RESEARCH HIGHLIGHTS

Selections from the scientific literature

BIOCHEMISTRY

Prion strings pictured on cells

For the first time, researchers have captured images of prions — proteins that can misfold and spread, causing neurodegeneration — in living cells. The images show the proteins residing on the cell surface in strings and webs.

Albert Taraboulos at the Hebrew University in Jerusalem and his colleagues used antibodies that react with a subset of the misfolded proteins to visualize the prions in cultured mouse cells and brain tissue under a fluorescence microscope. The team found prion strings up to five micrometres long that remained stable on the cell surface for several hours.

This anchoring provides insight into how misfolded prions interact with cells and can resist degradation, the authors say.

J. Cell Biol. **http://dx.doi.org/10.1083/jcb.201308028 (2014)**

Y. NUI *ET AL.*/CELL PRESS

BIOTECHNOLOGY

CRISPR makes modified monkeys

Researchers have used precise gene-editing techniques to generate genetically modified monkeys.

Previous models of human disorders in monkeys were created using viruses to transfer genes, but this method lacks the precision needed to modify specific gene sequences. Xingxu Huang at Nanjing University in China and his colleagues turned to the CRISPR–Cas9 system, which uses a customizable RNA fragment to guide the DNA-cutting enzyme Cas9 to a specific site. The team altered the genome in one-cell-stage embryos of cynomolgus monkeys (*Macaca fascicularis*). This resulted in the birth of twins (pictured) with mutations in two target genes: *Ppar-γ*, which is involved in regulating metabolism; and *Rag1*, which is involved in immune function.

The results pave the way for producing primate models with specific mutations that more closely mimic human diseases.

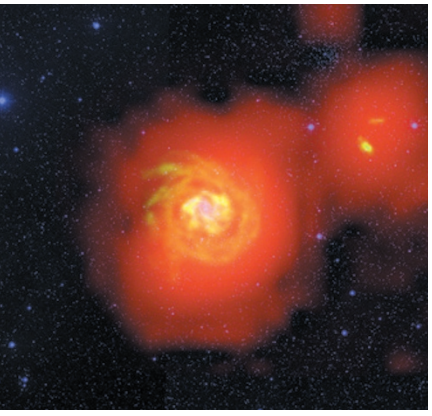
Cell **http://doi.org/q93 (2014)**

For a longer story on this research, see go.nature.com/327cbd

ASTROPHYSICS

Hydrogen river could fuel stars

The discovery of a faint filament of hydrogen gas streaming across space could help to explain how some galaxies maintain their pace of star formation.



D. J. PISANO (WVU)/B. SAXTON (NRAO/AUI/NSF)/PALOMAR OBSERVATORY, SPACE TELESCOPE SCI. INST. 2ND DIGITAL SKY SURVEY (CALTECH)/WESTERBORK SYNTHESIS RADIO TELESCOPE

D. J. Pisano from West Virginia University in Morgantown used the Robert C. Byrd Green Bank Telescope to identify a river of hydrogen connecting the galaxy NGC 6946 (**pictured**) with its neighbours. Pisano suggests that the filament could be the first observation of a 'cold flow', a stream of diffuse gas from intergalactic space that has long been theorized to be a source of fuel for star formation, and that is invisible to most telescopes.

Alternatively, the hydrogen could have been drawn out during a close encounter between NGC 6946 and its neighbours. Future galaxy surveys should confirm the source of this hydrogen stream.

Astronomical J. 147, **48 (2014)**

ARCHAEOLOGY

Britain's Anglo-Saxons were local

Anglo-Saxons succeeded the Romans in Britain during the early fifth century, probably through cultural adoption by local individuals rather than through invasion by Germanic people.

Susan Hughes at the US Navy in Silverdale, Washington, and her team analysed the tooth enamel of 19 individuals from an early Anglo-Saxon cemetery in southern England, and measured the levels of oxygen and strontium isotopes in the teeth. These levels are determined by the water and food consumed by the individual. The researchers found that the isotope ratios matched those of the surrounding water and soil, suggesting that most of the people were local to that area. One individual seemed to be an immigrant from the