

## Celebrating 25 Years of IMPRS

Dear alumni, students, friends, and colleagues,

This year marked the 25<sup>th</sup> Anniversary of our International Max Planck Research School (IMPRS) for Molecular Biology and its twin program in Neurosciences. From September 12–14, we hosted the largest and most memorable reunion in our programs' history, for which our University President fondly noted a remarkably high "hugging coefficient." Heartfelt thanks to everyone who shared memories, delivered inspiring talks, and enriched the celebrations with beautiful music, as well as to the more than 500 participants who joined us on this special journey.

For the pioneering cohort of students, founding faculty, and coordinator Steffen Burkhardt, who devoted much of his professional life to the program, this milestone was deeply personal. For later cohorts, the event marked the 10<sup>th</sup>, 15<sup>th</sup>, or 20<sup>th</sup> anniversaries of their admission or graduation.

The celebrations opened with a keynote by Nobel Laureate Randy Schekman, followed by the Anniversary Ceremony with University President Axel Schölmerich, UMG Board Spokesperson Wolfgang Brück, Lower Saxony Minister Falko Mohrs, and Max Planck

Society President Patrick Cramer. They paid tribute to the MolBio founders, Kurt von Figura, Gerhard Braus, Tomas Pieler, Reinhard Jahn, and Neuroscience colleagues Diethelm Richter, Erwin Neher, Walter Stühmer, and Detlev Schild.



Marina Rodnina, who has successfully led and shaped the IMPRS for Molecular Biology since 2013 through numerous external reviews, accreditations, the COVID pan-

demic, and other challenges, represented the program alongside Nils Brose, IMPRS Neurosciences speaker, as well alumni and PhD representatives from both programs. The event was a colorful, cheerful and entertaining celebration, enhanced by wonderful musical contributions of the MPI-NAT Choir, featuring students, faculty, and staff.

On the second day, the Alumni Career Forum showcased more than 150 alumni sharing their career journeys, giving visionary talks, and discussing the challenges facing the next generation of scientist. The evening program featured personal reflections by Reinhard Jahn, Steffen Burkhardt, Georg Hafner, and Jayeeta Basu, musical performances by Aybeg Günenc and Varsha Ramakrishna, entertaining newcomer introductions, and an interactive quiz by Eduardo Cienfuegos Pecina.

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The celebrations concluded with an Alumni Networking Brunch, sparking plans for a MolBio/Neuro alumni association and regional chapters (discover what MANGO stands for on page 36 of this newsletter). Overall, the 25<sup>th</sup> Anniversary reminded us of the remarkable network our alumni are part of and the lasting impact of their time in Göttingen. The programs' success over more than two decades is a testament to visionary founders and the passionate, collaborative spirit of all involved.

Enjoy contributions on our joint MolBio/Neuro MSc and PhD retreats, the annual Master's graduation, newcomer experience, alumni mentoring reflections, personal stories from our alumni, and a collection of anniversary photos on the back cover.

With the newly emerging activities of our alumni association and regional chapters, our unique and ever-growing network is reaching a new level of connection. We look forward to welcoming you to upcoming annual alumni reunions on our campus.

Peter Rehling, Marina Rodnina, Steffen Burkhardt

# Mitotic Prophase Prolongation by PLK1 inhibition

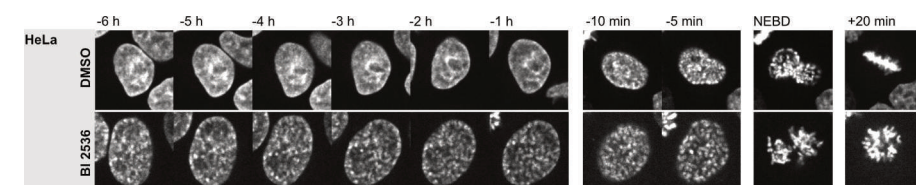
Prolonged prophase allows quantitative phosphoproteomics of a rather inaccessible mitotic stage

A seemingly simple event lies at the core of life: one cell becoming two. Errors in any step of this process can have severe consequences, underlying diseases such as cancer. For this reason, cells employ a tight spatiotemporal regulation through an intricate network of molecular checkpoints and signaling pathways, leading to a defined sequence of stages known as the cell cycle, through which cells divide. DNA replication occurs during S phase, followed by a preparatory growth phase (G2), and mitosis (M phase).

A critical step of mitosis is mitotic entry, when cells completely switch their morphology to accommodate division. This switch is powered through a massive wave of phosphorylations that occur as a result of the activity of different mitotic kinases. Known as the master mitotic kinase, Cyclin-dependent-kinase 1 (CDK1), is already present in G2; however, it is kept inactive via two inhibitory phosphate groups (Cmcec & Hochegger, 2019).

During mitotic entry, another mitotic kinase, Polo-like-kinase 1 (PLK1), activates CDC25, a phosphatase which dephosphorylates CDK1 and thereby

activates it (Gheghiani et al., 2017). CDK1 then phosphorylates different substrates, leading to different events in a timely ordered manner, such as chromosome condensation, spindle assembly, cellular rounding up, and the major and irreversible event of nuclear envelope breakdown (NEBD), signaling mitotic entry.



**Fig. 1:** Montages showing exemplary control and BI 2536-treated HeLa cells stained with 5-SiR-Hoechst and undergoing chromosome condensation. Time is relative to NEBD.

Despite the critical importance of mitotic entry, many questions remain open regarding the precise mechanisms governing it. To a large part, this is due to the fact that this dramatic transition occurs in a very short time and therefore its intermediate states are nearly impossible to access experimentally.

In our study published in the EMBO Journal (Gobran et al., 2025), we addressed this challenge by inhibiting PLK1 in S phase-synchronized mammalian cells using a potent small molecule inhibitor, BI 2536 (Steegmaier et al., 2007). Similar to earlier

studies (Lénárt et al., 2007), in all cell lines investigated, we could confirm that PLK1 inhibition causes a delay in mitotic entry, with an increasing fraction of cells failing to enter mitosis at higher concentrations of BI 2536.

To understand the reason behind this delay, we investigated CDK1 activity

changes during the delay using a FRET-based CDK activity sensor in single living cells. In control cells, CDK1 activation was abrupt, rising sharply shortly before NEBD. In contrast, PLK1-inhibited cells showed a rather slow and gradual increase in CDK1 activity over several hours. This was mirrored by Cyclin B1 accumulation in the nucleus: an event that only happened over a few minutes during prophase in control cells and instead occurred slowly and gradually over hours in PLK1-inhibited cells. Notably, despite CDK1 low activity, cells began to display hallmark features of

## Mitotic Prophase Prolongation by PLK1 inhibition (continued)

prophase: chromosomes progressively condensed (Fig. 1), microtubule dynamics increased, and the actin cortex reorganized as cells attempted to round up. We therefore named this phenotype *prolonged prophase*.

*Prolonged prophase* provided a unique opportunity to examine early mitotic events at the molecular level. Taking advantage of this phenotype using quantitative phosphoproteomics, we could uncover a distinct and limited set of phosphorylation events on proteins involved in chromatin organization, nuclear architecture, and cytoskeletal remodeling, well before the massive phosphorylation wave that accompanies NEBD and perfectly matching the observed changes in cellular architecture.

Together, our findings offer a novel model to study prophase and access an otherwise inaccessible transient stage of early mitosis, before CDK1 is fully activated and the nuclear envelope disassembles. Although this is a major step in our understanding of mitotic entry dynamics, we are still far from a complete understanding of the sequence of events leading up to mitotic entry, how their durations are determined, and how they depend on one another.

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**Monica Gobran** completed her doctoral research in September 2025 in the group of Peter Lénárt at the Max Planck Institute for Multidisciplinary Sciences, where she currently works as a postdoctoral researcher.

These results were published in Gobran M, Politi AZ, Welp L, Jakobi J, Urlaub H, Lénárt P (2025) PLK1 inhibition delays mitotic entry revealing changes to the phosphoproteome of mammalian cells early in division. EMBO J 44(7), 1891–1920



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## Protein prosthesis compensates for loss of elbow in tRNAs

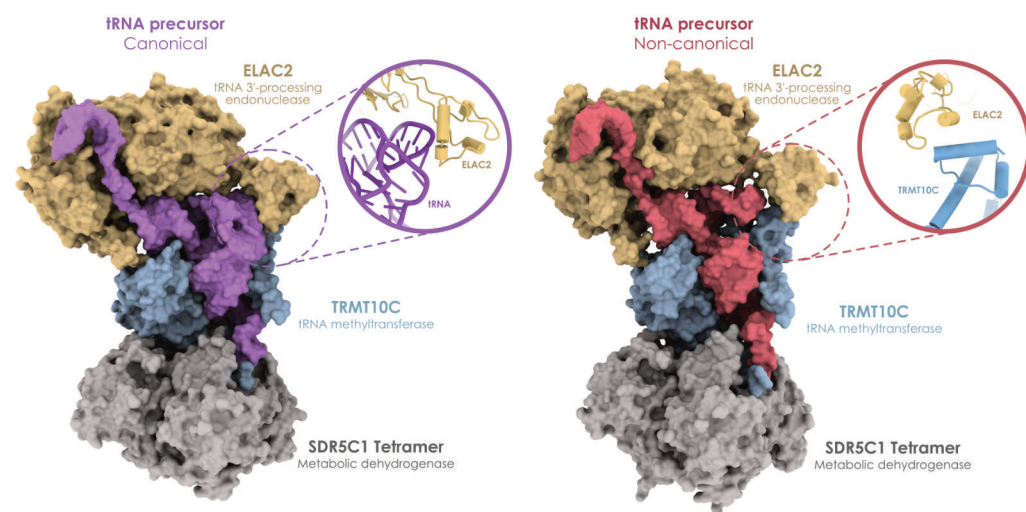
For life on earth, transfer RNAs (tRNAs) are the translators of information to function: these adapter molecules translate nucleotide sequences into amino acid sequences, thereby giving rise to proteins of various functions. Due to this essential function, tRNAs—as well as the mechanisms of tRNA interaction and recognition by tRNA interactors—are extraordinarily well conserved amongst all forms of life.

The tRNAs encoded in animal mitochondrial genomes (mt-tRNAs) are, however, a unique exception. These highly diverse tRNAs have lost many sequential and structural elements which

are otherwise universally conserved in tRNAs. For example, these tRNAs show very little conservation of the so-called “tRNA elbow” region—an extremely conserved tertiary structural element that is utilized for tRNA recognition by several tRNA interactors, including tRNA maturation enzymes, aminoacyl-tRNA synthetase and the ribosome. In this work, we were interested in understanding how these “degenerated” tRNA lacking the canonical elbow are recognized by mitochondrial tRNA interactors.

Our work was focused on the mechanism of mt-tRNA maturation by human

ribonuclease Z (ELAC2), the enzyme responsible for maturing the 3' ends of both mitochondrial and nuclear tRNAs. Ribonuclease Z enzymes are found in all domains of life and recognize their substrate tRNA by a common mechanism: a flexible arm recognizes and binds the conserved tRNA elbow, which positions of the nuclease active site about 66 Å away, precisely near the 3' cleavage site of the tRNA—a “molecular ruler” mechanism. The tRNAs containing a canonical tRNA elbow could conceivably be recognized and processed by ELAC2 via the same mechanism; but what about the mitochondrial tRNAs that lack the elbow?



**Fig. 1: Mechanism of tRNA recognition by ELAC2 for tRNAs with canonical (left) vs non-canonical (right) elbows.** Recognition of canonical elbows depends on direct recognition of the tRNA elbow structure, while recognition of tRNAs with non-canonical elbows requires interactions between ELAC2 and TRMT10C.

## Protein prosthesis compensates for loss of elbow in tRNAs (continued)

Previous work had suggested that ELAC2 required a tRNA m1R9 methyltransferase complex (TRMT10C–SDR5C1) for processing of mt-tRNAs. First, we corroborated these findings. Then, by artificially mutating the tRNA elbow, we showed that ELAC2 required TRMT10C–SDR5C1 only to process tRNAs that lack a canonical elbow; for tRNAs with canonical elbows, ELAC2 was self-sufficient. Ergo, TRMT10C–SDR5C1 specifically compensated for the loss of elbow in tRNAs for 3' maturation by ELAC2.

Next, to understand how TRMT10C–SDR5C1 compensates for the loss of tRNA elbow for 3' processing, we *in vitro* reconstituted two complexes of ELAC2, TRMT10C–SDR5C1 and tRNA with either canonical or non-canonical elbow, and determined their structures using cryo-electron microscopy. Comparison of the two structures revealed distinct mechanisms of substrate recognition for tRNAs with canonical and non-canonical elbows. Canonical elbows of tRNAs are recognized by the ELAC2 flexible arm in the “classical” manner.

Contrastingly, for the tRNAs with non-canonical elbows, tRNA recognition is primarily carried out by TRMT10C via extensive interactions with the tRNA in a global shape-selective and sequence-

nonspecific manner. Meanwhile, the N-terminal globular domain of TRMT10C is positioned near the non-canonical tRNA elbow and interacts with ELAC2 flexible arm in lieu of the canonical elbow. Stabilization of ELAC2 flexible arm by TRMT10C N-terminal domain allows the positioning of ELAC2 active site near the 3' cleavage site.

Thus, we discovered that TRMT10C—and particularly its N-terminal domain—function as a direct compensatory solution to the problem of tRNA elbow degeneration for 3' maturation of human mt-tRNAs. Interestingly, we had previously observed a similar compensatory role of TRMT10C in 5' maturation of mt-tRNAs, and some evidence in the literature further suggests

a similar facilitatory role of TRMT10C in other steps of tRNA maturation. Moreover, emergence of TRMT10C appears to exactly coincide with the onset of widespread mt-tRNA degeneration in animals. Taken together, it appears that TRMT10C–SDR5C1 may have evolved as a general compensatory solution for several tRNA interactors to the problem of tRNA elbow degeneration in animal mitochondria.

**Arjun Bhatta** completed his doctoral research in August 2024 in the group of Hauke Hillen at the University Medical Center Göttingen, where he currently works as a postdoctoral researcher.

These results were published in Bhatta A, Kuhle B, Yu RD, Spanaus L, Ditter K, Bohnsack KE, Hillen HS (2025) Molecular basis of human nuclear and mitochondrial tRNA 3' processing. *Nat Struct Mol Biol* 32(4), 613-624



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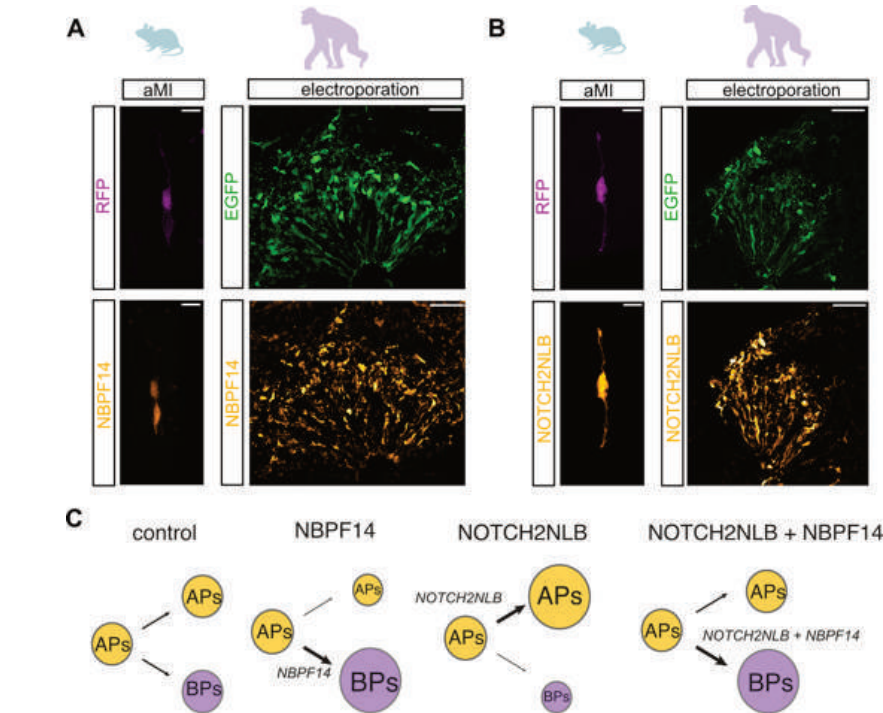
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# A Genetic Duet Behind Human Brain Expansion

The neocortex is the most recently evolved part of the brain and is responsible for higher cognitive functions. During evolution, it has undergone remarkable expansion, reaching its greatest size and complexity in humans. This evolutionary expansion is thought to underlie our exceptional cognitive abilities. Its basis is established during fetal development and is primarily driven by the proliferation and differentiation of cortical neural stem and progenitor cells (cNPCs). In the developing neocortex, two main types of cNPCs can be distinguished: apical progenitors (APs) and basal progenitors (BPs). During development, BPs are generated from APs through a process called delamination and serve as the main source of neurons in the human neocortex.

