NEWS

Community Newsletter: Nanoscale brain imaging; naturalistic mouse set-ups

BY **MICHAEL FERGENSON**

25 JUNE 2023

Adam Glaser of the Allen Institute detailed his team's preprint, "**Expansion-assisted selective plane illumination microscopy for nanoscale imaging of centimeter-scale tissues**," posted on bioRxiv 11 June.

> How do you image the large and the small at the same time? We developed new ???? technology to image centimeter-scale specimens - including whole mouse brains ??? - with diffraction-limited resolution and without sectioning. **#mesoscale #imaging https://t.co/Kl7ZURNpdM**
>
> ???? (1/n) **pic.twitter.com/m1bvSORsuI**
>
> — Adam Glaser (@adam_k_glaser) **June 12, 2023**

Jayson Jeganathan of the University of Newcastle in Australia posed a question, which Glaser answered.

> Definitely. The combination of the resolution, field of view, imageable tissue thickness, and blazing speed (nearly 10^9 voxels/sec) makes this an ideal method for larger brains.
>
> — Adam Glaser (@adam_k_glaser) **June 14, 2023**

Bryan Jones of the University of Utah responded to Glaser.

> This is a massive advancement for projectomics. Some neurons in neural systems are truly long range projections, and tracking those has been problematic. I cannot wait to see these tools applied to neurodegenerative diseases. **https://t.co/LaNxmtqshv**
>
> — Bryan William Jones (@BWJones) **June 12, 2023**

Mackenzie Mathis of École Polytechnique Fédérale de Lausanne, Jacqui Marshall of Cancer Research UK and **Wim Crusio** of Université de Bordeaux posted the article "**Lab mice go wild: Making experiments more natural in order to decode the brain**," published in *Nature* 14 June.

> Studying both natural & skilled behavior is critical to understand the brain. I'm very happy tools we develop- **@deeplabcut**- are used so broadly ????& openning new research in neuro and ecology
>
> New **@Nature** news piece re: lab????: **https://t.co/eubr87t0M9**
>
> Wild:**https://t.co/zF82MyRP3P pic.twitter.com/45UCcVOQYo**
>
> — Mackenzie Mathis, PhD (@TrackingActions) **June 15, 2023**

> Do we, as scientists, think enough about how our experiments would correspond to the real world?
>
> ????Useful to consider how well our results might be generalised into real world scenarios! **https://t.co/8JykbA8ylm**
>
> — Dr Jacqui Marshall CSci ILM5-Dip ??????????????????????????????? (@JacquiMarshall2) **June 15, 2023**

> Robert Gerlai and **@nickyclayton22** already argued for this in 1999 and Hanspeter Lipp has been running experiments in naturalistic settings since the mid 1990s. 2/**https://t.co/ZhCeJe0Ynw**
>
> — Wim Crusio (@WimCrusio) **June 15, 2023**

Nikola Grujic of Eidgenössische Technische Hochschule Zürich explained his team's study, "**Control and coding of pupil size by hypothalamic orexin neurons**," published in *Nature Neuroscience* 19 June.

> Pupil size is used in many many studies as a readout of behavioural arousal. In our new work in **@NatureNeuro** we add to the literature on neural control of pupil size by demonstrating a strong impact of orexin neurons. (1/3)**https://t.co/SAR1sBGA7H**
>
> — Nikola Grujic (@umochitju) **June 19, 2023**

Seán Froudist-Walsh of the University of Bristol describes his team's paper, "**Gradients of neurotransmitter receptor expression in the macaque cortex**," published in *Nature Neuroscience* 19 June.

> Gradients of neurotransmitter receptor expression in the macaque cortex, out now in **@NatureNeuro**. **https://t.co/xjUGWFbCNG** Our findings: 1/7
>
> — Seán Froudist-Walsh (@seanfw) **June 19, 2023**

Nathan Spreng of McGill University and **Chris Klink** of Universiteit Utrecht responded to Froudist-Walsh.

:-) There are! We haven't quantified them yet. More work is on the way on this from Nicola Palomero-Gallagher's group, including a voxel-wise reconstruction of the whole brain led by postdoc Thomas Funck

— Seán Froudist-Walsh (@seanfw) **June 20, 2023**

Thanks Chris. RheMAP is great, but that was exactly the issue that stopped us from providing the maps in other templates already. It seems a solvable issue, but one that would require a bit of work

— Seán Froudist-Walsh (@seanfw) **June 21, 2023**

Rosa Hoekstra of King's College London linked to her team's study, "**Non-specialist delivery of the WHO Caregiver Skills Training Programme for children with developmental disabilities: Stakeholder perspectives about acceptability and feasibility in rural Ethiopia**," published in *Autism* 16 May.

