

# RESEARCH HIGHLIGHTS

Selections from the scientific literature

## ELECTRONICS

### Skin that glows on touch

A flexible electronic skin, or e-skin, lights up instantly in response to touch.

A team led by Ali Javey at the University of California, Berkeley, manufactured the e-skin by layering carbon nanotube transistors, light-emitting diodes (LEDs) and pressure sensors. The authors made a 3.5- by 3-centimetre patch of e-skin that lights up where pressure is applied — the higher the local pressure, the brighter the LEDs. The researchers suggest that the technology could be modified to respond to sensations other than pressure and may have applications in interactive displays, robotics and health monitoring.

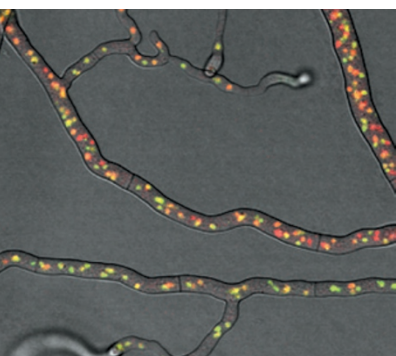
*Nature Mater.* <http://dx.doi.org/10.1038/nmat3711> (2013)

## FUNGAL BIOLOGY

### Mould optimized for gene mixing

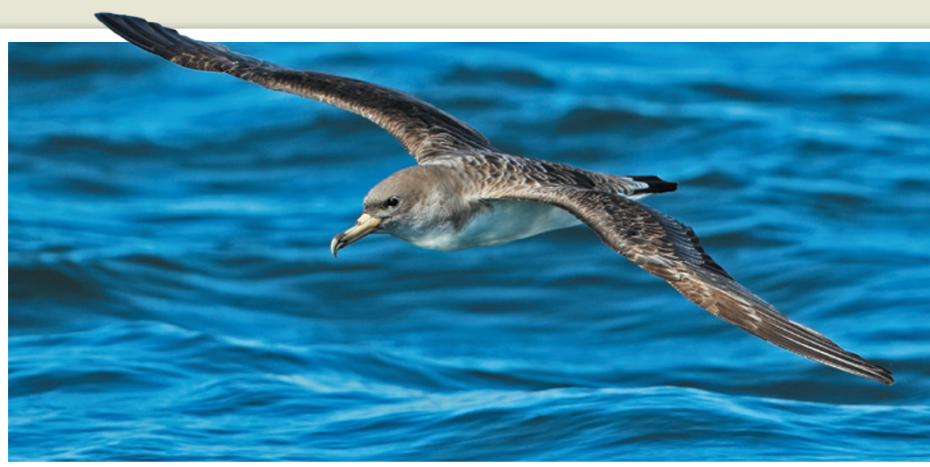
Some moulds boost their genetic diversity by pumping DNA through sprawling networks of fungal fibres.

Unlike plants and animals, certain fungi form colonies of interconnected cells with mobile, genetically distinct nuclei in a common cytoplasm. Marcus Roper at the University



of California, Los Angeles, and his colleagues tagged nuclei of the red bread mould *Neurospora crassa* with either green or red fluorescent proteins (pictured) and then monitored how the nuclei moved through fungal filaments, which branch and fuse into a hyphal network. The team found that fluids push nuclei through the tiny tubes at a rate of 3 millimetres per hour, supplying the tips of the network with a diverse mix of DNA. The network's structure enhances hydraulic flow, boosts nuclear mixing and could help fungi to recombine genes to create more robust mould, the authors say.

*Proc. Natl Acad. Sci. USA* <http://dx.doi.org/10.1073/pnas.1220842110> (2013)



ROBIN CHITTENDEN/FLPA

## ANIMAL BEHAVIOUR

### Sea birds scent home

Scent helps Cory's shearwaters to navigate long distances over featureless oceans.

Anna Gagliardo at the University of Pisa in Italy and her team deprived eight shearwaters (*Calonectris borealis*; pictured) of their sense of smell by washing their nasal cavities with a zinc sulphate solution. The authors attached magnets to the heads of eight more birds to disrupt any natural magnetic sense, and used another eight not subject to sensory manipulation as controls.

All animals were tagged and released around 800 kilometres from their home colony. The control birds and seven of those carrying magnets returned to the colony within a few days. Just two of the smell-deprived birds made it home within the breeding period, and only after following long, tortuous paths. The researchers suggest that shearwaters navigate by an odour-based map, and not by geomagnetic fields. *J. Exp. Biol.* 216, 2798–2805 (2013)

## CANCER RESEARCH

### Tumour lines are not all equal

The cell lines that researchers routinely turn to when studying ovarian cancer are not the best genetic match available.

Nikolaus Schultz and his team at the Memorial Sloan-Kettering Cancer Center in New York screened 47 cell lines used to model ovarian cancer. The researchers compared the models with samples of human ovarian cancer in terms of gene expression, genetic duplications and mutations. Many frequently used lines were quite different from the most common and lethal cancer types. For example, two cell lines most often used as

tumour models did not contain mutations in a gene that is typically altered in ovarian cancers. Less-used lines were deemed better matches. The analysis will help researchers to choose the most-relevant lines for testing potential cancer drugs, the authors say, and the approach could be used for other tumour types.

*Nature Commun.* 4, 2126 (2013)

## ASTRONOMY

### Stellar ice hints at planet birth

A 'snow line' in the gas-rich disk around a young star shows how far from the star carbon monoxide freezes, and so where planets are likely to form. Carbon monoxide ice

PATRICK HICKEY/UCLA