SPOTTED

Gene-editing gadgetry; intelligence trajectories; research reset and more

BY **EMILY WILLINGHAM**

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Gene-editing gadgetry

Researchers have added a couple of new gadgets to the **gene-editing toolbox**, *STAT* reported 25 October. One system, dubbed REPAIR, targets RNA instead of DNA. RNA carries copies of a cell's protein-building instructions. Editing these copies sidesteps some of the pitfalls of editing the DNA original. REPAIR was developed by CRISPR trailblazer **Feng Zhang** of the Broad Institute of MIT and Harvard.

The second tool, called ABE, offers a lighter editing touch than CRISPR. It swaps out single DNA letters rather than clipping out larger pieces of DNA. **David Liu** of Harvard University developed the tool, *STAT* reported.

SOURCES:

STAT / 25 Oct 2017
CRISPR toolbox gets two new molecular gadgets, boosting gene-editing
https://www.statnews.com/2017/10/25/crispr-gene-editing-advances/

Quotient shifts

There is accumulating evidence that intelligence test scores **can change** considerably with age in children who have autism. Researchers tracking scores for 102 children on the spectrum from ages 2 to 8 years found leaps bigger **than 30 points** in intelligence quotient (IQ) scores in more than a third of the group. They published their findings 27 October in *Autism Research*. (*Spectrum* reported the **unpublished results** from the International Meeting for Autism Research in May.)

The investigators identified four patterns of IQ trajectories in the children: a low initial IQ score that remains unchanged, a low initial IQ score that declines slightly, an average score that remains stable, and a low initial score that increases substantially. Overall, about 75 percent of the children showed improvements with age, and 14 percent no longer met the criteria for autism at age 8.

SOURCES:

Autism Research / 27 Oct 2017
What will my child's future hold? Phenotypes of intellectual development in 2-8-year-olds with autism spectrum disorder
http://onlinelibrary.wiley.com/doi/10.1002/aur.1884/abstract;jsessionid=1F4525095FA26D1AF3824CB34EA635FC.f03t03

Research reset

The advocacy group **Autism Speaks** asked for input from the autism community about research priorities for its upcoming three-year strategic plan. Compared with the results of a similar 2012 survey, the 6,000-plus respondents this time **expressed greater interest** in the experiences of **adults with autism** and co-occurring conditions such as gastrointestinal troubles, *Disability Scoop* reported 31 October.

Respondents expressed less concern about environmental factors and immune dysfunction. A total of 500 people with autism **responded to the survey**, *Autism Speaks* said in a statement.

SOURCES:

Disability Scoop / 31 Oct 2017
Revamped scientific plan forthcoming at Autism Speaks
https://www.disabilityscoop.com/2017/10/31/revamped-scientific-autism-speaks/24371/**Autism Speaks** / 17 Oct 2017
The results are in: Priorities in autism research
https://www.autismspeaks.org/science/science-news/results-are-priorities-autism-research

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Interactive brain

The Society for Neuroscience has created an **interactive brain** that users can manipulate to view specific regions, along with brief descriptions of the functional relevance of each area. *Spectrum* gave it a test run on 31 October. The tool is enlightening for researchers, students and brain-curious citizens alike.

SOURCES:

BrainFacts.org / 31 Oct 2017
Welcome to the brain!
http://www.brainfacts.org/3Dbrain#intro=true

Facephene findings

Some people with autism register less activity in the **fusiform face area**, a brain region associated with recognizing faces. To address the question of whether this region has any other function, researchers used electrodes to stimulate the fusiform face area in a man undergoing neurosurgery.

He reported **seeing illusory faces**, which the researchers dubbed ‘facephenes,’ during the stimulation. He saw rainbows with stimulation of adjacent color-perception regions, according to results reported 30 October in the *Proceedings of the National Academy of Sciences*. The investigators concluded that at least some brain areas do not multitask and are reserved for single mental processes.

SOURCES:

Proceedings of the National Academy of Sciences / 30 Oct 2017
Facephenes and rainbows: Causal evidence for functional and anatomical specificity of face and color processing in the human brain
http://www.pnas.org/content/early/2017/10/24/1713447114.abstract

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Invisibly disabled

Autism is among many disabilities that observers can’t always readily detect. The result can be misunderstandings about everything from social behavior to having a disabled parking badge. Disability activists **seeking to boost awareness** about these issues are using a Twitter hashtag, **#InvisiblyDisabledLooksLike**, to share their experiences, *BBC News* reported 25 October.

SOURCES:

BBC News / 25 Oct 2017
Thousands share their invisible disabilities on Twitter
http://www.bbc.com/news/disability-41733769

Star-studded fundraiser

The United States may achieve a comedy critical mass on 18 November when HBO airs “Night of Too Many Stars: American Unites for Autism Programs.” **Jon Stewart will host**, joined by such comedy luminaries as **Chris Rock** and **Stephen Colbert**, *Disability Scoop* reported 27 October. Proceeds benefit the nonprofit NEXT for AUTISM.

SOURCES:

Disability Scoop / 27 Oct 2017
Autism benefit to air on HBO
https://www.disabilityscoop.com/2017/10/27/autism-benefit-to-air-on-hbo/24353/

Children’s insurance

States are digging into rainy-day funds to continue covering enrollees in the U.S. federal **Children’s Health Insurance Program**. The program provides health insurance for millions of children whose families don’t qualify for Medicaid but still need support. Political parties can’t agree on **how to fund the program** if they reauthorize it. The House was expected to vote on a Republican plan this week, *The Hill* reported on 29 October.

SOURCES:

The Hill / 29 Oct 2017
States running out of cash for children’s health insurance
http://thehill.com/policy/healthcare/357568-states-running-out-of-cash-for-childrens-health-insurance

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Evolutionary conditions

The evolutionary basis of autism and other neurodevelopmental conditions is **attracting growing attention**. One reason is that **huge global databases** of human genomic information, along with a little Neanderthal DNA, now make such evolutionary investigations possible, *Nature* reported 30 October. Researchers can mine the databases for regional sequence differences and compare them with sequences lifted from Neanderthal samples.

SOURCES:

Nature News / 30 Oct 2017
Geneticists are starting to unravel evolution's role in mental illness
http://www.nature.com/news/geneticists-are-starting-to-unravel-evolution-s-role-in-mental-illness-1.22914

Researcher recognition

Autism researcher **Charles A. Nelson** of Boston Children's Hospital has **received the Ruane Prize** from the Brain & Behavior Research Foundation. The prize recognizes important advances in the understanding and treatment of early-onset brain conditions, the foundation announced 30 October.

SOURCES:

Brain & Behavior Research Foundation / 30 Oct 2017
Brain & Behavior Research Foundation honors nine scientists for outstanding achievements in psychiatric research at 30th annual dinner
https://www.bbrfoundation.org/content/brain-behavior-research-foundation-honors-nine-scientists-outstanding-achievements

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