NEWS

Community Newsletter: Brain sizes; Project Vesuvius; head-turning Neuropixels tool

BY **MICHAEL FERGENSON**

13 NOVEMBER 2022

What accounts for individual differences in brain size? It "**varies** ~2-fold across adults, ~100 fold across primates, and nonlinearly changes across the lifespan," tweeted **Jakob Seidlitz**, a postdoctoral fellow at the Children's Hospital of Philadelphia.

> ??NEW PREPRINT??
>
> Brain size varies ~2-fold across adults, ~100 fold across primates, and nonlinearly changes across the lifespan. How is this reflected at the molecular level?**https://t.co/6xK8Zxj07x**
>
> Thread????
>
> — Jakob Seidlitz (@jakob_seidlitz) **November 4, 2022**

In a bioRxiv **preprint**, Seidlitz and his colleagues analyzed postmortem brain samples from 2,531 people and found that brain weight correlated with expression differences in 928 genes.

Armin Raznahan, chief of the Section on Developmental Neurogenomics at the U.S. National Institute of Mental Health, called the work a "**beautiful triangulation** using diverse methods to dissect out molecular underpinnings of human brain size variation!"

> Check out this fab new work from **@jakob_seidlitz @Aaron_A_B** and a stellar team. Beautiful triangulation using diverse methods to dissect out molecular underpinnings of human brain size variation! ?? Congrats all! **https://t.co/ixrwmknbZ3**
>
> — Armin Raznahan (@bogglerapture) **November 4, 2022**

“Amazing work on a highly informative and under-studied phenotype — **brain weight**!” tweeted **Ted Satterthwaite**, associate professor of psychiatry at the University of Pennsylvania in Philadelphia.

> Check out this EPIC work from **@jakob_seidlitz** and an amazing team (**@Aaron_A_B @mikejg84** and many others). Amazing work on a highly informative and under-studied phenotype-- brain weight! **https://t.co/ebre8d2EUI**
>
> — Ted Satterthwaite (@sattertt) **November 4, 2022**

“The great **@jakob_seidlitz** and co have picked up on something **really profound** here,” tweeted **Jacob Vogel**, a postdoctoral fellow at the University of Pennsylvania.

> This is *such* exciting work exploring molecular contributions to normal variation in brain size. The great **@jakob_seidlitz** and co have picked up on something really profound here -- definitely check out this thread and the paper!! **https://t.co/Txg2YR08Kh**
>
> — Jake Vogel (@_JakeVogel_) **November 4, 2022**

This next research thread had Twitter users practically exploding with excitement: **Project Vesuvius** is “a resource of **cellular phenotypes** for knockouts of every essential human gene,” tweeted **Iain Cheeseman**, professor of biology at the Massachusetts Institute of Technology in Cambridge, Massachusetts.

> Project Vesuvius now published! In collaboration with **@BlaineyLab**, we created a resource of cellular phenotypes for knockouts of every essential human gene using pooled optical screening. Explore your favorite gene. Discover new functional relationships.**https://t.co/p5bzgLPwO3**
>
> — Iain Cheeseman (@iaincheeseman) **November 7, 2022**

Veronica Rodriguez-Bravo, associate professor of biochemistry and molecular biology at the Mayo Clinic in Rochester, Minnesota, called the project "a fantastic **eruption of data** and Herculean effort!"

> What a fantastic eruption of data and Herculean effort! **https://t.co/aMB7GFtqo2**
>
> — Veronica Rodriguez-Bravo (@VRodriguezBravo) **November 7, 2022**

Georgia Kafer, lecturer in biomedical science at the University of the Sunshine Coast in Queensland, Australia, said the project was aptly named, tweeting, "This is actually **blowing my mind**!"

> Um. Wow. This is actually blowing my mind! ???? Vesuvius is an apt name! **https://t.co/btcuzkm047**
>
> — Georgia Kafer (@GeorgiaKafer) **November 8, 2022**

"Someone was telling me about this **technique** last week and I was absolutely floored," tweeted **Paul Carman**, business development manager at Araceli Biosciences in Hillsboro, Oregon.

> Someone was telling me about this technique last week and I was absolutely floored. Phenotypic genetic screens of live cell data at scale. Project Vesuvius indeed! **https://t.co/xo5kyDXZzc**

— Paul Carman (@NYCMicroscopy) **November 7, 2022**

Another head-turning resource, created and shared by **Emily Aery Jones**, a postdoctoral scholar in neurobiology at Stanford University in California, anchored this next thread.

“Interested in freely moving recordings using **Neuropixels**? I’m releasing the build files, code, parts lists, and detailed protocols for my chronic recoverable implant in mice design,” Aery Jones tweeted.

> Interested in freely moving recordings using Neuropixels? I'm releasing the build files, code, parts lists, and detailed protocols for my chronic recoverable implant in mice design ???? **https://t.co/DSY6r9LMBw pic.twitter.com/vl6P9jLdyr**
>
> — Dr. Emily A. Aery Jones (@EmilyAeryJones) **November 8, 2022**

The **resource** includes protocols to “chronically, recoverably **implant Neuropixels 1.0 probes** into mice and record during a freely moving automated (non)match to direction task.”

Matt Gaidica, a neuroscientist at the University of Michigan in Ann Arbor, asked, “Is that copper (mini Faraday cage?) or **kapton tape**?”

> Copper tape, adapted from the Luo & Bondy et al 2020 design
>
> — Dr. Emily A. Aery Jones (@EmilyAeryJones) **November 9, 2022**

Aery Jones also tweeted, “If you’re attending **#SfN22** and want to discuss chronic recoverable designs, I’d love to chat!”

> If you're attending **#SfN22** and want to discuss chronic recoverable designs, I'd love to chat! I'll have handouts and demo implants at the Neuropixels booth (#3200) Wednesday

> 11am-12pm and at my poster (741.05, board VV27) Wednesday afternoon **https://t.co/2VonlcRfbs pic.twitter.com/Wn9AIQ2kJy**
>
> — Dr. Emily A. Aery Jones (@EmilyAeryJones) **November 8, 2022**

Speaking of **Neuroscience 2022**, if you're attending the meeting in person or virtually, join our live Twitter chat on Monday, 14 November, at 12:00 p.m. PST. Discuss science from the conference and weigh in on questions posted by **@Spectrum** using the hashtag **#SFNChat**.

That's it for this week's Community Newsletter! If you have any suggestions for interesting social posts you saw in the autism research sphere, feel free to send an email to **michael@spectrumnews.org**.

Follow us on Facebook, Twitter (@Spectrum), Instagram and LinkedIn.

Subscribe to get the best of* Spectrum *straight to your inbox.

Cite this article: https://doi.org/10.53053/OQSG9042