LIFE Newsletter Volume 17, No. 3
December 2023

Editorial

Dear Readers,

Most of this edition of the newsletter is dedicated to the Fall Academy, which was organized by Zurich Fellow Speakers *Sabrina Beck* and *Michelle Loher*, and coordinator *Ines Florin*. As documented in this issue, they did an excellent job!

But we start with an article by MPIB fellow *Marlene Hecht* and her colleague *Mubashir Sultan* who organized this year's Summer Institute on Bounded Rationality, hosted annually by the MPIB's Center for Adaptive Rationality and traditionally coordinated by PhD students and postdocs. Marlene and Mubashir describe the intricacies of planning such an event and the lessons they learnt.

Savannah Adams, *Analia Marzoratti*, and *Jahla Osborne* then give an enthusiastic report of the Fall Academy and present some of their photos (the others in this issue were again taken by LIFE photographer and speaker *Steve Boker*). As usual we provide the fellows' abstracts, illustrating the richness of the research being done in LIFE.

We then honor UVA alumnus *Christopher Beam* who received the LIFE Outstanding Alumni Award 2023. Congratulations!

This time, FU faculty *Nina Knoll* answers our 10 questions and provides us with many interesting insights. A host of new faculty and fellows are introduced in the following pages. Welcome to them all!

And finally we list recent publications by fellows (as well as a selection of alumni's) before providing the latest news.

Wishing us all a peaceful festive season!

Julia Delius

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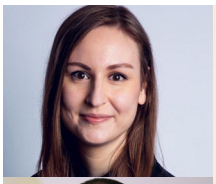
Reminder

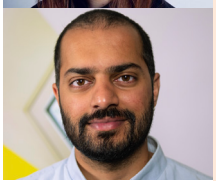
Fellows, alumni, and faculty, please keep us informed about your LIFE-relevant news (e.g., awards, career moves)! Fellows and alumni, please check that your web profiles are up-to-date—they are often the first thing that pops up when your name is googled! Send your updates to delius@mpib-berlin.mpg.de

LIFE Website: https://www.imprs-life.mpg.de

BlueSky: @imprs-life.bsky.social

Mastodon: @imprs_life@social.mpdl.mpg.de





Organizing the Summer Institute on Bounded Rationality 2023

Marlene Hecht, LIFE fellow, & Mubashir Sultan, predoc,
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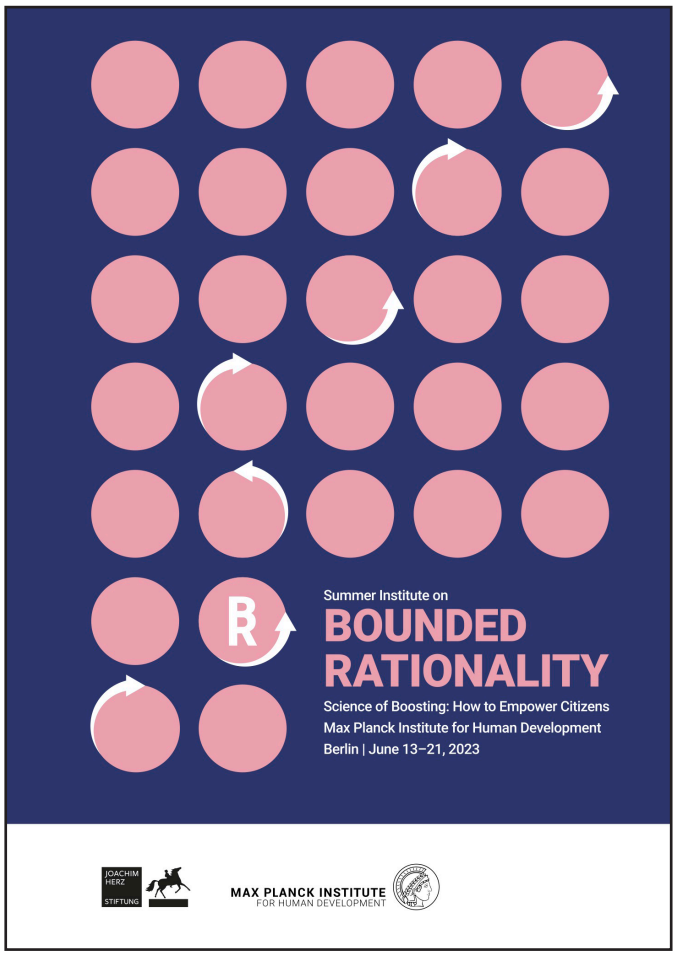
Overview of the Summer Institute

The Summer Institute on Bounded Rationality (SI) was first hosted at the Max Planck Institute for Human Development (MPIB) back in 2001. Through the SI, we bring together young researchers and scientists from around the globe for 8 days of discussion, talks, and workshops about decision-making under real-world constraints. The aim of the SI is to provide a platform for junior scientists across diverse disciplines to share their approaches, engage in discussions about their research, and mutually inspire one another. As per tradition, the SI is always organized by PhD students or postdocs (several former or current LIFE fellows and faculty are among the previous organizers: Dirk Wulff in 2014, Anika Josef in 2015, Philip Gerlach in 2016, Anna Thoma in 2021, and Michael Geers in 2022). This year marked the 21st edition of the SI and focused on the "Science of Boosting: How to Empower Citizens." During the event, participants discussed how citizens form decisions, and how their decision competencies can be strengthened to empower them to make better-informed choices—for instance, in domains such as online misinformation or health-related decisions. For us as organizers, it was important to not only put together an exciting scientific program but also to create an atmosphere that encouraged fun and creative social exchange.



What and who helped us organize the Summer Institute?

Organizing the SI is a massive effort and a labor of love. In the first instance, hosting up to 40 participants, and also the speakers, requires a large amount of funding. In light of this, we are extremely lucky to have the Joachim Herz Foundation which has been funding us for many years. Without their generous support, an event like this wouldn't be possible. In addition, we were supported by our (amazing!) student research assistant Amanda Fink. It was Amanda's second time helping to organize the SI, and beyond bringing a lot of knowledge from the previous iteration of

Summer Institute organizers, from left to right: Mubashir Sultan, Amanda Fink, and Marlene Hecht.

the event, Amanda is really good at staying organized, paying attention to details, and just stellar at dealing with people. She did such a great job at managing the SI crowd, that being impressed by her people skills, she was even offered a job at one of the restaurants we dined at during the SI!

Moving a level further, we benefited tremendously from detailed and shared experiences of past organizers. Next to having much of this experience documented, we could always reach out to some of the previous organizers who are still at the Center for Adaptive Rationality (ARC) at the MPIB. In addition, the whole of ARC gets involved in the preparations. The various tasks include screening participants for eligibility, setting up poster presentation stands, taking photos at the event, and rating the participants' posters for a poster prize. Some researchers at ARC also give talks and deliver workshops. Our huge thank you goes out to them.

In addition, there's the very friendly and helpful staff at the MPIB, including our colleagues from the canteen (who stayed after hours for a BBQ during the event), secretaries, the DTP unit, the third-party funding team, and the administration. All of these people help with the organization and make this event not only run smoothly, but also a fun project to work on.

Finally, we benefited from having a great infrastructure set in place at the MPIB. It was when there was a crack in this infrastructure, that we got to realize how much it has helped us along the way. For example, a lot of printing is done at the MPIB's internal DTP unit, including posters for the event. When there was a technical error with the printers just before the SI was to start, we had to find external printing services for our posters, making us realize once more how lucky we are to have such resources in-house.

At the start of organizing an event like this, one feels overwhelmed at the task ahead and living up to the expectations (that we set for ourselves). While being nervous about how the event would go, we were very glad that everything went smoothly and that there were no major hiccups along the way. We were also extremely happy that this was reflected by our participants who were very positive about the event.

What was surprisingly difficult?

The event wouldn't be an event if some things didn't turn out more difficult than expected. Our first hurdle was finding accommodation for the nearly 40 participants. In a city like Berlin, there is always a big event happening at the same time—in our case, it was the Special Olympics. This made it very difficult to find hotels at a reason-

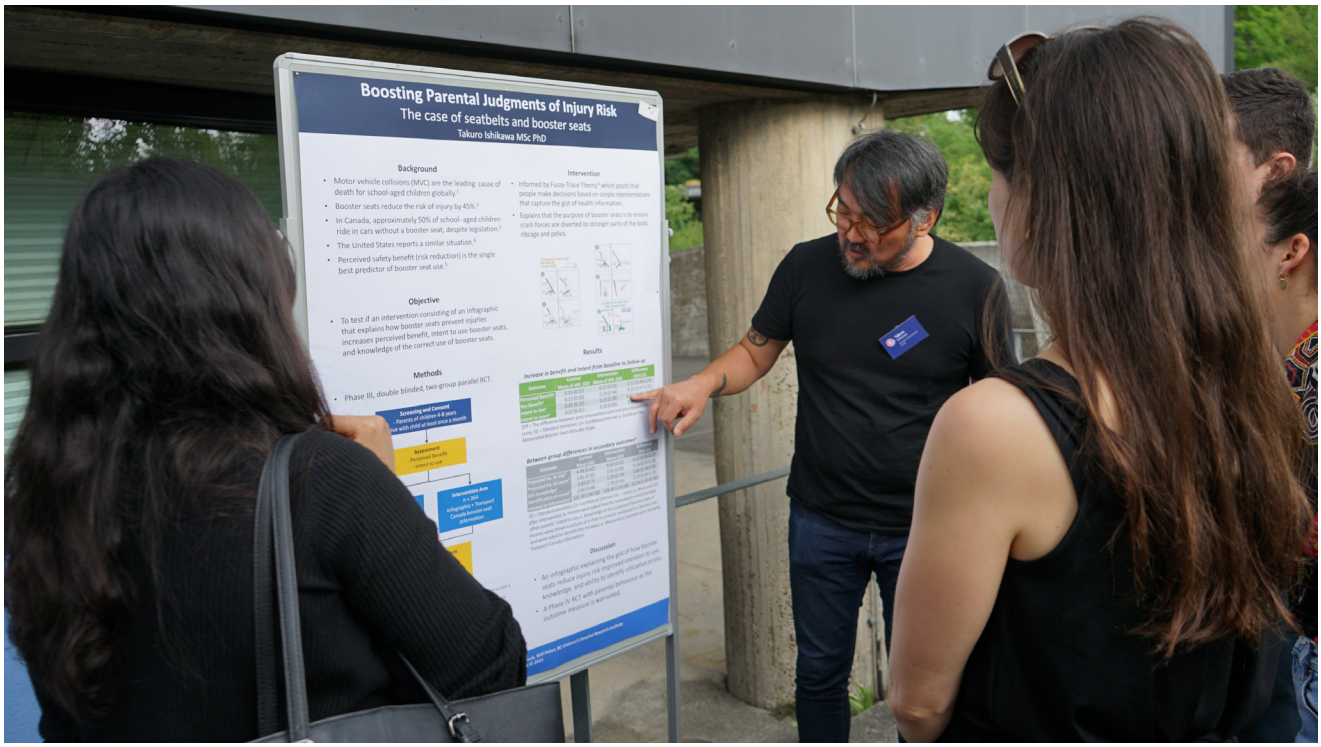


Photo: MPIB

As part of the event, participants presented their current research during one of two poster sessions. Here Takuro Ishikawa (Government of British Columbia, Canada) talks about his work.

able price. In light of this, starting the preparations in October seemed early at first, but we realized this helped us a lot, given the difficulty with accommodation, time needed to put together a good scientific program, and accommodating everyone's schedules.

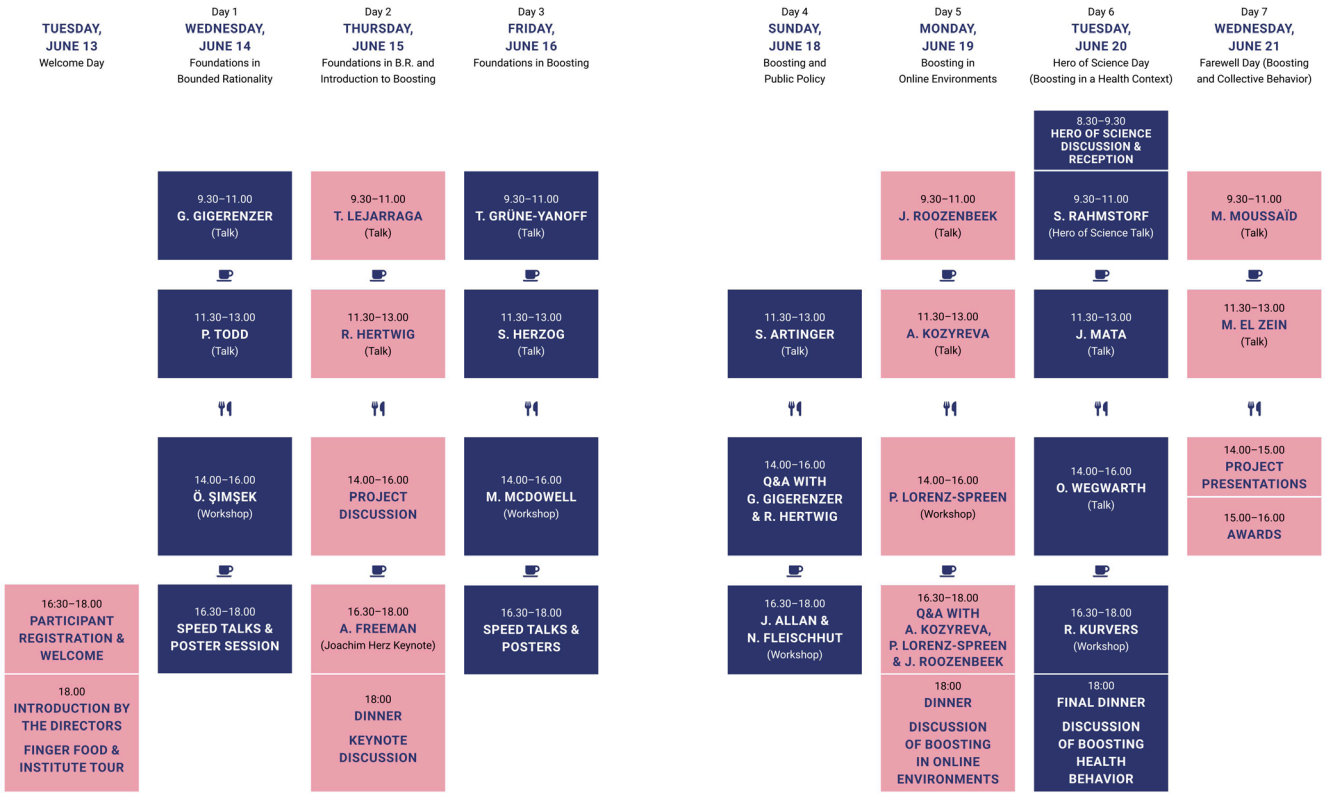
Moreover, while we are reimbursed for our time spent organizing, it was tricky to juggle the responsibilities of organizing the SI and focusing on our PhD work, which we still did, although to a lesser extent. During this time, task-switching between event planning, which involved a different kind of focus, and deep academic work was challenging. Through the process, we gradually learned how to better manage our time and priorities effectively. Overall, organizing the SI truly makes you master time management (and one of the previous organizers mentioned that he even used these skills to organize his own wedding)!

Lastly, amidst the whirlwind of ensuring that everything runs smoothly, it was surprisingly difficult to spend as much time with the participants as we had hoped. This was a reminder that, while the organizational aspect is crucial, the heart of the event lies in the interactions and connections made with the participants, which we would have liked to have even more of. In hindsight, we would try to enjoy the moment—the actualizing of the SI—much more. There's a lot of effort that goes into organizing and during the event one can get caught up in the pursuit of making sure everything works out as expected.

What did we enjoy most?

Organizing the SI was a very rewarding experience. In many ways, we as organizers have a lot of freedom over who we invite to present at the SI. This was a very enjoyable experience—the brainstorming of the program, organizing the days with themes in mind, and putting it all together like a puzzle. This also gave us a chance to address issues of gender imbalance and diversity within the program, which we care deeply about.

In addition, we got to know the directors (Ralph Hertwig and Gerd Gigerenzer), ARCies, and the MPIB staff a lot better. This helped us to form a better connection to the institute and the people we work with daily, giving us a sense of a community. We were also given a chance to get to know and learn from the many speakers and participants who joined the SI—the presentations during the event and the discussions with these bright and amazing people really inspired us.



The program of the Summer Institute 2023.

