A defeat for primate research

Active Vision: The Psychology of Looking and Seeing
by John M Findlay and Iain D Gilchrist
Reviewed by Melvyn A Goodale

Eph–ephrin promiscuity is now crystal clear
Elena B Pasquale ► see also p 501

Presynaptic NMDA receptors get into the act
Anastassios V Tzingounis & Roger A Nicoll ► see also p 525

Tlx genes make an exciting choice
Stewart Anderson ► see also p 510

Visual and action cues contribute to the self–other distinction
Marc Jeannerod ► see also p 542

scaling up neuroscience

Scaling up neuroscience
Kalyani Narasimhan

Limits to growth: why neuroscience needs large-scale science
Thomas R Insel, Nora D Volkow, Story C Landis, Ting-Kai Li, James F Battey, Jr & Paul Sieving

Neurogenomics: at the intersection of neurobiology and genome sciences
Mark S Boguski & Allan R Jones

Progress in the use of microarray technology to study the neurobiology of disease
Károly Mirnics & Jonathan Pevsner

To understand the brain, we must confront its complexity. Thus efforts to 'scale up' data production in neuroscience are on the rise. In this issue, we present a special focus on this topic, a collection of perspective articles that highlight the use of high-throughput methodologies in neuroscience and discuss their current progress and future challenges. Some of the available database resources are described for those who wish to explore this topic further. This special focus is sponsored by the National Institutes of Health. (pp 425–487)
440 Proteomics in postgenomic neuroscience: the end of the beginning
Jyoti Choudhary & Seth G N Grant

446 Large-scale recording of neuronal ensembles
György Buzsáki

452 Using multi-neuron population recordings for neural prosthetics
John K Chapin

456 Multiple neural spike train data analysis: state-of-the-art and future challenges
Emery N Brown, Robert E Kass & Partha P Mitra

462 Neurobehavioral assessment in the information age
Laurence H Tecott & Eric J Nestler

467 e-Neuroscience: challenges and triumphs in integrating distributed data from molecules to brains
Maryann E Martone, Amarnath Gupta & Mark H Ellisman

473 Sharing neuroimaging studies of human cognition
John Darrell Van Horn, Scott T Grafton, Daniel Rockmore & Michael S Gazzaniga

483 Gene Expression Nervous System Atlas (GENSAT)
Nathaniel Heintz

484 A genome end-game: understanding gene function in the nervous system
Carol Bult, Warren A. Kibbe, Jay Snoddy, Martha Vitaterna, Doug Swanson, Stephanie Pretel, Yanxia Li, Moses M. Hohman, Eugene Rinchik, Joe S. Takahashi, Wayne N Frankel & Dan Goldowitz

485 WebQTL: rapid exploratory analysis of gene expression and genetic networks for brain and behavior
Elissa J Chesler, Lu Lu, Jintao Wang, Robert W Williams & Kenneth F Manly

486 Neurodatabase.org: networking the microelectrode
Daniel Gardner

489 Circadian regulation of GABA_A receptor function by CKIε-CKIδ in the rat suprachiasmatic nuclei
K Ning, L Li, MLiao, B Liu, J G Mielke, Y Chen, Y Duan, Y H El-Hayek & Q Wan

491 Towing of sensory axons by their migrating target cells in vivo
D Gilmour, H Knaut, H-M Maischein & C Nüsslein-Volhard

493 Orexigen-sensitive NPY/AgRP pacemaker neurons in the hypothalamic arcuate nucleus
M van den Top, K Lee, A D Whymant, A M Blanks & D Spanswick

495 Stimuli associated with a single cocaine experience elicit long-lasting cocaine-seeking
R Ciccocioppo, R Martin-Fardon & F Weiss
497 Dorsal anterior cingulate cortex shows fMRI response to internal and external error signals

499 Left temporoparietal junction is necessary for representing someone else’s belief
D Samson, I A Apperly, C Chiavarino & G W Humphreys

ARTICLES

501 Repelling class discrimination: ephrin-A5 binds to and activates EphB2 receptor signaling
J-P Himanen, M J Chumley, M Lackmann, C Li, W A Barton, P D Jeffrey, C Vearing, Detlef Geleick, D A Feldheim, A W Boyd, M Henkemeyer & D B Nikolov ► see also p 417

510 Tlx3 and Tlx1 are post-mitotic selector genes determining glutamatergic over GABAergic cell fates
L Cheng, A Arata, R Mizuguchi, Y Qian, A Karunaratne, P A Gray, S Arata, S Shirasawa, M Bouchard, P Luo, C-L Chen, M Busslinger, M Goulding, H Onimaru & Q Ma ► see also p 421

518 A proportional but slower NMDA potentiation follows AMPA potentiation in LTP
A J Watt, P J Sjöström, M Häusser, S B Nelson & G G Turrigiano

525 Retrograde activation of presynaptic NMDA receptors enhances GABA release at cerebellar interneuron–Purkinje cell synapses
I C Duguid & T G Smart ► see also p 419

534 Modulation of spike timing by sensory deprivation during induction of cortical map plasticity
T Celikel, V A Szostak & D E Feldman

542 Extrastriate body area in human occipital cortex responds to the performance of motor actions
S V Astafiev, C M Stanley, G L Shulman & M Corbetta ► see also p 422

549 Modulation of activity in medial frontal and motor cortices during error observation
H T van Schie, R B Mars, M G H Coles & H Bekkering

555 The fusiform face area subserves face perception, not generic within-category identification
K Grill-Spector, N Knouf & N Kanwisher

NATURE NEUROSCIENCE CLASSIFIED

See back pages.