evolution may have tilted the balance of direct and indirect neurogenesis. The indirect neurogenesis characteristic of primate brain development may be a slower way to build a brain, but the resulting brain has a lot more neurons than a snake’s does. —PJH

METABOLISM
Metabolic changes in gut surgery
Roux-en-Y gastric bypass surgery (RYGB) is an effective treatment strategy for obesity. Whether RYGB-mediated weight loss is directly associated with the long-term metabolic benefits remains elusive. Ben-Zvi et al. studied the physiological adaptations of obese mice subjected to RYGB or calorie restriction and compared the results with data for post-RYGB patients. RYGB-operated mice displayed beiging of adipose tissue and short-term skeletal muscle adaptations not observed in calorie-restricted mice. Meanwhile, altered amino acid metabolism in the liver and intestinal immune and metabolic changes were conserved between RYGB-operated mice and humans. These integrated organ adaptations exhibited a time-dependent pattern of activation coordinated with the circadian clock network, providing evidence that metabolic changes associated with RYGB are not attributable to weight loss alone. —MY
Cell Metab. 10.1016/j.cmet.2018.06.004 (2018).

DNA METHYLATION
Differential methylation affects risk of MS
Specific variants of the human leukocyte antigen (HLA) locus are heritable risk factors for the autoimmune disease multiple sclerosis (MS). However, how these variants confer risk is not well understood. It has been proposed that epigenetic modifications, such as differences in methylation, of noncoding regions near the HLA coding regions may explain why some people are more likely to develop MS. Comparing controls and patients, Kular et al. identified hypomethylated genomic regions associated with increases in gene expression at the HLA locus that increased the risk of developing MS. Extending this investigation, the authors identified a protective variant that reduces the probability of developing MS that is more highly methylated. —LMZ

NEUROSCIENCE
Different species solve problems differently
The most powerful methods available for investigating the neural correlates of perceptual learning increasingly rely on rodents as animal models. The implicit assumption is that whenever rodents perform a task, they engage a similar neural circuitry as other species, such as primates. This is problematic for visual system studies because rodent vision is poor. Mustafar et al. examined the behavior of rats, long-tailed macaques, and tree shrews as they learned an identical visual discrimination task. Rats learned more slowly and had a lower peak performance than the other species. They also learned in a different way: Throughout training, including after acquisition, rats used reward history to guide their performance, unlike long-tailed macaques and tree shrews. These results indicate the necessity of careful comparative studies in translational research. —PRS

INORGANIC CHEMISTRY
Noble xenon wears a crown
Nobility has its privileges. In chemistry, it means, comparatively speaking, being left alone. The noble gases react with very few other substances, although xenon in particular can bond to fluorine or oxygen before pushing them away—sometimes violently—to more receptive elements. Marczenko et al. now report that xenon can also wear a crown: more specifically a noble gas crown. The researchers first coaxed the atoms’ spins to align along a direction perpendicular to an external magnetic field, which had a small gradient. The gradient acted to couple the atoms’ spin and spatial degrees of freedom, resulting in a collective mode in which the spins oscillated with an amplitude that was dependent on their position. The experimental results were consistent with a hydrodynamic model. —JS

IN OTHER JOURNALS
C. Nair, D. Marczenko, M. Figgis, M. Marzec, H. Schiebel, T. J. Wilkerson, S. D. Stenning, and M. J. Rumsey