Recent studies have identified several genes that are preferentially expressed in these progenitors and have uniquely evolved in humans. These “human-specific genes” are therefore strong candidates for driving neocortex expansion. Among them, *NOTCH2NLB* has been shown to promote the self-renewal of APs by activating the Notch signaling pathway, thereby increasing AP abundance in the developing neocortex. Interestingly, *NOTCH2NLB* is located



**Fig. 1: (A-B)** Immunofluorescence for NBPF14 (A) and NOTCH2NLB (B) (orange) together with RFP (magenta, left) or EGFP (green, right) after automated mRNA microinjection (aMI) into single APs of embryonic mouse neocortex and after plasmid electroporation in chimpanzee cerebral organoids. Scale bars, 10  $\mu$ m (left) and 50  $\mu$ m (right). **(C)** Effects of NBPF14, NOTCH2NLB, and their co-expression on AP (yellow) and BP (purple) pool sizes relative to control.

adjacent to another human-specific gene, *NBPF14*. While the molecular function of NBPF14 has remained unknown, it belongs to *NBPF* gene family, which is greatly expanded in primates, and its signature domain has been associated with brain size.

Furthermore, *NOTCH2NLB* and *NBPF14* have been proposed to have co-evolved and to be co-expressed in APs, raising the question whether they may act together to regulate neocortical development.

## A Genetic Duet Behind Brain Expansion (continued)

To investigate potential functional interactions between *NOTCH2NLB* and *NBPF14* during cortical development, we combined two complementary approaches: automated microinjection of APs in embryonic mouse neocortex and electroporation of APs in chimpanzee cerebral organoids. In these models, we expressed *NOTCH2NLB* and *NBPF14* individually and in combination and analyzed the effects on progenitor populations. Consistent with previous studies, our results confirmed that *NOTCH2NLB* increases the number of APs without affecting BPs. We further showed that this effect is mediated by enhanced AP mitosis. In contrast, *NBPF14* promoted the delamination of APs and led to an increased abundance of a specific BP subtype, basal radial glia (bRG), which are known to be key progenitors for neocortical expansion. These findings indicate that the two human-specific genes exert distinct effects on the cell fate of APs during cortical development.

To elucidate how NBPF14 promotes AP delamination at the cellular level, we examined the orientation of the mitotic cleavage plane, a key determinant of whether APs continue proliferating or delaminate to generate BPs. Vertical orientation of cleavage plane is typically

associated with proliferation, whereas horizontal and oblique orientations result in delamination. Strikingly, *NBPF14* expression led to increased oblique and horizontal cleavage planes of APs, suggesting that *NBPF14* induces delamination by modulating cleavage plane orientation during mitosis.

A prerequisite for neocortex expansion is maintaining a larger progenitor pool capable of giving rise to a greater number of neurons. Expression of *NOTCH2NLB* and *NBPF14* individually expanded the AP and BP pools, respectively. However, this expansion of one progenitor type occurred at the expense of the other, ultimately leading to a smaller overall progenitor pool. In

contrast, co-expression of the genes resulted in an expanded BP pool and maintained AP pool, generating a larger combined progenitor population that could support neocortex expansion.

Together, our findings propose a model in which two human-specific genes act in concert to regulate progenitor abundance in the developing neocortex. Importantly, our work highlights the importance of combinatory approaches when studying human-specific gene function and provides a framework for future studies to uncover complex molecular mechanisms that makes human brain unique.

**Nesil Esiyok** completed her doctoral research in May 2025 in the groups of Rüdiger Behr and Michael Heide at the German Primate Center. She currently works as a postdoctoral researcher in the group of Michael Heide.



These results were published in Esiyok N, Liutikaite N, Haffner C, Peters J, Heide S, Oegema CE, Huttner WB, Heide M (2025) A dyad of human-specific NBPF14 and NOTCH2NLB orchestrates cortical progenitor abundance crucial for human neocortex expansion. *Sci Adv* 11(13), eads7543

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# A Novel Strategy to Resist Antibiotics

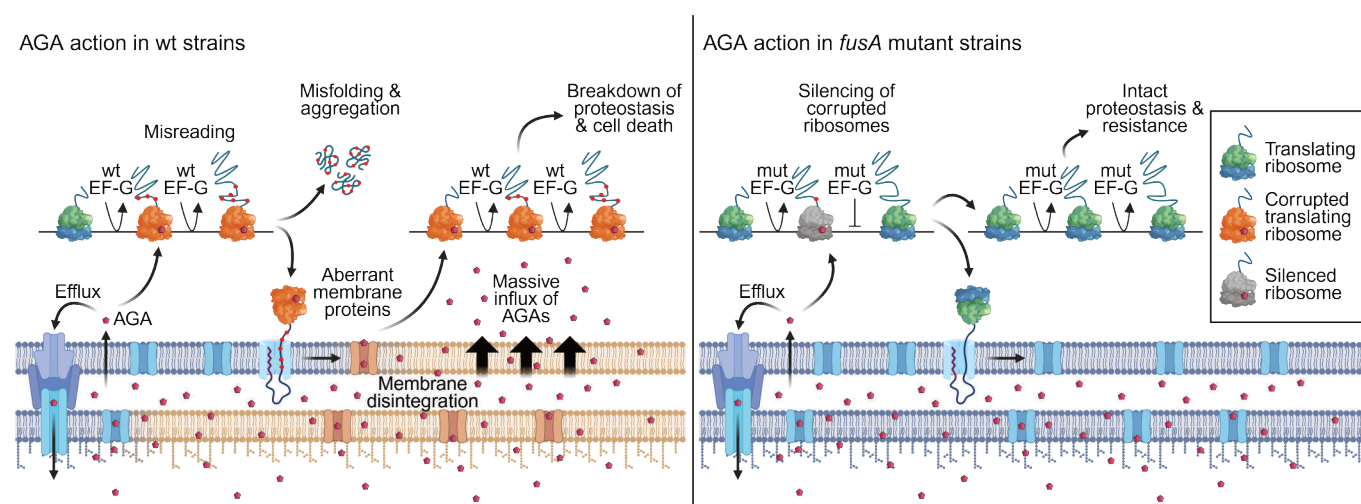
Antibiotic-resistant infections are rising and now rank as a major leading cause of mortality worldwide. Aminoglycosides (AGA) are ribosome-targeting antibiotics that lower the fidelity and speed of bacterial protein synthesis. They promote mRNA misreading by stabilizing an error-prone ribosomal conformation, causing incorrect amino acids to be incorporated into the nascent peptide chain. Importantly, these corrupted ribosomes can keep translating, which promotes repeated mistakes in peptide sequence—

so-called error clusters, or consecutive amino acid substitutions. Consequently, aberrant proteins intensify proteotoxic stress, driving proteostasis collapse and loss of inner membrane integrity. Membrane disintegration then accelerates the uptake of hydrophilic AGA molecules, resulting in increased intracellular accumulation.

To protect themselves from the bactericidal effect of AGA, many clinically relevant pathogens have evolved

resistance, often via mutations in the *fusA* gene. *fusA* encodes elongation factor G (EF-G), the GTPase that drives mRNA-tRNA translocation during elongation. Despite the prevalence of AGA-resistant *fusA* mutations in multiple pathogenic bacteria, the underlying resistance mechanism has remained unclear.

To investigate how *fusA* mutations confer AGA resistance, we constructed *E. coli* strains carrying chromosomal *fusA* mutations in the MG1655 background.



**Fig. 1: Model of AGA resistance in *fusA* mutants.** Left panel: AGA action in wt strains. Early during treatment, traces of AGA molecules reach the cytoplasm, where they bind a few ribosomes and corrupt translation. Corrupted ribosomes produce aberrant cytosolic and membrane proteins, destabilizing the membrane and triggering self-promoted massive AGA influx, culminating in cell death. Right panel: AGA action in *fusA* mutant strains. In contrast to wt cells, the resistant EF-G variant selectively silences AGA-bound ribosomes until the drug dissociates, lowering the error burden. This preserves membrane integrity, prevents self-promoted AGA uptake, and maintains proteostasis, collectively enabling AGA resistance. Created in BioRender (<https://BioRender.com/shb0fhv>).

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## A novel strategy to resist antibiotics (continued)

All three mutant strains exhibited high-level resistance to multiple AGA antibiotics, including kanamycin, apramycin, sisomicin, and gentamicin. We first asked whether *fusA* mutations might confer resistance via adaptive mechanisms — for example, by inducing resistance proteins.

To assess the impact of the *fusA* mutations on the proteome, we performed a large-scale proteomic analysis and compared the proteomes of the three mutant strains during exponential and stationary growth phases. The *fusA* mutants did not show altered expression of proteins directly linked to AGA resistance (such as multidrug efflux pumps). Overall, the proteomic changes induced by the mutants were minimal, insufficient to account for resistance. The preservation of proteomic integrity in the *fusA* mutants ruled out indirect, adaptive resistance mechanisms and suggested a direct role for the EF-G variant. Because EF-G is crucial for the translocation step during protein synthesis, we next analyzed the effect of the mutations on translocation.

Using purified EF-G variants, translocation rates were measured *in vitro*. Surprisingly, translocation was severely slowed down by the variants only on AGA-bound ribosomes, whereas drug-free ribosomes were hardly affected. To obtain a more comprehensive understanding, we

examined the effect of the variants on AGA-bound ribosomes *in vivo* by comparing AGA-induced misreading in mutant and wildtype (wt) cells. For our analysis, we quantified AGA-induced amino acid substitutions (single errors and error clusters) in elongation factor Tu (EF-Tu), the most abundant protein in *E. coli*. In addition to single errors, a severe reduction in error cluster formation was observed in AGA-treated mutant cells.

Notably, the reduction in error cluster formation indicated that *fusA* mutations slow AGA-bound ribosomes long enough for the AGA to dissociate before the ribosome completes multiple elongation cycles, effectively silencing corrupted ribosomes before they generate extensive error clusters. Consequently, proteostasis

and inner membrane integrity were preserved in the mutant cells, which prevented further self-promoted uptake of AGA molecules (Figure 1), leading to resistance.

In summary, we identified a conceptually new class of resistance mechanism in which drug-corrupted ribosomes are selectively silenced, limiting toxic downstream effects, while translation on antibiotic-free ribosomes remains largely intact, allowing cells to survive. Our findings point to a new paradigm for antibiotic resistance in which the *kinetics of translation* — rather than drug exclusion or modification — play a central role in mitigating antibiotic damage.

**Nilanjan Ghosh Dastidar** completed his doctoral research in December 2025 in the department of Marina Rodnina at the Max Planck Institute for Multidisciplinary Sciences, where he currently works as a postdoctoral researcher.



These results were published in Ghosh Dastidar N, Freyer NS, Petrychenko V, Schwarzer ACDP, Peng BZ, Samatova E, Kothe C, Schmidt M, Peske F, Politi AZ, Urlaub H, Fischer N, Rodnina MV, Wohlgemuth I (2025) Selective silencing of antibiotic-tethered ribosomes as a resistance mechanism against aminoglycosides. *Nat Commun* 16(1), 9568

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## Master's class of 2025/26



**Tala Al-Rubaye**

Iraq  
Kadir Has University  
Bachelor of Science  
Molecular Biology and Genetics

<https://www.uni-goettingen.de/en/700793.html>



**Viet Duc Ho**

Vietnam  
Hong Kong University of Science and Technology  
Bachelor of Science  
Biochemistry and Cell Biology

<https://www.uni-goettingen.de/en/700803.html>



**Likhith Chandragiri**

India  
IISER Pune  
BSc - MSc Dual Degree  
Biology

<https://www.uni-goettingen.de/en/700794.html>



**Duygu İldam**

Turkey  
Izmir Institute of Technology  
Bachelor of Science  
Molecular Biology and Genetics

<https://www.uni-goettingen.de/en/700805.html>



**Elif Dolu**

Turkey  
Bilkent University  
Bachelor of Science  
Molecular Biology and Genetics

<https://www.uni-goettingen.de/en/700797.html>



**Andrasch Jörgensen**

Germany  
Philipps-University Marburg  
Bachelor of Science  
Biomedical Science (Human Biology)

<https://www.uni-goettingen.de/en/700807.html>



**Laura Ehrenforth**

Germany  
Georg-August Universität Göttingen  
Bachelor of Science  
Biochemistry

<https://www.uni-goettingen.de/en/700798.html>



**Shreya Kaushal**

India  
Sri Venkateswara College  
Bachelor of Science  
Molecular Biology and Genetics

<https://www.uni-goettingen.de/en/700808.html>



**Lance Andrei Esteban**

Philippines  
University of the Philippines Diliman  
Bachelor of Science  
Molecular Biology and Biotechnology

<https://www.uni-goettingen.de/en/700799.html>



**Zio Kim**

Republic of Korea  
Heinrich Heine University Düsseldorf  
Bachelor of Science  
Quantitative Biology

<https://www.uni-goettingen.de/en/700809.html>



**Emma Gál**

Hungary  
Georg-August Universität Göttingen  
Bachelor of Science  
Biology, Molecular Genetics

<https://www.uni-goettingen.de/en/700802.html>



**Timothy Lee**

Philippines  
University of the Philippines Diliman  
Bachelor of Science  
Molecular Biology and Biotechnology

<https://www.uni-goettingen.de/en/700810.html>

## Master's class of 2025/26



**Melissa Mattern**

Germany  
University of Rostock  
Bachelor of Science  
Medical Biotechnology

<https://www.uni-goettingen.de/en/700811.html>



**Borislav Stoyanov**

Bulgaria  
Constructor University Bremen  
Bachelor of Science  
Biochemistry and Cell Biology

<https://www.uni-goettingen.de/en/700817.html>



**Reece Muir**

Scotland  
Heriot-Watt University  
Bachelor of Science  
Biological Sciences

<https://www.uni-goettingen.de/en/700812.html>



**Altan Tekgöl**

Turkey  
Bogazici University  
Bachelor of Science  
Molecular Biology and Genetics

<https://www.uni-goettingen.de/en/700818.html>



**Sara Müller**

Germany/Italy  
Rheinische Friedrich-Wilhelms-Universität Bonn  
Bachelor of Science  
Molecular Biomedicine

<https://www.uni-goettingen.de/en/700813.html>



**Ramazan Temizkan**

Turkey  
Izmir Institute of Technology  
Bachelor of Science  
Molecular Biology and Genetics

<https://www.uni-goettingen.de/en/700820.html>



**Noha Nasr**

Egypt  
The German University in Cairo  
Bachelor of Science  
Biotechnology

<https://www.uni-goettingen.de/en/700814.html>



**Larysa Vynohradnyk**

Ukraine  
Taras Shevchenko National University of Kyiv  
Bachelor of Science  
Biology, Molecular Biology