Moreover, we very much enjoyed the social events that were part of the SI. Attending these dinners and nights out (with funny dancing included) helped us and the participants to get to know each other better and fostered a positive environment. Above and beyond all of this, the most enjoyable moment was the appreciation we received from the participants. In a very endearing manner, they presented us with gifts and lots of hugs. These moments have left a lasting impression, making our overall decision to organize the event more meaningful.

With these memories in mind, we now think that it's important during the event to take a step back and just enjoy and appreciate the event, because the event is over so quickly. Now, we are passing on the baton to Samuel Aeschbach and LIFE fellow Linda Kerbl, the next organizers, and the process starts all over again…

Summer Institute on Bounded Rationality 2024

Keep an eye out on the MPIB website and X (https://twitter.com/sibr2024), where more information about the exact timeline, theme, and how to apply for the next edition of the SI will be shared soon!

Website: https://www.mpib-berlin.mpg.de/research/research-centers/adaptive-rationality/summer-institute

The 21st Summer Institute took place from June 13 to 21, 2023, at the Max Planck Institute for Human Development in Berlin.

Experiencing the LIFE Fall Academy 2023 in Zurich

Savanna Adams, UM fellow, Analia Marzoratti, UVA fellow, & Jahla Osborne, UM fellow

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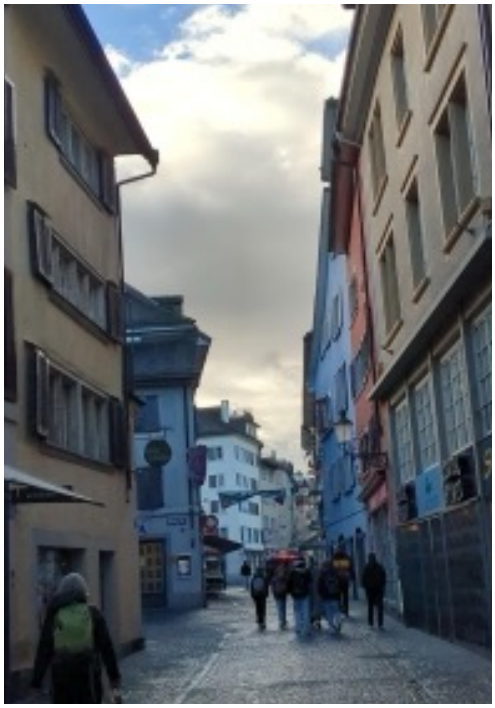
Despite the rainy weather, this latest LIFE academy in Zurich was a bright and inclusive experience of exploring the interdisciplinary work being done to characterize human development across the lifespan. This was the first (Analia), and second (Jahla and Savannah) LIFE academy for us three authors, which gave us unique perspectives on the experience upon reflection. Despite this being the second academy for Jahla and Savannah, it was the first academy they were able to share with fellows outside of their home turf, and the experience was incredibly positive. We are delighted to share with you the exciting highlights from the recent LIFE program academy that took place in Zurich from November 14th to 17th, 2023. The event was hosted at Kirchgemeindehaus Paulus, a protestant church in a residential district of northern Zurich, and featured engaging scientific presentations, discussions, and networking opportunities far beyond what one might ordinarily expect from a church setting!

Day 1: Tuesday, 14th November 2023

The academy commenced with a warm welcome and introduction by Moritz Daum and Alexandra Freund. New LIFE fellows were introduced, fostering a sense of community and collaboration. The day's highlight included a lecture by Angeline Lillard, titled "When Bigger Looks Better: CLASS Results in Public Montessori Classrooms." This was followed by a talk from Angeline Lillard's graduate student Lee Leboeuf on her work investigating student-teacher relationship quality in Montessori versus public elementary school classrooms. Many audience members expressed newfound interest in exploring Montessori education further! Subsequent talks explored various topics regarding educational disparities, including a novel study from Blake Ebright using eye tracking to explore whether bias in teacher attention may underlie disciplinary disparities among diverse student populations. The day concluded with stimulating talks on various educational topics, teaching approaches in diverse classroom spaces, and the impact of socioeconomic background on academic motivation. The research described on this first day which took place in the classroom and occurred at the student-level differed greatly from the typical topics of interest for many fellows, demonstrating the unique perspective offered by the LIFE Academy experience.

Academy location in Zurich: Kirchgemeindehaus Paulus.



Using a tram was a first for many of us.

The evening featured networking opportunities during the Steering Committee Dinner at Linde Oberstrass and the Fellows Dinner at Les Halles. The journey to and from the fellows dinner marked many of our first times using public transportation in Zurich, which in and of itself served as a chance for bonding as we learned how to use this public resource. Over wine, cheese, and raviolis, fellows from Europe and the U.S. had our first chance outside of the lecture hall to get to know each other. Even in the wind and rain, the fellows banded together and made the night one that won't soon be forgotten.

Day 2: Wednesday, 15th November 2023

The second day commenced with a lecture by Dirk Wulff, delving into "Mapping the Aging Lexicon and its Role in Cognitive Aging." This was a significant departure in topic from the primarily education-focused research from the day before. Subsequent talks covered diverse topics such as speech processing, virtual reality applications, and developmental foundations of emotional intimacy. It was lovely to see how well grouped all the presentations accommodating the interests of the researchers in the room coming from such a broad variety of disciplines! This diversity of research interests was further represented during the poster session that day, the first of two that week. New and experienced fellows offered engaging snapshots of their work and invited broad commentary from other fellows to stimulate discussions about new directions for research. As an added bonus, the sun came out to light up the room over the lunch break that followed!

Denis Ribeaud then gave a thorough introduction of the Zurich Project on the Social Development from Childhood to Adulthood (z-proso), followed by talks exploring the dynamics of moral compensation and adolescent friendship. This was then followed by more computationally oriented talks describing methods for classifying emotions and visual working memory processes. Finally, a talk from Laura Jamison ended the session on an

Lunch in the sunshine!


Spaghetti dinner at Commercio.

exciting note, outlining her dissertation work regarding dynamic network loadings and measurement invariance and the R package she produced as a result. The day concluded with a faculty and fellows' spaghetti dinner at Commercio, accompanied by a scenic walk through the old town of Zurich. The atmosphere at Commercio was a fun and engaging one, with faculty and fellows alike merging together for hours of great pasta and discussion.

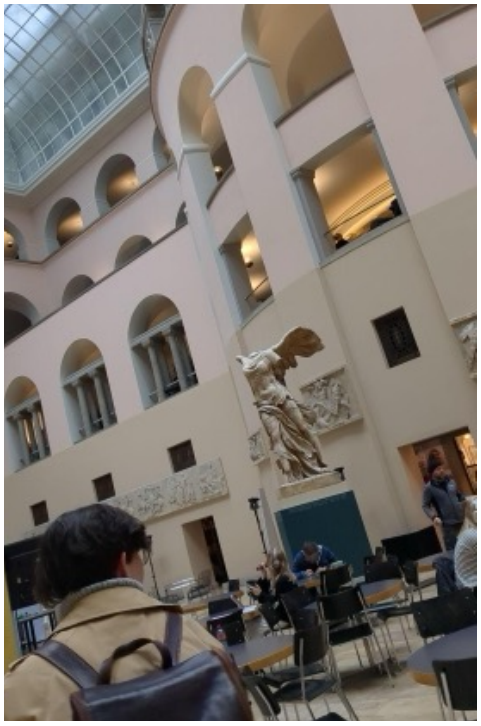
Day 3: Thursday, 16th November 2023

To start the day, Naftali Raz presented a captivating lecture on "Brain Energy Metabolism and Neuropil Maintenance: Age and Sex Differences Observed via 31P MRS," with Kevin Schönholzer providing the introduction and Alexandra Freund stepping in as the faculty discussant. This was followed by talks from Wilson Merrell and Savannah Adams on the topic of infectious disease concealment, a topic they demonstrated as relevant to the human experience throughout the lifespan. After a break, a virtual talk by Muna Aikins explored the associations of racialized inequities with saliva DNA-methylation measures of biological aging. Luianta Verra also gave a fantastic talk about anxiety generalization before everyone headed out to the courtyard for a group photo. Shout out to the very nice girl who was flagged down to take our photo; we're sure it turned out great! We returned to another faculty talk from Timo von Oertzen which became a wonderfully engaging game show spotlighting Bayesian methods, and this was followed by our final poster session. So many wonderful posters were on display!

After the final break of the day, we headed into round table discussions covering topics of longitudinal research, collaborating internationally, careers in academia, interdisciplinarity, and navigating identity in research. These roundtables based on topics recommended by fellows produced passionate discussion amongst faculty members and students, and left both with much to think about moving forward. The night concluded with a farewell by Moritz Daum and Alexandra Freund, followed by a commencement dinner at Kirchgemeindehaus Paulus Zurich. We had a lively 3-piece band along with drinks and dinner. All of the fellows that commenced will be sorely missed!

Day 4: Friday, 17th November 2023

The final day included a Jacobs Foundation and Jacobs Center Symposium on "Insights on the manyfold impacts of children's context on their development." This symposium featured many speakers, including the laureate who would be receiving the Klaus J. Jacobs Research Prize later that day, Janet M. Currie, Henry Putnam Professor of Economics and Public Affairs, Princeton School of Public and International Affairs. She discussed her work using administrative data to pinpoint predictors of children's outcomes in the elegant setting of the University of Zurich campus. The stone pillars, high vaulted ceilings, and finely carved statues made this a very impressive university campus!



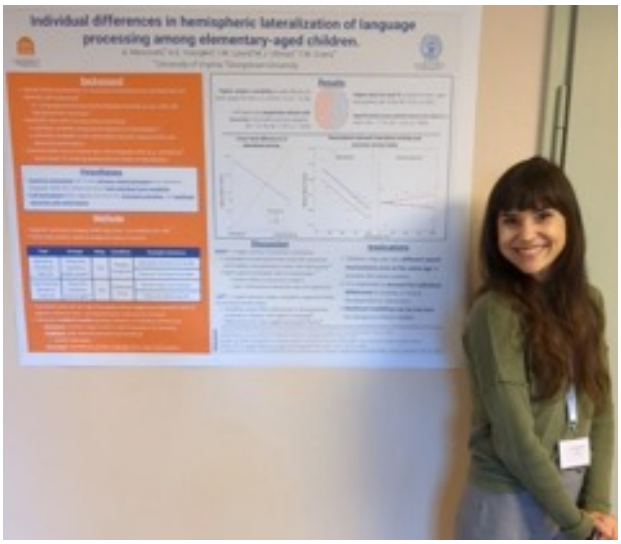
Main building, University of Zurich.

Having a rest.

The day culminated with the Klaus J. Jacobs Research Prize, recognizing outstanding contributions to research and fostering further discussions among the academic community. It was wonderful to celebrate Janet Currie's success, and it was similarly wonderful to share the event's flying dinner with so many other individuals who are passionate about research. Despite the bittersweet quality of it being the final full day of the academy (and for some fellows, their last day before going home), there was no shortage of smiles, joking conversations, and flowing discussions. These lasted until the very last second, when fellows could no longer stay at the venue and made the decision to keep the night going themselves, opting for one last hurrah—a night of karaoke.

Author Reflections

Analia: As a first-time attendee at the Zurich 2023 LIFE Academy, I am profoundly impressed by the dynamic and interdisciplinary nature of the talks and discussions. The array of topics, from Montessori classrooms to cognitive aging and emotional intimacy, reflects the rich diversity of research within the LIFE community. What stands out most is the genuine openness of the faculty members, who not only deliver thought-provoking lectures but also foster an inclusive atmosphere for engaging conversations. The interactive sessions and individual meetings during coffee breaks have created a unique space for meaningful exchange, which speaks to the huge potential for innovative work which can result from this program. This experience has left me eagerly anticipating the upcoming Spring event at



Analia and her poster (see p. 21 for her abstract!).

UVA, where we will have the privilege of hosting these talented students. The prospect of continuing these enlightening discussions and building on the interdisciplinary spirit at our home institution is truly exciting. I look forward to extending the warm welcome and collaborative spirit I have experienced here in Zurich to all the attendees at UVA in the Spring!

Savannah and Jahla: While it was our second LIFE academy, the ability to take part in festivities from the point of view of an attendee rather than a co-organizer certainly made a difference! While we loved being able to help others navigate Michigan last May, it was truly amazing to be able to travel so far away from home to engage with other fellows and with stimulating research. For Jahla, this was even her first experience abroad! We made sure to take a lot of pictures to

Savannah, Kathy Xie, and Jahla in the old town.

celebrate this experience—some of which you can see here! Particularly exciting for Savannah was the opportunity to make lasting connections. These were both academic, such as in the case of meeting university faculty who could be involved in a potential research stay later on, and personal, such as in the case of staying out late to have discussions with newfound best friends. It was a fantastic experience and we are very grateful to the Zurich team (shout out also to Sabrina Beck and Michelle Loher for ensuring everything ran so smoothly!) and very much looking forward to the next academy in Virginia!

Congratulations to all Commencees!

Laura Buchinger, Anna Thoma, Zita Mayer, Raffael Schmitt, Laura Bechtiger, Plamina Dimanova, & Foivos Iliopoulos (from left to right) celebrated at the Academy, but Andrea Hasl, Ann-Kathrin Jöchner, Christoph Koch, Jannik Orzek, Eleftheria Papadaki were not able to attend.

Fall Academy 2023: Fellows' Abstracts

Talks and posters in alphabetical order by author respectively

Contact information available at https://www.imprs-life.mpg.de/people

Talks

Moral judgments of disease concealment

Savannah Adams, UM
Co-Authors: Kaelyn Sabree, Madhulika Shastry, & Joshua Ackerman

Current concealment literature focuses on how people may conceal identity-relevant features (e.g., sexual orientation) to avoid moral judgments and stigma, but recent research demonstrates people also conceal non-identity-relevant features, such as contagious illness. We propose there may be a moral stigma attached to illness concealment similar to other forms of concealment, but that unlike other concealment these judgments arise from the harm this type of concealment may pose to others. Across three studies, we had participants read scenarios describing targets as concealing mild (less harm) or severe (more harm) symptoms of a contagious illness in a variety of situations. Participants were then asked to evaluate the targets' moral character and the perceived harm and risk of illness spread within each situation. Overall, higher harm and risk perceptions correlated with harsher moral judgments, particularly when the motive for concealment was seen as less justified. This research expands on current literature to show that moral consequences of concealment may also apply to non-identity-relevant forms of concealment, and this may be due to the perceived harm of that concealment by others.

Associations of racialized inequities with saliva DNA-methylation measures of biological aging and mental health across childhood and adolescence

Muna Aikins, MPIB
Co-Authors: Yayouk Willems, Colter Mitchell, Bridget Goosby, & Laurel Raffington

Racialized disparities in aging-related health may partially be driven by epigenetic processes related to accelerated biological aging. Adversity in childhood, such as racial marginalization and low socioeconomic status (SES) has been associated with a faster pace of biological aging measured in children's DNA-methylation (DNAm). The aim of this study is to explore racialized inequities in longitudinally assessed saliva DNAm measures of biological aging and mental health across childhood and adolescence. Participants include n = 2,020 children from the birth cohort Future Families and Child Well-being Study (FFCWS) with DNAm data collected at 9 years and repeated at 15 years of age. We will examine associations between individual's race/ethnicity, neighborhood contexts (i.e., family-level and neighborhood-level racial/ethnic identities, SES, police interactions), saliva DNAm quantification of biological aging (i.e., DunedinPACE, GrimAge, PhenoAge), and mental health (i.e., parent-reported internalizing and externalizing behaviors from age 3 to 15; child-reported depression and anxiety). Following preregistered analyses, we will employ latent growth curve models and cross-lagged panel models to assess multivariate longitudinal dynamics. Analyses are ongoing and preliminary results will be presented.

Speech processing in the brain at risk for cognitive impairment

Elena Bolt, UZH
Advisor: Nathalie Giroud

The close relationship between cognition and hearing in old age suggests that neurophysiological data from older adults may shed light on how deficits in speech processing along the auditory pathway characterize the aging brain at risk for cognitive impairment. In the auditory pathway, signals pass through subcortical relay stations before being integrated into cortical areas. A recent study suggests that the pathophysiology of mild cognitive impairment (defined by a Montreal Cognitive Assessment [MoCA] score < 26) extends to auditory encoding in the brainstem, reflected by slower and weaker encoding at subcortical levels, whereas processing in the cortex is enhanced, and that neural responses to auditory input at both levels have predictive potential for a low MoCA score. In our study, we aimed to rep-

licate these previous findings and extend them to responses to natural running speech. We performed audiometric and cognitive tests with N = 44 participants (26 women, 70.0 ± 5.9 years). According to their MoCA scores, participants were divided into a low MoCA group (MoCA score < 26, n = 19) and a control group (MoCA score = 26, n = 25). Using a novel electroencephalography (EEG) paradigm that allows simultaneous measurement of subcortical and cortical responses to naturally occurring speech, we recorded EEG while participants listened to audiobook segments.
At the academy, we would like to present the results of the study and preview the next PhD project in my dissertation, which will take an in-depth look at linguistic neural speech processing in older adults with and without risk for cognitive impairment. Our research has the potential to contribute to the understanding of the neurophysiological mechanisms underlying cognitive impairment, which could help identify individuals at risk for dementia at an earlier stage.

