

contact, which makes influenza transmission less subject to climate variation. —CA

*Science*, this issue p. 75;  
see also p. 29

## ECONOMICS

### Educating for economic rationality

The hypothesis that education enhances economic decision-making has been surprisingly underexplored. Kim *et al.* studied this question using a randomized control trial in a sample of 2812 girls in secondary schools in Malawi. Four years after providing financial support for a year's schooling, they presented the subjects with a set of decision problems (for example, allocating funds to immediate versus future expenses) that test economic rationality. The education intervention enhanced both educational outcomes and economic rationality as measured by consistency with utility maximization in the long run. —AMS

*Science*, this issue p. 83

## MUSCLE DISEASE

### Gene editing and muscular dystrophy

Duchenne muscular dystrophy (DMD) is characterized by progressive muscle weakness and a shortened life span. The disease is caused by mutations that reduce or prevent expression of dystrophin, an essential structural protein in skeletal and heart muscle. The gene editing technology CRISPR-Cas9 can correct disease-causing mutations and has yielded promising results in mouse models of DMD. In a small, short-term study, Amoasii *et al.* tested this strategy in a dog model of DMD that exhibits many features of the human disease. Intramuscular or systemic delivery of the gene editing components resulted in a substantial increase in dystrophin protein levels in skeletal and heart muscle. Restoration

of dystrophin expression was accompanied by improved muscle histology. —PAK

*Science*, this issue p. 86

## ASTRONOMY

### New moon rising

Although the existence of exomoons—moons orbiting extrasolar planets—is probable, direct observational evidence has been elusive. Previous observations made using NASA's Kepler space telescope suggested that Kepler-1625b, a Jupiter-sized planet orbiting the solar-mass yellow star Kepler-1625, may be orbited by an exomoon. Now, Teachey and Kipping report additional observations made using the Hubble Space Telescope, as well as a refined analysis of Kepler photometry data, that strongly support the exomoon hypothesis. This moon, if it exists, would be similar in size to Neptune or Uranus in our own Solar System. —KVH

*Sci. Adv.* 10.1126/  
sciadv.aav1784 (2018).

## HIV

### Gut check for a promising HIV treatment

Eradicating HIV in infected patients likely requires disrupting the reservoir of infected T cells in the gastrointestinal tract. One approach may be targeting cells expressing the integrin  $\alpha 4\beta 7$ , which has been tested in simian immunodeficiency virus models and is an approved therapy for inflammatory bowel disease. Uzzan *et al.* studied a small cohort of HIV-infected individuals on antiretroviral therapy who began receiving an antibody against  $\alpha 4\beta 7$  as a treatment for their mild inflammatory bowel disease. Longitudinal colonoscopies revealed that the anti- $\alpha 4\beta 7$  therapy disrupted local lymphoid aggregates. The treatment was well tolerated, but long-term effects on the HIV reservoir remain to be determined. —LP

*Sci. Transl. Med.* 10, eaau4711 (2018).

## IN OTHER JOURNALS

Edited by **Caroline Ash**  
and **Jesse Smith**



Osteoporosis reduces bone density because of imbalances in signaling feedbacks.