<https://www.uni-goettingen.de/en/700821.html>



**Susana Nunes**

Portugal  
University of Porto  
Bachelor of Science  
Biology

<https://www.uni-goettingen.de/en/700815.html>



**Yuliia Zahorska**

Ukraine  
Taras Shevchenko National University of Kyiv  
Bachelor of Science  
Biology, General and Medical Genetics

<https://www.uni-goettingen.de/en/700822.html>



**Luming Zhang**

P.R. China  
Southern University of Science and Technology  
Bachelor of Science  
Bioinformatics

<https://www.uni-goettingen.de/en/700823.html>



**Priyanka Sankar**

India  
Indian Institute of Science, Bengaluru  
Master's in Life Sciences  
Cell Biology, Molecular Biology, Biochemistry

<https://www.uni-goettingen.de/en/700816.html>



**Jolina Zimmer**

Germany / P.R. China  
Constructor University Bremen  
Bachelor of Science  
Biochemistry and Cell Biology

<https://www.uni-goettingen.de/en/700824.html>



## PhD projects started in 2025



**Fazel Amirvahedi Bonab**  
Multimodal learning approach to decipher the aetiology of pancreatic cancer and improve its diagnosis.  
*Tim Reißbarth, Constantin Pape, Johannes Söding*



**Morten Flieger**  
Mechanism, allosteric regulation and medical application of the human asparaginase.  
*Kai Tittmann, Hauke Hillen, Dirk Görlich*



**Arina Kurochkina**  
mRNA recoding in disease and therapeutics.  
*Marina Rodnina, Matthias Dobbelsstein, Markus Bohnsack*



**Merve Nida Baştürk**  
Fate and consequences of endosymbiotic gene transfer in light of mosaicism in embryophyte pathways.  
*Jan de Vries, Rolf Daniel, Johannes Söding*



**Khushboo Jain**  
Pharmacotherapy of influenza virus infection.  
*Matthias Dobbelsstein, Stefan Pöhlmann, Carsten Lüder*



**Rhea Pisani**  
High-throughput visualization of mRNA localization in cells.  
*Katherine Bohnsack, Stefan Jakobs, Heike Krebber*



**Jona Brückner**  
Ribosome-associated quality control in human mitochondria.  
*Ricarda Richter-Dennerlein, Sonja Lorenz, Kai Tittmann*



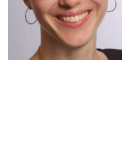
**Hannah Knerich**  
Epigenetic mRNA marks in translation regulation.  
*Marina Rodnina, Matthias Dobbelsstein, Kai Tittmann*



**Sait Şeyhanlı**  
Investigation of novel regulatory mechanisms of ubiquitylation enzymes.  
*Sonja Lorenz, Kai Tittmann, Peter Rehling*



**Fatma Chafra**  
*In silico* optimization of nanobodies.  
*Dirk Görlich, Kai Tittmann, Johannes Söding*



**Kaatje Knüwer**  
Analysis of dipteran male determining factors affecting alternative splicing.  
*Hassan Mutasim Mohammed Ahmed, Gregor Bucher, Kai Tittmann*

## Our Molbio student representatives

### MSc student representatives

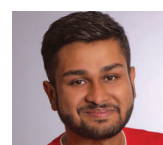


Congratulations to our newly elected MSc student representatives **Melissa Mattern** (left) and **Zio Kim** (right)



Many thanks to our former MSc student representatives **Ariana Nogreh** (left) and **Mariia Zelenskaia** (right)

### PhD student representatives



Congratulations to our newly elected PhD student representatives **Shantnu Kumar** (left) and **Morten Flieger** (right)



Many thanks to our former PhD student representatives **Spyridoula Sagropoulou** (left) and **Sumeru Panta** (right)

## Honors / Awards

### Faculty Members

**Jörg Enderlein** received the ERC Proof of Concept Grant by the European Research Council.

**Dirk Görlich** received the Lasker Award of the Lasker Foundation.

**Stefan Hell** was awarded the Landesmedaille of Lower Saxony.

**Erwin Neher** received the honorary doctorate from the University of Oxford.

**Marina Rodnina** received an ERC Synergy Grant by the European Research Council.

**Melina Schuh** was honored with the Science Breakthrough 2025 in the Life Sciences category by the Falling Walls Foundation, the Mendel Lecture & Medal by Masaryk University Brunn, and the Theodor Boveri Lecture by the Physikalisch-Medizinischen Gesellschaft Würzburg.

### Students (current and former)

**Tayfun Hazar Eyyuboglu** and **Alexander Rotsch** won the Campus Seminar Communication Award 2025 of the MPI-NAT.

**Jaschka Nicol** was awarded a PhD fellowship by Boehringer Ingelheim Fonds.

**Sait Şeyhanlı** was awarded a PhD fellowship by Boehringer Ingelheim Fonds.

**Ninadini Sharma** was awarded the Presidential Postdoctoral Fellowship of Caltech, received a Linde Center for Science, Society, and Policy (LCSSP) Science-for-Policy grant, and was selected as a finalist for the Women's Impact Award 2025 by the Berlin-based Falling Walls Foundation, Volkswagen Stiftung, and The Elsevier Foundation.

**Summa cum laude distinctions** for their doctoral theses and defense in 2025 were awarded to **Monica Gobran** and **Priya Kumar**.

Congratulations!

### GBM Master Award for Rhea Pisani

We congratulate Rhea, who received the GBM Master Award 2025, granted by the *Gesellschaft für Biochemie und Molekularbiologie* and donated jointly with *Springer Verlag*, for excellent performance in her Master examinations and Master thesis entitled "Development of a library-scale RNA imaging system in yeast". This award is meant to be a distinction for graduated students who submitted an outstanding Master thesis in the molecular life sciences.

Rhea did her Master research in the Department of Molecular Biology (Bohnsack) at the University Medical Center Göttingen (UMG) under the supervision of Katherine Bohnsack. The photo was taken in October 2025 at the Molbio MSc graduation ceremony in the Manfred-Eigen Lecture Hall of the Max Planck Institute for Multidisciplinary Sciences.





### The Masters of 2025



**Fatima Alkafri**  
(Argyris Papantonis)  
Studying the cohesin-RNAPII interplay in human “degron” cell lines.



**Fazel Amirvahedi Bonab**  
(Johannes Söding)  
Functional annotation bacteriophage genomes utilizing gene-synteny information.



**Branimir Ayvazov**  
(Marina Rodnina)  
Release factors performing quality control during translation.



**Merve Nida Baştürk**  
(Jan de Vries)  
Phylogenetic analyses for chimeric proteins in photosynthetic eukaryotes.



**Jona Brückner**  
(Ricarda Richter-Dennerlein)  
Ribosome-associated quality control in human mitochondria.



**Fatma Chafra**  
(Dirk Görlich)  
Exploring neural network-based approaches for optimizing the affinity of nanobodies.



**Parisa Dashtestani**  
(Felipe Opazo)  
Establishing a high-throughput multiplexing imaging method using nanobodies to study neuronal physiology.



**Katharina Harms**  
(Ramona Schulz-Heddergott)  
Mutant p53 dysregulates PD-L1 expression in gastrointestinal cancers.



**Khushboo Jain**  
(Matthias Döbelstein)  
Investigating the impact of Baloxavir and 4'-Fluorouridine on Influenza A virus replication and immune signaling.



**Elif Karay**  
(Lutz Walter)  
Validation and functional assessment of the interaction between KIR3DL1-repaired and KIR3DL2, and identification of the original ligand of human KIR3DL1.



**Hannah Knerich**  
(Marina Rodnina)  
Characterization of pathogenic variants of human mitochondrial translation factors mtEFG1 and mtEFG2.



**Kaatje Knüwer**  
(Ernst Wimmer)  
Investigating sex determination in the mediterranean fruitfly *Ceratitis capitata*.



**Marta Kolarić**  
(Marieke Oudelaar)  
Investigating gene regulation during erythroid differentiation.



**Arina Kurochkina**  
(Marina Rodnina)  
Ribosomal frameshifting driven by RNA modifications.



**Nina Lenaršič**  
(Elisa Oberbeckmann)  
Role of chromatin-remodelling enzymes and nucleosome positioning in loop extrusion mechanism.



**Deepa Mehta**  
(Henning Urlaub)  
Dissecting the cellular and non-cellular proteome of the human-engineered myocardium.



**Tashveen Moonian**  
(Michael Winkler)  
Evaluation of the antiviral activity of the interferon-stimulated genes MX2 and TRIM5alpha against primate simolexviruses.



**Rhea Pisani**  
(Katherine Bohnsack)  
Development of a library-scale RNA imaging system in yeast.



**Foad Rommasi**  
(Christian Dienemann)  
Structural and functional studies of activation-induced cytidine deaminase.



**Sait Şeyhanlı**  
(Sonja Lorenz)  
Redox regulation of human ubiquitin-conjugating enzymes.



**Shruti Thottakara Guruvayurappan**  
(Peter Lenart)  
Maternal mRNA localization in *Clytia hemisphaerica* ovary: tracking Wnt signaling components and germplasm during oogenesis.



**Natalie Vahraram**  
(Marieke Oudelaar)  
Development of a workflow for haplotype-aware Hi-C analysis.

### The Doctors of 2025



**Laura Ahumada-Arranz**  
Bioinformatic analyses of complex genomic regions in non-human primate genomes.  
*Lutz Walter, Rolf Daniel, Jörg Stülke*



**Carmela Rieline Cruz**  
The role of the histone variant H3.3 in human embryonic germline development.  
*Ufuk Günesdogan, Argyris Papantonis, Shiv K. Singh*



**Nesil Esiyok**  
Deciphering human brain development and evolution: insights from brain organoid models.  
*Rüdiger Behr, Ernst Wimmer, Ufuk Günesdogan*



**Tayfun Eyyuboglu**  
Mechanisms of membrane protein extraction in ER-associated protein degradation (ERAD): a re-evaluation of the role of dislocases.  
*Alexander Stein, Peter Rehling, Sonja Lorenz*



**Nilanjan Ghosh Dastidar**  
Selective silencing of antibiotic bound ribosomes as a resistance mechanism against aminoglycosides.  
*Marina Rodnina, Henning Urlaub, Peter Rehling*



**Monica Gobran**  
Resolving intermediate states of mitotic entry.  
*Peter Lenart, Matthias Döbelstein, Melina Schuh*



**Vaishali Goyal**  
Insights into elongation dynamics in human translation from a fully reconstituted *in vitro* system.  
*Marina Rodnina, Stefan Pöhlmann, Markus Bohnsack*



**Naintara Jain**  
Investigating mitochondrial presequence import.  
*Peter Rehling, Alex Faesen, Kai Tittmann*



**Alexandra Kolodyazhnaya**  
Mishpokhe: searching for functional modules in microbial genomes.  
*Johannes Söding, Jörg Stülke, Jan de Vries*



**Priya Kumar**  
Targeting SARS-CoV-2 with nanobodies and antibodies: neutralization and escape variants.  
*Matthias Döbelstein, Stefan Pöhlmann, Dirk Görlich*



**Annabel Maisl**  
Bone morphogenetic protein signaling in the planarian flatworm *Schmidtea mediterranea* – evolutionary, cellular, and spatial patterns.  
*Jochen Rink, Ernst Wimmer, Melina Schuh*



**Vella Nikolova**  
Pharmacotherapeutic approaches against *Plasmodium falciparum*.  
*Matthias Döbelstein, Uwe Groß, Dirk Görlich*



**Ana Carolina Schwarzer**  
The roles of RNA modifications in tRNA fragmentation and function.  
*Katherine Bohnsack, Ralf Ficner, Henning Urlaub*



**Rahul Shaha**  
Mechanism, regulation and structure of human pyruvate dehydrogenase complex.  
*Kai Tittmann, Sonja Lorenz, Peter Rehling*



**Chairini Thomé**  
The roles of GTPases in biogenesis of the large ribosomal subunit.  
*Katherine Bohnsack, Ralf Ficner, Jörg Stülke*



**Josefa Torres Llanos**  
Effects of perturbed SUMOylation and neddylation on synaptic transmission.  
*Nils Brose, Silvio Rizzoli, Tobias Moser*



**Zehra Vural**  
Functional analysis of SUMO2 substrates in neuronal synapses.  
*Nils Brose, Henning Urlaub, Sonja Lorenz*



## Daniel & Yaisa on the 25<sup>th</sup> Anniversary Weekend

Alumni Reflections: Inaugural Cohort, Class of 2000

As two of the first students in the inaugural cohort of the International Max Planck Research School for Molecular Biology and Neuroscience, we were honored to return to Göttingen for the program's 25<sup>th</sup> anniversary celebration. It was a weekend filled with reconnection, reflection, and renewed appreciation for the community that shaped our scientific and personal journeys.

From the moment we arrived, the energy was palpable. Alumni flew in from all over the world, and we were thrilled to reunite with friends, faculty, and former colleagues — some of whom we hadn't seen in

over two decades. The city of Göttingen welcomed us back with its familiar charm: cozy neighborhoods, winding streets, and historic buildings that still hold so many memories.

The anniversary program itself was beautifully curated. We were inspired by lectures from leading scientists and deeply impressed by the current students' engagement and curiosity. The Career Forum was a standout moment — a space where alumni could share honest insights about life after graduate school, from academia to industry and everything in between. It was a chance to offer guidance, share lessons learned, and maybe even spark new collaborations.

The reception in the Alte Mensa was a highlight. With great food, drinks, and

everyone gathered in one place, it created a rare opportunity for meaningful conversations across generations. We were especially moved by how many students



Yaisa Andrews-Zwilling, Reinhard Jahn and Daniel Zwilling

approached us with thoughtful questions and genuine interest in our paths since graduation. All this, with the wonderful backdrop of photos across the many years of the program playing on the big screen.

One of the most memorable parts of the weekend was the evening of Vision Talks, cultural presentations, and music. Hearing fellow alumni speak about their careers and the future of science was both inspiring and humbling. It reminded us how far we've come — and how much we've learned since our days as students, when we thought we knew so much. Two and a half decades later, we realize how much more there is to share, and how much more there is still to learn.

We also enjoyed revisiting the city itself — the student bars, cafés, and restaurants we used to frequent. Some places to our immense pleasure, like the Kartoffelhaus, Effes Doener, Tanners, were still standing. It was a reminder that no matter how much things change — some things remain the same.

The weekend closed with a beautiful brunch on Sunday morning — a generous and thoughtful send-off before we boarded our trains and planes back home. We're incredibly grateful to Steffen, the faculty, and everyone who helped organize this entire weekend of celebrations. It was a perfect blend of reflection, reconnection, and renewal.

**Daniel Zwilling** belongs to the first cohort (MSc class of 2000/01) of the IMPRS for Molecular Biology. He completed his PhD under the supervision of Reinhard Jahn in 2005. He is currently Principal Scientist at Merck, PA, USA.

**Yaisa Andrews-Zwilling** belongs to the first cohort (MSc class of 2000/01) of the IMPRS for Neurosciences. She completed her PhD under the supervision of Nils Brose in 2005. Yaisa is currently Vice President and Global Program Team Lead at Annexon Biosciences, CA, USA.

## A 25-year Reunion That Felt Like Coming Home

I left the Molecular Biology program in Göttingen back in 2014, not realizing how much it would stay with me. In the ten years since, I finished a PhD in Munich, helped build a biotech startup in Japan, and became a parent to two boys. Each of these life chapters was a world of change. Yet the friendships and connections from Göttingen stayed in my life. Former classmates became lifelong friends, and even alumni I had never met turned into mentors when I reached out.