Vulnerable self-disclosure co-develops in adolescent friendships: Developmental foundations of emotional intimacy
Meghan Costello, UVA
Advisor: Joseph P. Allen

Friendships become a central source of support, intimacy, and information about norms for discussing emotionally vulnerable topics; a high-stakes and high-reward process for building connections with close others. In order to better understand the process by which vulnerability is learned, the current study examines the development of vulnerability when help-seeking from ages 13 to 29. A diverse community sample (N = 184; 86 boys, 98 girls; 58% White, 29% Black, 13% other identity groups) participated in annual observed interactions with close friends and romantic partners. Random intercept cross-lagged panel models (RICLPMs) were used to parse markers of within-individual change in vulnerable self-disclosure across ages 13 to 18. A follow-up regression model also investigated cascading associations from self-disclosure in adolescent friendships to self-disclosure in adult romantic relationships. Results indicate that adolescents with best friends high in vulnerable disclosure tend to disclose appropriately more in the future when seeking support and disclose appropriately less when providing support. These adolescents also tend to continue to express more vulnerability within future romantic relationships, potentially facilitating future interpersonal regulation opportunities. Results indicate that the best friendship, a key source of emotional support, serves as a foundational context for learning important intimacy-building skills, such as vulnerable self-disclosure, which persist across time and relationships.

Concept of SENTI-NET: Emotion classification using free-text descriptions
Hannes Diemerling, MPIB
Advisor: Timo von Oertzen

Emotion recognition is a central challenge in both technical and psychological domains. One possible approach to better understand this complexity is to consider free-text descriptions labeled by volunteers based on real psychotherapeutic sessions. Rather than relying solely on predetermined emotion categories, these descriptive emotional narratives may offer more detailed insight into human emotions.
The proposed research design aims to collect these textual descriptions to provide an enriched dataset suitable for emotion classification. The complexity of individual emotion expression suggests that these free-text descriptions may need to be transformed into semantic vectors, with the primary goal being to convert the narrative richness into data that can be processed using machine learning techniques. Subsequently, Deep Neural Networks (DNN) will be used to predict these semantic vectors. Here, a multilabel design as well as the use of extended loss functions, such as cosine similarity, is envisioned.
This research design, while exploratory in nature, is intended to provide a new perspective in emotion recognition. The realization of such an approach is expected to make a constructive contribution to ongoing discussions in both technological and therapeutic circles by offering a perspective through which human emotions could be interpreted and understood.

Do teachers respond fairly to norm violations? Mobile eye tracking and differential attention in classrooms
Blake D. Ebright, UM
Advisor: Kai S. Cortina

There is a lot of evidence suggesting that student demographics are a factor in everyday classroom

interactions. However, the claims are often conflicting. For example, some assume that girls get less attention, which means their contributions as well as individual needs are more often overlooked. Others claim that boys tend to misbehave because teachers focus more on high-achieving girls. Some researchers claim that students of color are more scrutinized by teachers and hence their misbehavior is more likely to be noticed and reprimanded. With mobile eye tracking, we recorded in 46 classrooms how often teachers focused on each student during a regular classroom period. We matched data with video footage identifying student behaviors that violated classroom norms. We found different profiles of behavior by student gender and race and differences in teacher responses based on the type of norm violation and teacher expertise. Teachers did not focus on one gender more than another, but they looked at Black students more often than at White students. Teachers observe Black students violating norms more often than White students, but only for infractions that indicate active participation. This corroborates Black students' perception that teachers scrutinize their behavior more. While this could indicate a sensitivity to pedagogical needs, we interpret it as teacher bias with potentially drastic downstream effects.

Beyond auditory-cognitive trainings: Using stereoscopic virtual reality to improve speech comprehension in older individuals with hearing loss

Vanessa Frei, UZH
Advisor: Nathalie Giroud

Auditory-cognitive trainings (ACTs) and audiovisual speech presentation represent promising approaches to improve speech comprehension and promote neural processing of speech despite hearing loss (HL), while generalizability and transfer effects of ACTs still pose a major challenge. The study aims to clarify whether an enriched training environment facilitates speech comprehension and neural speech processing compared to purely audio-cognitive training in a laboratory environment. Participants (with varying degrees of cognitive capacity and peripheral HL) answer questions about spoken content in a three-dimensional immersive (stereoscopic virtual reality) conversation and a purely auditory set-up. Neural speech tracking is measured by electroencephalography simultaneously. Speech comprehension is measured on a behavioral level and concurrently cortical speech processing as a function of cognitive capacity, sensory auditory performance and varying cognitive demand is assessed. Additionally, speech-in-noise performance is assessed before and after each training session.
We predict improved speech comprehension using immersive ACT and simultaneously gain a deeper understanding of associated speech tracking and its role regarding speech comprehension, particularly with varying cognitive demands. We intend to model these effects as a function of cognitive capacity and HL, thereby gaining a more comprehensive understanding of the underlying relationships between these constructs (data collection finished on September 1). The study further allows both a within- and a between-person perspective, whereby individual prerequisites, environmental and motivational factors can be considered. Finally, it allows for valuable considerations for future training, particularly regarding transferability and generalizability, while enabling increased engagement of individuals.

Context matters: An individual participant data (IPD) meta-analysis on how students' socioeconomic background is associated with academic motivation

Sarah Grünthal, Universität Potsdam
Co-Authors: Martin Brunner & Hanna Dumont

Students' achievement motivation is important for students' learning behaviors and determines students' educational and professional success (Quílez-Robres et al., 2021). Since the PISA shock in 2000, educational research has focused on the relation between socioeconomic status (SES) and students' academic achievement. In stark contrast, there is little knowledge on the relation between students' SES and their achievement motivation characteristics. To address this gap, we specifically focus on studying how students' SES relates to students' achievement motivation characteristics taking international and developmental perspectives.
Eccles' general model of relations among parental influences on children's motivation (1993) assumes that the SES influences which extracurricular experiences parents can provide for their children (e.g., musical instrument lessons) and

how they can support their children's learning progress at school (e.g., helping with homework). These experiences should influence students' achievement motivation characteristics, particularly in relation to academic learning.
Using integrative data analysis, we will meta-analytically integrate the results from multiple international educational large-scale assessments, such as PISA, TIMSS, and PIRLS. In doing so, we will study how students' domain-specific achievement motivation characteristics (e.g., interest in reading) are related to different SES indicators (e.g., HISEI and book stock in household). We will also examine how the results vary across domains, motivational characteristics, SES indicators, time, countries, and students' age.
Our first results confirm that there are domain specific differences (correlations for reading and science related characteristics are stronger than for mathematics related scales), differences related to the analyzed motivational characteristic (strongest correlations for self-efficacy in mathematics, interest in reading and enjoyment in reading; lowest relations for interest in mathematics and instrumental motivation in mathematics), and SES indicator specific differences (educational resources and book stock in the household) described strongest relations with analyzed characteristics while years of parents' education and HISEI showed lowest) in how students' SES is associated with achievement motivation characteristics.

How do teachers teach heterogeneous classrooms? Multivariate analyses using large-scale assessment primary school data

Svenja Hascher, Universität Potsdam
Advisor: Camilla Rjosk

Primary school classrooms are heterogeneous in many intersecting dimensions, such as achievement, ethnic and socio-economic backgrounds. There are varying theories about how this classroom heterogeneity affects learning: while some suggest that heterogeneity can positively influence student outcomes and equity (diversity enriching hypothesis, Lazear 1998), others propose potential negative impacts on teacher stress levels and teaching quality (e.g., Maestri et al., 2007, referencing the theory of provision of public goods in Alesina and La Ferrara, 2005). These negative impacts could potentially undermine the positive effects of heterogeneity on learning or even lead to detrimental outcomes. However, with appropriate strategies and teaching methods, teachers can amplify the positive impacts of diverse classrooms (Cohen & Lothan, 1977).
The aim of this study is to evaluate the influence of heterogeneity on primary school teachers and their teaching. We defined heterogeneity using a multidimensional measure, encompassing the dimensions of achievement, ethnic, and socio-economic heterogeneity. Through regression analyses of large-scale assessment data from 528 German primary school classrooms (IQB trends in student achievement 2016: Stanat et al., 2019; Schipolowski et al., 2019), we discovered that heterogeneity slightly negatively impacts teaching quality and increases teacher stress, while significantly positively affecting the diversity of teaching methods.
Further, we examined classrooms with high levels of heterogeneity. Utilizing cluster analyses, we observed that here most teachers experienced stress, with classroom management appearing to play a significant role in the interplay between stress and teaching. Teachers who reported the least stress were those who employed cognitively stimulating teaching methods and utilized the greatest number and variety of teaching methods.

Dynamic network loadings and measurement invariance

Laura Jamison, UVA
Co-Authors: Hudson Golino & Alex Christensen

Establishing measurement invariance (MI) is vital when using any psychological measurement to ensure applicability and comparability across groups cross-sectionally and longitudinally. As the field of network psychometrics continues to expand, it is crucial for invariance testing methods to be available. Prior research conducted by Hallquist et al., 2021, has allowed for the computation of network loadings, which are analogous to factor loadings from the factor analytic framework (Christensen & Golino, 2021). This opened the door for further advancement in assessing cross-sectional metric invariance in the Exploratory Graph Analysis framework using permutation testing. However, to date, there is not a method available for the computation of dynamic network loadings with intensive longitudinal data. As such, we first present a method for computing dynamic network loadings with output from

Dynamic Exploratory Graph Analysis (DynEGA). Then, we will present a new method for testing dynamic configural and metric invariance using DynEGA and dynamic network loadings. Results from initial simulation studies will be presented as well as a demonstration of the practical application of these methodologies.

Student-teacher relationship quality in Montessori and non-Montessori preschool

Lee LeBoeuf, UVA
Advisor: Angelina Lillard

According to the Contextual Systems Model (Pianta, 1999), individual characteristics of students and teachers, along with the characteristics of the classroom and school contexts in which they are embedded, influence student–teacher relationship (STR) quality. Having a high-quality relationship with one's teacher, characterized by a high degree of closeness and a low degree of conflict, in the early years of schooling predicts numerous positive outcomes for children throughout schooling and development. Identifying features of a classroom and school context that promote the development of positive STR is an important goal for researchers to inform practitioners on how to best cultivate these contexts. Montessori classrooms feature many characteristics that have previously been associated with higher-quality STR, so Montessori classrooms offer a helpful point of comparison for understanding how context and individual characteristics of students and teachers contribute to STR quality. This study represents the first investigation of Montessori STR quality. I use data from the first-ever national evaluation of Montessori preschool in the United States. Results will reveal specific classroom characteristics that help facilitate high-quality STR for all children, regardless of their identities or abilities.

Prevalence and predictors of health-relevant information concealment in the United States and Europe

Wilson Merrell, UM
Co-Authors: Walter Bierbauer & Urte Scholz

Concealing information about one's health can lead to harmful individual physical and psychological outcomes – it could make an illness worse, cause you to miss out on key social support, and foster feelings of isolation. But relatively less is known about the factors that influence whether someone decides to conceal these different pieces of health-relevant information or not. Pulling from established literatures on concealable stigmatized identities, secret-keeping, and infectious disease concealment, we aim to identify the prevalence and predictors of concealment decisions across different health-relevant categories. In this registered report, we will be testing concealment behavior (1) across different health information categories (infectious illness, smoking), (2) from different audiences (family, friends, strangers), and (3) in different cultural contexts (United States, German-speaking European countries). We plan to examine how variation across these three factors (e.g., harmfulness to others, welfare tradeoff ratios, sick leave policies, social norms) differentially predicts concealment behaviors. As this is a registered report, I will not have any data to present but will instead be looking for feedback on our methods, hypotheses, and data analytic plan.

Educational expansion and beliefs in the importance of education for earnings

Kevin Schoenholzer, UZH
Advisor: Kaspar Burger

Educational expansion over the last decades has increased the average educational attainment and narrowed its distribution across most societies. Studies have shown that beliefs in the importance of education influences educational decisions and outcomes of individuals. The potential impact educational expansion could have on how people think about the relationship between education and earnings has not been adequately explored. This research investigates whether the increase in educational attainment that resulted from educational expansion, is related to changes in how important people think education should be for earnings. Moreover, we determine whether there is a significant difference between individuals with higher and lower levels of education. This study combines nationally representative individual-level data assessing beliefs related to inequality taken from the International Social Survey Program (ISSP) modules from 1992, 1999, 2009, and 2019, with country-level educational attainment data. The final sample post imputation contains 109,094 individual-level observations, totaling 79 country-years across 31 unique countries. We find that across countries, an absolute increase in educational attainment was sig-

nificantly and positively associated with stronger beliefs in the importance of education for earnings. Additionally, individuals with higher educational attainment showed significantly higher beliefs compared to fellow citizens with lesser educational attainment. Educational expansion seems to have raised overall beliefs in the importance of education for earnings, especially for individuals with above average educational attainment. Overall, our study contributes to the small but growing body of literature on the relationship between education and beliefs in the importance of education for earnings, highlighting the changes that have occurred across countries in the last three decades of educational expansion.

Dissociating perceptual and value-based generalization in anxiety and intolerance of uncertainty

Luianta Verra, MPIB
Co-Authors: Bernhard Spitzer, Nico Schuck, & Ondrej Zika

A characteristic marker across anxiety disorders is inflated affective responses to stimuli that are in fact safe. Such generalization of affective responses can arise from two sources: the failure to discriminate between stimuli (i.e., perceptual mechanisms) and the active process of transferring learned values to similar, but discriminable stimuli (i.e., value-based mechanisms). We ask how these mechanisms differentially shape threat generalization and how they are impacted by individual differences in anxiety (STICSA) and intolerance of uncertainty (IUS).
In a Pavlovian aversive learning paradigm, participants first learned to probabilistically associate flowerlike shapes with aversive screams. Next, affective ratings to stimuli varying in similarity to the original shapes were collected as a measure of generalization. We systematically varied perceptual and outcome uncertainty to test the respective contributions of perceptual and value-based components to generalization.
Perceptual uncertainty was manipulated using personalized stimuli at different discrimination difficulties and outcome uncertainty by varying reinforcement rates during threat acquisition. We next related these individual processes to trait anxiety and intolerance of uncertainty variations in a healthy population sample (n = 50).
We found an effect of both perceptual uncertainty and value on threat generalization that varied depending on the distance from the conditioned stimulus. We further found that trait anxiety and intolerance of uncertainty affect generalization differently. While anxiety strengthened threat beliefs across all stimuli, intolerance of uncertainty was associated with elevated generalization further from the conditioned stimulus.
Next, we plan to use computational models to infer strength of conditioning and generalization for each participant and condition. This will allow us to analyze the contributions of perceptual and value-driven mechanisms in threat generalization and additionally to relate individual differences in generalization to trait anxiety and intolerance of uncertainty.

Moral compensation via prosocial behavior

Jasmin Weber, UZH
Advisor: Alexandra M. Freund

Much of the research on moral behavior focuses on the role of developmental, dispositional, and situational factors, while neglecting patterns of moral behaviors over time. Assuming that morality is a disposition, one would expect moral behaviors to be relatively stable over time. However, research on sequential moral behaviors indicates that people sometimes balance between moral and immoral behavior, for instance when moral transgressions promote prosocial behavior as a compensatory response. Previous research has primarily attributed the phenomenon of compensatory prosocial behavior to the attempt to restore a positive moral self-image and counteract feelings of guilt. However, immoral behavior often also negatively affects a person's reputation and social relationships, which can be addressed by subsequent prosocial behavior due to its positive reputational and relational consequences as well. My dissertation will investigate the mechanisms underlying moral compensation. In addition, I want to explore whether moral compensation extends beyond an individual level to the group level: Do moral transgressions committed by a group that is part of one's social identity also promote compensatory prosocial behavior by its individual members? In this talk, I will present the theoretical assumptions of prosociality as a compensatory response to immoral behavior as well as a series of studies to test them.

Task-dependent representational dynamics in visual working memory reflected in human gaze patterns?

