

IN BRIEF

➤ COGNITIVE NEUROSCIENCE

The right and the good: distributive justice and neural encoding of equity and efficiency

Hsu, M. *et al. Science* 8 May 2008 (doi:10.1126/science.1153651)

The authors showed that during a goods-distribution task that involved making a trade-off between fairness and efficiency, activity in the insula and the putamen correlated with the two options' levels of inequity and efficiency, respectively. Furthermore, individuals with higher insula activation preferred fairer over more efficient options, suggesting that individual differences in distributive justice might reflect differences in emotional processing.

➤ NEURODEGENERATIVE DISEASE

Light-activated channels targeted to ON bipolar cells restore visual function in retinal degeneration

Lagali, P. S. *et al. Nature Neurosci.* 27 Apr 2008 (doi:10.1038/nn.2117)

The degeneration of retinal photoreceptor cells is the underlying cause of blindness in conditions such as retinitis pigmentosa. Here the authors expressed the light-sensitive ion channel channelrhodopsin 2 in 'ON' bipolar cells — those that are normally activated by increased light levels — in a mouse model of retinal degeneration. Exposure to high-intensity light generated responses in the ganglion cells to which the bipolar cells project and in the visual cortex. Furthermore, the mice responded to light in several behavioural tests, providing hope that this technology might be translated to the human retina.

➤ DEVELOPMENT

Bergmann glia and the recognition molecule CHL1 organize GABAergic axons and direct innervation of purkinje cell dendrites

Ango, F. *et al. PLoS Biol.* 29 Apr 2008 (doi:10.1371/journal.pbio.0060103)

In the cerebellum, stellate interneurons make synapses onto a specific subcellular compartment of Purkinje cells: the dendritic shaft. The authors shed light on the cellular and molecular mechanisms that regulate the organization and patterning of stellate cell axons and synapses. They show that the radial fibres of Bergmann glia (BG) form a scaffold that guides the growth of stellate cell axons towards their targets and that this organization requires the expression of the cell adhesion molecule close homologue of L1 (CHL1) by the BG.

➤ SYNAPTIC PLASTICITY

Expression of long-term depression underlies visual recognition memory

Griffiths, S. *et al. Neuron* **58**, 186–194 (2008)

Long-term potentiation and long-term depression (LTP and LTD) are thought to underlie learning and memory, although direct evidence for a causal relationship is scarce. The authors showed that preventing the internalization of the AMPA receptor (AMPA) *in vitro*, by inhibiting the interaction between the AMPAR GluR2 subunit and the clathrin adaptor protein AP2, blocked LTD in slices of perirhinal cortex. Crucially, preventing this interaction *in vivo* disrupted visual recognition memory in rats, and LTD could not be induced in perirhinal cortex slices from these animals, indicating that LTD is required for visual recognition memory.