

## IN BRIEF

**NEUROIMAGING**

## Resting-state networks in the infant brain

Fransson, P. *et al.* *PNAS* **104**, 15531–15536 (2007)

Functional MRI (fMRI) studies have revealed the presence of intrinsic, synchronized activity in ‘resting-state networks’ in the adult brain when it is not engaged in a task. Here, the authors carried out fMRI in sleeping preterm infants around normal birth age. Resting-state networks were present: some shared characteristics with those identified in adults, whereas others appeared to have no adult equivalent. The authors found no evidence for a ‘default-mode network’ (regions that demonstrate lower activity during certain cognitive tasks in adults), suggesting that this develops at a later stage.

**NEURONAL MIGRATION**

## N-cofilin is associated with neuronal migration disorders and cell cycle control in the cerebral cortex

Bellenchi, G. C. *et al.* *Genes Dev.* **21**, 2347–2357 (2007)

Several neurodevelopmental disorders are characterized by errors in cortical neuronal migration. The authors investigated the contribution of the actin cytoskeleton to these abnormalities, using mice that lacked N-cofilin, a protein that regulates the length of actin filaments. Cortical migration and the formation of cortical layers were impaired in these animals. Furthermore, neuronal progenitors in the ventricular zone stopped proliferating and differentiated more rapidly. This suggests that mutations that interfere with actin-filament formation might be involved in neuronal migration disorders.

**COGNITIVE NEUROSCIENCE**

## Expectation modulates neural responses to pleasant and aversive stimuli in primate amygdala

Belova, M. A. *et al.* *Neuron* **55**, 970–984 (2007)

To respond to and learn from surprising encounters with pleasant and aversive stimuli, the brain needs to compute both stimulus intensity and valence. The authors revealed that, in monkeys, the response of some populations of neurons in the amygdala to a rewarding stimulus was altered when the stimulus was unexpected. In some neurons, expectation altered responses selectively to either pleasant or aversive stimuli whereas in others, the responses were modified by expectation regardless of the stimulus type. These findings provide insights into how the amygdala generates appropriate responses to different stimuli.

**GLIA**Glia promote local synaptogenesis through UNC-6 (netrin) signalling in *C. elegans*.Colon-Ramos, D. A. *et al.* *Science* **318**, 103–106 (2007)

This study reveals a novel function for glia-derived UNC-6, a molecule that is best known for its conserved role in axon guidance in the assembly of presynaptic terminals in AIY interneurons in *C. elegans*. Both the AIY neuron and its postsynaptic partner, the RIA neuron, express the UNC-6 receptor, DCC; however, this protein triggers distinct cellular processes in the two cells. Whereas DCC guides RIA neurons to their appropriate location, it mediates glia-induced synaptogenesis in AIY neurons. This study highlights the multifunctionality of axon-guidance molecules and the importance of glia in establishing neuronal circuits.

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