

SPOTTED

Political science; canine connection; reference point

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Political science

Want to know where Hillary Clinton and Donald Trump stand on science? Check out ScienceDebate.org, where the presidential candidates have **answered 20 questions** about topics ranging from space exploration to mental health.

Clinton's responses are the most thorough, according to a summary in The New Yorker by theoretical physicist **Lawrence Krauss**. Krauss sits on ScienceDebate.org's steering committee.

"She makes the case for supporting education and basic, curiosity-driven research — scientific work without any immediate practical application — as a necessary precursor to economic growth," Krauss writes. "With few exceptions, she describes specific, programmatic proposals to address each issue."

In January, **Clinton unveiled a plan** to "significantly increase" funding for autism research, calling out studies on the condition's genetic roots and **prevalence** as particularly important.

What about Trump? Krauss says his responses were surprisingly decent.

"Even if, upon closer reading, there are major problems of internal consistency, his responses do present what one might almost call an over-all philosophy, which is that innovation, education, and a healthy environment are best fostered by letting private industry act unfettered," he writes. "Beyond that, however, there are few specifics."

Trump will cross those bridges later, Krauss adds, "before he builds walls around them."

SOURCES:

The New Yorker / 13 Sep 2016

Twenty science questions for Donald Trump

<http://www.newyorker.com/tech/elements/twenty-science-questions-for-donald-trump>

Canine connection

Dogs have a knack for willing their owners to do things. Who can resist a pair of puppy-dog eyes longing for a treat?

A new study highlights **five genes at the root of this skill**, four of which have ties to human conditions such as autism.

The study, published last week in *Scientific Reports*, found that beagles with a variant of the autism-linked gene **SEZ6L** are more likely to seek out a person when they face an unsolvable problem, such as a treat that they cannot reach, than when they don't need help.

"This is, to our knowledge, the first genome-wide study presenting candidate genomic regions for dog sociability and inter-species communication," the researchers write. "These results advance our understanding of dog domestication and raise the use of the dog as a novel model system for human social disorders."

SOURCES:

Scientific Reports / 29 Sep 2016

Genomic regions associated with interspecies communication in dogs contain genes related to human social disorders

<http://www.nature.com/articles/srep33439>

Machine unlearning

Researchers are increasingly relying on computational tools to sift through the reams of data emerging from large **gene-sequencing studies** and **brain-imaging efforts**. After a bit of training, the machines can spot patterns that offer clues about conditions such as autism. But a new study highlights the **hazards of this technique**, called machine learning, in hilarious fashion.

The study, entitled "I tried a bunch of things: The dangers of unexpected overfitting in classification," hit the preprint server bioRxiv on Monday. In the paper, lead researcher **Bradley Wyble**, associate professor of psychology at Pennsylvania State University, and his colleagues

describe machine-learning algorithms as “black boxes.” It’s easy to make computers really good at sorting data in a training set, only for them to falter with a new, similar dataset — a pitfall called ‘overfitting.’

“The biggest danger of data science is that the methods are powerful enough to find apparent signal in noise, and thus the likelihood of data overfitting is substantial,” the researchers write.

SOURCES:

bioRxiv / 03 Oct 2016

I tried a bunch of things: The dangers of unexpected overfitting in classification
<http://biorxiv.org/content/biorxiv/early/2016/10/03/078816.full.pdf>

Trial tracker

A total of 240 autism clinical trials are currently enrolling participants, according to **CenterWatch.com**.

The website, launched in 1994, aims to be the “leading source of clinical trials information for both clinical research professionals and patients,” detailing the location and the type of therapy being tested. The site should help families find trials that are convenient and relevant to them.

You can also check out **ClinicalTrials.gov** for a list of all U.S. trials.

SOURCES:

CenterWatch.com / 01 Jan 1970

CenterWatch
<http://www.centerwatch.com/>

Reference point

Women applying for postdoctoral fellowships in the field of geoscience are **less likely to receive a glowing reference letter** than are male applicants. The finding, published last week in *Nature Geoscience*, highlights the persistent gender bias in science.

The researchers sifted through more than 1,200 reference letters submitted to geoscience lab heads from 54 countries between 2007 and 2012. They looked for phrases such as ‘highly intelligent,’ ‘very productive,’ ‘scientific leader,’ ‘brilliant scientist,’ ‘trailblazer’ or ‘one of the

best students I've ever had,' and ranked the recommendations as 'excellent,' 'good' or 'doubtful.'

About one in four men received 'excellent' references, compared with just one in seven women.

SOURCES:

Nature Geoscience / 03 Oct 2016

Gender differences in recommendation letters for postdoctoral fellowships in geoscience

<http://www.nature.com/ngeo/journal/vaop/ncurrent/full/ngeo2819.html>

Job news

Making a career move? Send your news to jobmoves@spectrumnews.org.