## GENOMICS

### Evolving risks to personality

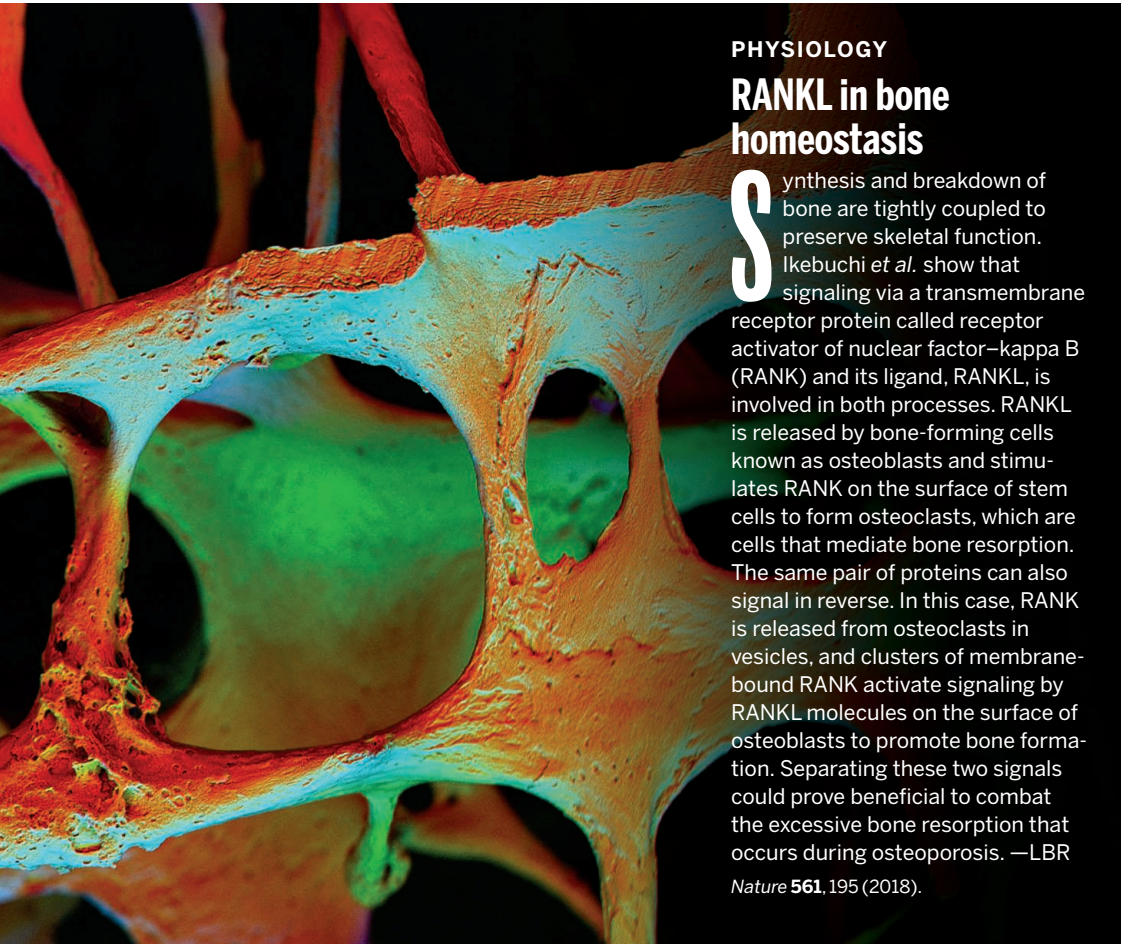
The origin of the uniquely large and complex human brain has been shrouded in mystery. To identify genetic changes that may underlie human evolution, Sato and Kawata examined human-specific genetic changes associated with neuropsychiatric disease and identified selection for variants in three genes. Interestingly, one variant of the *SLC18A1* gene, which encodes a neurotransmitter, arose at the time humans migrated out of Africa. It appears to be under balancing selection in some populations, which has resulted in two variants in most non-African populations. This variant is linked with anxiety, but it is not yet understood what conditions favor its selection. —LMZ

*Evol. Lett.* 2, 499 (2018).

## SOCIOLOGY

### Joke theft and comedians' authenticity

Joke theft among comedians is difficult to discern because jokes are rarely identical and may be discovered independently of each other. To determine how people adjudicate instances of joke theft, Reilly conducted 4 years of participant observation and interviews among stand-up comics in Los Angeles to examine norms surrounding joke theft. He found that accusations of joke theft are driven less by joke similarity and more by a comedian's reputation, authenticity, and past success. Comedians perceived as being more successful than they deserve to be are more vulnerable to accusations of joke theft. These data have implications for understanding how intellectual property disputes are handled in other creative and scientific domains, as well as how character and action information are



**PHYSIOLOGY**

**RANKL in bone homeostasis**

**S**ynthesis and breakdown of bone are tightly coupled to preserve skeletal function. Ikebuchi *et al.* show that signaling via a transmembrane receptor protein called receptor activator of nuclear factor- $\kappa$ B (RANK) and its ligand, RANKL, is involved in both processes. RANKL is released by bone-forming cells known as osteoblasts and stimulates RANK on the surface of stem cells to form osteoclasts, which are cells that mediate bone resorption. The same pair of proteins can also signal in reverse. In this case, RANK is released from osteoclasts in vesicles, and clusters of membrane-bound RANK activate signaling by RANKL molecules on the surface of osteoblasts to promote bone formation. Separating these two signals could prove beneficial to combat the excessive bone resorption that occurs during osteoporosis. —LBR *Nature* **561**, 195 (2018).

dendrite order might facilitate nonsynaptic signaling across dendrites. —PJH *eLife* **7**, e35825 (2018).

