airway that are disturbed in cystic fibrosis.
Cell Stem Cell **10**, 398–411; 385–397 (2012)

NEUROPSYCHOLOGY

Poor attention linked to dyslexia

Early problems with visual attention in children seem to be linked to later difficulties in learning to read, a hallmark of dyslexia.

Andrea Facoetti at the University of Padua in Italy and his colleagues tested 96 Italian-speaking children in kindergarten on their ability to pick out specific symbols from an array of others, as a measure of their visual-attention skills. Those who scored below average in visual attention were more likely to show below-average reading skills when they reached first and second grade.

The results suggest that visual-attention deficits, rather than developmental delays in language skills, could predict dyslexia diagnoses in children, and could inspire strategies for early detection and treatment.
Curr. Biol. **http://dx.doi.org/ 10.1016/j.cub.2012.03.013 (2012)**

INFECTIOUS DISEASE

Multiple malaria mechanisms

The considerable variation in malaria symptoms seen between patients can be predicted from the parasite's expression of certain genes and the response of the host's red blood cells to infection.

Red blood cells infected by the malaria parasite *Plasmodium falciparum* often stick to uninfected ones in a process called rosetting. Peter Bull and his co-workers at the Kenya Medical Research Institute–Wellcome Trust Research Programme in Kilifi studied parasites isolated from 131 infected children and found that patients with high levels of rosetting tended to have breathing difficulties.

Children infected with parasites that did not exhibit high rosetting but expressed high levels of a particular subset of 'var' genes were more likely to exhibit impaired consciousness or coma. *Var* genes encode proteins that sit on the surface of infected red blood cells and specific subsets have previously been linked to severe malaria.

The findings could help to guide treatment decisions or lead to new therapies.
Sci. Transl. Med. **4**, 129ra45 (2012)

PHOTONICS

Diamond sparkles with one photon

A diamond diode can produce single photons at room temperature in response to a small electrical current.

Devices that can produce one photon at a time have potential applications in quantum communication and computation, but usually require very low temperatures. Norikazu Mizuochi at Osaka University in Japan and his colleagues say that the key feature of their diode is a diamond layer that contains gaps in the carbon lattice occupied by nitrogen atoms. The researchers theorize that these nitrogen-vacancy complexes naturally capture positively charged 'holes' and electrons from a small electrical current that recombine and emit light.
Nature Photon. **http://dx.doi.org/ 10.1038/nphoton.2012.75 (2012)**

NEUROSCIENCE

Fragile X fixed in mice

A molecule that inhibits a neurotransmitter receptor reverses many of the symptoms in a mouse model of fragile X syndrome, the most common form of inherited mental retardation. The disorder is caused by mutations in the *FMR1* gene that result in overactivity of the mGlu5 receptor.

Lothar Lindemann at

BIOELECTRONICS

Snail drives implanted fuel cell

A fuel cell implanted in a living snail can generate electrical power for several months.

Implanted fuel cells that are driven by glucose generated by their host could one day power medical devices in humans or environmental sensors in animals. Evgeny Katz at Clarkson University in Potsdam, New York, and his colleagues made the electrodes of their fuel cell out of densely packed carbon nanotubes, and attached glucose-oxidizing and oxygen-reducing enzymes to them. The authors then implanted the electrodes into a snail (*Neohelix albolabris*). After decreasing the rate of current extraction to match the snail's slow glucose transport and metabolism, they got continuous electrical output for an hour. The fuel cell remained functional in the snail for several months.
J. Am. Chem. Soc. **134**, 5040–5043 (2012)

F. Hoffmann-La Roche in Basel, Switzerland, Mark Bear at the Massachusetts Institute of Technology in Cambridge and their colleagues treated young adult mice engineered to have fragile X syndrome with a new long-acting mGlu5 inhibitor, CTEP, for up to four months. The treatment reversed a range of defects, including hyperactivity, impaired learning and memory, and abnormal neuronal shape. CTEP also corrected the elevated rate of protein synthesis in the brain's hippocampal region, which is characteristic of the disease.

Several drug companies are testing mGlu5 inhibitors in clinical trials.
Neuron **74**, 49–56 (2012)

CLIMATE MODELLING

Predicting the Indian monsoon

Climate models can produce more-accurate forecasts of rainfall during India's summer monsoon season than can conventional statistical analyses of sea surface temperatures.

Timothy DelSole and Jagadish Shukla at George Mason University in Fairfax, Virginia, found no significant

N. NANU/AFP/GETTY

statistical relationship between summer monsoon rainfall in India and sea surface temperatures surrounding the country in May of each year from 1960 to 2005. They analysed predictions made by five coupled ocean–atmosphere climate models based on the same temperature data and period, and found that the models were better than the statistical methods at predicting rainfall.

The authors say the models can more accurately forecast the evolution of sea surface temperatures throughout the summer, which influences the monsoon rainfall (**pictured**).
Geophys. Res. Lett. **http://dx.doi. org/10.1029/2012GL051279 (2012)**

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