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Newsletter of the University Research Priority Program Adaptive Brain Circuits in Development and Learning

Dear Reader,

In this edition, we're pleased to share exciting developments from both the **Microscopy Innovation Platform (MIP) (previously mesoSPIM Platform)** and the **Learning and Learning Disorders (LLD) platform**. The **MIP is growing**, with new expertise and innovations pushing the boundaries of brain imaging. On the LLD side, a new **center for diagnostics offers dyslexia assessments** and consultation services.

Looking ahead, we invite you to **join the 10 Years of mesoSPIM Symposium this October**—a key event for the light-sheet microscopy community. And if you missed our recent activities, we've included highlights from the Monte Verità conference on the adaptive brain and our public panel discussion on autism, both of which sparked valuable dialogue across disciplines. If you missed the public panel discussion, have a look at the recording and Q&A on our website!

We hope you enjoy reading and find the insights and developments from our community both valuable and inspiring.

Exciting news from the Microscopy Innovation Platform (MIP)

A new optical engineer at MIP

We are very happy that **Angeliki Vavladeli** has recently joined the Microscopy Innovation Platform (MIP), formerly mesoSPIM platform, where she will contribute her expertise in optical imaging to advance imaging techniques for brain research. Angeliki is an optical engineer and neuroscientist with a background in physics, microscopy, and neuroscience. She is passionate about developing and applying custom imaging systems. Since joining the team, she has already picked up work on the Schmidt objective, which had been developed by Fabian Voigt in the Helmchen Lab ([Voigt et al., 2024](#)) and which opens up new dimensions for biological research by enabling new ways to image large tissue samples at high resolution. This is why we renamed our platform: Building on the success of our mesoSPIM microscopes, we are now broadening our focus to drive cutting-edge innovation across a wider range of light microscopy technologies.



Could you explain your current role in a few words?

I support the MIP platform by maintaining and optimizing custom imaging systems and coordinating microscope development projects. Currently, I'm focused on advancing the Schmidt two-photon microscope to enable high-resolution imaging over large volumes.

How can the Schmidt Objective offer new possibilities for microscopy?

The Schmidt Objective enables large field-of-view imaging with submicron resolution, bridging the gap between mesoscopic and cellular scales. This opens new opportunities for fast and detailed imaging of expanded brain samples or large tissue volumes.

Upcoming Event: 10 Years of mesoSPIM Symposium 2025



The place to be for the light-sheet microscopy community!

From **October 13–15, 2025**, the **10 Years of mesoSPIM Symposium** brings together the global light-sheet microscopy community at the University of Zurich.

You can expect a dynamic program featuring keynote talks, lightning sessions, live demos, and plenty of space for discussion, collaboration, and getting in touch with imaging experts from various fields.

Topics include tissue clearing, large-scale imaging, image analysis (open-source & commercial), and microscope hardware/software development.

Whether you're a biologist with a need to image large samples, a microscopy enthusiast, or a mesoSPIM veteran, this symposium offers valuable insights and networking opportunities for all career levels.

Find **more information about the detailed program and registration** [here](#).

New Diagnostics Service at the LLD platform

Dyslexia assessment and telephone consultation

Starting in September 2025, the LLD platform will offer dyslexia assessments for children and adolescents. We are delighted that **Linda Affolter** joined us. She will be carrying out these assessments. Linda completed a Master's degree in Clinical Psychology with a focus on children and adolescents at the University of Bern in 2022. Since then, she has worked in a social-educational institution with a trauma-sensitive approach and as a school psychologist.

What are you most looking forward to in your new position?

I'm most looking forward to supporting children and adolescents in gaining a clearer understanding of their learning difficulties. Receiving an explanation can be a great relief - for both the individuals affected and their families - and is often the first step toward greater self-acceptance.

What should you do if you suspect someone might have dyslexia?

If you suspect a child might have dyslexia, it's important to seek a professional assessment. This can provide clarity about their specific difficulties and help guide appropriate support at school and in everyday life.



You can find more information about the dyslexia assessment and contact options [here](#) (in German). In addition, the LLD platform offers phone consultations on learning disorders. New appointments are available [here](#).