Stepping into the Aula for the 25<sup>th</sup> anniversary celebration felt like coming home. The event was huge with more than 300 attendees - but the atmosphere was instantly familiar. Every conversation started as if we had seen each other only yesterday.

This time, I didn't come alone. My husband Georg and our two kids joined



Evgeniia with her older son Anton at the presentations on Saturday evening

me. We were a bit nervous about the logistics of a reunion with young children. But the organizers had us covered. There was on-site childcare - a pop-up playroom, kind and professional caregivers, toys, games, and two very happy boys. Our toddler settled in quicker than expected. Our older one ran off immediately and later, back home, asked if we could go again next weekend.

And Georg, who always found it funny that I reach out for advice to "complete

strangers" just because they are alumni, witnessed firsthand that this is because we don't treat each other as strangers. And he learned that I am not the only person who has stories to tell about Steffen's emails.

Even with a whole weekend together, I left feeling I hadn't talked to everyone I wanted to - or not for long enough. Now that I'm back in Europe, I hope there will be more chances to reconnect without waiting another decade.

**Evgeniia Edeleva** is an alumna of the MolBio MSc class of 2011/12. Since November 2025 she works as Project Manager Bioanalytics and Bioinformatics at BioNTech SE.

## Anniversary Impressions (further photos on backcover)





## A Shared Point of Return

Marking the 25<sup>th</sup> Anniversary of the international Molecular Biology and Neuroscience graduate programs

There is a very specific feeling that springs with entering a plane on your way back home. It is not just the anticipation of the destination, but the quiet certainty of movement toward something familiar and deeply meaningful. You carry with you stories that have not yet been told, updates that have been waiting for the right audience, and the comforting knowledge that the people you are about to see will understand not only where you are now, but also where you came from. It is a feeling shaped by excitement, gratitude, and a subtle sense of urgency—to make the most of the limited time you have together.

This feeling often follows a familiar pattern. You land, exchange the first general updates, and slowly settle back into a rhythm that feels natural despite the passing of time. The following days fill up quickly: carefully planned meetings, long conversations, shared meals, and moments of reflection. You try to see as many people as possible. You seek out those whose experiences inspire you, whose wisdom helps you put your own path into perspective. You meet new members of the family, learn their stories, and find connections you did not expect. And finally, on the last day, you gather once more—often around a table—to say goodbye properly, knowing that this closing moment is just as important as the arrival.

This was exactly the feeling I had in September, when our program celebrated its 25<sup>th</sup> Anniversary.

It was an event I never expected to be part of. And yet, there I was,

surrounded by people who had traveled from all corners of the world, drawn back to Göttingen by a shared point in their personal and professional histories. For many,



Spyridoula together with her Neuroscience colleague Svilen in the University Aula giving the anniversary speech of the PhD representatives

MolBio or Neuro was not just a program they once attended; it was a landmark in the timeline of their lives—a place where decisions were shaped, careers were influenced, friendships were formed, and identities as scientists began to take clearer form.

From the very beginning of the celebration, it was impossible not to notice the joy with which people greeted each other. Conversations began mid-sentence, as if no time had passed at all. Laughter was often

followed by pauses of reflection, moments where memories seemed to pass visibly in front of people's eyes. It was clear that this anniversary was not simply a celebration of longevity, but a reunion in the truest sense of the word.

What struck me most was how naturally everyone seemed to slip back into this integrative spirit. Despite differences in age, career stage, country, or discipline, there was an immediate sense of shared understanding. Everyone had once stood at a similar starting point, shaped by the same environment of curiosity, challenge, and collaboration that those programs have cultivated over the past 25 years. That common experience alone was enough to bring people back together, both physically and emotionally.

As a recent addition to the MolBio community, I experienced the celebration from a slightly different perspective. I listened more than I spoke and observed more than I expected, repeatedly reflecting on what it means to belong to something that existed long before you arrived and will continue long

### Spyridoula Sagropoulou

belongs to the MolBio MSc class of 2022/23. She is a PhD candidate at the Research Group Genome Organization and Regulation of Marieke Oudelaar at the Max Planck Institute for Multidisciplinary Sciences.

## A Shared Point of Return (continued)

after you move on. Throughout the event, expressions of gratitude surfaced again and again—for the program, for the people behind it, and for the opportunities it created. Gratitude not only for academic training, but also for personal growth, confidence, and the courage to pursue uncertain paths.

Initially, I wondered how much of my own experience would resonate across such a wide range of generations and career trajectories. My reference points were lectures, exams, and the everyday challenges of student life—experiences that can feel specific to a particular moment in time. Yet conversations during the celebration quickly revealed how many of these moments were shared far beyond my own cohort. Familiar topics surfaced repeatedly: the intensity of certain lectures, the collective struggle with subjects such as splicing, and the strong sense of solidarity that formed around exam periods. What seemed like small or recent experiences turned out to be part of a much longer, shared story.

These exchanges highlighted that while the scientific landscape and the program itself continue to evolve, certain aspects of the MolBio experience remain remarkably consistent. The challenges, moments of doubt, and bonds formed under pressure appeared to transcend generations, reinforcing the idea that MolBio is shaped not only by its curriculum or structure, but by the shared experiences that connect those who pass through it.

The anniversary celebration felt like a living archive of these stories. Senior alumni shared lessons learned over



Spyridoula with classmates at the anniversary reception

decades, offering perspectives shaped by time, success, and sometimes failure. More recent graduates spoke about transitions, uncertainties, and the excitement of new beginnings. Current students listened, asked questions, and quietly imagined where they might stand in twenty-five years' time. The exchange of experience and knowledge—the very core of the

and so have the challenges faced by young researchers. Yet the fundamental values of curiosity, interdisciplinarity, and mutual support remain unchanged. This balance between evolution and continuity is, perhaps, one of our program's greatest strengths.

As the celebration came to an end, the atmosphere in Göttingen was marked by both reflection and anticipation. The anniversary offered a moment to look back on shared experiences, while also opening space to think about what lies ahead. Conversations did not feel like conclusions, but rather like points of connection that would continue beyond the event—through future collaborations, reunions, and anniversaries still to come.



A moment with Reinhard Jahn, co-founder of our program, honoring the origins of an idea and the community that continues to carry his vision forward.

program's mission—was happening organically, without effort.

One of the most meaningful aspects of the event was witnessing how the program has adapted while remaining true to itself. Science has changed dramatically over the past 25 years,

In this sense, September felt less like a one-time celebration and more like a point of convergence—bringing together past experiences while opening space for future collaborations and encounters.



## On Taking Risks in Science

This is not advice, but I hope it is useful

It is the spring of 2025 — a lonely figure is standing on a California beach, wiping the stinging cold rain and hard ocean spray from their face, and contemplating their life choices. That person is recently unemployed, having quit a well-paying biotech job, and has to pack up and leave the country within weeks because their green card application was denied.

Yup, that's me. You're probably wondering how I ended up in this situation.

Well, let me tell you — I have an affliction with risk-seeking. But before we get into all that, let me give you the happy ending, first: I am writing this in the final days of 2025, from my first own office, at the Laboratory of Molecular Biology (LMB) in Cambridge, UK. I am now leading the Molecular Brain Mapping research group at the LMB; our goal is to generate molecular brain maps that explain how biological computation leads to animal behavior.

While I'm not sure it would be sound advice for me to recommend adopting my affliction with professional risk-seeking behavior as a model, I want to share my experiences with you. I hope my experiences will give you hope and encouragement — whether you are similarly afflicted with risk-seeking or simply feel forced into risk-taking in today's uncertain environment.

In the final days of 2024, I decided to - once again - professionally pull the

rug out from under my feet. I quit my job as Lead Scientist at E11 Bio — where I contributed to building amazing new brain mapping technology, working with a close-knit team of out-



Hiking in Lassen Volcanic National Park in California (May 2025)

standing scientists, and getting paid more money than I had ever imagined in academia. There was no obvious reason to quit — except for what I can only describe as a growing compulsion: my dream to do independent research on some problems in biological computation that just wouldn't leave my mind alone, and that didn't fit into the mission statement at my current role.

And so — without having any new job lined up, without having written any application or research proposal, and without so much as having updated my CV — I quit. I have experience with this sort of thing — from quitting medical school to pursue a PhD, declining locked-in graduate school offers without a guarantee of a spot anywhere else, joining the labs of young group leaders “without a proven track record” over “more established” options (quotes are not my thoughts, but

words of advice I received at the time), to dropping out of the academia track to join the world's first Focused Research Organization (FRO), E11 Bio - but it is never not scary.

This brings me to the first lesson I want to share from my personal experience: it is fine to be scared! Doing something that your peers don't understand or even sneer at, and for which you cannot find good role models — yeah, that is never going to feel safe; that is always going to feel scary. That doesn't mean it's the wrong decision. Being scared is an emotional

mechanism that alerts you to danger - that is very helpful, but it doesn't have to determine your decisions! Decisions made out of fear are rarely optimal, and can limit your potential.

### Sven Truckenbrodt

completed his doctoral research in the lab of Silvio Rizzoli at the University Medical Center Göttingen, where he stayed as a postdoc for more than a year, before he continued his research as a postdoctoral fellow at the Institute of Science and Technology Austria in Vienna. In 2022 he started as Lead Scientist Molecular Connectomics at E11 Bio in Alameda, CA, USA. Since October 2025, Sven leads the Molecular Brain Mapping research group at the MRC Laboratory of Molecular Biology (LMB), Cambridge, UK.

## On Taking Risks in Science (continued)

The second important follow-up lesson to this is: be intentional about the decisions you make! Making smart decisions is hard, because we live in an uncertain world and humans are terrible at predicting the future (where is the hover-board that Back to the Future promised me, huh?). Making smart decisions while scared is even harder! But being scared can also set you on a path towards intentional decision making: when presented with an option that makes you feel safe and one that scares you — instead of wrapping yourself in the comfort of the “safe” option, turn towards the option that scares you and begin scrutinizing it! What about it scares you? Are these emotional reactions or are there concrete risks? What actions could you take to mitigate each of those risks? While answering those questions, start comparing the risky option with the safe option. What if a bet on the risky option pays off - where will you be in five years compared to the path the “safe” option leads you down? What are the most likely top and bottom outcomes choosing the “safe” option over the “risky” option? You might find that going with the safe option is often not an intentional choice but one of convenience or fear.

This brings me to my final lesson, for now: being brave is a competitive advantage! If you go for opportunities that few other smart and capable people would dare go for — well, those are a lot of smart and capable people you don't have to compete against. And going for the “outside bet” doesn't make you any less smart or any less capable, either! If you performed a proper risk assessment, as sketched out above, you might just see things others don't.

I cannot promise that taking risks will lead to rewards for you — that's why I present my experiences not as advice but as lessons. Survivorship



The first photo of me in my new office at the LMB in Cambridge (September 2025)



10 million cubic  $\mu\text{m}$  of reconstructed mouse hippocampus — the first showcase of the PRISM technology for connectomics barcoding via expansion microscopy and molecular multiplexing we built at E11 Bio (learn all about it at: <https://www.e11.bio/blog/prism>).

bias is a fallacy to be aware of, too, but let me close by sharing how taking a risk-seeking over a risk-averse approach has worked out for me.

Towards the end of my PhD, in 2015, a new super-resolution imaging technology became available — expansion microscopy! There was a lot of excitement — but also a lot of initial skepticism. Using baby diaper polymers to haphazardly swell a biological sample 100-fold in volume? Oh, please! What about sample damage, labeling efficiency, signal dilution? There were a lot of risks — so, of course, I jumped on it. This year, I was one of the speakers at the 10-year anniversary conference of

expansion microscopy, organized by Ali Shaib and Silvio Rizzoli — who recognized the potential of expansion microscopy early and, as my amazing PhD advisor, I must credit Silvio for his strong support of me pivoting towards it. In the winter of 2021, I was contacted out of the blue by Andrew Payne, who was at the time drawing together the team for E11 Bio, the world's first Focused Research Organization (FRO). He was familiar with my work in expansion microscopy, and wouldn't it be marvelous to use this technology to revolutionize how we map the brain, all by using the FRO model to cultivate a team-science environment unlike anything possible in academia or industry?

That was E11's mission — and I was hooked. The advice I received at the time was along the lines of “if you do this, there is no path back into academia for you” and “if you want to leave academia, at least go for a safe industry job — not this wild expansion brain mapping idea.” After an amazing two and a half years at E11, we showed that you can indeed map the brain much faster and at much higher detail using expansion microscopy. And I have now become the existence proof that there was, in fact, a path back into academia, too.

Leading the Molecular Brain Mapping group at the LMB is a dream come true. It has been a wild ride and while it has not always been an easy path, I don't regret any of the risks I took along the way. Don't be afraid of risks — they make science wild and beautiful!



## From budding yeast to budding careers: a two-body story

In academia, the “**two-body situation**” refers to the challenge of securing two positions for a couple at the same institution or city. I call it a situation rather than a problem because, as I have learned, it can be both a challenge and an opportunity.

Here’s our story:

Homa and I met in the early 2000s as undergraduates in Tehran. When we decided to pursue graduate studies in Germany, we had never heard the term “two-body situation”- and certainly didn’t feel its weight. Back then, we were bees in open skies- light, unburdened, and armed with the uncommon strengths of perfect academics and ample research experience- a rarity for students from our homeland. So, when we both received admission offers from the Molecular Biology program at Göttingen, it felt natural. (Though, if Steffen were to dig into the old files, he might say one of us got in because of the other- a perfect example of a “**two-body opportunity**”!)

That was in 2005. Fast forward seven years to 2012, and the situation became more complex: we were now looking for two postdoc positions in the same city. During our PhDs in Göttingen - Homa studying sRNP formation with Markus Wahl and me studying translation initiation with Ralf Ficner - we both developed a deep interest in structure-function relationship studies of RNA-protein complexes. This convergence of interests made our academic niches very similar, which can turn a two-body situation into a **two-body problem**.

Fortunately, strong training and publications helped us secure several postdoc offers. Considering all



The Family!

the opportunities available, the prospect of conducting exciting research in a well-supported, highly productive lab by the ocean made the decision clear. This time, we ended up not only in the same city but in the same lab at The Scripps Research Institute!

In hindsight, this probably wasn’t the most strategic decision, as it left us with research profiles that were nearly identical! The consequences of that earlier decision became clear in 2016, when we entered the faculty job market. No matter how we tailored our proposals, their overall scope remained similar. Unsurprisingly, few universities were looking to hire two RNA biochemists at the same time. Eventually, we each received offers, though in entirely different locations! In the end, we chose the environment that best fit our research goals

and our life as a family of three, and we moved to Atlanta.

Homa began her independent lab as an Assistant Professor of Biochemistry at Emory in 2017, and I chose to follow her, joining Emory as a Research Scientist. During this transition, I supported the research in her group by collaborating on projects between her lab and others, while also working to broaden my own scientific portfolio. Having trained with the budding yeast model during my PhD and postdoctoral years and being immersed in Emory’s rich microbiology environment adjacent to center of disease control (CDC), I saw a natural opportunity to expand my work into the study of fungal

### Sohail Khoshnevis and Homa Ghalei

completed their doctoral research under the supervision of Markus Wahl (Homa) at the Max Planck Institute for Multidisciplinary Sciences (for Biophysical Chemistry), and Ralf Ficner (Sohail) at the University of Göttingen. Both graduated from the Molecular Biology Program in 2010. After a brief postdoctoral phase in Göttingen, they worked for several years as Research Associates at the Scripps Research Institute – Florida campus. In 2017/18, they relocated to Emory University School of Medicine, Atlanta, Georgia, where Homa is an Associate Professor of Biochemistry, and Sohail is an Assistant Professor.

## From budding yeast to budding careers: a two-body story (continued)

pathogens. These pathogens claim nearly 1.5 million lives annually, their RNA biology is poorly understood, and none of the current antifungal drugs- against which resistance is rising rapidly- target RNA biology. Given my expertise in RNA and yeast genetics, this seemed like an opportunity worth pursuing.

