIRCADIAN RHYTHMS IN MAMMALS, <i>David P. King and Joseph S. Takahashi</i>	713
PARALLEL PATHWAYS FOR SPECTRAL CODING IN PRIMATE RETINA, <i>Dennis M. Dacey</i>	743
PAIN GENES?: NATURAL VARIATION AND TRANSGENIC MUTANTS, <i>Jeffrey S. Mogil, Lei Yu, and Allan I. Basbaum</i>	777
INDEXES	
Subject Index	813
Cumulative Index of Contributing Authors, Volumes 14–23	825
Cumulative Index of Chapter Titles, Volumes 14–23	829