Biomedical briefing

FUNDING

BRAIN fuel

The National Institutes of Health (NIH) Advisory Committee to the Director issued a report last month that calls for $4.5 billion in new federal funding over ten years for the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative, a major neuroscience effort launched last year by the US government. The NIH has thus far pledged only $40 million toward the brain-mapping project; another $100 million is earmarked for next year. But beginning in fiscal year 2016, the new report urges the agency to devote between $300 million to $500 million per year to the project, with the money—which should come on top of existing NIH investments in neuroscience—going toward technology development for five years, followed by a second five-year phase of tool implementation. "While these estimates are provisional and subject to congressional appropriations, they represent a realistic estimate of what will be required for this moon shot initiative," NIH director Francis Collins said in a statement.

DRUGS

Hemophilia A-OK

Less than three months after winning approval for the long-acting hemophilia B drug Alprolix, Massachusetts's Biogen Idec and Stockholm-based Swedish Orphan Biovitrum received another green light from the US Food and Drug Administration for Eloctate, a recombinant version of coagulation factor VIII, the blood-clotting protein that is missing in people with hemophilia A. Like Alprolix, Eloctate, which won approval on 6 June, is linked to a protein fragment found in antibodies that allows the drug to persist in the blood for much longer than currently available therapies. "It offers a paradigm shift in treatment options for patients," says hematologist Keith Gomez from the Royal Free Hospital in London. In a phase 3 study of 165 males with severe hemophilia A, injections of Eloctate resolved 98% of bleeding episodes and reduced the incidence of episodes by 92% when used as individualized prophylaxis and 76% as weekly shots (*Blood* **123**, 317–325, 2014).

CNRI / Science Source

Parasitic worm genomes whip up new drug targets

Scientists have sequenced the genome of a parasitic worm that infects around a billion people worldwide, revealing numerous drug targets that could help prevent abdominal pain, anemia, stunted growth and other health problems. A British research team mapped the whole genomes of the trichuriasis-causing whipworm *Trichuris trichiura* (pictured) and the related mouse-infecting species *Trichuris muris*. They found more than 8,000 expressed genes, 29 of which are the targets of existing approved medicines and hundreds more that are druggable and essential for worm viability (*Nat. Genet.* **46**, 693–700, 2014). Study author Richard Grencis, a parasitologist at the University of Manchester, says he now hopes to identify "molecules that could be taken forward as novel therapeutic agents." A separate team also analyzed the genome of *Trichuris suis*, a pig parasite that has been explored as a 'helminthic therapy' for people with autoimmune disease (*Nat. Genet.* **46**, 701–706, 2014).

New gut therapy

In late May, regulators in the US and Europe approved the first gut-selective treatment for ulcerative colitis and Crohn's disease. Entyvio (vedolizumab), produced by Japan's Takeda Pharmaceuticals, is a monoclonal antibody that blocks the a_4b_7 integrin, which promotes the homing of T cells to intestinal sites. "Given the limited options that we have for treating Crohn's disease and ulcerative colitis, it's great to have another choice for our patients that has a completely different mechanism of action," says gastroenterologist Bruce Sands from the Icahn School of Medicine at Mount Sinai in New York. Sands, who led studies with the drug, says that Entyvio's specificity reduces the infection risk that comes with immunosuppressive drugs; plus, the gut selectivity of Entyvio makes it safer than other anti-inflammatory antibodies that block T cell migration more broadly.

BUSINESS

Merck bets on HCV

Three years after Gilead paid a whopping $11 billion to purchase Pharmasset and its portfolio of hepatitis C virus (HCV) treatments, antivirals for hepatitis C have not lost their luster. On 9 June, Merck announced plans to pay $3.85 billion to acquire Idenix Pharmaceuticals, a Cambridge, Massachusetts–based company with three HCV drugs in early- or mid-stage clinical development. These include a nucleotide analog called IDX21437 that New Jersey–based Merck plans to combine with the company's current two-drug regimen. "We're interested in adding a third component that would allow for a one-size-fits-all kind of approach," Eliav Barr, vice president of infectious disease research at Merck, told *Nature Medicine*. UBS analyst Marc Goodman cautioned in an investor's note that IDX21437 has only been tested in short clinical trials. Nonetheless, some shareholders seem to think Idenix is getting a raw deal: on 17 June, one Idenix investor filed a lawsuit seeking to block the transaction.