The challenge? I knew nothing about fungal pathogens. Fortunately, a colleague at Emory was studying *Candida* species, and I was welcome to spend time in her lab learning the basics of *Candida albicans*. When she left soon after, I was on my own, trying to become a microbiologist from scratch!

One of Emory’s strengths is its support for early-stage investigators through internal grants. I was fortunate to secure a competitive internal award to study RNA biology of *C. albicans*. This award enabled me to focus on collecting the preliminary data needed to propose bigger plans and apply for research funding from the National Institute of Health (NIH) to study “post-transcriptional regulation of gene expression in *Candida*” - a proposal that was funded in 2023.

That marked the official start of my independent research group at Emory. Since then, my team has grown to include a postdoc, a graduate student, three research spe-

cialists, and several undergraduates. We use a broad toolkit- from RNA/protein biochemistry to yeast



Ghalei/Khoshnevis Labs’ picnic!

genetics, structural biology, and cell-based assays- to explore RNA biology in *Candida*, from RNA modifications to translational control, with plans to expand to other fungal pathogens in near future. In just a few years, we have developed and patented a biologic to neutralize *Candida* infections and are preparing for commercialization. We have also identified several small molecules targeting RNA-related pathways in *Candida* that we are further exploring their potentials as therapeutics. These therapeutic opportunities emerged from fundamental RNA research- a reminder of the power of basic science.

Looking back, my academic journey so far has involved traveling across three continents, networking with diverse researchers across the world, exploring new research directions outside my core areas of expertise, and learning techniques far beyond my

graduate and postdoc training. My transition from research scientist to faculty, which allowed me to apply for

federal funding, benefited in part from Homa’s success - Emory wanted to retain her, and that opened a door for me. Likewise, my flexibility in following Homa to Emory enabled her success in establishing her lab and allowed both of us to be present for our kids. We have worked together to turn a

two-body problem into a two-body opportunity at every stage of our careers and have taken joy in spreading the love of science to our community and our little ones by introducing them to the concepts of research, running research labs, collecting and analyzing data, and writing manuscripts.

The lesson? There are times when you must choose between personal and professional priorities. My advice: prioritize your personal life. The professional side will work out - sometimes in ways you never imagined.



### From Pipettes to Python

Leaving the bench behind to discover the joy of computational biology

#### Discovering the Quantitative Side

Do you remember that dopamine rush when you are in the lab, pipetting experiments, carefully mixing solutions and handling your cell line? I never had that. But I do remember when I finally got the results and could go back to my computer to see what I could wrestle out of the painstakingly acquired data. This was what motivated me to be in the lab all these long hours during my PhD. So naturally I was wondering how I could skip being in the lab to spend as much time with my data. And that slowly but surely turned me into a Bioinformatician.

I always preferred quantitative work, even back during my Bachelor's degree. I remember learning R and Matlab and feeling a distinct satisfaction when a script finally ran without errors - a feeling that was different from a successful wet lab experiment. That interest stayed with me through my Master's in Göttingen, but it was really during the later stages of my PhD that it clicked.

I realized that the part of science motivating me the most wasn't the data generation itself, but the transformation of that data. I wanted to take the raw, often messy outputs from the lab and turn them into something useful, moving beyond the typical t-tests and bar charts we see in every group meeting. My PhD project aligned well with this; it was heavy on image analysis, which forced me to get comfortable with handling large datasets and automating processes.

At the time, Data Science was just starting to pick up steam. We didn't have the Transformers or GPT models that dominate the headlines today. I started learning on the side, taking Coursera courses and trying to apply concepts like clustering to my own project whenever possible.



The Bioinformatics team on our on-site retreat in Cologne; Martin as the sixth from the left.

I was lucky to have a like-minded colleague sitting right next to me in the lab. Having someone to bounce ideas off was crucial, especially since the rest of our environment was very wet-lab oriented. It kept me motivated to keep learning when the coding got tough.

Towards the end of my PhD, I started applying to Data Science positions. I won't lie, the process was intimidating. I had spent 1.5 years teaching myself these skills on the side, but I still felt like an outsider applying to real data science roles. But in the end, I got an offer from Miltenyi and haven't looked back since.

#### Differences Between Academia and Industry

Interestingly, my current environment still feels quite academic. I reimplement methods from papers to test them on our data, I develop proto-

types, and I still attend conferences. The variety is what keeps it interesting. Because Bioinformatics has such a broad spectrum, ranging from flow cytometry all the way to imaging, there is always a new type of data to learn about or a novel idea to transfer from one field to another.

While the "science" feels similar, the way we produce it is different.

First, the software we write has to live up to a higher standard. In university, you often write code for an audience of one: yourself. You might write a complex, messy script that runs once, and then you never touch it again. It doesn't matter if it's inefficient or hard to read, as long as it works

that one time. In a professional setting, that doesn't fly. I am writing code that others use, understand, and maintain. It needs to be readable, well-documented, and robust. When I develop software, there is a whole suite of tools, like version control, testing, or code analyzers that make sure that the code adheres to

**Martin Helm** completed his doctoral research in the lab of Silvio Rizzoli at the University Medical Center Göttingen. He graduated from the Molecular Biology Program in 2019, where he stayed for a brief postdoctoral phase. Since 2020, Martin works at Miltenyi Biotec, with a brief intermission as CSO at a startup, where he currently holds the position of Senior Data Scientist.

### From Pipettes to Python (continued)

our standards. At the same time, I still really like to use notebooks, like Jupyter, to combine my analysis with interpretation, creating a narrative that others (or future me in a few months) can follow.

Second, the "stakeholders" are different. In a PhD, it's mostly you and your supervisor. Here, a project might involve IT, marketing, engineering, and application specialists. If I develop an analysis app for customers, all those departments have an interest in how it works. And all of them have their wishes that somehow need to be aligned to form a successful product.

#### Day-to-Day Work: A Mix of Coding and Communication

There is a misconception that bioinformaticians spend most of their time writing code. In reality, my day is split about 50/50. Half the time is indeed programming, building analysis pipelines, or testing new methods. We use a wide range of tools, from classical statistical methods like clustering (which are still incredibly useful) to state-of-the-art Deep Learning models for tasks like image segmentation or protein structure prediction.

The other half is reading, communication, and strategizing. I spend a significant amount of time talking to internal "users", often biologists, to understand their pain points and to figure out what is actually worth building. This is where my background in the wet lab is a massive advantage. I can speak their language. I understand their experimental workflow or what the biological variance looks like, which helps me design better analysis tools for them.

#### Balancing Family and Work with Remote Flexibility

One of the biggest practical changes in my life since leaving the wet lab has been flexibility. I already had a family



A view of the Kummerower See close to my home. Another advantage of remote work: Live close to nature and still be connected with your colleagues.

during my PhD, and towards the end, the pandemic forced us into remote work. I was surprised to find how much I enjoyed it. Being able to have lunch with my family or pause work to help with the kid, and then just log back in later to finish up, was a game changer.

In my current environment, and in most bioinformatics roles in the industry, this flexibility is a core part of the culture. That means I can design my day around my life, not the other way around. Now that I have three kids, this is even more valuable than it was before. For me, a 3-days-remote, 2-days-office split is the sweet spot. It allows for deep focus time at home but keeps me connected to the team with face-to-face interactions. Another benefit of Bioinformatics is the ability to collaborate globally with ease, as there is a plethora of tools that make working asynchronously much easier than it is in experimental research.

#### AI and Staying Relevant

I want to be honest about the challenges, too. Imposter syndrome is very real in this field. The speed of development is breathtaking, and it is only accelerating; there is always a new method or a new field to break into. At the same time, you can quickly become an expert in one of these novel

technologies, simply because they didn't exist before and nobody has a headstart on you.

I use AI tools daily to help manage this, for example to get overviews of new topics or to help write code. It's a great productivity booster, but I advise not to rely on it blindly. It is very easy to let AI write code that looks clean but does something logically incorrect. And you need to wrestle through some bugs, analysis problems, and architectural decisions yourself to really learn them. Only then can you get to know the underlying concepts well enough to spot when the AI is hallucinating or taking a shortcut.

A benefit of Bioinformatics is that biology is inherently noisy and complex, so there are a lot of judgment calls to make, even when using AI. My MolBio background helps a lot with understanding the limitations of the assays that generate the data we work with, and let me pick the right solution.

If you enjoy the puzzle of data analysis more than the physical routine of the lab, this might be a path worth exploring. It's a different kind of challenge, but for me, it was exactly the right one.



### A Journey of Growth and Change

I was part of the MolBio program between 2006-2012—a long time ago! While my BSc training in Turkey was molecular biology and genetics focused, it was in Göttingen, where I developed a keen interest in protein biochemistry. It was this interest, which was the main driver during my PhD, as well as the wonderful Fasshauer/Jahn lab colleagues, and my little Göttingen family, formed of many friends from the MolBio and Neuroscience programs.

In my mind, PhD equals “deep work”, and I, undoubtedly, thought deeply about the SNARE protein family during my PhD. So much so, that there were probably only a couple of proteins that were the “protagonists”, that I spent so much energy on. I now question if this is the best way to approach science, but it was maybe right at the time, while I am still a PhD trainee.

#### Stay curious, and pursue change...

After completing my PhD, I decided to continue with a postdoc, and it was the “curiosity” which brought me to Cambridge/US. A large part of my postdoc was dedicated to learning structural biology, which I developed a big passion for, as I wanted to “look” at molecules closer and closer over the years. I took my time, and gained extensive experience in X-ray crystallography, and electron cryomicroscopy during my 7-year postdoc.

As I approached the end of my postdoc, I found myself passionate about science more than ever. This may sound provocative, but it was also around that time that I started considering roles outside of academia... I wanted to take a role where I would actively continue practicing science, solving structures, and analyzing those structures, figuring their intricacies. Also, I was pretty sure

that there was not a particular “niche”, e.g., a biological pathway, or a technique, that I was obsessed with, which, in my opinion, is the key for wanting to become an academic PI. These thoughts made me approach to several small- and mid-sized startup compa-



Esra at Stinson Beach

nies. Of note, I was particularly excited about gene editing, and intriguingly, a rejection from a gene editing company led me to my next role, which unexpectedly, was still an academic one. I heard from one of my interviewers that Feng Zhang, right next door, had been looking for a structural biologist for a staff scientist role. I went for that role, and I got it!

I have been fortunate to work along with incredibly hard-working, talented and special people throughout my entire career, but the Zhang lab colleagues, and the entire experience there were remarkable! I learned so much within a ~4-year period, which included the pandemic, and the challenging, but fun night shifts which came along with it. Zhang lab, uniquely, had the motivation and the resources to pursue a variety of research themes under a single roof. There was a “true teamwork” atmosphere, where each project was collectively driven by multiple members of the lab. As part of my role, I established the protein purifi-

cation workflows within the lab, while supporting protein biochemistry, and structural biology work in several projects. Also, I learned so much I didn’t know about single particle cryoEM!

#### Nurture your close network and friendships...

In many ways, it wouldn’t be misleading to say that I found an ideal role in the Zhang lab. It would have been fine to settle there perhaps, but after a while, I wanted to fly on my own wings, so a new search started... Once again, I found myself reaching out to everyone in my network, connecting with the Feng Zhang spinoffs, and more... After a month, while all my search was still focused within the Cambridge/Boston area, an auspicious job post came along my way. A friend in the Bay Area, whom I knew from my postdoctoral years, informed me about it: Genentech was looking for a Principal Scientist/Group Leader in its Structural Biology division. When I read the job description, I felt so excited, as I genuinely thought that I was quite fitting. Overall, I was truly lucky, but life happens, and friends can be extremely important in your job search.

#### F Esra Demircioglu

completed her doctoral research in 2011 with Dirk Fasshauer in the lab of Reinhard Jahn at the former Max Planck Institute for Biophysical Chemistry. After a short postdoc phase, she continued at the Massachusetts Institute of Technology (MIT) as Postdoctoral Research Associate and Research Scientist for seven years, followed by almost four years as Research Scientist I and II in the Zhang Lab at the Broad Institute of MIT and Harvard. Since 2023, Esra works as Principal Scientist at Genentech in South San Francisco, CA.

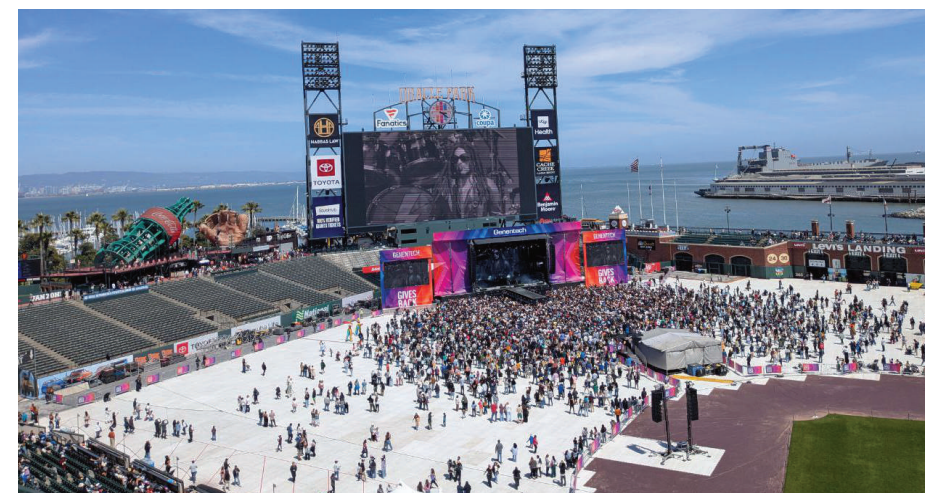
### A Journey of Growth and Change (continued)

I sent my application to Genentech without having any internal connections within the company, but it all worked out. First, I had a phone call, and then an invitation for a 2-day interview (including 17 1:1s!). During the first day, I introduced my work on a slide deck, putting emphasis not only on success stories, but also on challenges and how I overcame them. On the second day, there was a “chalk talk” which is a norm in academic interviews, but it was not unusual to include it, since ~20% of my role in Genentech is meant to focus on basic research. I must admit that I was not quite ready for it, as I’ve never applied for academic jobs, but I was able to figure it all out after a 2-week long intensive marathon.

Although I had a quite positive feeling about the interview, I, unfortunately, had to wait for a few months for the decision, since Genentech was going through a hiring freeze at the time. I made use of that time, however: vacationed a bit, and took another interview at Moderna—which I got accepted for! Right around the time that I heard from Moderna, the Genentech team also reached out, and I made a choice, which swiftly sent me to the Bay Area. All in all, the big move to the west coast was quite unplanned, considering what I had in mind just a few months ago. But, the Genentech role simply sounded appealing—an invitation to work on diverse biological questions (some of those I can pick entirely myself), and to get a chance to help patients while doing all of this.

#### Follow your joy...

It’s now about two years since I arrived in the Bay Area. I live right in the city, so I have a chance to explore and appreciate the picturesque streets of



Annual Genentech concert, featuring Lenny Kravitz in 2025

San Francisco. The tech scene here, the driverless cars, and the absence of the seasons are some of the things that I am still trying to get used to... But, overall, the new life feels exciting, and rejuvenating! And I like the feel of being on the move—always!



A Forest Hill stairway in San Francisco

Also, my role at Genentech did meet my expectations so far. The bench work for me is over, but I’ve been indulging in so much new biology, and so many new structures! I consider myself still a “trainee” when it comes to leading teams and projects, especially compared to the quite seasoned colleagues here, however, I also feel substantially settled. All my colleagues are kind, friendly, and supportive, and I have “a lot” of them,

as each new project introduces me to some new ones. There is so much to do here, and plenty of resources, despite the current economic challenges, so I feel fortunate. Also, although I did not hire my own postdoc yet, I am already co-mentoring one, and I’m hoping to start writing a couple of manuscripts soon.