**THERMAL TRANSPORT**

**Blowing by the blackbody limit**

The blackbody limit tells us the maximum amount of heat that can be emitted from an object. However, this limit is known to be no limit at all when the spacing between objects is small enough. Thompson *et al.* show that the blackbody limit can be circumvented when the emitting objects themselves are small. More importantly, they demonstrate a massive, hundredfold enhancement relative to the classical blackbody limit using nanoscale membranes. This opens the door to tailoring nanoscale materials for enhanced thermal absorption and emission applications. —BG *Nature* **561**, 216 (2018).

**ELECTRON IMAGING**

**Imaging with ghostly electrons**

Ghost imaging is a computational imaging approach that uses correlations between a signal beam that interacts with a sample and a reference beam that doesn't. The correlations are then used to reconstruct an image of the sample and can, in principle, be used to image samples with very weak signal beams that might otherwise be damaged with a typical probe beam. Already demonstrated for optics and atoms, Li *et al.* now extend the method of ghost imaging to electrons. To circumvent the difficulty of splitting an electron beam, they instead used a structured electron beam to probe the sample. They show that a reconstructed image of a sample with a lower electron dose than that used in direct imaging methods can be faithfully produced. This technique could reduce acquisition time and avoid damaging sensitive samples in electron imaging applications. —ISO *Phys. Rev. Lett.* **121**, 114801 (2018).

integrated into moral judgment more broadly. —TSR *Am. Sociol. Rev.* **83**, 933 (2018).

**HEALTH**

**Gene for preeclampsia**

Preeclampsia is a serious complication of pregnancy that often presents as an increase in maternal blood pressure. The disorder is more prevalent and severe in women with African ancestry, most likely because of genetic factors. Reidy *et al.* have been investigating a variant of the gene encoding apolipoprotein L1 (APOL1), which was previously shown to confer a high risk of kidney disease in black Americans. Studying two independent populations of pregnant black women, they found that preeclampsia was associated with the APOL1 high-risk genotype. Interestingly, it was the genotype of the fetus, not the mother, that mattered. The fetal APOL1 high-risk genotype may

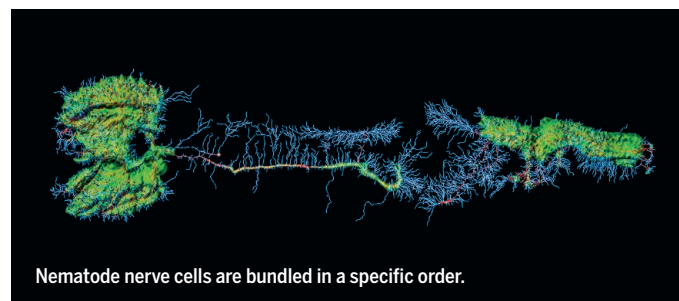
be linked to one in eight cases of preeclampsia in black women. —PAK *Am. J. Hum. Genet.* **103**, 367 (2018).

**NEURODEVELOPMENT**

**Sticky order for neurites**

How do biological systems assemble in an ordered way, particularly in complex organs like the brain? One idea is that order emerges from multiple simple, local interactions. To explore this question, Yip and Heiman examined the organization of the sensory neurons of

the nematode *Caenorhabditis elegans*. The amphid sense organ sends processes to the anterior of the worm to detect environmental conditions. The dendrites that make up these nerves are bundled in an ordered manner. Close to the nose, one dendrite occupies the middle of the bundle. A little further away from the nose, this dendrite cedes the middle track to another dendrite. The ordering is determined by cell-adhesion molecules expressed by the neurons themselves. The stereotypical organization of



Nematode nerve cells are bundled in a specific order.

IMAGE: HEITI PAVES/LAMY STOCK PHOTO