Past Events

International Conference on Monte Verità, Ascona: May 25 - 28, 2025
"The Adaptive Brain: Development, Learning, and Learning Disorders"



Nearly 100 researchers gathered at the historic Monte Verità for our international AdaBD Conference, diving into the adaptive brain across multiple levels of analysis. The program featured inspiring keynotes, lively poster sessions, and engaging discussions on topics such as multisensory learning, computational modelling, and learning disorders. Talks spanned from evolutionary insights in zebrafish to MRI studies on fetal brain development and mechanisms of memory consolidation. A true highlight was the excursion to the Brissago Islands, where participants enjoyed a botanical tour and dinner with stunning views over Ascona. We thank all participants for their contributions to this memorable event!

Public Panel Discussion - Autism



When the World Becomes Too Loud

How do people on the autism spectrum perceive the world? What challenges do they face in daily life, and how can research, education, and medicine better respond to their needs? These questions were at the heart of a **public panel discussion held on June 10, 2025**, at the University of Zurich.

Experts from research, clinical practice, and lived experience shared insights into sensory perception, social challenges, and support strategies. Panelists included Prof. Dr. Andreas Eckert (HfH Zurich), Leah Gerstenkorn (special education professional and autistic advocate), Dr. med. Rabia Liamlahi (University Children's Hospital), and Dr. Maya Schneebeli (Child and Adolescent Psychiatry, UZH). The discussion was moderated by Prof. Dr. med. Bea Latal (University Children's Hospital and member of our Steering Committee).

The hybrid event, **jointly hosted by the AdaBD and the Developmental Science Network Zurich (DSN-ZH)**, was very well attended and a great success.

Did you miss the event? Don't worry: The recording, as well as additional written answers to questions from the audience can be found on our [website](#) (in German).

New Projects

We are pleased to announce the launch of several new research projects this summer, focusing on multisensory learning and autism. Many new PhD Students are currently getting started.

We look forward to sharing more details in our next newsletters.

New Publications (since our last Newsletter)

2025

Haenseler W, Eschment M, Evans B, Brasili M, Figueiro-Silva J, Roethlisberger F, Abidi A, Jackson D, Müller M, Cowley SA, Bachmann-Gagescu R (2025)

Differences in neuronal ciliation rate and ciliary content revealed by systematic imaging-based analysis of hiPSC-derived models across protocols, *Front. Cell Dev. Biol.* 13

Hugg A, Frei N, Lutz C, Di Pietro SV, Karipidis II, Brem S (2025)

[The structural covariance of reading-related brain regions in adults and children with typical or poor reading skills](#), *Developmental Cognitive Neuroscience* 72, 101522

Speckert A, Payette K, Knirsch W, von Rhein M, Grethen P, Kottke R, ... , Latal B & Jakab A (2025).

[Altered Connectome Topology in Newborns at Risk for Cognitive Developmental Delay: A Cross-Etiologic Study](#) *Human Brain Mapping*, 46(1), e70084.

2024

Aydogan G, Ruff CC (2024)

[New Insights from Gene Expression Patterns on the Neurobiological Basis of Risky Behaviour](#) *Nature Mental Health* 2, 1273–1274

Ehrler M, Speckert A, Kretschmar O, Tuura O’Gorman R, Latal B, Jakab A (2024)

[The cumulative impact of clinical risk on brain networks and associations with executive function impairments in adolescents with congenital heart disease](#) *Human Brain Mapping*, e70028

Kolokotronis K, Suter A-A, Ivanovski I, Frey T, Bahr A, Rauch A, Steindl K (2024)

[DPF2-related Coffin-Siris syndrome type 7 in two generations](#) *European Journal of Medical Genetics* 69

Noble AR, Masek M, Hofmann C, Cuoco A, Rusterholz TDS, Ozkoc H, Greter NR, Phelps

IG, Vladimirov N, Kollmorgen S, Stoeckli E, Bachmann-Gagescu R (2024)

[Shared and unique consequences of Joubert Syndrome gene dysfunction on the zebrafish central nervous system](#)

Biol Open 13(11): bio060421.

Toyofuku A, Ehrler M, Naef N, Schmid AS, Kretschmar O, Latal B, O’Gorman Tuura R (2024)

[Heart rate variability and cognitive functions in adolescents with complex congenital heart disease.](#) *Pediatr Res* 97, pp. 1103–1113

Voigt FF, Reuss AM, Naert T, Hildebrand S, Schaettin M, Hotz AL, Whitehead L, Bahl A, Neuhaus SC, Roebroek A, Stoeckli ET, Lienkamp SS, Aguzzi A, Helmchen F (2024).