AWARDS

Kavli kudos

Three researchers who helped discover the specialized brain networks responsible for memory won this year's Kavli Prize in Neuroscience. The pioneering work of Brenda Milner (pictured), a neuropsychologist at McGill University in Montreal, showed that different brain regions contribute to different types of memory. Neuroscientist John O'Keefe of University College London demonstrated that the hippocampus contains neurons, now known as place cells, that form a cognitive map of the physical surroundings. And Marcus Raichle, a neurologist at the Washington University School of Medicine in St. Louis, helped develop two imaging techniques commonly used today to study brain activity. The three recipients will share a $1 million cash award, the California-based Kavli Foundation announced on 29 May.

Meera Paleja, McGill University

Protein pioneers

Often considered the Nobel Prize of Asia, the Shaw Prize in Life Science and Medicine this year went to two researchers who described the cell's quality control response to an accumulation of defectively folded proteins. Because of the work of Kazutoshi Mori and Peter Walter, scientists now know that malfunctions in the so-called unfolded protein response (UPR) can lead to diseases related to metabolism, neurodegeneration, inflammation and cancer. Mori, a biophysicist at Kyoto University in Japan, and Walter, a biochemist at the University of California–San Francisco, "revolutionized the field," says Claudio Hetz, who studies cellular stress at the University of Chile in Santiago. The Shaw Prize Foundation in Hong Kong announced the winners of the $1 million prize on 27 May.

More online

Patients with ALS spearhead a new investment fund: go.nature.com/nWmMbu

Compound blocks viruses behind MERS and SARS: go.nature.com/C1zBfy

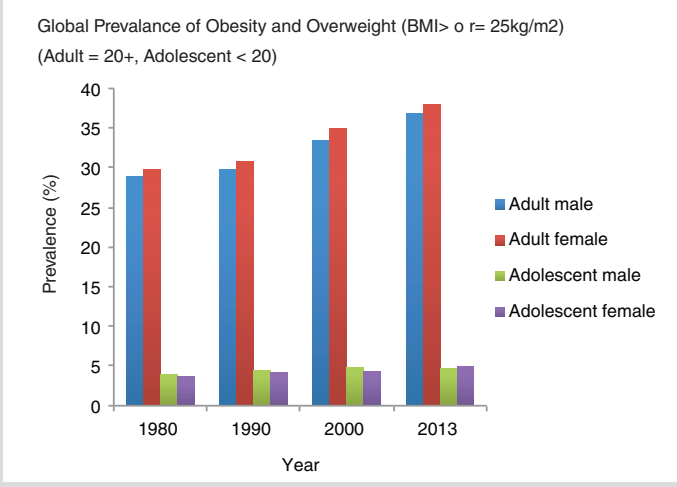
RESEARCH

PI predictor

Academic scientists are all too familiar with the maxim of 'publish or perish'—and now researchers have the data to prove it. In a report published last month in *Current Biology* (**24**, R516–R517, 2014), three computational biologists who worked together as trainees at the Weizmann Institute of Science in Rehovot, Israel, analyzed the PubMed records of more than 25,000 early-career biomedical researchers who published papers between 1996 and 2000. They then tracked those authors' career trajectories and found that the number of first-author publications and the volume of papers in high-impact-factor journals were the most significant predictors of who would go on to become a principal investigator. Gender was important, too: on average, women were 7% less likely to become lab heads than men with the same publication record. You can calculate your own chance of academic success at http://www.pipredictor.com.

One-third of the world's population is now obese or overweight

Obesity rates are tipping scales from Afghanistan to Zimbabwe. An international study published 29 May in *The Lancet* (doi:10.1016/S0140-6736(14)60460-8, 2014) found that the number of people who are obese or overweight increased from 857 million in 1980 to 2.1 billion in 2013. Although the prevalence rates remain highest in developed countries, developing nations have experienced a more rapid increase in obese and overweight cases, particularly since the late 1990s. Calling the increases in developing countries "alarming," lead author Marie Ng, a global health researcher at the Institute for Health Metrics and Evaluation in Seattle, hopes the study will both encourage and provide a baseline for country-specific and international efforts to address the growing issue.



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