Dilara Zorbek, MPIB
Advisor: Bernhard Spitzer

A long-standing question in the working memory (WM) literature is the extent to which WM maintains retrospective representations of past sensory inputs and/or future-oriented representations of prospective actions. More recently, it has been proposed that WM might instead maintain representations intermediate to sensation and action, in terms of contingencies that define how future behaviors will depend on upcoming events. Whether and how human visual WM transforms perceptual inputs into a contingency representation yet remains to be shown.
To address this question, we record eye movements while participants are asked to map memorized stimulus information onto different response spaces, depending on task condition. Building on previous findings from our lab, we expect the memorized stimulus information to be reflected in characteristic gaze patterns during WM processing. Specifically, we ask to which extent these patterns reflect the transformation into a task-related contingency map, and if so, when in time such transformation occurs. The work is anticipated to yield first insights into the temporal dynamics of potential WM transformations into a contingency space, and to lay the foundation for subsequent studies into potential format changes on the neural level, using, e.g., functional magnetic resonance imaging (fMRI).

Posters

Associations of polygenic and methylation profile scores with cognitive development

Deniz Främke, MPIB
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Individual differences in children's cognitive and academic performance arise through transactional gene–environment interplay, predict future educational attainments, income, and aging-related cognitive health. Recent genomic studies have quantified DNA-based correlates of performance on cognitive tasks and educational attainment based on genome-wide association studies that can be used to compute polygenic indices (PGIs) in separate target samples. Similarly, results from epigenetic studies have quantified DNA-methylation based correlates of performance on cognitive tasks that can be used to compute methylation profile scores in separate target samples. We present preregistered analyses to examine whether polygenic and methylation scores developed to predict adult cognitive function are (1) uniquely associated with variation in cognition and academic attainments and (2) predict longitudinal cognitive development. This will allow us to evaluate whether the molecular markers of cognitive performance originally identified in adults arise through developmental changes in cognitive performance and academic achievement that onset early in the life course. We leverage longitudinal, genomic, and twin designs to test these aims in three cohorts covering the life span: in n = 1,830 8–18-year-olds from the US Texas Twin Project, n = 5,432 3–77-year-olds from the German Twin Family Panel Study (TwinLife), and n = 2,262 0–72-year-olds from the German SOEP-G[ene] cohort.

Research update: Altered stress response and gene expression among peer victimized youth

Jens Heumann, UZH
Advisor: Mike Shanahan

Building upon our prior talk, this poster serves as a comprehensive research update on the enduring impact of peer victimization on psychological, physiological, and biological stress reactivity. Previously, utilizing the Zurich Brain and Immune Gene Study (ZGIG) data, a subset from the z-proso longitudinal study, we found that peer victimization (PV) is associated with altered stress reactivity and differential gene expression, particularly in the conserved transcriptional response to adversity (CTRA) gene signature. Using inverse probability of treatment weighting (IPW), we aim to identify causal effects.
In this updated research, we introduce refined analytical methods aligned with existing literature and incorporate additional outcomes. These new dimensions include hair samples for cortisol, cortisone, and testosterone levels to assess long-term stress, cytokine analysis to measure

immune response, pupil dilation during the Dot Probe task for a physical measure of anxiety/arousal, and heart rate variability as a measure of autonomic nervous system function. We also bring in supplementary surveys, including the State-Trait Anxiety Inventory (STAI) for anxiety levels, and the Ambiguous Intentions Hostility Questionnaire (AIHQ) to assess hostile attribution and aggression bias.

The poster systematically categorizes all outcomes and presents comparative analyses of effect sizes. Our intent is to facilitate robust discussions about the broader significance and implications of these multi-layered findings. The objective remains: to gain a more detailed understanding of the complex impacts of PV and to underscore the critical need for comprehensive interventions aimed at alleviating the far-reaching physical and mental health consequences attributed to peer victimization.

Biophilia across the lifespan

Elena Isenberg, MPIB
Advisor: Simone Kühn

A goal of environmental neuroscience is to research the mechanisms behind the positive effects of natural environments in order to leverage them to optimize well-being. Research has shown that presenting pictures or sounds from different environments yields similar results to an immersive, multi-sensory experience in a real environment, namely reductions in stress, rumination, and general improvements for well-being. In my previous research I used an established paradigm (Haga et al., 2016; Koivisto et al., 2022) in order to isolate not just sensory modality, but also to disentangle the top-down effects of the environment that result from the beliefs and knowledge of participants from the bottom-up effects that are purely stimulus-driven. In this paradigm, participants heard a mixture of pink and white noise, which the experimenter attributed either to a nature or an industrial environment. The sensory, bottom-up input is identical in both conditions. Results showed that trait mindfulness could moderate the degree of rumination depending on the attribution condition. This research supports the Conditioned Restoration Theory, which attributes the positive effects of nature to conditioning and associative learning, and challenges the evolutionary account. My PhD research project aims to disentangle these influences by studying infants' and young children's discrimination between, preference for, and behavior under different environments.

A longitudinal analysis of reinforcement learning in early childhood

Linda Kerbl, MPIB
Co-Authors: Simon Ciranka, Christin Schulze, & Anna Thoma

As children navigate their environment, they learn about the likelihood of different outcomes from action and feedback: they press the button on two elevators and learn that the left one tends to open faster; they pull their pets' tails and learn that the cat is more likely to scratch than their golden retriever. Most often these action-outcome contingencies are probabilistic and, therefore, demand continuous integration of new experiences to update predictions and adapt future behavior accordingly. Reinforcement learning—formalizing the computational processes underlying value-based learning—characterizes a seminal class of learning and decision-making models in both psychology and neuroscience. In recent years, these models have played a critical role in informing developmental research, casting new light on the cognitive processes enabling adaptive learning and decision-making in childhood. Previous developmental work has focused on school-aged children and used cross-sectional comparisons as a proxy for intraindividual development. However, there is no empirical evidence on the longitudinal trajectory of reinforcement learning in early age. How does outcome valence affect young children's choice behavior? How do they integrate information about chosen and unchosen options? We addressed these questions in the first longitudinal study on reinforcement learning in children aged 3.5–6.5 years, assessed at three measurement timepoints (N = 74 at T1). Using hierarchical Bayesian modeling techniques, we provide new evidence for age-related changes in value-based learning and illuminate the computational mechanisms underlying choice behavior in early childhood.

Exploring the relationship between social support and accelerated epigenetic aging in aging adults

Minah Kim, UVA
Co-Authors: Morgan E. Lynch, Jessica J. Connelly, & James P. Morris

The impact of social relationships on reducing mortality risk is akin to that of quitting smoking (Holt-Lunstad et al., 2010). Nevertheless, maintaining social relationships becomes challenging for older adults, as they often experience declines in their ability to provide support (Shaw et al., 2007). It is worth noting that there is significant variability among individuals in terms of the support they offer. In older adults, providing higher levels of support is linked to reduced feelings of loneliness (Fokkema et al., 2011). This suggests that individuals who offer more support to others are likely to experience lower levels of loneliness and benefit from greater social protection against stress and health deterioration. To investigate this hypothesis, our study aims to explore whether increased support provided by healthy aging adults (n = 89, M_{age} = 68.57, SD_{age} = 5.79) is associated with a decrease in epigenetic age (DNAmGrimAge), a metric that is predictive of health outcomes. We will control for sex, race, education level and chronological age. Additionally, we will investigate the relationship between epigenetic age and resting-state functional connectivity to examine the brain networks implicated in epigenetic age acceleration (e.g., the level in which someone is epigenetically aging faster than their chronological age). Exploratory analyses will be conducted on other metrics of social relationships, such as support enacted, support perceived, and social embeddedness.

Simultaneous polysubstance use in adolescents and young adults: Prevalence, patterns, and correlates

Michelle Loher, UZH
Co-Authors: Denis Ribeaud, Lydia Johnson-Ferguson, Laura Bechtiger, Manuel Eisner, Boris B. Quednow, & Lilly Shanahan

Background: Mortality due to overdoses of prescription drugs and illegal substances has surged among young people, especially in the US. Simultaneous polysubstance use is, in part, responsible; however, its prevalence and correlates are poorly understood. This study addresses these gaps and investigates correlates of substance combinations that could result in potentially fatal side effects, such as respiratory depression, serotonin syndrome, or sympathomimetic toxidrome.
Methods: Data came from two large community-based studies of three age groups of adolescents and young adults (N = 2,379 at age 15; N = 841 at age 18; N = 1,159 at age 24). Simultaneous polysubstance use and its risk correlates, including sociodemographic factors, poor mental health and wellbeing, adverse social experiences, risky behaviors, and attitudes toward illegal substance use, were self-reported.
Results: The past-year prevalence of simultaneous polysubstance use was 13.5%, 31.0%, and 28.8% among 15-, 18-, and 24-year-olds, respectively. Young adults reported 58 different substance combinations as their most frequently used. 9.1% combined drugs that could cause respiratory depression, and another 10.4% those that could cause serotonin syndrome or sympathomimetic toxidrome. The risk of respiratory depression-inducing combinations was specifically increased among young adults with poorer mental and physical well-being and adverse social experiences. Contrarily, serotonin syndrome/sympathomimetic toxidrome risk was increased for young adults with risk-seeking tendencies.
Conclusions: To best understand substance use among young people, researchers should assess simultaneous polysubstance use. Public health efforts must educate young people about the potential toxicity of consuming certain prescription drugs and illegal substances simultaneously. The identified correlates could be a first step for moving toward targeted preventions and interventions.

Perinatal risk and protective factors for the social-emotional development of children born preterm

Miriam Löffler, UZH
Co-Authors: Moritz Daum, Giancarlo Natalucci, & Lisa Wagner

Children born preterm (PT) are at risk to encounter social-emotional difficulties. Risk and protective factors, such as caregiver characteristics and environmental influences, are related to the social-emotional development of children born PT. Understanding these factors helps to identify children at risk and offer targeted interventions. The study aims to explore medical and psychological risk and protective factors for the social-

emotional development of children born PT, by focusing on the temperament dimensions positive affectivity/surgency, negative emotionality, and orienting/regulatory capacity. Furthermore, the study aims to compare these factors between children born PT and full term (FT) and examine general differences in temperament between the groups. Participations will be caregivers of 242 to 484 children born PT and FT at the University Hospital Zurich (USZ). The children will be between 3 months and 2 years old. Data will be collected longitudinally via the kleineWeltentdecker app and the medical records of the participants will be screened for further risk and protective factors.

Individual differences in hemispheric lateralization of language-related neural processing among elementary-aged children

Analia Marzoratti, UVA
Co-Authors: Anna Youngkin, Ian Lyons, Michael Ullman, & Tanya Evans

Developing language processing skills is a major task of early cognitive development undergirded by complex neural mechanisms. However, there has been little study regarding subclinical individual differences in typical neural mechanisms for language learning, or their potential implications for cognitive outcomes.
We analyzed magnetic resonance imaging (MRI) data from age-7 children ($N = 159$) as they judged the accuracy of auditory sentences with varied semantic (task S) or grammatical (task G) errors. We quantified mean left and right hemisphere blood oxygen-level dependent (BOLD) signal (I.e., activation) and estimated multilevel models with random intercepts predicting activation in either hemisphere based on task. Intraclass correlation coefficients (ICCs) quantified the added value of accounting for within-subject nesting of task-level values (I.e., individual differences). We estimated models predicting accuracy based on task or hemispheric BOLD signal.
We found a significantly higher right hemisphere activation for task G compared to task S ($B = 0.08$, $SE = 0.02$, $p < .001$). ICCs for the right (0.34) and left hemisphere (0.41) models suggest that 34% and 41% of neural variability was explained by subject-level trends. Left hemisphere activation was negatively related with accuracy ($B = -21.78$, $SE = 9.91$, $p = .029$) and performance was lower for task G versus task S ($B = - 7.79$, $SE = 2.63$, $p = .003$).
Language processing is left lateralized, an effect which increases with content mastery. Children often develop skills with language semantics prior to syntax or grammar. Our findings somewhat support these models, as children showed both lower accuracy and greater right hemisphere activity during the ostensibly more difficult task G. However, the negative association of left hemisphere BOLD signal with accuracy aligns more with models positing decreased neural activity with language expertise.
These results show that same-age children may rely on markedly different neurocognitive mechanisms to process the same content, illustrating the added value of accounting for individual differences in studies of neurodevelopment.

Age differences in memory generalization across childhood

Tydings McClary, MPIB
Advisor: Markus Werkle-Bergner

Memory allows us to make generalizations based on the regularities across related experiences. Neurocomputational models of memory suggest that the hippocampus contributes to memory generalization in addition to remembering specific details of our past. However, the extent to which generalization relies on memories of individual experiences during childhood is poorly understood. Additionally, despite generalization being studied using various behavioral paradigms and targeting different developmental windows, our knowledge of how individual variations in different behavioral assessments relate to one another remains limited. In four paradigms (statistical learning, associative inference, transitive inference, and category learning), we therefore investigated (i) how generalization differed by age, (ii) how it related to memory for individual instances, and (iii) the associations between tasks from age 4 to 8. We found that 4-year-olds performed worse than older children in all tasks and 8-year-olds outperformed younger children in the associative and transitive inference. Interestingly, inferential accuracy is more tightly coupled with memories of individual instances in older compared to younger children, suggesting this coupling is stronger with age. Surprisingly, despite being conceptualized as generalization

tasks, the intertask correlations were far from consistent. Together, these findings underscore the importance of employing a multi-task design to capture the different aspects of generalization development.

Making it to the academic path in a tracked education system: The interplay of individual agency and social origin in early educational transitions

Francesca Mele, UZH
Co-Authors: Marlis Buchmann & Kaspar Burger

Little is known about the role of agency in transitions in tracked education systems or whether it varies by socioeconomic background. This study addressed this gap by estimating structural equation models based on longitudinal data that are representative of the German- and French-speaking parts of Switzerland (N = 1,273 individuals, surveyed from age 6 to 18, mean age at wave 1: M_{age} = 6.54, SD_{age} = 0.50, female = 49%). The findings reveal that agency (captured by study effort and occupational aspirations) and socioeconomic background (measured by parental education and family income) significantly predicted students' transitions to academically demanding tracks in lower- and upper-secondary education. In the transition to upper-secondary education, students with fewer socioeconomic resources benefitted less than their more advantaged peers from ambitious aspirations, but they benefitted more from exerting effort. These findings suggest that both an optimistic forward-looking orientation and the exertion of effort are required to make it to an academic track. Effort may serve as a "substitutive" resource for less socioeconomically advantaged students, whereas ambitious aspirations may enhance the positive effect of family socioeconomic resources on academic educational trajectories. Overall, the evidence from this study calls for greater attention to investigating not only how agency shapes adolescents' educational trajectories and opportunities but also how its role differs across social groups.

Age effects on the encoding and retrieval of overlapping events

Isabelle L. Moore, UVA
Advisor: Nicole M. Long

Healthy older adults typically show impaired episodic memory, memory for when and where an event occurred, but intact semantic memory, knowledge for general information and facts. We hypothesize that these effects can be explained by an increased tendency to enter into and remain in a 'retrieval state,' a brain state in which attention is focused internally in an attempt to access prior knowledge. Engaging in a retrieval state can lead to impairments in subsequent memory, potentially because the retrieval state trades off with an 'encoding state,' a brain state in which attention is focused externally. To test our hypothesis, we conducted multivariate pattern analyses of scalp electroencephalographic (EEG) data while participants were explicitly directed to encode or retrieve object images. We find that both young and older adults can flexibly engage in memory brain states as directed. However, whereas young adults' memory state engagement gradually increases throughout the stimulus interval, older adults' memory state engagement plateaus early in the stimulus interval. These findings suggest that the temporal dynamics of encoding and retrieval states differ across the lifespan, with possible implications for the ability to maintain versus flexibly shift between memory states.

Neurofunctional effects of adaptive computer-based auditory cognitive training in hearing-impaired older adults

Julian Ockelmann, UZH
Co-Authors: Maren Stropahl, Sigrid Scherpiet, & Nathalie Giroud

Speech perception in background noise poses a difficult task for older adults, even for those with hearing aids or normal pure-tone thresholds. Thus, factors beyond just peripheral hearing integrity seem to contribute to these speech-in-noise (SiN) understanding difficulties in older adults. Due to its impact on hearing-relevant cognitive skills, age-related cognitive decline is thought to be one such factor. Auditory cognitive training (ACT) has been shown to successfully tackle these cognitive deficiencies. However, only little work has been done on ACT-induced changes in neural speech processing with most reports being based on small sample sizes and no active control groups. Accordingly, our experimental framework investigates short- and long-term effects of ACT regarding behavioral, cortical, and subcortical components of speech processing in a large sample of older adults with sensorineural hearing loss (M_{age} = 65 years; N =

80). We employ a 4-week training, 2-month follow-up, and pre-post four-group design with two active control groups. Groups categorically differ in the use/non-use of hearing aids. Neural data is acquired using electroencephalography during a SiN understanding and a syllable detection paradigm. Neural measures include the N1-P2 complex, parietal alpha power, auditory brainstem responses, and afferent connectivity from midbrain to cortex. We expect improved behavioral performance, increased parietal alpha power as listening effort decreases, alongside decreases in both N1-P2 magnitudes and wave V latency. Ultimately, our study is set to provide ample and novel insight on neural and behavioral effects of ACT for older adults with hearing loss. Preliminary data are presented.