Most of my time here is still spent on thinking about science, and this can either stay as it is or evolve into a rather managerial role over time. It looks like either path is fine, and well-appreciated here, which is reassuring and liberating. There is much uncertainty how our careers, and the way we do science will evolve in the era of AI, and I find it unhelpful to try to draw a rigid career trajectory for the future. For now, I enjoy looking at structures each day, and I am overall happy, looking forward to staying here for many more years. Whatever comes my way, I hope that I will continue to evolve and find always a way to follow my joy!



## Two PhDs and a baby

Our experience navigating the three biggest projects of our lives

We both came to Göttingen as part of the 2019 batch and quickly became a couple. After surviving covid times we both stayed in Göttingen for our PhDs in the Brose and Jakobs labs. In our third year, we felt that we might be ready for the next big step - the step into parenthood.

When Mareike got pregnant, it was the start of a very special time - every day there was something new to organize. We not only had to think about doctor's visits, baby names and baby clothes, but Mareike also had to adapt her lab work. During the maternity leave six weeks before the due

date Mareike wanted to get a head start on writing her thesis. But life with a child seldom goes as planned and after a week writing was cut short by a premature birth. Thankfully, both Mareike and our son Jaron were well and soon we could settle into life as a happy family of three.

We had two wonderful months of parental leave together so we could fully enjoy the start of our new life. After two months, it was time for Jannis to go back to work while Mareike stayed at home with Jaron.

When Jaron was six months old, we swapped roles, with Mareike working and Jannis taking care of Jaron. Although we were determined to equally split parenting time, this transition was a bit difficult. Jaron still relied on Mareike for milk, which means that she had to pump while at work and arrange experiments so she could work from home in the afternoon.

Soon, however, Jaron started with solid foods and luckily turned out to be a huge fan, which gave Mareike more freedom during the day.

At ten months, we switched to both working part-time.

This was an intense time with lots of careful planning and spontaneous rescheduling to fit two sets of experiments into one week. But it was also great that we could spend time with Jaron and also work. Additionally, we both realized that working shorter hours not necessarily means that you will achieve less, it can also motivate you to focus more on tasks at hand.

When Jaron was 13 months old, we started with daycare, and after two months of gradual settling in, he was ready to spend the whole day

there. Now we both work full-time again, but our work-day still looks different to before. Due to the opening times of the daycare our days begin and end earlier, and we need to be more flexible than before, working from home, in the evenings or on weekends. And of course we have become more used to working tired after a rough night or two.

Another thing that changed is our outlook on the future. Our planning of the PhD was not hugely affected as all time spent in parental leave is automatically added to the PhD deadline. When thinking about the next career steps, however, our priorities have shifted somewhat. Although we still consider going abroad for some time after the

**Mareike Lohse** is in the final year of her PhD. She is doing her doctoral research in the lab of Nils Brose at the Max Planck Institute for Multidisciplinary Sciences - City Campus under the supervision of Noa Lipstein.

**Jannis Anstatt** is also in the final year of his PhD. He is doing his doctoral research in the lab of Stefan Jakobs at the Max Planck Institute for Multidisciplinary Sciences - Faßberg Campus.

Their son Jaron was born in summer 2024 and they look forward to a sibling later this year.



Find the baby hidden on this photo :-)

## Two PhDs and a baby (continued)

PhD, we would take more care to find a country and a city that feels right for raising a child, where daycare is available and good, where family-sized flats are affordable and where families are well-supported. Additionally, it is a priority for us to find work in the same place, as we can't picture a long-distance relationship with a child. And ideally, we don't want to move too often any more and we would like to settle down before Jaron is too old.

All in all, the obvious question is: Would we do it again? Our answer is: Yes! We might be slightly biased due to the fact that Jaron is the most wonderful baby (or, by now, toddler) that has ever existed, but apart from that we also feel that it was the right decision.

The flexibility that a PhD offers is great when having a child. You can usually interrupt your project for a few months of parental leave and you won't need someone to replace you in that time, which makes planning for after the birth easier. For both of us, having a break in our projects actually allowed time for developments (waiting for data, development of new tools, acquisition of new instruments) that our PhDs benefited from! And flexibility in the everyday work makes it easier to adapt your schedule to the requirements of life with a child.

However, this obviously greatly depends on the work you do. If your project depends on a postdoc who is about to leave or on animals that are available at a specific time, or if you lab work

is not flexible at all you might want to wait a little longer. Especially women have to carefully consider what kind of lab work is still possible during

supportive, we didn't take the full 14 months that are possible for parental leave.



Jaron, Jannis and Mareike in the alps

the pregnancy. We found third year to be a great time because we had already accumulated quite some data and therefore had enough data analysis and writing on our to-do lists to fill many days of home-office.

A drawback of the PhD, although this could easily be the case in other jobs as well is that you might feel pressured to return to work as soon as possible. Even though both of our supervisors were

In the end the decision is of course a very personal one. But our advice is: if you think the time is right, don't be afraid of the big decision!



## How Being a MolBio Fellow Changed Our Lives

There is a running joke among MolBio alumni that Steffen has been running the most successful matchmaking program in science for the past 25 years. While this outcome is not mentioned in any official program description, the MolBio environment has consistently produced more than strong scientific collaborations. Since you are all science lovers, let us explain it in your language. Based on the formula below, working long hours in the lab side by side led us to most

*Probability of finding a partner -  
Time partners spend in close proximity  
Distance between the parties*

meaningful, productive collaboration in our lives.

Looking back, it is striking how little we could have predicted what followed. At the time, we were deeply embedded in academic science, focused on finishing our PhDs, publishing papers, and navigating the familiar pressures of securing the next position. Yet even then, two things were already clear to both of us: first, that we wanted to spend our lives together; and second, that neither of us wanted to remain in academic science in the long term.

**Choosing Different Paths Early On:** Motivated by curiosity about the world beyond academia, we decided to pursue new professional adventures early on.

Mahi: I moved into the pharmaceutical industry, joining Roche as a postdoctoral researcher. The transition was eye-opening. Research was clearly structured around defined goals, timelines, and potential products. Contrary to common assumptions, this environment still allowed a high degree of scientific ownership. Within less than two years, this resulted in two publications

and a patent – an output that, by traditional academic timelines, might seem almost impossible.



Mahi, Arman, and Sasha at Arman's Kindergarten summer party

Sasha: I took a different route and founded my first biotech startup. The company did not succeed, but the experience provided an efficient and honest introduction to what it actually means to build something from scratch. From fundraising to strategy, execution, and failure, it was an intense learning experience. While objectively unsuccessful, it was worth every minute and laid the foundation for many decisions we would make later.

**The Pandemic as a Reset Button:** Like for many others, COVID marked a major turning point. The pandemic disrupted routines, plans, and long-held assumptions – but it also created unexpected space for reassessment and new beginnings.

Sasha: For me, this meant moving into management consulting. The initial motivation was pragmatic rather than idealistic: “I was young and needed a visa”. Consulting offered stability, structure, and a clear career path at a time when uncertainty was widespread. What surprised me was how much I enjoyed it.

The pace, the diversity of the projects and the breakdown of complex problems to individual components was deeply engaging. Most unexpectedly, I found myself working in truly collaborative teams, surrounded by very supportive colleagues – not something I have expected about consulting coming from outside of the business world. What was intended as a temporary solution became a longer-term commitment. Over five years at Bain, I progressed rapidly and eventually became the

fastest-promoted Senior Manager among all non-business hires in the history of Bain Germany.

Mahi: After realizing that COVID had fundamentally altered our plans to move to the US, I decided to step away from my professional career for a year. For the first time in my life, I had the time, courage, and resources to focus on something purely creative: writing. That year resulted in the publication of my novel *Pandemic*, a thriller written during a time when isolation and reflection

**Mahdokht Kohansal-nodehi and Oleksandr Yagensky** completed their PhD in the Jahn lab in 2016 and 2018 respectively. Mahi is currently Analytical Project Lead & Senior Scientist II at AbbVie, Sasha is Co-Founder and Co-CEO of Ovo Labs. They have a three year-old son, Arman.

## How Being a MolBio Fellow Changed Our Lives (continued)

were shared experiences across the world.

Following this period, I decided to reshape my professional path rather than return to the lab bench. I transitioned into a more managerial role, first as an analytical project lead at Boehringer Ingelheim and later at AbbVie. This role has two distinct dimensions. On one hand, it remains deeply scientific: working with chromatograms, mass spectrometry data, and physicochemical characterization of biomolecules requires a strong analytical background and scientific judgment. On the other hand, it involves responsibility for timelines, coordination, and designing the analytical work packages needed for regulatory submissions to health authorities such as the FDA and EMA to enable clinical trials. The learning curve was steep and the transition demanding, but it introduced me to a type of work that was both new and rewarding.

**A Year That Changed Everything:** The year 2022 stands out as a moment when personal and global events collided with full force. We were expecting our first child when the Russian invasion of Ukraine began. The shock of war to Sasha's homeland, made it impossible for us to remain passive observers.

Sasha: Since the beginning of the invasion, I have been organizing and supporting several initiatives aimed at helping civilians affected by the war as well as soldiers on the frontlines. Balancing professional responsibilities, impending parenthood and engagement for Ukraine was exhausting – but also clarifying. It reinforced the understanding that careers, no matter how demanding, will always be secondary to the important things in life.

In August of that year, we welcomed our son Arman into the world. From the very beginning, he brought a



Arman at the Mannheim Planetarium



Sasha and Arman after receiving the captain's autograph from the Mannheim handball team

sense of lightness and perspective that no career accomplishment could rival.

**Learning From a Three-Year-Old:** Arman is now three and a half years old and, quite simply, a source of daily joy. From day one, he has been cheerful, curious, and permanently in what we like to call “exploration mode”. Watching the world through his eyes has been a constant reminder that progress does not always mean efficiency, and that attention itself is a form of care.

We occasionally confess – only half joking – that we envy his learning speed. He speaks three languages, rides

scooters with impressive confidence, and can emotionally negotiate his goals far more effectively than either of us. He is currently fascinated by sports of all kinds and is an enthusiastic supporter of the local ice hockey and handball teams in Mannheim. Attending home games together has become a small but meaningful family ritual, grounding us in a community beyond work.

**Returning to Entrepreneurship:** Sasha: In 2025, after five years at Bain, I felt ready to come back to my entrepreneurial roots. While exploring ideas for a new company, I was accidentally (re)-introduced to Professor Melina Schuh and one of her brilliant former students Agata Zielinska. They were in the process of founding a biotech company based on the research from Melina's lab and were looking for someone to help with the business side of things. After a few discussions, their vision of improving IVF success rates resonated strongly with both my scientific background and personal values. Together, we founded Ovo Labs in January 2025, with me taking on the role of co-CEO.

**Balancing Life and Progression:** Mahi: If there is one lesson that consistently emerges from our story, it is that uncertainty is the only reliable constant. Almost every year brought developments we could not have imagined twelve months earlier – professionally, personally, or globally.

Not everything worked out as planned. Some ideas failed outright, others evolved into something better than expected. We learned that deviation from the plan is not necessarily a problem to be solved – most of the times, it is the point.

*Continued on next page*



## Gratitude, Growth, and Guidance in Mentoring

### A Dual Perspective

***Being in the final steps of your PhD is not only stressful from a scientific point of view but also from a career perspective - What is coming next? What is the "right" path for me?***

The GGNB Alumni Mentoring Program pairs experienced alumni with current graduates to support them on this journey. This year, Monika (People Leader at Roche Diagnostics GmbH) mentored Monica (aspiring computational/cell biologist) for six months. Here is a dual perspective on their journey.

### **The Mentee's View: Finding Clarity and Confidence**

I am grateful to have participated in the GGNB Alumni Mentoring Program, a truly enriching experience that has significantly impacted my career planning and personal growth. From the time that I decided to sign up, I had

a clear vision of becoming a computational/cell biologist in the pharmaceutical industry. My mentor, Monika, a People Leader in Roche Diagnostics GmbH, was an ideal match, and our initial discussion paved the path to a productive and supportive relationship.

Our mentoring partnership was tailored to my support, with a flexible plan that allowed me to set the agenda for our meetings. Throughout this partnership we could cover a wide range of topics, from CV building to job interview preparation and mock interviews, job market analysis, and even understanding job advertisements by "reading between the lines". I was also grateful to be invited to further explore my personality, my skills, and my priorities in life, and discuss what career paths would suit me the most.

Beyond these aspects, Monika provided invaluable guidance on navigating the competitive job market. She helped me develop resilience in the face of rejection and encouraged me to stay focused and motivated, even when faced with setbacks. Her support extended to sharing job opportunities that she believed I would be a strong candidate for, and inviting me to apply.

Despite her busy schedule, Monika consistently made time for our meetings and maintained an open-minded approach to my career aspirations. Her willingness to challenge my convictions and offer alternative perspectives was particularly valuable, drawing on her extensive experience.

Our mentoring relationship also allowed for personal connections

## How Being a MolBio Fellow Changed Our Lives (continued)

The truth is parenthood for a super energetic three-year-old has not simplified our lives. Handling two very demanding careers and the life outside work is not easy. Our strategy is neither elegant nor perfect: we plan extensively, do sacrifices and communicate constantly. Almost every hour of our schedule is planned. With Sasha managing the unpredictability of a startup CEO role and me navigating the shifting priorities of project management in pharma, dividing tasks and adapting daily has become essential.



Sasha, Arman, and Mahi celebrating the Persian New Year – March 2025

Fortunately, the MolBio years equipped us with analytical thinking, resilience and discipline. Life beyond academia has added many important lessons: humility, flexibility and the understanding that success comes in many forms.

Looking back, we are grateful not only for where we are today but also for the paths that never materialized. They shaped us just as much as the ones that did.

Mahdokht (Mahi) Kohansal Nodehi & Oleksandr Yagensky

## Gratitude, Growth, and Guidance in Mentoring (continued)

and mutual support. Sharing stories about our lives and career journeys created a sense of compassion and understanding, which was a wonderful aspect of the program. Initially, I must admit that I found it challenging to fully accept the time and effort Monika dedicated to my growth. It was difficult for me to grasp that someone with her experience and expertise would be willing to invest in my development. However, as our mentoring relationship progressed, I began to appreciate and embrace her kindness and generosity. This, in itself, was a significant point of growth for me. Learning to accept help and support from others, and recognizing the value of mentorship, has been a valuable lesson that extends beyond my career aspirations.

Through my participation in the GGNB Alumni Mentoring Program, I have gained increased confidence in my job application and interview

skills. I have a clearer sense of direction and am more confident in my ability to overcome obstacles and pursue my long-term goals. I highly recommend this program to others, as it offers a unique opportunity for growth, guidance, and support in navigating one's career path.

### **My Two Cents as a Mentor: More Than Just Chats**

Mentoring Monica sometimes felt a bit like looking in a mirror at my younger self, and honestly, it was great to help her navigate a career change. My main goal was to back her journey, not just push what worked for me.

But it is more than giving, I picked up a few things, too! Unlike typical professional development conversations at work, we had the freedom to explore all sorts of ideas. Monica's dedication was clear—she was always prepared and

effectively drove the sessions with her own agenda, which made the mentoring exceptionally productive.

I particularly enjoyed exploring with Monica what truly mattered to her. At times, I challenged her to think beyond the obvious to ensure her chosen direction was deeply aligned with her major goals. Watching her personal growth was fantastic. She now has a much clearer vision of her objectives, has established key personal boundaries, and appears more resilient navigating the complexities of the application processes.

I wholeheartedly recommend this program, not only for mentees but also for mentors.

Monica Gobran & Monika Bug



**Monica Gobran** is a postdoctoral researcher in the group of Peter Lénárt at the Max Planck Institute for Multidisciplinary Sciences, where she completed her PhD in September 2025.