Paper alert! We previously adapted the **@WHO** caregiver skills training for use in Ethiopia and pre-tested in a specialist setting. But is it feasible to train non-specialists to deliver the programme in rural context? Paper freely available here: **https://t.co/EQxpTReYvj pic.twitter.com/eSJ3r3lTQ2**

— Dr Rosa Hoekstra (@rosa_hoekstra) **June 8, 2023**

Kathy Leadbitter of the University of Manchester commented on the study, and Hoekstra replied.

Yes, I think parent- child play through toys is ultimately quite a western concept. Ethiopian parents can certainly be playful with their children. But the idea to sit on the floor to play with your child with toys is uncommon, and I think that's true in many countries.

— Dr Rosa Hoekstra (@rosa_hoekstra) **June 8, 2023**

Autism in Adulthood announced the release of its special issue.

We are so pleased to announce that our Special Issue dedicated to the intersection of autism and the broad LGBTQ+ is online now.

ALL papers FREE to 15 Jul:**https://t.co/q1ATDPt0VH pic.twitter.com/GCfsWkjXOm**

— AutismInAdulthood (@AutismAdulthood) **June 16, 2023**

Shreejoy Tripathy of the University of Toronto shared his team's preprint, "**BrainRBPedia: A resource for RNA-binding proteins relevant to neurodevelopmental disorders**," posted on bioRxiv 9 June.

I'm proud of this **@biorxivpreprint** on BrainRBPedia, a resource for RNA-binding proteins relevant to neurodevelopmental disorders, led by Kara Han while she was a **@UofT** BCB ugrad in my lab! **https://t.co/xZwnNCGkhl pic.twitter.com/h9JGcIi7NV**

— Shreejoy Tripathy (@neuronJoy) **June 20, 2023**

Science posted a link to the article "**PSMC3 proteasome subunit variants are associated with neurodevelopmental delay and type I interferon production**," published in *Science Translational Medicine* 31 May.

New in **@ScienceTM**: Researchers have identified 15 separate variants in the PSMC3 proteasome gene in 23 patients with neurodevelopmental delay and intellectual disabilities. **https://t.co/auKeeA9ZG5 pic.twitter.com/KGR6lqnQSs**

— Science Magazine (@ScienceMagazine) **June 14, 2023**

Marc Seal of the University of Melbourne shared a link to the preprint "**Mapping neurodevelopmental diversity in executive function**," posted on medRxiv 16 June.

> Mapping neurodevelopmental diversity in executive function | **#medRxiv** **https://t.co/R3DTMQrOPJ pic.twitter.com/xGQIvP2BLx**
>
> — Marc L Seal (@ParkvilleGeek) **June 19, 2023**

The Association for Child and Adolescent Mental Health shared a link to its podcast "**Depression in autism and ADHD: What do we know?**" posted 2 May.

> Interested in learning more about **#Neurodevelopmental** disorders & comorbidity?
>
> Listen now to this fantastic podcast with **@Lucy_Livingston** as she explores **#Depression** in **#ADHD** & **#Autism**, including the prevalence of ADHD & Autism. **https://t.co/boijgSRkX1 pic.twitter.com/iL8GcYFJPL**
>
> — Association for Child & Adolescent Mental Health (@acamh) **June 19, 2023**

medRxiv linked to the preprint "**Loss-of-function variants in CUL3 cause a syndromic neurodevelopmental disorder**," posted 16 June. *Spectrum* covered research on CUL3 in **2021** and **2019**.

> Loss-of-function variants in CUL3 cause a syndromic neurodevelopmental disorder **https://t.co/e89RAbZpH8 #medRxiv**
>
> — medRxiv (@medrxivpreprint) **June 16, 2023**

Renato Polimanti of Yale School of Medicine tweeted about the upcoming **World Congress of Psychiatric Genetics**.

> The **#WCPG2023** symposia schedule is out! **#SaveTheDate** on OCT 11 for the symposium **@ErinDunnScD**, **@michelnivard**, **@manuela_kouakou**, **@spaul1124**, **@DrAJespersen**, **@robbeewedow**, and I organized to discuss the impact of socioeconomic factors on psychiatric genetic and epigenetics. **@ISPGnet pic.twitter.com/78k1bA3YjG**
>
> — Renato Polimanti (@RenatoPolimanti) **June 21, 2023**

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**.

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