The Structured Clinical Interview for ADHD research: Automation and validation

Jahla Osborne, UM
Co-Authors: Madelyn Quirk & John Jonides

The Structured Clinical Interview for the DSM-5 (SCID) is a commonly utilized tool for clinicians to deliver clinical diagnoses of psychiatric disorders based on the relative DSM-5 criteria. The attention-deficit/hyperactivity disorder (ADHD) module of the SCID involves a trained practitioner asking a subject a series of questions about their experiences with ADHD symptoms and subsequent diagnostic criteria. From the anecdotal evidence provided, the practitioner determines whether each symptom or diagnostic criterion qualifies as being above threshold or not. When conducting research using adult participants with ADHD, researchers often administer the SCID to validate participant self-reports of having a formal diagnosis of ADHD. However, administering the SCID is a time-consuming process, especially when sample size goals include hundreds of participants. Thus, we developed an automated SCID survey in Qualtrics, allowing participants to complete the SCID on their own time and have the survey deliver a classification of "ADHD" or not to determine eligibility for a given research project. This paper will explore the use and validation of this automated version of the ADHD module of the SCID compared to practitioner-led SCIDs.

The influence of locus coeruleus and basal forebrain degeneration on arousal regulation

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Arousal regulation is vital for human behavior, aligning cognitive processes and peripheral functions with situational demands. The interplay between neuromodulatory systems, regulated by the locus coeruleus (LC) and basal forebrain nuclei (BF), plays a crucial role in balancing brain arousal. However, aging can lead to structural changes in these brain regions, potentially altering arousal regulation. Therefore, the primary objective of this study is to explore how age-associated structural changes in the LC and BF may drive interindividual differences in arousal regulation during rest. Additionally, we aim to assess the potential correlation between interindividual differences in arousal regulation and peripheral measures of arousal such as heart rate variability. We will use a subset of the population-based LIFE-Adult cohort (N = ~1,700, aged 60–80) who underwent a 20-minute resting state electroencephalography (EEG), 3T magnetic resonance imaging (MRI), and a 10-second electrocardiogram (ECG). The VIGALL 2.1 add-on for Brain Vision Analyzer will measure EEG-vigilance, and three outcome variables—mean vigilance, stability score, and slope index—will estimate average arousal level and dynamics. We hypothesize that structural degeneration in the LC and BF will result in imbalances in neuromodulatory systems, leading to impaired arousal regulation. This impairment may manifest as lower mean vigilance, reduced stability, and potentially altered slope index, indicating difficulties in maintaining wakefulness and flexibility. Moreover, we expect a correlation between interindividual differences in arousal regulation and peripheral measures such as heart rate variability. Understanding age-related structural changes and their impact on arousal regulation contributes to knowledge about the arousal system, with implications for researchers studying cognitive aging and interventions to mitigate cognitive decline in older individuals.

Neural dynamics of lip contour tracking in older adults

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A typical aspect of age-related hearing loss are problems in understanding speech, especially in noisy conditions. However, in many conversational settings listeners can draw on visual cues from the interlocutor's face to compensate for the degraded unimodal percept (i.e., auditory) to form a complete multimodal percept (i.e., audiovisual) and thus achieve successful comprehension. Numerous studies suggest the synchronization between cortical oscillations and temporal modulations of the acoustic speech signal (i.e., the amplitude envelope) to be a key step in the speech processing hierarchy—a process that has also been extensively studied in audiovisual speech perception. In this study, we investigate how cortical activity tracks information provided by a speaker's lip movements (i.e., the lip contour). For this purpose, a sample of 25 older adults (67–80 years) with varying degrees of hearing loss (6–51.6 dB HL) watched videos of a female speaker that were either presented in quiet surroundings or in the presence of background noise. Since the temporal envelope and lip movements overlap, we measured the alignment between participants' brain activity and the lip contour while partializing out the stimulus acoustics. Our results revealed that participants processed the lip contour more thoroughly when speech was presented in background noise. However, this effect was restricted to activity in delta (0.5–4 Hz) and not modulated by participants' hearing thresholds. This suggests that, when perception is equalized (i.e., speech comprehension did not differ as a function of hearing loss), hearing-impaired listeners do not seem to be more susceptible to information pro-vided by lip movements.

Cairn of care: Does the Pebbles App rock parenting and development?

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Introduction: Mobile phone interventions for parenting are rapidly gaining relevance, and studies have shown the positive effects of such applications on caregivers and their children. In the current project, we aim to investigate whether using a mobile developmental diary app for caregivers of children from 0 to 6 years of age (Pebbles App) is associated with changes in caregivers' knowledge, awareness of developmental status, parenting, and parental self-efficacy. Furthermore, we explore the possible effects of the Pebbles App on children's cognitive, social-emotional, and temperamental development.
Methods: We will track 600 caregivers and their children over a period of 18 months, beginning when the children are 12 months old. Three groups of 200 dyads each will be observed: one group will start using the Pebbles App when the children are 12 months old (intervention 1), another group will start at 18 months of age (intervention 2), and a third group will not use the app at all (control). All caregivers will complete online surveys when their children are 12, 18, 24, and 30 months old, assessing their developmental knowledge, awareness of the developmental status of their child, parenting behavior, mindful parenting, parental self-efficacy, and children's temperament. Additionally, data from the Pebbles App will be used to measure children's development.
Outlook: This study's findings may elucidate the Pebbles App's potential as an intervention tool, extending beyond its primary function as a developmental diary app. Furthermore, it could offer insights into the creation of analogous applications and illuminate the underlying mechanisms relevant to child development.

The role of beliefs about exhaustion for persistence in goal pursuit: The sample case of physical exercise

Beatrice Tărăpoancă, UZH
Advisor: Alexandra M. Freund

Beliefs play an important role for how people experience events, including their own actions. A plethora of motivational research has investigated the role of beliefs about one's abilities for performance and persistence in the face of negative feedback (e.g., Dweck & Yeager, 2019). In contrast, surprisingly little is known about the role of beliefs about exhaustion and their effects on motivation and behavior. We mainly differentiate between the belief that exhaustion is a signal of impending growth when continuing with a given activity ("push-through beliefs") and the belief that exhaustion indicates depleted resources that need to be recovered by disengaging from

the activity ("depletion beliefs").
Building on the motivational model of exhaustion and recovery emphasizing the impact of beliefs for the exprience of exhaustion and subsequent behavior (Schüttengruber & Freund, 2023), we hypothesize that, in contrast to depletion beliefs that should lead to a sooner disengagement, "push-through beliefs" lead to (i) experiencing less exhaustion, and (ii) a longer persistence in the activity.
I propose to test these hypotheses in an experiment manipulating beliefs about exhaustion through a meta-cognitive intervention suggesting that exhaustion can be both a sign of resource depletion or a signal impending growth. The experiment will use the sample case of physical exercise; participants will engage in an strenuous physical training, allowing to test if the induced beliefs affect subsequent exhaustion experience and persistence in further exercise. The same design could also be used with a cognitive task, allowing to test the generalizability.

Building a computational model of loneliness: Research plan and preliminary findings

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Loneliness is an urgent public health crisis. Research in cognitive, clinical, and social psychology, sociology, and network science has provided valuable insights into the mechanisms underlying loneliness. However, these fields typically conduct research in isolation and have historically used methods that are unlikely to adequately capture the complex biopsychosocial nature of loneliness. Computational modeling can be used to integrate hypotheses generated by different disciplines and rigorously test these theoretical predictions by formalizing them (i.e., representing them in the language of mathematics and/or computer code as opposed to words). For instance, predictions about the development of chronic loneliness can be expressed as computer code that represents people as interacting agents that exhibit dynamic changes in cognition as they interact and assess their social relationships in comparison to others'. Such a model can then be used to simulate data that mirrors real-world systems (e.g., a social network comprised of individual people). The model outcomes can be compared to available empirical findings to determine how well theories of loneliness can explain real-world observations, thereby allowing for the identification and correction of gaps in knowledge and theory. The aim of this project is to use computational modeling to formalize an integrated psychosocial theory of loneliness. We present preliminary work incorporating loneliness into a well-established generative network model, demonstrating that features of social networks associated with loneliness can be modeled computationally. We will also discuss plans to extend and improve upon this work by leveraging tools from agent-based modeling and differential equation modeling to construct a computational model that can account for how social threat perception and social network structure together produce chronic loneliness.

How do teacher-caring and sense of community influence adolescent development of cultural respect over middle school years?

Allison Rae Ward-Seidel, UVA
Co-Authors: Anna Wilkerson, Sara Rimm-Kaufman, & Lia Sandilos

Adolescence is a crucial time of identity and character skill development (National Academies of Sciences, Engineering, and Medicine, 2019). In this developmentally sensitive period, adolescents are primed to explore their own identities and understand who they are in relation to peers and their environment (Branje et al., 2021). School contexts can be supportive environments for students to develop crucial prosocial skills, such as respecting people from different cultures, identities, or backgrounds, when the school climate promotes positive social interactions and relationships (Rudasill et al., 2018). This exploratory study aims to answer the research question: To what extent is adolescent development of cultural respect related to their experience of (a) teacher caring and (b) sense of community over two years in middle school? This investigation is part of a larger quasi-experimental study, which sought to evaluate the Expeditionary Learning (EL) Education model for middle school, particularly students' ethical character development. Student participants were from nine schools in four US cities (n = 241; M_{age} = 11 years; M = 24 students in each school, range = 6–45). We conducted a longitudinal multilevel regression analysis to investigate adolescents' development of

cultural respect over time and the school contexts that support adolescents' cultural respect. Results indicate that students' self-reported cultural respect was influenced by their perceptions of teacher caring, however their development of cultural respect over time was not necessarily influenced by either (a) teacher caring nor (b) sense of belonging in the school community in this sample. Implications for promoting school conditions that support students' development of cultural respect are discussed.

The longer-term impacts of working memory testing

Kathy Xie, UM
Advisor: Patricia Reuter-Lorenz

Previous research from our lab has demonstrated that an opportunity for retrieval practice during a working memory (WM) recognition test can benefit associative episodic memory (EM) minutes later compared to mere WM re-exposure (Xie & Reuter-Lorenz, under revision). These results suggest that a testing effect can emerge for tests administered within the canonical capacity and temporal parameters of WM. However, in these studies EM was tested following a retention interval of 1–5 minutes (i.e., after completion of the initial study–test procedure). This interval was quite short compared to other studies of the testing effect, where memory is tested hours and days after the initial study episode (Karpicke, 2017). In addition, larger testing benefits arise for final tests administered after one day (Rowland, 2014). The current study assesses whether the observed WM testing advantage can lead to associative EM benefits after a 24-hour delay. Young adult participants will study word-pairs that will either be tested or restudied during the WM phase of our task. Then, associative EM for half of all learned pairs will be measured after a short retention interval of 1–5 minutes and associative EM for the remaining word-pairs will be measured after a long retention interval of 24 hours. We will present preliminary results comparing associative EM at short and long retention intervals between pairs re-studied or retrieved during WM. If results indicate a WM-testing benefit after longer delays, this provides further support that cognitive processes are shared between WM and EM and possibly highlights WM retrieval practice as a useful strategy for improving associative EM.

Winner of the

LIFE Outstanding Alumni Award 2023

Christopher R. Beam

UVA alumnus, now Assistant Professor of Psychology and Gerontology in the Department of Psychology, University of Southern California, Los Angeles, USA.

He will receive the award and give a lecture at the next LIFE academy.

Congratulations, Chris!

Selected Publications

Lynch, M., Arpawong, T. E., & **Beam, C. R.** (2023). Associations between longitudinal loneliness, DNA methylation age acceleration, and cognitive functioning. *Journals of Gerontology: Series B*. Advance online publication. https://doi.org/10.1093/geronb/gbad128

Beam, C. R., Pezzoli, P., Mendle, J., Burt, S. A., Neale, M. C., Boker, S. M., Keel, P. K., & Klump, K. L. (2022). How nonshared environmental factors come to correlate with heredity. *Development & Psychopathology, 34*(1), 321–333. https://doi.org/10.1017/S0954579420001017

Beam, C. R., Turkheimer, E., Finkel, D., Levine, M., Zandi, E., Guterbock, T, Giangrande, E. J., Ryan, L., Pasquenza, N., & Davis, D. W. (2020). Midlife study of the Louisville twins: Connecting cognitive development to biological and cognitive aging. *Behavior Genetics, 50*(2), 3–83. https://doi.org/10.1007/s10519-019-09983-6

10 Questions

Nina Knoll, Professor of Health Psychology at Freie Universität Berlin

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How did you get involved in health psychology?

When I pursued my Diploma degree at the Johannes Gutenberg-Universität Mainz during the 1990s, I had the good fortune to be part of one of the first health psychology programs in Germany. Heinz Walter Krohne, one of a team of four German professors who established health psychology as a psychological subdiscipline in Germany (during the late 1980s), developed the program. I also came to work for him as a student research assistant, gaining a deeper insight into one of the major research topics in health psychology, i.e., stress and coping.

Following this, I stuck with health psychology as I had the opportunity to study in a social and health psychology graduate program and work with Gerdi Weidner at the State University of New York at Stony Brook in the US. I then returned to Germany to work on my PhD as part of the graduate program (DFG-Graduiertenkolleg) "Psychiatry and Psychology of Aging,"[1] with Ralf Schwarzer, another pioneer of German health psychology, as my advisor at Freie Universität Berlin (FU).

Could you name books or articles that have profoundly influenced your own thinking about the field?

This is hard as there are so many. From the 1990s when I pursued my Diploma degree, various books and papers on anxiety, stress, and coping (e.g., Krohne, 1996; Schwarzer, 1993; Weidner & Collins, 1993) come to mind, as these topics were where I started in research.

While working on my dissertation, my field of interest expanded somewhat to include personality and coping (e.g., Aldwin & Yancura, 2004; Bolger, 1990; Bolger & Zuckerman, 1995; Carver et al., 1993; Folkman & Moskowitz, 2000; Lazarus & Folkman, 1987; McCrae & Costa, 1986) and of course gerontology (e.g., Baltes & Mayer, 1999; Heckhausen & Schulz, 1995; Staudinger & Fleeson, 1996; Tesch-Römer & Wahl, 1996).

Thereafter, and partly as a consequence of the research for my dissertation, I became interested in the social influences on health, starting out with social support. At the time, social support research had already been going on for decades and I often turned to the volume edited by Sarason, Sarason, and Pierce (1990), "Social support: An interactional view," a great resource for the classic theories. Also, a very good overview paper that I have gone back to ever since is one by Berkman et al. (2000) that provides a framework model on how social integration is connected to health and longevity. After turning to dyadic health behavior change, I especially valued the work by Karen Rook and colleagues (e.g., Rook, 2015; Rook & Ituarte, 1999) and Lynn Martire and colleagues (e.g., 2010). And then there are of course countless other papers by colleagues and collaborating international groups that I regularly come back to (e.g., Hagger & Luszczynska, 2015; Hoppmann & Gerstorf, 2015; Scholz et al., 2021; Schwarzer et al., 2011).

Which do you consider the two main current debates within the field?

The two hot topics I can come up with are probably not so much debates as they are shifts in focus in health psychology research. One concerns the establishment of taxonomies or even ontologies of behavior change techniques to streamline description and reporting of different components of behavior change interventions and to facilitate evidence synthesis on their effectiveness (Marques et al., 2023; Michie et al., 2013).

Another important change concerns the shift to more and more personalized interventions in health psychology that are tailored to an individual with changing needs and changing environments (just-in-time adaptive interventions, JITAIs). The idea is to support the individual's health behavior change by providing the right

1 *DFG-GRK 429: Psychiatry and Psychology of Aging:* This Berlin graduate school was established in 1998 by Margret M. Baltes (FU) and Hanfried Helmchen (FU), followed by Jacqui Smith (then MPIB) and Isabella Heuser (FU) as Speakers. In some respects, this school (1998–2007) can be regarded as a precursor of LIFE.

intensity and content of an intervention at just the right time (as opposed to fixed intervention schedules). The concept has been around for some time, but is gaining more and more momentum with increasingly able mobile and sensor technologies. The downside of such mobile-health (m-health) interventions are low intervention adherence (e.g., Nahum-Shani et al., 2018).

What research topics have been neglected or have not received enough attention so far?