[Reflective multi-immersion microscope objectives inspired by the Schmidt telescope.](#)

Nature Biotechnology, 42(1), pp.65-71.

Yusifov E, Schaettin M, Dumoulin A, Bachmann-Gagescu R, Stoeckli ET (2024).

[The primary cilium gene CPLANE1 is required for peripheral nervous system development.](#) *Dev Biol*. Epub 2024 Dec 16.

New Preprints

Raduner N, Providoli C, Di Pietro S, Schneebeli M, Karipidis II, Casimiro E, Bedi S, Von Rhein

M, Raschle NM, Ruff CC, Brem S (2025)

[Growing Minds, Integrating Senses: Neural and Computational Insights into Age-related Changes in Audio-Visual and Tactile-Visual Learning in Children](#)

bioRxiv

See our website for a list of all [publications](#).

PhD Defenses

Congratulations for the successfully completed dissertations in 2024 and until March 2025

Anna von Overbeck (-Speckert): [Structural Basis of Mild Developmental Delay in the Developing Human Brain Connectome](#)

Elkhan Yusifov: [Primary Cilia are Important for Neural Circuit Formation in the Peripheral Nervous System](#)

Sarah Wicki: [Effects of Development and Social Isolation on Multi-Sensory Learning and Orbital Cortex Glutamate Synapses in Mice](#)

Awards and Appointments

Congratulations

AdaBD member **Nora Maria Raschle** has been appointed as Associate Professor ad personam for Developmental Neuroscience, starting June 1, 2025.

Progress report 2024

The progress report 2024 of the URPP AdaBD can be [downloaded on our website](#).

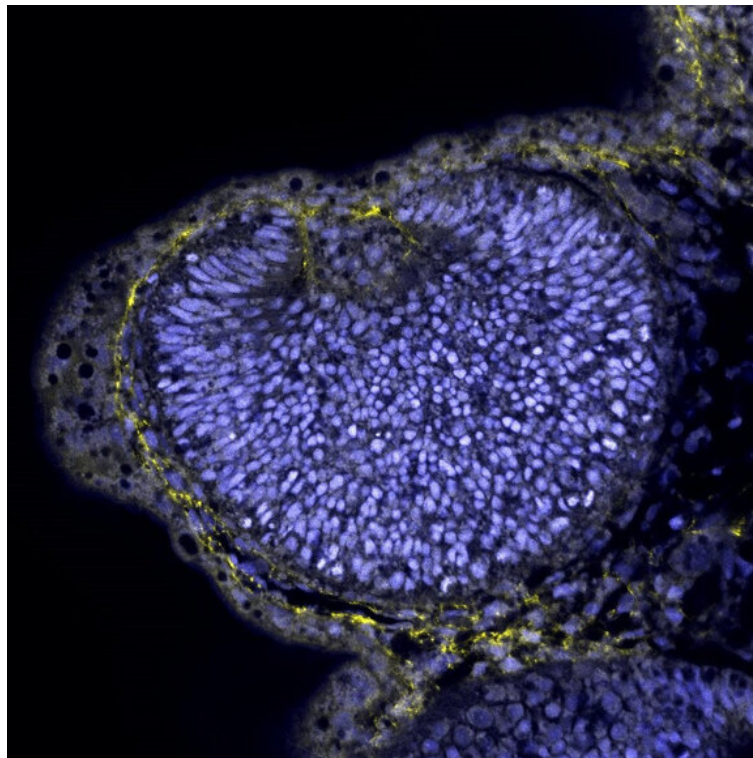
From the Editor's desk

Welcome

We're delighted to introduce two new members of our coordinating office: **Corinne Nussbaumer**, our administrative assistant, and **Nadja Greter**, our fundraising manager. They've both settled in wonderfully, and we're excited to have them on board.



**Universität
Zürich** UZH



Eye from a *Xenopus tropicalis* tadpole sample stained for Atp1a. Sample prepared by Thomas Naert. Image acquired with the Schmidt objective by Angeliki Vavladeli.

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