**Monika Bug** completed her PhD with Matthias Döbelstein at the University Medical Center Göttingen in 2010. After six years of postdoctoral research at the University Duisburg-Essen, she joined Roche Diagnostics in Penzberg, where she transitioned from her initial tasks of a Project Leader Research Informatics to a People Leader in 2020.



## Mentoring in the In-Between

An interview in retrospect

**Q: Did mentoring feel like an extra task on an already full plate?**

*Larisa:* Absolutely. I admit, I'm not very good at saying no — especially not to Steffen.

*Naintara:* Same here. Also not great at saying no to Steffen.

*Larisa:* We quickly realized we had that in common, and this ignited the first spark of friendship. We agreed, that Steffen is like a sports trainer who asks for ten more sit-ups when you are already exhausted. You resist in the moment, but you are grateful afterwards.

**Q: How did you organize the meetings? Was it easy to find time slots that worked for both of you?**

*Naintara:* Meetings happened once a month — wherever life allowed them to happen. I learned quickly that mentoring doesn't wait for ideal conditions; it squeezes itself into real life.

*Larisa:* There was seldom a perfect time. Mostly, there was in between. We phoned from conference rooms in between the sessions, from behind the curtains at my kid's judo competition, Naintara standing in crowded ICE trains, etc.

**Q: What did you actually talk about?**

*Larisa:* We "painted" Naintara's ikigai, walked several times through her CV, discussed open position ads, did a mock interview, and spoke openly about expectations, doubts, and options.

*Naintara:* I also visited Larisa's workplace in summer, the week after submitting my thesis. Larisa organized informal interviews with colleagues from R&D, Production, and Product Management, which allowed me to ask very direct questions about their work—and how they actually landed their jobs.

*Larisa:* A mentee's visit is always a highlight for me. This one too — even though I managed to get sick on the second day.

*Naintara:* It was only two days, but we made great memories: a dinner in a Bavarian biergarten, long conversations on Larisa's balcony with good wine and exquisite marzipan from Cron & Lanz, and being transported around in her son's "buggy," which was honestly hilarious.

*Larisa:* For the record: it was not a buggy. It was a Lastenrad—a cargo bike, and the most efficient way to transport my kid, myself, and apparently my mentee through the city.

**Q: Any particularly useful — or useless — advice?**

*Larisa:* At some point, I suggested Naintara organizing an internship in a company and taking a few months of "sabbatical" from the PhD.

*Naintara:* Interesting. And unfortunately late.

*Larisa:* During my PhD, I myself dismissed this idea as impossible — because of regulations and the feeling that every minute had to be spent on the project. With some distance, I'm convinced this would have been enormously useful and one would find a way — especially with a coordinator like Steffen, who genuinely lives and breathes for his students.

*Naintara:* With hindsight, this is advice best given early in a PhD. Many internships are only open to enrolled students. After graduation, most of them are gone.

**Q: Final question — what did mentoring bring you?**

*Naintara:* What mattered most was not a single piece of advice, but the feeling of being accompanied through a demanding phase.

*Larisa:* A new perspective. During my PhD, I perceived it as cutting a path through a wild jungle. Looking back now, it wasn't a jungle, but more like a park. Maybe that's the takeaway: mentoring doesn't magically solve careers. But sometimes, it helps you stop fighting imaginary jungles.

And yes—we both gained something else as well: a new, very personal jewel in our professional networks.

*Naintara:* Absolutely. You don't just gain a contact—you gain a discussion partner you can return to months or even years later.



**Naintara Jain** completed her PhD in the department of Peter Rehling at the University Medical Center Göttingen, where she currently works as a postdoctoral researcher.



**Larisa Yurlova** completed her doctoral research in 2010 with Mikael Simons at the former Max Planck Institute for Experimental Medicine. She currently holds the position of a Senior Scientist at ProteinTech Germany in Martinsried.

## Mentoring: Stepping in the Right Direction

It is easy to put off planning one's career. After all, as a PhD student the job market seems distant - until graduation looms and burning questions pile up: academia or industry? Do employers value my skills? Why was I rejected?

The best would be to have a crystal ball, yet the GGNB Alumni Mentoring Program comes a close second. It pairs PhD students in their last year before graduation with GGNB alumni who provide real-world advice.

For us it started in late 2024. Not a start from nothing – Rahul had doubts about staying in academia and had applied to pharma before. Mentoring was nonetheless a safe space to ask questions. Should I pursue an MBA first? (Lope: only if you intend to move away from science.) How about a dab in consulting? (Lope: exciting ride, but again, a bit of a fresh start.)

Lope suggested focusing less on companies and more on the content of the job. The objective became clearer - Rahul still liked doing science, though he wanted to focus more on its applications. The job searches then centered on putting Rahul's background as an enzymologist and structural biologist to effective use.

Applying to open positions is an emotional rollercoaster, even with a plan. Relevant jobs started to come in, some sounding like a perfect match. For instance, an "AI first" lab needed a structural biologist. The successful candidate would conduct wet lab experiments to validate the AI predictions. Alas, the company rejected Rahul's application. Was it an error in the CV or cover letter? Was it wrong to assume

that this job ad was relevant? Lope assured him there was nothing wrong with his application or his reasoning. More likely, the company received many applicants, and they had to focus on a few. The outcome was still disappointing, yet it was helpful to know it was not due to one's fault or omission.

Stress was at its peak around the PhD submission and defense. No job interviews yet, finishing the thesis demanded time, the next step was still uncertain. Yet the discussions under time stress led to renewed perspectives. Lope wondered: if the first step was still unclear, how about the one after that? Ultimately, Rahul wanted to work in drug discovery, but the job offers he saw asked for methods outside his practical repertoire. Lope then asked how he could become skilled in those methods.

This perspective challenged the initial assumptions. The choice was not between academia and industry. It was about the right next step in a multi-step career path. Rahul concluded that he needed to go

beyond enzymology and learn how therapeutic proteins, particularly antibodies/nanobodies, are created in the lab. Louis Pasteur was right when he said, "serendipity favors the prepared mind."

The lab of Prof. Dirk Görlich in Göttingen specializes in nanobodies. These single-domain antibody fragments, derived from alpacas, are an essential part of the drug discovery toolkit. Standing there, Rahul knew he had found the place he needed to grow his portfolio. Rahul: "I'm excited about my current postdoc in Dirk's lab, as it expands the range of interesting positions and allows me to continue working towards my goal." Lope: "A mentor cannot provide all the answers, yet I'm happy to have been a trusted sparring partner, who could encourage Rahul from my vantage point."

The mentoring journey was a valuable experience for both of us. Our advice for students considering it is to go for it! Mentorship gives you honest feedback, new perspectives, and the confidence to navigate career challenges.



**Rahul Shaha** completed his PhD in April 2025 in the department of Kai Tittmann at the University of Göttingen. Afterwards, he joined the department of Dirk Görlich at the Max Planck Institute for Multidisciplinary Research as a postdoctoral researcher.



**Lope Flórez** completed his PhD with Jörg Stülke at the University of Göttingen in 2010. Subsequently, he joined the Boston Consulting Group for two years as a consultant. Since 2013, Lope is Manager at Genedata in Basel, Switzerland.



## Announcement of MANGO

### Establishment of the Molecular Biology And Neuroscience Göttingen Alumni Organization

Dear Students, Faculty, Friends, and Supporters,

We are delighted to share exciting news with you: the establishment of the very first **Molecular Biology And Neuroscience Göttingen Alumni Organization (MANGO)**!

For over two decades, our MSc/PhD/MD-PhD programs and International Max Planck Research Schools for Molecular Biology and Neurosciences have fostered a spirit of research excellence, collaboration, and support of our students. As our network of graduates continues to grow and thrive across the globe, we recognize the immense value of staying connected, sharing experiences, learning from each other, and inspiring one another.

Many of us recognize that we are part of a unique, dynamic, intellectually stimulating, driven and expansive community - this was so clearly showcased during the 25<sup>th</sup> Anniversary celebrations in September 2025. With the energy and enthusiasm renewed at this meeting,

MANGO was founded in November 2025 by graduates of the Molecular Biology and Neuroscience programs from diverse batches.

**MANGO is founded with the following goals:**

- To cultivate a worldwide community of MolBio and Neuro alumni, providing a hub for our strong and supportive network that transcends borders and disciplines.



Alumni Career Forum during the 25<sup>th</sup> Anniversary events at Stadthalle Göttingen

- To maintain and strengthen professional and personal ties within our network - graduates, faculty, and current students.
- To actively connect our members through meetings, career talks, networking events, and opportunities for knowledge exchange.
- To offer mentorship and support for new students joining our programs, ensuring a smooth transition and a welcoming environment.
- To support our MolBio and Neuro graduate school's activities, such as culture nights and other community-building events through fundraising.



MANGO Founding Members: Olga Babaev, Florian Hauer, Katharina Hoff, Lena Kutscher, Carlos Eduardo Lima da Cunha, Marija Liutkute, Simone Mayer, Dragomir Milovanovic

## Announcement of MANGO (continued)

### 1st MANGO Meeting: Save the date! 11-12 September 2026, Göttingen

We are thrilled to announce that our first meeting will take place in conjunction with the 23<sup>rd</sup> Horizons in Molecular Biology Symposium, in Göttingen, 11-12 September 2026! Join us for inspiring talks, engaging networking events, the chance to shape the future of our alumni community, and simply meeting your friends in the lovely City of Science. Stay tuned for updates regarding the meeting program and registration details.

Finally, we're excited to announce that we're looking for people interested in joining our association! If you share our passion and vision, we invite you to become a member and help us make a difference. Ready to take the next step?

Sign up now by clicking here (<https://forms.gle/1dSunMZ2KKXBQHcZ6>), or simply scan the QR code below.



We are looking forward to welcoming you to our growing community!

With warm regards,  
Founding Members

Olga Babaev,  
Florian Hauer,  
Katharina Hoff,  
Lena Kutscher,  
Carlos Eduardo Lima da Cunha,  
Marija Liutkute,  
Simone Mayer,  
Dragomir Milovanovic

## Regional MolBio & Neuro Alumni Chapters in Europe

### UK Chapter

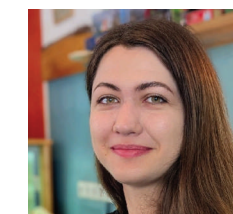
Following the 25<sup>th</sup> IMPRS Anniversary in September, we're launching an IMPRS Alumni UK Chapter for alumni based in the UK. The chapter already has 24 members, with plans for our first in-person meetup in London as Brunch on 8 February 2026.

We're planning a mix of events throughout the year: talks and fireside chats on career journeys (academia to pharma, tech, policy, entrepreneurship), structured networking sessions, skill-sharing workshops (grant writing, data science, scientific communication), lab and company tours, and of course social gatherings like pub nights and dinners.

If you're in the UK and want to connect with fellow IMPRS alumni, join the [WhatsApp group](#), and you can also subscribe to our events calendar: [https://lu.ma/imprs\\_london](https://lu.ma/imprs_london).

### Munich Chapter

Another Alumni Chapter is planned for Munich. In December 2025, Jenifer Rachel took the initiative to reach out to graduates of the IMPRS for Molecular Biology and Neurosciences and connect. A [WhatsApp group](#) has been started and alumni from the wider Munich area are welcome to join. First activities will be kicked off in the upcoming month. Feel free to contact Jenifer on [LinkedIn](#).



Anna Liashenko, UK



Vlad Dembrovskiy, UK



Jenifer Rachel, Munich



## Launch of the MANGO USA Northeast Chapter

The new year opened with exciting momentum as Dan, Yaisa, Alex, Martin, and Caghan gathered for the first planning meeting to officially launch the MANGO USA Northeast Chapter. This marks the beginning of a coordinated effort to bring together IMPRS Molecular Biology and Neuroscience alumni across the US Northeast and Mid-Atlantic and strengthen the growing MANGO community in the United States. Led by Dan and Yaisa, the group met to align on goals, structure, and the shared vision for a vibrant, connected regional network.

The team outlined a chapter framework that reflects both the geographic diversity and the collaborative spirit of the alumni community, spanning Boston, New York City, Philadelphia, and the Maryland/DMV (Delaware, Maryland, Virginia) region. The long-term vision centers on building meaningful alumni connections, supporting scientific exchange, mentoring and creating a welcoming, active community that brings people together across institutions and career paths.

The kickoff meeting covered plans for quarterly subchapter activities, including networking gatherings, socials, student outreach, and collaborative initiatives designed to keep members engaged throughout the year. The group also discussed coordinating and aligning with the annual MANGO in-person gathering in Göttingen, to strengthen ties with the broader MANGO network. In addition, the chapter plans to host a regional Northeast/Mid-Atlantic meeting roughly six months after Göttingen, rotating among major cities to ensure broad participation and shared ownership.

To build momentum, the team agreed on several immediate next steps: launching a MANGO USA Slack workspace, sending a call-to-join email to all Northeast-based alumni, and formally



establishing local subchapters in Boston, NYC, Philadelphia, and the DMV. Each subchapter will identify volunteer leads to help coordinate events, communications, and outreach as the community grows.

Looking ahead, the chapter aims to host one local gathering in each subchapter during summer 2026, laying the foundation for a strong regional presence and encouraging alumni participation at the MANGO meeting in Göttingen in September.

Submitted by Dan and Yaisa, Northeast Chapter Leads on behalf of the MANGO USA NE leadership team (Yaisa Andrews-Zwillig, Dan Zwillig, Martin Wienisch, Caghan Kizil, Adema Ribic, Jayeeta Basu, Tanvi Butola, and Alex Pouloupoulos)

### Current profession and location of our Molbio PhD alumni

#### Country Distribution

##### Europe (82%)

Austria 1.2%  
Belgium 0.4%  
Bulgaria 0.4%  
France 0.4%  
Germany 63.1%  
Luxembourg 0.8%  
Malta 0.4%  
Netherlands 1.2%  
Poland 1.2%  
Romania 0.8%  
Spain 1.2%  
Sweden 1.2%  
Switzerland 5.2%  
Turkey 0.4%  
United Kingdom 4.4%

##### North America (13%)

Canada 2.0%  
United States 10.7%

##### Asia / Australia (5%)

Australia 0.4%  
China 0.8%  
India 2.4%  
Iran 0.8%  
Qatar 0.4%  
Singapore 0.4%

#### Profession

##### Academia / Research (38%)

Professor 5%  
Group leader, PI 5%  
Staff/senior scientist 3%  
Postdoc 23%  
Science management 3%

##### Private & Public Sector (48%)

Scientist, team leader, manager R&D 24%  
Staff, team leader, manager non-R&D 16%  
Science manager 4%  
Consulting 5%

##### Other Profession (10%)

Media, publishing 4%  
Patent attorney 2%  
IT, software development 1%  
Self employment 4%

##### Other (4%)

Other professions, internships, job applications, family management etc. 4%

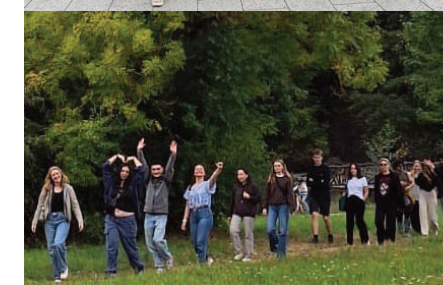
## IMPRS Master's Joint Retreat in Weimar

For the past 25 years, every cohort of Molecular Biology and Neuroscience master's students has experienced the same challenge: a summer of intense preparation for the looming Goliath of exams. Upon receiving the news that the entire cohort had successfully passed, relief quickly gave way to celebration - setting the perfect mood for the first joint Molecular Biology and Neuroscience Master's retreat in years.