In health psychology research, I would say that gender, sex, and diversity have been rather neglected so far. For example, when you look at sample characteristics in randomized controlled trials to evaluate interventions for health behavior change, samples are usually fairly highly educated, already have a high intention to change, and and are described along the lines of only a few major diversity dimensions. There are now earnest efforts to amend this in the future by the implementation of new funding and journal policies. For our own research, we will start using the Diversity Minimal Item Set (DiMIS) by Gertraud Stadler, head of the Gender in Medicine Institute of Charité – Universitätsmedizin Berlin, and colleagues (2023).

One of your foci is behavior change interventions in dyadic contexts. Can you tell us more about this?

When I got interested in health psychology I was working on the topic of stress and coping (Knoll et al., 2005; Krohne et al., 2002). As a result of some peripheral finding in my dissertation, I became more interested in social forms of coping, particularly in social support in couples dealing with health challenges (e.g., Knoll et al., 2007).

Also at about this time, colleagues and I began to think about dyadic health behavior change interventions (e.g., Burkert et al., 2005). Like many other researchers before us, my colleagues and I thought that some of the survival advantage of people who are socially integrated (e.g., living in happy relationships) must also be channeled through better health behavior (e.g., Berkman et al., 2000). At the same time, we noted that most of the health behavior change models and interventions were focusing on the individual rather than on social groups. As partners in romantic relationships tend to co-regulate their behavior, for instance by supporting and controlling each other (e.g., Rook, 2015; Rook & Ituarte, 1999), we sought to look at related, but more specific social exchange processes that might be harnessed in couple interventions.

Planning (also referred to as implementation intentions) received a lot of attention at the time and was mostly done individually (Gollwitzer, 1999; Hagger & Luszczynska, 2014). We then started to investigate dyadic planning (i.e., target person and partner plan target person's behavior change) in an illness rehabilitation context. We figured that if the partner assists the patient with prostate cancer in his planning to increase a rehabilitative exercise following the removal of the prostate, this—besides all the individual processes that have been observed to follow individual planning interventions—might have the additional benefit of higher-quality planning, more supportive, and possibly more controlling action of the partner (e.g. Burkert et al., 2011).

My colleagues and I have done some intervention and correlative research with dyadic planning now. One of the outcomes of the randomized controlled trials so far is that dyadic planning usually increases the hypothesized dyadic and individual volitional mechanisms of action (e.g., social support, sometimes social control, and action control), but is often not reliably associated with behavior change and possibly even counter-productive in couples with lower relationship quality (e.g., Burkert et al., 2011; Keller et al., 2020; Knoll et al., 2017). If at all, there are some positive results for dyads where one partner has to change a certain behavior due to a medical condition (Burkert et al., 2011; Kulis et al., 2022), but not for dyads where both partners want to change their behavior (Keller et al., 2020; Knoll et al., 2017). A very similar concept, collaborative planning (also referred to as collaborative implementation intentions), came up at about the same time (Prestwich et al., 2005). Here, both partners plan together when, where and how they want to change their behavior together, e.g. they plan together when, where, and how they will work out together. Interestingly, although this type of planning is much more resource-intense, there seem to be more consistent positive effects on behavior change (Prestwich et al, 2012; Szczuka et al., 2021).

How can your research be applied to everyday life?

One of the fun sides of doing research on (individual and dyadic) health-behavior change is that you can apply the strategies to all kinds of behavior change domains yourself, not only to health behavior. So, if I want to increase some preventive behavior, change some routines to save energy and water, or don't want to get distracted by my emails all the time, I usually start out by making relatively specific plans on when, where, and how I want to pursue my new goal, engage in action control, note mastery experiences and harness them to increase my self-efficacy (e.g., Schwarzer et al., 2011). Usually, I also let my close social network members know about my intentions to change, plan with them, seek advice and support, and thus renew my commitment. For me, this is often helpful when I start a new behavior, but maintenance is still hard work, especially if I get bored with some specific form of daily exercise I wanted to do or if I am tired and the emails keep coming.

What are you currently working on?

Over the years, dyadic health behavior change interventions have gained some momentum. Currently, I have the good fortune to be collaborating in a project that seeks to establish a compendium of different dyadic health behavior change techniques to take stock of what has been on the market so far (Di Maio et al., 2023).

Other than that, I am also working on individual health behavior change interventions, mostly focusing on increasing or at least maintaining everyday physical activity in persons with a medical condition (e.g., Lorbeer et al., 2023). These are usually older individuals and my lab and I often find that we have a lot to learn from lifespan psychology in terms of the framing of our intervention work (Ziegelmann & Knoll, 2015).

What do you get out of LIFE as a faculty member?

I enjoy the lectures and discussions with new Berlin fellows, getting to know them a bit better, and learning a lot of new things. Also, of course, the LIFE academies are spectacular and I wish I could participate more often.

What is the added value of LIFE's internationality?

There is a lot to gain from internationality and diversity, I think. Especially in an international learning context that provides such outstanding resources, exciting events, and excellent supervision opportunities as the LIFE program does. Both in terms of work and in terms of life, there is ample creativity, support, international networking, and last, but not least, global friendships to be gained from a highly international and diverse doctoral program such as LIFE. Of course, there is also work involved, including training to overcome language barriers or finding common denominators in the work one does, as LIFE is not only highly international, but also highly interdisciplinary.

How has the COVID pandemic changed the way you work?

For one, very early in the pandemic, my colleagues and I temporarily switched our favorite health behavior domains (e.g., physical activity, healthy eating) to hand washing (e.g., Luszczynska et al., 2022). Most of us are now back to our specialty domains, however.

I particularly like the new teaching formats the pandemic has brought, especially the flipped classroom format for some of the classes I teach. I prepare some input electronically and then use the time that I am with the students to discuss or work on classroom projects with them.

Now, I also work a bit more from home than I did before. However, since the pandemic I value and enjoy the time with my colleagues on site much more and also the time I spend with students in the classroom. For all the flexibility that working from home and some of the online teaching formats afford, it is different and precious to be face to face with people.

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Szczuka, Z., Kulis, E., Boberska, M., Banik, A., Kruk, M., Keller, J., Knoll, N., Scholz, U., Abraham, C., & Luszczynska, A. (2021). Can individual, dyadic, or collaborative planning reduce sedentary behavior? A randomized controlled trial. *Social Science & Medicine, 287,* Article 114336. https://doi.org/10.1016/j.socscimed.2021.114336

Tesch-Römer, C., & Wahl, H.-W. (1996). *Seh- und Höreinbußen älterer Menschen: Herausforderungen in Medizin, Psychologie und Rehabilitation* [Older people's visual and hearing impairments: Challenges in medicine, psychology, and rehabilitation]. Steinkopff Verlag.

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Ziegelmann, J. P., & Knoll, N. (2015). Future directions in the study of health behaviour among older adults. *Gerontology, 61*(5), 469–476. https://doi.org/10.1159/000369857

New LIFE Faculty in Charlottesville

Bethany A. Bell is an Associate Professor at UVA's School of Education and Human Development with a primary faculty appointment in the Research, Statistics, and Evaluation Program. She is also a faculty affiliate with the Youth and Social Innovation undergraduate program. Prior to joining UVA, she was at the University of South Carolina, first at the College of Education then at the College of Social Work. Before graduate school and the academy, she worked with multiple community agencies, with a commitment towards improving people's lives; first as an AmeriCorps member where she worked in HIV education, prevention, and testing and later as the inaugural director of the Oklahoma Caring Vans Program. These experiences combined with her commitment to working on teams, across disciplines, are what led her to earning a self-created, dual-disciplined PhD in Community and Family Health and Educational Research, Measurement, and Evaluation. Her research is driven by two overarching goals: to increase the accessibility of advanced statistical techniques and research methodologies for applied social science scholars and to address critical health and education outcomes by collaborating with public health and education scholars, using a team science approach. She has over 100 publications, developed and co-edited a multilevel modeling textbook, and has been a co-investigator on nine federally funded grants, including four NIH-funded R01s. Currently her primary scholarly focus is on her forthcoming handbook, *Handbook of research methods and methodologies for the social sciences*, which will be published in 2024. She is on several editorial boards including the *Journal of Early Intervention* and the *Journal of School Psychology* and has held multiple elected and appointed positions within the American Educational Research Association.

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Key publications

Bell, B. A., Taylor, S., Roberts, A., Shi, D., Burgess, K., Hough, C., & Flory, K. (2023). Factor structure of the Teacher Strengths and Difficulties Questionnaire in a large community-based sample: An investigation of alternative measurement models. *Assessment*. Advance online publication. https://doi.org/10.1177/10731911231157627

O'Connell, A., McCoach, B., & Bell, B. A. (Eds.). (2022). *Multilevel modeling methods with introductory and advanced applications*. Information Age Publishing.

Bell, B. A., Morgan, G. B., Schoeneberger, J. A., Kromrey, J. D., & Ferron, J. M. (2014). How low can you go? An investigation of the influence of sample size and model complexity on point and interval estimates in two-level linear models. *Methodology, 10*(1), 1–11. https://doi.org/10.1027/1614-2241/a000062

Jamie Jirout is a developmental scientist studying children's curiosity and other intellectual character virtues, and playful learning and cognitive development more generally. She is especially interested in understanding the role curiosity plays – or could play – in education. Curiosity is a natural motivator for learning, but there is a lot unknown about it. On the learning side, she and her team study the potential benefits of curious learning. Curious learning is related to better memory of what is learned and motivation for information seeking, and she is trying to identify what happens in the learning process that leads to those benefits and how learning experiences can promote curiosity in lab-based studies. On the education side, she is interested in understanding how teachers can promote curiosity and how different instructional practices relate to learners' curiosity, creativity, open-mindedness, academic courage, and critical thinking. To do this, Jamie's research team is partnering with educators to assess the impact of different instructional practices on both self-report and direct measures in 2nd and 3rd grade children across a school year. In addition to studying traditional public-school models, she is also exploring different educational philosophies, such as Montessori and Reggio Emilia, and other virtues that might be important

for curiosity such as intellectual humility. Jamie's work extends into higher education, where she engages in Scholarship of Teaching and Learning (SoTL) research to explore college students' curiosity, identity and belonging, and motivation and how these relate to engagement in different STEM learning experiences. Jamie and her team are very grateful to the Templeton Foundation, the Jacobs Foundation, and the National Science Foundation for supporting this research.

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Project website: CuriosityinClassrooms.com

Key publications

Evans, N. S., Burke, R., Vitiello, V., Zumbrunn, S., & Jirout, J. J. (2023). Curiosity in classrooms: An examination of curiosity promotion and suppression in preschool math and science classrooms. *Thinking Skills and Creativity, 49,* Article 101333. https://doi.org/10.1016/j.tsc.2023.101333

Jirout, J. J., Ruzek, E., Vitiello, V. E., Whittaker, J., & Pianta, R. C. (2023). The association between and development of school enjoyment and general knowledge. *Child Development, 94*(2), e119–e127. https://doi.org/10.1111/cdev.13878

Jirout, J., & Klahr, D. (2012). Children's scientific curiosity: In search of an operational definition of an elusive concept. *Developmental Review, 32*(2), 125–160. https://doi.org/10.1016/j.dr.2012.04.002

Gail E. Lovette is an experienced reading specialist, school leader, and teacher. She is currently an Assistant Professor in the online Ed.D. program in Curriculum and Instruction at the School of Education and Human Development at UVA. During the 2021–2022 school year, she served as an elementary reading specialist in a public school in Charlottesville, Virginia. She teaches courses in translating educational research into practice and identifying problems of practice within educational contexts, and she engages in research around effective instructional practices for all students. She works with school districts around the country in implementing effective literacy assessment, instruction, and interventions.

From 2016–2021, Lovette was an Assistant Professor, Research Faculty at UVA. She served as the Director of Turnaround Projects and led partnerships funded through federal School Improvement Grants between the department of Curriculum, Instruction, and Special Education at UVA and several priority identified elementary schools across Virginia. The focus of these partnerships included: building instructional and leadership capacity in literacy and numeracy development and instruction, improving school and classroom climate, and developing collaborative leadership structures with the goal of sustainably increasing student achievement. Additionally, she was core faculty on the Supporting Transformative Autism grant from 2018–2021. Before moving to Charlottesville in 2010, Lovette was a teacher and administrator for over a decade in Title 1 public schools in Virginia and holds current Virginia licensure as a K-12 school administrator, Reading Specialist, ESOL teacher, and K-6 elementary teacher.

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Key publications

McLucas, A. S., Wilson, S. E., Lovette, G. E., & Therrien, W. J. (2023). Lead exposure in children: What special educators need to know. *Teaching Exceptional Children, 55*(6), 412–421. https://doi.org/10.1177/00400599211054867

Doabler, C. T., Therrien, W. J., Longhi, M. A., Roberts, G., Hess, K. E., Maddox, S. A., Uy, J., Benson, S., Lovette, G. E., VanUitert, V. J., Powell, S. R., Sampson, V. S., & Toprac, P. (2021). Efficacy of a second-grade science program: Increasing science outcomes for all students. *Remedial and Special Education, 42*(3), 140–154. https://doi.org/10.1177/0741932521989091

Lovette, G. E. (2013). Reading preparation of secondary ELA teachers: A U.S. survey of state licensure requirements. *Journal of Adolescent and Adult Literacy, 57*(3), 193–203. https://doi.org/10.1002/JAAL.222

Michael Lyons is an Associate Professor in the School of Education and Human Development. He the program director for the combined Clinical and School Psychology doctoral program at the University of Virginia and a licensed clinical psychologist (in the Commonwealth of Virginia) and a Nationally Certified School Psychologist. He is interested in how to expand the capacity of communities to address mental health needs

among K-12 students in the United States (ages 6-18). There are two strands to his scholarship. First (1), Dr. Lyons studies how to expand the capacity of school staff to implement schoolwide strategies for promoting positive mental health. He is currently conducting a randomized controlled trial, funded by the National Institute of Mental Health, across three US states to test the effects of online coaching as a means for increasing school staff capacity to address mental and behavioral health needs of middle school students (ages 11-14). This study expands on his prior research showing promising effects of telementoring as an implementation support (see Lyons et al., 2023) Second (2), Dr. Lyons studies how paraprofessional and volunteer workers can positive mental and behavioral health outcomes of middle school students. He is particularly interested in best practices in youth mentoring programs (in which adult volunteers are matched with youth) that promote positive developmental outcomes of youth (Lyons & McQuillin, 2021; Lyons et al., 2019).

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Key publications

Lyons, M. D., Taylor, J., Zeanah, K., Downey, S., & Zabek, F. (2023). Short-term impact of telementoring on school staff engagement, knowledge, and attitudes for evidence-based school mental health care. *Child and Youth Care Forum, 52*(1), 65–84. https://doi.org/10.1007/s10566-022-09673-1

Lyons, M. D. & McQuillin, S. D. (2021). It's not a bug, it's a feature: Evaluating mentoring programs with heterogeneous activities. *Child and Youth Care Forum, 50*(6), 1131–1145. https://doi.org/10.1007/s10566-021-09609-1

Lyons, M. D., McQuillin, S. D., & Henderson, L. (2019). Finding the sweet spot: Investigating the effects of relationship closeness and instrumental activities in school-based mentoring. *American Journal of Community Psychology, 63,* 88–98. https://doi.org/10.1002/ajcp.12283

Jacob Resch is originally from Spirit Lake, Iowa. He completed his undergraduate degrees in athletic training and health promotions at South Dakota State University before traveling to study and work in London, England. After returning to the United States, he completed his master's in Exercise and Sport Science at South Dakota State University while working clinically for the Orthopedic Institute in Sioux Falls, South Dakota. He then pursued his doctorate in Exercise Science at the University of Georgia where he investigated current and novel clinical measures of sport concussion, and he became increasingly involved with the international expansion of the athletic training profession. In 2010, he joined the faculty of the University of Texas at Arlington where he taught within the athletic training education program and conducted research addressing sport concussion in middle school, high school, and collegiate athletes. In 2014, he joined the Department of Kinesiology faculty at UVA. The focus of his research is to investigate the reliability and validity of current and emerging clinical biosignals of concussion in athletes and military personnel. He is the Co-Principal investigator of the LIMBIC Military and Tactical Athlete Research Study and several additional studies designed to identify an efficient and cost-effective measures of sport concussion that may be used across all levels of sport, the clinical setting, and the military.

