



# HMZ Flagship Project STRESS

2nd year HIGHLIGHTS



**ETH** zürich



University of  
Zurich <sup>UZH</sup>

**USZ** Universitäts  
Spital Zürich



UNIVERSITÄTS-  
KINDERSPITAL  
ZÜRICH

**Balgrist**  
Universitätsklinik



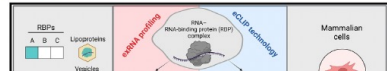
Psychiatriische  
Universitätsklinik  
Zürich



## Cell Genomics

### exRNA-eCLIP intersection analysis reveals a map of extracellular RNA binding proteins and associated RNAs across major human biofluids and carriers

Graphical abstract



Authors

Emily L. LaPlante, Alessandra Stürchle, Robert Fullem, ..., Eric Van Nostrand, Bogdan Mateescu, Aleksandar Milos

## Resource CURRENT PROTOCOLS

PROTOCOL | Open Access | © | f | ↻

### Single-Nucleus RNA-Sequencing in Brain Tissue

Rebecca Waag, Johannes Bohacek

First published: 21 November 2023 | <https://doi.org/10.1002/cpz.1919>

University of Zurich

Published in the Neuroscience section

nature human health

Article

<https://doi.org/10.1038/s41562-023-1389-6>

Resource

### Analysis of behavioral flow resolves

Johannes Bohacek, Lukas von Ziegler, Fabienne Rössler, Oliver Sturman,

This is a preprint; it has not been peer reviewed by a journal.

<https://doi.org/10.21203/rs.3.rs-3268663/v1>

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### Self-regulating arousal via pupil-based biofeedback

Received: 12 January 2023

Accepted: 20 September 2023

Published online: 30 October 2023

Sarah Nadine Meissner<sup>1,2,3</sup>, Marc Bächinger<sup>1</sup>, Sanne Kikkert<sup>1</sup>, Jenny Imhof<sup>1,2</sup>, Silvia Missura<sup>1</sup>, Manuel Carro Dominguez<sup>1</sup>, Nicole Wenderoth<sup>1,2,4,5</sup>

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect



## Circulation

FREE ACCESS | ABSTRACT

GARDIAC DEVELOPMENT, STRUCTURE AND FUNCTION

SESSION TITLE: SKELETAL MUSCLE FUNCTION AND PHYSICAL ACTIVITY

### Abstract 16692: Early Life Stress Elicits Heart Failure Traits Across Generations in Mice

Sarah Costantino, Francesca Manuella, Shafeeq Mohammed, Samuele Ambrosini, Chiara Boscardi, Frank Ruschitzka, Nazha Hamdani, Isabelle M Mansuy and Francesco Paneni

Originally published 6 Nov 2023 | [https://doi.org/10.1161/circ.148.suppl\\_1.16692](https://doi.org/10.1161/circ.148.suppl_1.16692) | Circulation. 2023;148:A16692

### The epigenome under pressure: On regulatory adaptation to chronic stress in the brain

Rodrigo G. Arzate-Mejia<sup>a</sup>, Nancy V. N. Carullo<sup>a</sup> and Isabelle M. Mansuy

Neuroscience

### Noradrenaline release from the locus coeruleus shapes stress-induced hippocampal gene expression

Mattia Privitera, Lukas M. von Ziegler, Amalia Floriou-Servou, Sian N. Duss, Runzhong Zhang, Sebastian Leimbacher, Oliver Sturman, Rebecca Waag, Fabienne K. Roessler, Annelies Heylen, Yannick Vermeiren, Debby Van Dam, Peter P. De Deyn, Johannes Bohacek

Laboratory of Molecular and Behavioral Neuroscience, Institute for Neuroscience, Department of Health Sciences and Technology, ETH Zurich, Switzerland • Neuroscience Center Zurich, ETH Zurich and University of Zurich,

### The Journal of Child Psychology and Psychiatry

Journal of Child Psychology and Psychiatry \*\*\*(2023), pp \*\*-\*\*\*



doi:10.1111/jcpp.13896

### START NOW: a cognitive behavioral skills training for adolescent girls with conduct or oppositional defiant disorder – a randomized clinical trial

Christina Stadler,<sup>1</sup> Christine M. Freitag,<sup>2</sup> Arne Popma,<sup>3</sup> Lucrez Nauta-Jansen,<sup>3</sup> Kerstin Konrad,<sup>4,5</sup> Eva Untermahrer,<sup>1</sup> Katharina Ackermann,<sup>2</sup> Anke Ramhard,<sup>2</sup> Anna Martinelli,<sup>2</sup> Helena Oldenbof,<sup>2</sup> Melon Gundlach,<sup>2</sup> Gregor Kohle,<sup>2</sup> Developmental Cognitive Neuroscience 64 (2023) 101324

Nov

Contents lists available at ScienceDirect

Developmental Cognitive Neuroscience

journal homepage: [www.elsevier.com/locate/dcn](http://www.elsevier.com/locate/dcn)



Current Opinion in Neurobio

From mother to child: How intergenerational transfer is reflected in similarity of corticolimbic brain structure and mental health

Plamina Dimanova<sup>a,b,\*</sup>, Réka Borbás<sup>a</sup>, Nora Maria Raschle<sup>a,b,\*</sup>

<sup>a</sup> Jacobs Center for Productive Youth Development, University of Zurich, Zurich, Switzerland  
<sup>b</sup> Neuroscience Center Zurich, University and ETH Zurich, Zurich, Switzerland

## AWARDS AND OUTREACH



- 5 Awards
- 3 Lab rotations (Young Investigator Program)
- 14 Press interviews / news / podcasts / media features
- 12 Symposia / public talks / workshop contributions
- 4 Industry collaborations



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HOME > RESEARCH NEWS > Symptoms of stress

### Symptoms of stress

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The flagship project STRESS financed by Hochschulmedizin Zürich (HMZ) celebrates its first anniversary - reflecting on achievements and future directions in the pursuit of biomarkers to predict mental and physical symptoms of stress.





- **Networking session** at the Annual STRESS symposium where attendees could voice wishes and ideas for events and exchange between projects
- **Lab Rotations**
  - Tour of the SNS-Lab, including their setup for video interviews, fMRI with electrostimulation, physio recordings, and biosampling
  - Pupil-feedback and try-out of VR goggles in the NCM-Lab
  - Demonstration of animal facilities and data collection procedures in the Bohacek-Lab
- International online seminar series **“Resilient Minds”** which offers an informal platform for exchange and ideas amongst early career stress and resilience researchers  
X: @ResilienceTea





*Johannes Bohacek and Oliver Sturman*

- Launched in March 2024
- Effective 3R technologies (Replace, Reduce and Refine)
- Grown (in part) out of the HMZ STRESS Behavioral phenotyping core and work to develop and share novel behavioral tools with colleagues (Bohacek group).



## March Bachinger and Sarah Meissner

- ETH spin-off
- Pupil-based feedback training using a VR headset
- Application to resilience training and reducing stress



## Bogdan Mateescu

- UZH spin-off
- Next-Generation RNA Liquid Biopsies
- Application to advance diagnostics and therapeutic developments using liquid biopsies