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Key publications

Neumann, K. D., Seshradi, V., Thompson, X. D., Broshek, D. K., Druzgal, J., Massey, J. C., Newman, B., Reyes, J., Simpson, S. R., McCauley, K. S., Patrie, J., Stone, J. R., Kundu, B. K., & Resch, J. E. (2023). Microglial activation persists beyond clinical recovery following sport concussion in collegiate athletes. *Frontiers in Neurology, 14,* Article 1127708. https://doi.org/10.3389/fneur.2023.1127708

Thompson, X. D., Erdman, N. K., Walton, S. L., Broshek, D. K., & Resch, J. E. (2021) Reevaluating clinical assessment outcomes after unrestricted return to play following sport-related concussion. *Brain Injury, 10*(35), 1577–1584. https://doi.org/10.1080/02699052.2021.1975818

Resch, J. E., Brown, C. N., Schmidt, J., Macciocchi, S. N., Blueitt, D., Cullum, C. M., & Ferrara, M. S. (2016). The sensitivity and specificity of clinical measures of sport concussion: Three tests are better than

one. *British Medical Journal Open Sport & Exercise Medicine, 2*(1), Article e000012. https://doi.org/10.1136/bmjsem-2015-000012

Sara Rimm-Kaufman, the Commonwealth Professor of Education at the University of Virginia, received her PhD in Developmental Psychology and has spent more than two decades conducting research on how schools and classrooms create a context for the development of children, youth, and teachers. Her work examines the naturally occurring variation in classrooms as well as the effects of interventions on teacher and student experiences and outcomes. In doing so, her research considers the diversity present in schools, respects the challenges that teachers face every day, and recognizes the complexity of school improvement.

She and her team have received numerous grants from the National Science Foundation, the Institute of Education Sciences, and private foundations (e.g., Carnegie, Templeton) and have authored more than 100 chapters, articles, blogs, and websites. She also serves in a research advisory capacity for the World Bank Group, EL Education, New Schools Venture Fund, and other organizations. She is a fellow of the American Psychological Association (Division 7 and 15) and American Psychological Science.

One of her great passions is doctoral and post-doctoral training. She has directed the Virginia Education Science Training (VEST) doctoral training program since 2004 and has directed the VEST post-doctoral training program since 2008 – both programs are funded by the Institute of Education Sciences, the funding arm of the U.S. Department of Education. Given this interest, she is particularly excited about engaging with the LIFE program. Sara Rimm-Kaufman advises master's and doctoral students in the Educational Psychology–Applied Developmental Science program. In addition, she teaches undergraduate courses in learning and development, educational psychology, and social development. Most recently, she has assumed the role of Department Chair for the Department of Education Leadership, Foundations, and Policy in the UVA School of Education and Human Development.

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Key publications

Rimm-Kaufman, S. E., Strambler, M. J., & Schonert-Reichl, K. A. (2023). *Social and emotional learning in action: Creating systemic change in schools.* Guilford Press.

Soland, J., Rimm-Kaufman, S. E., Kuhfeld, M. & Ventura-Abbas, N. (2022). Empirical benchmarks for social and emotional skills. *Child Development, 93*(4), 1129–1144. https://doi.org/10.1111/cdev.13741

Rimm-Kaufman, S. E., Merritt, E. G., Lapan, C., DeCoster, J., Hunt, A. & Bowers, N. (2021). Can service-learning boost science achievement, civic engagement, and social skills?: A randomized controlled trial of Connect Science. *Journal of Applied Developmental Psychology, 74,* Article 101236. https://doi.org/10.1016/j.appdev.2020.101236

Jim Soland is an Assistant Professor of Research, Statistics, and Evaluation at the University of Virginia School of Education and Human Development, as well as an Affiliated Research Fellow at NWEA, an assessment nonprofit. His research is situated at the intersection of educational measurement, practice, and policy. Particular areas of emphasis include understanding how measurement decisions impact our understanding of how students develop academically and socio-emotionally, as well as what programs best support that development. Prior to joining the University of Virginia, Jim completed a doctorate in Educational Psychology at Stanford University with a concentration in measurement. Jim has also served as a classroom teacher, a policy analyst at the RAND Corporation, and Senior Policy Analyst at the Legislative Analyst's Office (LAO) in California.

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Key publications

Kuhfeld, M., & Soland, J. (2022). Avoiding bias from sum scores in growth estimates: An examination of IRT-based approaches to scoring longitudinal survey responses. *Psychological Methods, 27*(2), 234–260. https://doi.org/10.1037/met0000367

Soland, J., Kuhfeld, M., & Edwards, K. (2022). How scoring decisions can affect results from com-

mon study designs: A trip through the IRT looking glass. *Psychological Methods.* Advance online publication. https://doi.org/10.1037/met0000506

Soland, J., & Thum, Y. M. (2022). Estimating and comparing growth using longitudinal interim achievement data with seasonal trends. *Journal of Research on Educational Effectiveness, 15*(3), 635–654. https://doi.org/10.1080/19345747.2021.2018744

Virginia (Ginny) Vitiello is a Research Associate Professor at the UVA School of Education and Human Development. She earned her PhD in developmental psychology at the University of Miami in Florida and did a postdoctoral fellowship at UVA. She then spent four years working at Teachstone, LLC as their research director, helping to translate research on teacher–child interactions into practice-based solutions for large and small public preschool programs. She returned to UVA to continue pursuing research. Ginny studies classroom environments, teacher–child interactions, child by classroom "fit," self-regulation, and differentiated instruction. She works on externally-funded research projects and big state contracts that aim to improve early childhood development in Virginia and beyond.

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Key publications

Vitiello, V. E., Nguyen, T., Ruzek, E., Pianta, R. C., & Whittaker, J. V. (2022). Differences between Pre-K and Kindergarten classroom experiences: Do they predict children's social-emotional skills and self-regulation across the transition to kindergarten? *Early Childhood Research Quarterly, 59,* 287–299. https://doi.org/10.1016/j.ecresq.2021.11.009

Vitiello, V. E., & Greenfield, D. B. (2017). Executive functions and approaches to learning in predicting school readiness. *Journal of Applied Developmental Psychology, 53,* 1–9. https://doi.org/10.1016/j.appdev.2017.08.004

Vitiello, V. E., Booren, L. M., Downer, J. T., & Williford, A. P. (2012). Variation in children's classroom engagement throughout a day in preschool: Relations to classroom and child factors. *Early Childhood Research Quarterly, 27*(2), 210–220. https://doi.org/10.1016/j.ecresq.2011.08.005

New LIFE Fellows in Berlin, Charlottesville, & Zurich

Vera Valentina Bocklet. I am a PhD student at the Chair of Individual Differences and Assessment at the University of Zurich. Under the supervision of Wiebke Bleidorn, I am aiming to investigate the causes and mechanisms of change in neuroticism and related personality constructs. Before joining the field of Individual Differences and Assessment, I had a strong focus on statistics and methodology during my Bachelor's and even more so during my Master's studies. I am looking forward to gaining valuable insight through the LIFE program into both lifespan development and the current methods to model and analyze it.

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Kenn Dela Cruz. I am a Developmental Psychology doctoral student working with Tobias Grossmann in the UVA Babylab. I am interested in questions around how we come to understand our own emotions and those of others. More broadly, my research interests focus on the interplay of emotion and cognition across the lifespan within the individual while considering the systems that surround them. Outside of my program, I enjoy running, photography, and graphic design.

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Deniz Främke. My academic trajectory includes a B.Sc. In Psychology at the University of Hamburg and a Research Master in Cognitive and Clinical Neuroscience in Maastricht. My path was guided by my strong interest on how interindividual differences in cognitive abilities and neuronal or molecular correlates are associated with environmental factors. Therefore I joined the Max Planck Research Group Biosocial - Biology, Social Disparities, and Development after finishing my masters thesis.
In my doctoral work, I am exploring how cognitive development and educational attainments are influenced by the synergistic interplay between genetic variation and childhood socioeconomic inequalities. Applying my strong background in psychological data science I will rely on large cohort data sets that include genetic and epigenetic information (eg. German Socioeconomic Panel, TwinLife or the Texas Twin Project). By incorporating new genomic tools, like polygenic scores and DNA-Methylation profiles into classical developmental methods I want to inform human development and reveal pathways of the intergenerational transmission of socioeconomic inequalities.

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Sarah Grünthal. I am a doctoral student in Educational Science at the University of Potsdam. Since April 2022, I have been working as a teaching and research assistant at Martin Brunner's chair for Quantitive Methods in Educational Science and started work on my PhD under his and Hanna Dumont's supervision. My doctoral research focuses on the question of the origins of educational inequalities. In my dissertation I am currently examining the relation between students' socioeconomic status (SES) and their academic motivation meta-analytically using Integrative Data Analysis. I also plan to investigate the stability of SES effects on students' academic motivation over the course of educational trajectories and the extent to which their SES equally affects high-achieving and low-achieving students. The results of these analyses will provide important insights and may point to specific mechanisms by which social inequalities are related to inequalities in students' academic motivation. While working as an educator from 2013 to 2016, I realized that I wanted to change and develop professionally. With the goal of working in social sciences in the future, I began my bachelor's degree in Educational Science and Sociology

at the University of Potsdam in 2016. I completed my master's degree in Educational Science at the University of Potsdam in 2022.

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Elena Isenberg. I am a predoctoral student in the Lise Meitner Group for Environmental Neuroscience at the MPIB under the supervision of Simone Kühn. I received my bachelor's in psychology from McGill University in Montreal, followed by my master's in social, cognitive, and affective neuroscience from Freie Universität Berlin. In my master's, I investigated the effect of preconceived notions about different environments on rumination and network connectivity, and whether trait mindfulness moderated this effect. My research interests broadly lie in investigating multiple facets of the positive impacts of nature: when in the lifespan do these positive effects appear, who is most susceptible to them, in which contexts are they replicable, what sensory modalities are driving the effects, and how we can leverage this effect to improve well-being on a large scale.

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Linda Kerbl. I am a doctoral student at the Center for Adaptive Rationality (ARC) at the MPIB under the supervision of Ralph Hertwig. My research focusses on the development of adaptive learning and information-seeking strategies using both behavioral and computational methods. I received my bachelor's degree in Psychology from the Humboldt-Universität zu Berlin and my master's degree in Social, Cognitive, and Affective Neuroscience from Freie Universität Berlin. In my master's thesis, I investigated the longitudinal development of reinforcement learning in early childhood.

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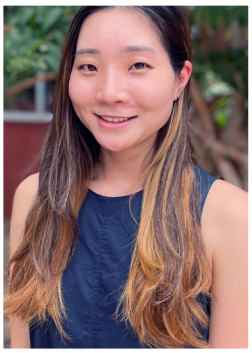
Minah Kim. I am a doctoral student in Cognitive Psychology at the University of Virginia, working with James Morris and Jessica Connelly. My research examines how changes in social support among aging adults relate to resting state brain networks and epigenetic markers. I am also exploring the relationship between maternal speech patterns and infant development. Alongside my doctoral studies, I earned a Masters in Data Science from the University of Virginia, where I constructed models that use RNA splice junction profiles to classify tissue types. Prior to graduate school, I was a research fellow at the Yale Child Study Center and Seattle Children's Research Institute with Frederick Shic. I hold a B.A. in Psychology from Macalester College.



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Analia Marzarotti. I am a PhD student working with Tanya Evans in the Educational Psychology- Applied Developmental Science program at the University of Virginia. My research centers on examining how specific differences in children's early environments associated with their socioeconomic status (SES) may affect patterns in their brain activity, cognitive strategies, and learning processes in the context of their education. My goal is to use biological insights produced using methods including magnetic resonance imaging (MRI), electroencephalography (EEG), and epigenetic analysis to promote instructional and home-based practices that better support children's learning based on their diverse needs. Part of my dissertation work is also aimed at developing novel methods for studying SES more catered to direct intervention compared with current standards. I graduated from the University of Texas at Dallas in 2021 with a B.S. in Neuroscience and Psychology. There, I worked in a lab that used EEG to study language learning among typically developing children with varying linguistic and socioeconomic backgrounds.

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Tydings McClary. I am a predoctoral fellow at the Center for Lifespan Psychology at the Max Planck Institute for Human Development in Berlin within the RHYME group (Supervisor: Markus

Werkle-Berger). My research deals with understanding the mechanisms by which generalization is achieved, which memory aspects play a role in this, and how generalization abilities develop in early stages of life. Additionally, I am interested in the computational foundations of these abilities to better understand how various forms of generalization are related. I received my BSc in Biology and then continued to study Social, Cognitive, and Affective Neuroscience, both at Freie Universität Berlin. In my master thesis, I investigated the development of memory generalization in childhood at MPIB under the supervision of Zoe Ngo.

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Julian Ockelman. I am a PhD student at the University of Zurich, as part of Nathalie Giroud's research group "Computational Neuroscience of Speech & Hearing." I am mainly interested in the interplay of cognitive ability and sensory performance and how they are reflected within the human brain. The focus of my primary PhD project lies upon the topics of auditory cognitive training, neural and cognitive underpinnings of hearing, alongside speech-in-noise comprehension. Specifically, my project is an industry collaboration with the hearing-aid provider Sonova AG and aims to co-develop and evaluate an auditory cognitive training protocol for older adults with hearing loss. I perceive appropriately constructed cognitive training as a great way to potentially slow down cognitive decline during the aging process, hence posing a contribution towards a healthier aging trajectory. In a side-project, I am further developing an open-access and open-source test toolbox for working memory capacity in Python.

I finished my Master of Science in Psychology at UZH, with my thesis project revolving around the role of working memory for speech-in-noise comprehension in older adults with tinnitus. Previously, I had finished my Bachelor of Science back in Frankfurt am Main alongside another experimental thesis project on psychophysiological anxiety markers and their influence on IQ test performance.

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Agata Patyczek. I am a PhD fellow at the Mind-Body-Emotion research group, located at both the Max Planck Dahlem Campus of Cognition in Berlin and the Max Planck Institute for Human Cognitive and Brain Sciences in Leipzig. My work is supervised by Arno Villringer and Michael Gaebler. My research interests include the study of neuromodulatory systems in the context of mind-brain-body interaction. I completed a degree in Neuroscience at the University of Glasgow followed by a MSc in Cognitive Science at the University of Vienna. In my master's thesis, I focused on the effects of acute stress on functional network interactions using resting-state fMRI data and connectome gradient analysis. My PhD research will concentrate on the interplay between the noradrenergic system, arousal, and aging.

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Sofia Scatolin. I am a PhD candidate in Developmental Neuroscience at the Jacobs Center for Productive Youth Development. Under the supervision of Nora Raschle, our research team is investigating the intergenerational transfer of socioemotional skills. To achieve this, we employ a comprehensive approach, collecting neuroimaging (MRI), physiological, and behavioral data across entire family units. I am particularly interested in the interactions between the brain and heart during socioemotional experiences, particularly focusing on how these dynamics are shaped by intergenerational transfer. Prior to my doctoral studies, I pursued a Bachelor's degree in Psychology in Brazil, where I am from, followed by a Research Master's in Behavioral Science at Radboud University in the Netherlands.

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Emma Toner. I am a PhD candidate in Clinical Psychology at the University of Virginia working with Bethany Teachman. My research leverages tools from complex systems science to understand and address psychological problems like anxiety and loneliness. I am particularly interested in using real-time data collection methods (e.g., ecological momentary assessment; passive physiological sensing) and computational modeling to examine how these problems develop and are sustained over time. My dissertation will use agent-based and differential equation modeling to formally evaluate hypotheses derived from psychological and social theories about how loneliness develops and becomes chronic. Through the LIFE Program, I am excited to gain essential training in advanced computational techniques for modeling dynamic interactions between factors at different levels of analysis that contribute to mental disorders.

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Allison Rae Ward-Seidel. I am an Institute of Education Sciences fellow in my third year of a PhD program in Education Psychology and Applied Developmental Science at UVA. I study identity development, specifically sociopolitical and ethnic-racial identity, and critical consciousness development among adolescents and pre-service teachers with aims toward social justice in education. Current research includes a randomized control trial evaluation of a schoolwide program focused on restorative practices, racial equity, and social emotional learning with Morningside Center for Teaching Social Responsibility and a mixed methods study of the EL Education model focused on students' sociopolitical development and meaningful school experiences. I earned my B.S. and M.A.T in Early Childhood Education from the University of Arkansas and earned my M.Ed. in Human Development and Psychology from the Harvard Graduate School of Education. I taught first and fourth grades for 5 years in a Title I public school in Springdale, Arkansas and 1 year in a charter school in Dallas, Texas. Though I love teaching, I returned to graduate school to study critical consciousness in teacher preparation and adolescent development, including sociopolitical development and a commitment to social justice.

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LIFE-Related Publications

These include all recent articles reported by *LIFE fellows* as well as selected work by *LIFE alumni*. See also https://www.imprs-life.mpg.de/publications. If your work is missing, please let us know!

Beltzer, M. L., **Daniel, K. E.**, Daros, A. R., & **Teachman, B. A.** (2023). Changes in learning from social feedback after web-based interpretation bias modification: Secondary analysis of a digital mental health intervention among individuals with high social anxiety symptoms. *JMIR Human Factors, 7,* Article e44888. https://doi.org/10.2196/44888

Bermudez, T., **Maercker, A.**, **Bierbauer, W.**, Bernardo, A., Fleisch-Silvestri, R., Hermann, M., Schmid, J. P., & Scholz, U. (2023). The role of daily adjustment disorder, depression and anxiety symptoms for the physical activity of cardiac patients. *Psychological Medicine, 53*(13), 5992–6001. https://doi.org/10.1017/S0033291722003154

Bower, J. E., & **Kuhlman, K. R.** (2023). Psychoneuroimmunology: An introduction to immune-to-brain communication and its implications for clinical psychology. *Annual Review of Clinical Psychology, 19,* 331–359. https://doi.org/10.1146/annurev-clinpsy-080621-045153

Cabiró, M. P., **Sudimac, S.**, Stobbe, E., & **Kühn, S.** (2023). Urbanization is positively associated with global perceptual style. *Journal of Environmental Psychology, 91,* Article 102100. https://doi.org/10.1016/j.jenvp.2023.102100

Daniel, K. E., **Moulder, R. G.**, **Teachman, B. A.**, & **Boker, S. M.** (2023). Stability and spread: A novel method for quantifying transitions within multivariate binary timeseries data. *Behavior Research Methods, 55*(6), 2960–2978. https://doi.org/10.3758/s13428-022-01942-0

Fua, K.*, **Daniel, K. E.***, **Werntz, A.**, Doss, B., Lawrence, E., & **Teachman, B. T.** (2023). Development and validation of the Flexibility in Partner Perspectives Scale. *Contemporary Family Therapy, 45*(4), 410–424. https://doi.org/10.1007/s10591-022-09653-6

Ganesan, K., Smid, C. R., Thompson, A., **Buchberger, E. S.**, Spowage, J., Iqbal, S., Phillips, H., & Steinbeis, N. (2023). Examining mechanisms of childhood cognitive control. *Journal of Cognition, 6*(1), Article 50. https://doi.org/10.5334/joc.314

Geers, M. (2023). Linking lab and field research. *Nature Reviews Psychology, 2,* 458. https://doi.org/10.1038/s44159-023-00215-7

Geers, M., Swire-Thompson, B., Lorenz-Spreen, P., Herzog, S. M., Kozyreva, A., & **Hertwig, R.** (2023). The Online Misinformation Engagement Framework. *Current Opinion in Psychology*. Advance online publication. https://doi.org/10.1016/j.copsyc.2023.101739

Hasl, A., **Voelkle, M.**, **Driver, C.**, Kretschmann, J., & **Brunner, M.** (2023). Leveraging observation timing variability to understand intervention effects in panel studies: An empirical illustration and simulation study. *Structural Equation Modeling*. Advance online publication. https://doi.org/10.1080/10705511.2023.2224515

Kottwitz, A., Monkediek, B., Klatzka, C. H., Hufer-Thamm, A., & Hildebrandt, J. (2023). Genetic and environmental contributions to the subjective burden of social isolation during the COVID-19 pandemic. *BMC Psychology, 11*(1), Article 134. https://doi.org/10.1186/s40359-023-01174-7

Krämer, M. D., van Scheppingen, M. A., **Chopik, W. J.**, & **Richter, D.** (2023). The transition to grandparenthood: No consistent evidence for change in the Big Five personality traits and life satisfaction. European *Journal of Personality, 37*(5), 560–586. https://doi.org/10.1177/08902070221118443

Kuhlman, K. R., Cole, S. W., Irwin, M. R., Craske, M. G., Fuligni, A. J., & Bower, J. E. (2023). The role of early life adversity and inflammation in stress-induced change in reward and risk processes among adolescents. *Brain, Behavior, and Immunity, 109,* 78–88. https://doi.org/10.1016/j.bbi.2023.01.004

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*Shared first-authorship.

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Luo, M. X., **Moulder, R. G.**, Breitfelder, L. K., & **Röcke, C.** (2023). Daily activity diversity and daily working memory in community-dwelling older adults. *Neuropsychology, 37*(2), 181–193. https://doi.org/10.1037/neu0000878

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Marzoratti, A., Liu, M. E., Krol, K. M., Sjobeck, G. R., Lipscomb, D. J., **Hofkens, T. L.**, **Boker, S. M.**, Pelphrey, K. A., **Connelly, J. J.**, & **Evans, T. M.** (2023). Epigenetic modification of the oxytocin receptor gene is associated with child-parent neural synchrony during competition. *Developmental Cognitive Neuroscience, 63,* Article 101302. https://doi.org/10.1016/j.dcn.2023.101302

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Moersdorf, L., **Freund, A. M.**, & **Daum, M. M.** (2023). What do you focus on? An investigation of goal focus from childhood to old age. *Psychological Research, 87*(7), 2120–2137. https://doi.org/10.1007/s00426-023-01804-0

Oppermann, E., & **Lazarides, R.** (2023). The interplay of gender with social and migrant background in the development of elementary school students' interest in mathematics and language arts. *Learning and Individual Differences, 106,* Article 102324. https://doi.org/10.1016/j.lindif.2023.102324

Orzek, J. H., Arnold, M., & **Voelkle, M. C.** (2023). Striving for sparsity: On exact and approximate solutions in regularized structural equation models. *Structural Equation Modeling, 30*(6), 956–973. https://doi.org/10.1080/10705511.2023.2189070

Partee, A., **Dela Cruz, K. L.**, & UVA CASTL (2023). *Early Childhood Mental Health Consultation (EC-MHC) Executive Summary*. University of Virginia Center for Advanced Study of Teaching and Learning, Virginia Department of Education.

Pauley, C., Kobelt, M., **Werkle-Bergner, M.**, & **Sander, M. C.** (2023). Age differences in neural distinctiveness during memory encoding, retrieval, and reinstatement. *Cerebral Cortex, 33*(16), 9489–9503. https://doi.org/10.1093/cercor/bhad219

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Taggart, J., Wheeler, L. B., & **Dela Cruz, K. L.** (in press). Supporting faculty with SoTL through an intensive SoTL scholars program. *New Directions for Teaching and Learning.*

Tighe, L. A., & **Davis-Kean, P. E.** (2023). Economic hardship trajectories of college-educated families living in or near poverty: Assessing predictors and outcomes. *Family Relations*. Advance online publication. https://doi.org/10.1111/fare.12938

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Zuber, S., **Bechtiger, L.**, Bodelet, J. S., Golin, M., **Heumann, J.**, Kim, J. H., Klee, M., Mur, J., Noll, J., Voll, S., O'Keefe, P., Steinhoff, A., **Zölitz, U.**, Muniz-Terrera, G., **Shanahan, L.**, **Shanahan, M. J.**, & Hofer, S. M. (2023). An integrative approach for the analysis of risk and health across the life course: challenges, innovations, and opportunities for life course research. *Discover Social Science and Health, 3,* Article 14. https://doi.org/10.1007/s44155-023-00044-2

LIFE News

- The Fall Academy 2023 was hosted by the Jacobs Center for Productive Youth Development and the Department of Psychology, UZH, from November 14 to 17 and co-organized by Fellow Speakers *Sabrina Beck* and *Michelle Loher*.
- The Spring Academy 2024 will take place at UVA from May 27 (arrival) to May 31, 2024.
- LIFE Berlin will host the Fall Academy from October 13 to 16, 2024 at MPIB.
- LIFE now posts on *BlueSky* under @imprs-life.bsky.social. Please follow us and let us know about news you'd like to have posted. We have discontinued our use of X (previously Twitter).

Exchanges

- UZH fellow *Jasmin Brummer* visited *Patti Reuter-Lorenz*'s lab at UM from mid-September to November 2023.
- HU fellow *Urmimala Ghose* spent a six-week research stay with *Jacqui Smith* at UM.

LIFE Berlin

- *Deniz Främke*, *Elena Isenberg*, *Linda Kerbl*, *Tydings McClary*, and *Agata Patyczek* have joined LIFE Berlin as fellows (see pp. 39ff. for more information).
- *Dilara Zorbek* and *Svenja Hascher* have taken over from *Warsha Barde* and *Marlene Hecht* as Fellow Speakers.
- *Imke Kruse* and *Julia Delius* at LIFE Berlin are beginning work on a proposal to the Max Planck Society to extend LIFE permanently. We will need your help and would be grateful if you could assist us by responding promptly!
- MPIB alumna *Elisa Buchberger* and fellow *Sonja Sudimac* received a grant for a cross-group collaboration from the Max Planck Dahlem Campus of Cognition for their project Umwelt-COMIC. This cross-group collaborative effort will combine a longitudinal investigation of memory development and maturational processes in the brain across childhood (the COMIC study – Charting the Ontogeny of Memory Processes in Childhood) with an assessment of physical characteristics of the environment in which children grow up (e.g., greenness, air pollution etc.). This data will provide crucial insights on the relationship between environmental factors and memory development and will advance our understanding of how the environment shapes development early in life on both a behavioral and neural level.
- DIW fellow *Elisa Buchinger* successfully defended her dissertation entitled "Life Goals Across Adulthood and Old Age: Associations With Personality and Well-Being" at FU in November.
- HU fellow *Jannik Orzek* submitted his dissertation entitled "Regularization Strategies for Extended Structural Equation Models" in August and will defend it in January. He has taken up a position with Factworks, an international market research company with offices in Berlin and Silicon Valley.

- The Berlin LIFE seminar in the winter semester is on "Research Designs in Developmental Research" and is being organized by LIFE faculty *Doug Garrett*. The speakers are *Andreas Brandmaier* (Medical School Berlin & MPIB), *Paolo Ghisletta* (Université de Genève), *Ellen Hamaker* (Utrecht University), as well as LIFE faculty *Steve Boker* (UVA), *Annette Brose* (FU), *Doug Garrett* (MPIB), *Denis Gerstorf* (HU), *Ulman Lindenberger* (MPIB), and *Manuel Völkle* (HU).

LIFE Michigan

- Faculty *Toni Antonucci* received the Distinguished Lifetime Career Award from the Society for the Study of Human Development
- Together with *Kristine Ajrouch*, LIFE faculty *Toni Antonucci* and *Laura Zahodne* (MPI = Multiple Principal Investigators) were awarded an NIH grant at Michigan Center for Contextual Factors in Alzheimer's Disease (MCCFAD).
- Fellow *Blake Ebright* passed his dissertation proposal defense.
- LIFE founder at UM, *Jacquelynne Eccles*, now University of California, Irvine School of Education Distinguished Professor, has been ranked as one of the top scientists in the field of psychology in the world. The academic research platform Research.com ranked her No. 28 globally, and No. 11 in the US.
- Faculty *Shinobu Kitayama* received the APS William James Fellow Award as well as the Society for Personality and Social Psychology (SPSP) Ambady Award for Mentoring Excellence. He was also named the recipient of the SPSP Daniel M. Wegner Theoretical Innovation Prize. According to SPSP, the Prize honors the author of an "article or book chapter judged to provide the most innovative theoretical contribution to personality and social psychology within a given year." Kitayama won the prize based on his work:

  Kitayama, S., Salvador, C. E., Nanakdewa, K., Rossmaier, A., San Martin, A., & Savani, K. (2022). Varieties of interdependence and the emergence of the Modern West: Toward the globalizing of psychology. *American Psychologist, 77*(9), 991–1006. https://doi.org/10.1037/amp0001073
- Fellow *Wilson Merrell*'s defense of his thesis entitled "Conspicuous Experiences as Unique Signals of Both Status and Warmth" is coming up soon. He will start a postdoc with *Lotte Thomsen* and *Jennifer Sheehy-Skeffington* at the Center for Experimental and Philosophical Study of Discrimination at Aarhus University, Denmark, in January.
- Faculty *Thad Polk* received the Distinguished Faculty Achievement Award, which honors senior faculty who consistently have demonstrated outstanding achievements in areas of scholarly research or creative endeavors, teaching and mentoring of students and junior colleagues, service and other activities.

LIFE Virginia

- *Bethany Bell*, *Jamie Jirout*, *Gail Lovette*, *Michael Lyons*, *Jacob Resch*, *Sarah Rimm-Kaufman*, *Jim Soland*, and *Virginia (Ginny) Vitiello* have joined the LIFE faculty (see introductions on pp. 34ff.).
- *Savannah Adams* has taken over from *Rita Hu* and joins *Kathy Xie* as Fellow Speaker.
- Alumna *Riana Elyse Anderson* is now an Associate Professor at Columbia University's School of Social Work. She is also one of the W. E. B. Du Bois Research Institute Fellows at the Hutchins Center for African & African American Research at Harvard University in 2023/24. During the fellowship period, she aims to develop a book prospectus "Reparation of the Mind: Healing from Racial Pain."
- Alumnus *Christopher Beam* received the LIFE Outstanding Alumni Award 2023 (see p. 27).
- Fellow *Meghan Costello* was awarded a NIH K12 Postdoc Fellowship at Massachusetts General Hospital/Harvard Medical School focused on intervention and prevention of substance use and addiction in adolescents and young adults.
- Fellow *Kenn Dela Cruz* was accepted to the Virginia Education Sciences Training program (VEST) 2-year fellowship at UVA.
- Fellow *Lee LeBoeuf* passed her dissertation proposal .
- Alumnus *Matt Lerner* has taken up a position as Associate Professor and Life Course Outcomes Program Leader at the AJ Drexel Autism Institute in Philadelphia. He has also been elected Treasurer & Member of the Board of Directors of the International Society for Autism Research.
- Fellows *Analia Marzoratti* and *Emma Toner* passed their comprehensive exams.

- Fellow *Isabelle Moore* has been awarded the Ruth L. Kirchstein National Research Service Award Individual Predoctoral Fellowship through the National Institute of Aging for her project "The contribution of semantic bias to false memory in healthy aging."
- Alumna *Meltem Yucel*, now postdoc at Duke University, has received the SAGE Emerging Scholar Award from the Society for Personality and Social Psychology.

LIFE Zurich

- *Vera Valentina Bocklet, Sofia Scatolin,* and *Julian Ockelmann* have joined LIFE Zurich as new fellows.
- *Julian Ockelman* has taken over as Fellow Speaker from *Sabrina Beck* and joins *Michelle Loher* in this role.
- Fellow *Plamina Dimanova* has successfully defended her thesis entitled "The Corticolimbic Brain Circuitry and its Association to Well-Being: Current Perspectives and Intergenerational Evidence." She will continue her work at UZH as a postdoc.
- Alumna *Tabea Meier* has returned to the Department of Psychology and Healthy Longevity Center at UZH from Northwestern University, now working as a postdoc with *Mike Martin*. She also received the Vontobel Award for Aging Research for her manuscript (under review) entitled "When I am sixty-four... Evaluating language markers of well-being in healthy aging narratives."
- Faculty *Nora Raschle* has been selected as a FENS-Kavli Scholar, joining the FENS-Kavli Network of Excellence, a dynamic and prestigious network of 30 outstanding early to mid-career European neuroscientists.
- Fellow *Raffael Schmitt* successfully defended his thesis entitled "Neural Dynamics of Speech Perception in Age-Related Hearing Loss" in October. He has now started an internship with a Swiss hearing aid company.
- Alumna *Elisa Weber* was awarded the Margret and Baltes Dissertation Award by the Developmental Psychology section of the German Psychological Society (DGPs). She recently started a postdoc working with *Guy Bodenmann*, Professor for Clinical Psychology for Children/Adolescents and Couples/Families at UZH.

Frequently used acronyms in LIFE

CRTD: Center for Regenerative Therapies Dresden

DIW: Deutsches Institut für Wirtschaftsforschung [German Institute for Economic Research]

DZA: Deutsches Zentrum für Altersfragen [German Centre of Gerontology]

DZNE: Deutsches Zentrum für Neurodegenerative Erkrankungen Dresden [German Center for Neurodegenerative Diseases]

FU: Freie Universität Berlin

HU: Humboldt-Universität zu Berlin

LIFE: International Max Planck Research School on the Life Course

MPIB: Max-Planck-Institut für Bildungsforschung [Max Planck Institute for Human Development]

UM: University of Michigan

UVA: University of Virginia

UZH: University of Zurich

LIFE Newsletter

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Aim of the newsletter
The LIFE newsletter encourages collaboration and interaction among people within the LIFE program. It provides an information platform where fellows, alumni, and faculty members can learn more about each other's research, and identify colleagues with similar interests and possible projects for collaboration.

Contributions
Please send contributions, suggestions, and input to the editor.

Publishing information
The LIFE newsletter is published three times a year as a PDF document and sent to LIFE members only.

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