Early Friday morning, we boarded the train to Weimar and began our journey. Despite the large number of sleepy faces, excitement carried us through the ride and we arrived at our destination for the weekend: Hotel Kaiserin Augusta. After settling into our rooms, we gathered over the hotel's lunch buffet before diving into the scientific portion of the retreat. In true IMPRS fashion, Molecular Biology and Neuroscience students pitted their knowledge against each other, facing off in a lighthearted quiz-style competition. This may not have been worth extra exam points, but it was certainly an educational experience filled with a great deal of laughter.

Between the day's activities, the hotel lobby became an unexpected highlight; several students showcased their musical talents at the piano, giving spontaneous performances that were met with appreciation not only from fellow students but also from the hotel staff and other guests.

In the late afternoon, we set out to explore Weimar together. Leonie - a Molbio student and a frequent visitor of the city - guided us through its historic streets, pointing out the



most notable landmarks along the way. A visit to Goethe's Gartenhaus, where several of his poems were written, offered us a glimpse into the city's literary past, and this walk was made even more memorable when we stumbled upon the soundcheck of a local band, providing the soundtrack to our tour. Of course, no summer stroll would be complete without ice cream, and the gelato we found served as a refreshing reward at the end of our explorations. After a hearty dinner back at the hotel, we split ways for the evening, with some returning to enjoy the concert we had earlier discovered, and others opting for a cozy night in with movies and board games. The fun then continued late into the night, as the Neuroscience students spent hours writing heartfelt messages to each other in yearbooks made by one of their classmates, Laura, bringing a perfect end to the first day.

On Sunday morning, we shared one last breakfast together before parting ways. Some eagerly set off to begin their holidays, while others set out in search of New Orleans-style fried chicken. A few even embarked on an impromptu journey to the nearest IKEA, and some chose to explore nearby cities such as Erfurt before heading back to Göttingen.

Of course, none of this would have been possible without the support of the Molbio and Neuro offices, and we are deeply grateful to Steffen, Kerstin, Sandra, and Jonas for their thoughtful organization, which gave us the perfect way to end an intense summer and begin the next chapter in our journeys!

Ariana Nogreh & Laura Pearson



## A Moment to Pause, Reflect, and Celebrate

Marking the conclusion of our MolBio master's journey and the community that shaped us

Life moves quickly. We constantly go through it, planning that next step whether that is something as big as a new career path or as small as a new experiment. This makes the moments of reflection and celebration especially

longer. Today, however, was the complete opposite: The building was now a chorus of cheerful reunions with the friends we had once spent hours with every day but have not had the chance to

how even if the workload might seem too intense, it is manageable, especially as a team.

We were also treated to an outstanding musical performance from fellow



Rhea and Sait delivering the graduation speech of the 2023/2024 MolBio class before their classmates, friends, relatives and MolBio newcomers

important. This is why I am grateful for events like our master's graduation. Here, most of us, some of whom no longer live in Goettingen or even Germany, can reflect on our journey together and how far we have come in a ceremony dedicated to celebrate the conclusion of our master's program.

The days leading up to the ceremony were already starting to buzz with excitement. Talking to fellow batchmates about what to wear, planning the after-party as well as ordering sashes and hats for the graduation. This really built up just how special this day was going to be. Then the day finally came. As we all made our way to Faßberg, it was impossible not to think back to those early morning days, some of which in freezing weather, where we would trudge to our lectures wishing we could have slept a little

meet in months. Celebrating our growth together alongside some of our families and friends was a wonderful and unique opportunity.

Together again we went to the ceremony, where our program speaker Peter Rehling underlined the importance of what we have achieved as MolBio students and shared useful advice going forward. Following the motivational speech, Hannah, Kushboo, Sait and I delivered an incredibly made speech (according to my completely unbiased opinion). Here we looked back at our experiences throughout our time together, from the joys of planning and taking part in culture nights, to the stress of the preparation for the big exam. We also took the opportunity to highlight some useful advice for the newcomers present at the event,

MolBios Tim Prolingheuer, Saruby Sharma and Nathan Schembri Rodgers. Hearing them perform was the perfect reminder of the diversity of skills and talents that makes each of us unique. Really, it is this blend of different experiences, whether it be via specific talents or hobbies or cultural elements, that really shapes our MolBio community.

Furthermore, we got to hear an interesting speech from the new batch of students. Melissa Mattern and Zio Kim represented their batch and introduced themselves, as well as spoke about their feelings as newcomers of the program and how they were adjusting to life in Göttingen. We also got to hear from the rest of the group as they all took the stage. They also had the interesting idea of introducing each other by having each person give a

## A Moment to Pause, Reflect, and Celebrate (continued)

fact about another one of their fellow batchmates. There is a sense of nostalgia as you look up at them and cannot help but remember yourself in that position 2 years ago. It helps you reflect on how much has changed in that time, how much you grew and who you have become through the experiences made possible by this program.

The main highlight of the event however was the distribution of the diplomas. As we walked up in front of our dear friends, we really got to experience the culmination of over a year of work and effort. Most of our families even got to participate in this moment, either in person or online via Zoom. Getting to receive the degree and bouquet to the applause of an audience helps to actualize that we have finally



The musicians Nathan, Saruby and Tim

opportunity to smile and pose for photos to make sure we can always look back at this day and the emotions we experienced together. We even made sure to throw up all

The fun continued over drinks and music as we set up an after-party at Kellnerweg. In some ways, it was reminiscent of our culture nights, but with a more personal meaning for us: it was a bittersweet feeling to celebrating again with these same people, as we talked, danced and laughed into the night, knowing this was likely the last night we would all be together like this for an indefinite period of time. Nonetheless, we certainly made the best of this great opportunity that made the day all the more special.

All this being said, this was an incredible opportunity to celebrate this milestone with the people who helped me so much along the way. I would like to thank each and every one for taking on this challenge with me through it all. I will never forget the time and memories we shared together. Finally, on behalf of



Master's graduates of the 2023/2024 MolBio class and their proud family

completed this part of our lives and are ready to move on to the next one, whatever that may entail.

Following the graduation ceremony itself, we stayed to talk and eat in the hall as it became alive with a combination of catching up and reminiscing. We also got the

the graduation hats we ordered together, to really celebrate our success. It really did feel like something straight out of a novel. All the highs and lows, the struggles and triumphs finally feel like they were now fully over and done in a moment that no email or degree could convey.

my entire batch I would like to thank Steffen and Kerstin for the tireless work they put it to making this program what it is and helping us in every step of this incredible journey. Their effort provided me with the opportunity to become who I am today and therefore I will forever consider myself a MolBio.

Rhea Pisani



# MolBio Newcomers through the Seasons

...and don't forget your vitamin D!

Late in the summer of 2025, our journeys in Göttingen began, juggling heavy suitcases and feeling grateful for the pick-up buddies who helped us find our new homes. We were fortunate to arrive just in time for Horizons and the 25<sup>th</sup> Anniversary celebrations of the IMPRS Molecular Biology and Neurosciences programmes. It was an energetic welcome indeed, as we were thrust straight into a vibrant week of high-spirited academic presentations and discussions. A strong shake-up from our summer breaks, it signalled the start of graduate school and set the tone for the rigor, pace and excitement ahead.

Horizons offered a deep dive into various realms of molecular biology, inspiring us and challenging us to engage with it critically. It was particularly exciting to listen to talks by group leaders who had graduated from our very own program. Thereafter, the 25<sup>th</sup> Anniversary celebrations gave us the opportunity to hear from those who shaped the program from its inception, as well as from alumni who went on to pursue careers in diverse fields. Their stories offered us a glimpse into our own possible futures: meaningful science, enriching cultural exchanges and lasting friendships. We learnt that while the path ahead will undoubtedly bring challenges, we will always have our friends and mentors by our side.

After the celebrations, we transitioned into the MolBio orientation. The opportunity to get to know everyone before the course officially began was golden; colleagues quickly became friends, and we bonded

over German classes and induction week. Nothing brings people closer than the shared struggle of understanding the difference between Akkusativ and Dativ cases, and attempting to pronounce



*Immatrikulationsbescheinigungen*. At the same time, we were learning another language, which, for some of us, felt easier than German: R programming. Orientation week culminated in a day trip to the Grenzland-Museum and a well-earned dinner of *Flammkuchen*. Armed with *„genau“*, *„ggplot“*, and filled with anticipation, we were ready to take on the lectures.

The days flew by as we attended engaging lectures and methods courses, adding cutting-edge techniques to our growing skillset, with *Tischfußball* and sprinting to catch the

bus for lunch being some of them. At least there was always pommes to look forward to at the Mensa. Soon enough, we had our official “Commencement” to the program, coinciding with the Master’s graduation of the 2023/24 class. It was a light-hearted moment where we revealed fun facts about ourselves, hinting at who would soon be filling their shoes.

For many of us, moving across the world to a small German university town was a big change. Luckily, the MolBio office made this transition seamless, assisting us with housing, bank accounts and all other paperwork. Settling into the town became a shared experience: figuring out bus routes, discovering grocery shops, and helping each other carry furniture across town. Slowly, we began to make Göttingen our home. Our weekly hangouts grew to include picnics by the Kiessee, dancing and climbing at Unisport, drinks at Thanners, döners at Efes, dinners at Madras and karaoke at Nörgelbuff.

We also encountered our fair share of cultural surprises: windows that open vertically, Sundays as a sacred day of rest, knocking on tables after lectures and, naturally, the challenges of navigating everyday life in German. To survive, many of us continued with German classes through the semester. *Genau!* You heard that right. Despite demanding schedules, rain, shine or even snowstorms, we made time to learn German so that we could order coffee

## MolBio Newcomers through the Seasons (continued)

with something more sophisticated than *„mit Karte, bitte.“*

As we warmed up to each other, the weather cooled down. With the fall colors as our backdrop, we started plotting our first group project, the “British Murder Mystery” Culture Night. A night shrouded in mystery and filled with scrummy scones gave us our first taste of how fun it is to organize culture nights. As chavs and aristocrats, we solved the murder and danced through the night to what had now become a predictable but endearing playlist: the Turkish *“Damat Halayı”*, the Indian *“Chamma Challo”*, the German *“Junge”*, and many favorites including ABBA, Shakira and Queen.

We blinked, and winter was upon us. The “Christmas Carol” Culture Night brought heartfelt performances and the holiday spirit. The evening was set abuzz with traditional Christmas desserts and drinks. As we sang Christmas classics at karaoke, we realized it was never just about the songs, but about the people we sang them with. For many of us, winter also meant experiencing our first snow!! Snowball fights, building snowmen and visiting the *Weihnachtsmarkt* for a glass of *Glühwein* quickly became new favorite group activities.

Inspired by our time in Göttingen, we grew curious about what other Christmas markets had to offer. A whisper of whimsy drew us to towns across Germany. Many of us ventured to Hanover, Eisenach, Erfurt, Goslar and beyond. Each town offered its own history and charm. These trips also introduced us to the classic “Deutsche Bahn experience”. Like many newcomers, we had only heard rumours. You learn quickly not to assume things will go exactly as planned. One particularly memorable



day followed a visit to Heidelberg’s castle and scenic viewpoints, when what was meant to be a five-hour journey turned into a nine-hour adventure, complete with delays, sprinting for trains and last-minute platform changes.

Balancing a new environment with an intense study schedule meant finding ways to unwind, together and alone. Sometimes that looked like cultural exchange: tango classes, shared traditional Christmas dinners, and hikes through wooded hills (or behind the MPI to see the alpacas). For others, it meant Formula 1 watch parties or Dungeons & Dragons sessions. We draw from each other’s cultures, interests and experiences to create moments of joy, connection and rest. Engaging with what others love, and letting them do the same for us, has become a defining part of our time together. In the end, we owe our deepest thanks to the people who brought us together and made this transition as seamless as possible: Kerstin and Steffen, the heart and soul of the program. We offer our Herzlichen Dank!

During these past months, it was also a privilege to listen to numerous Nobel laureates, including Thomas Südhof, Katalin Karikó, Stefan Hell and Randy Schekman. Their talks conveyed the beauty of science and the joys of a life dedicated to it. As we enter the new year and look ahead to lab rotations and the warmth of spring, we reflect on these experiences. Having seen both the brilliance of the research and the vulnerability of the researcher, we feel the weight of the tradition we are entering. At the same time, we feel quietly encouraged to find our own place within it.

Priyanka Sankar, Noha Nasr, Likhith Chandragiri, Shreya Kaushal



## Science, Community, and a Milestone Celebration

Three days of interdisciplinary sciences at the first MolBio/Neuro joint PhD Retreat at Harnack-Haus

The PhD Retreat 2025 brought together the students from both the IMPRS Molecular Biology and Neuroscience program for three full days of science, conversation, and engagement at the historic Harnack-Haus in Berlin-Dahlem. This time, the retreat represented a special event, as it coincided with the 25<sup>th</sup> anniversary year of our IMPRS program, making it both a scientific gathering and a preparation for the anniversary celebration in September. Our journey to the Harnack-Haus Berlin began early in the morning, with several of us



Group photo with participants of the joint MolBio/Neuro anniversary retreat in Berlin

traveling together either by bus or by train from Göttingen Bahnhof. Upon arrival at our retreat venue, both groups met together at the Harnack-Haus, a conference center with a rich tradition of scientific interaction. Once there, we checked in and enjoyed a light lunch, providing a casual introduction and a chance to reconnect with friends and colleagues from both programs.

Now it's time for some fascinating scientific talks by the PhD students, and the scientific session began in the Goethe-Saal with the first two talk sessions, featuring an intriguing combination of molecular biology and neuroscience themes. The talks included an astounding range of scientific topics from ribosome dynamics, mitochondrial biology, and macromolecular complexes to synaptic plasticity, neuronal signaling, and cellular mechanisms underlying brain function. This mix of topics sparked genuine curiosity and inspired us, as doctoral students, to think beyond our own specialties. Between the two scientific talk

sessions, the coffee break in the Planck Lobby was a nice diversion, providing us an opportunity to talk informally. Over snacks and coffee, we discussed ideas, asked each other questions, and identified surprising links between two scientific fields.

These moments felt just as meaningful as the presentations themselves. The vibrant setting demonstrated the value of uniting two scientific communities that approach biological problems from disparate but complementary angles.

After the completion of the afternoon scientific talks, it was time for some evening activities, and for that, we joined a guided Dahlem Campus tour. The tour delivered an interesting blend of history, storytelling, and interactivity. Through short anecdotes, historical facts, and entertaining quizzes, we learnt about Dahlem's heritage as the "German Oxford," its role in shaping contemporary science, and the mythology that surrounds the campus. The quiz by the tour leader to discern fiction from fact gave a lighter aspect and encouraged everyone to actively participate in the history of the place.

The first day of our retreat closed with a small celebration of our program coordinator Steffen's 25<sup>th</sup> anniversary of

joining the IMPRS program. We celebrated it by cutting a cake and a singing performance by the students, and then we had our dinner at Harnack-Haus, followed by evening activities in the Einstein Lounge. As this year marked the 25<sup>th</sup> anniversary of the program, a special preview session was held, led by Steffen, reflecting on the journey of the graduate school over the years. The relaxed setting encouraged open conversations: some participants discussed some ideas for the anniversary, while others shared some personal stories, laughed together, or simply took the opportunity to unwind after a full day.

The second day of our PhD retreat, Friday, 4<sup>th</sup> July, began with a fulfilling breakfast and continued with the scientific presentations in the Goethe-Saal. The morning talk sessions once again bridged Molecular Biology and Neuroscience, touching on scientific areas such as synaptic control, mitochondrial organization, molecular imaging, and enzymatic mechanisms. The range of methodologies and systems inspired critical questions and emphasized how identical molecular principles might function across quite different biological contexts. Following the presentations, the retreat shifted into the poster sessions conducted in Meitner-Saal I and II. Over coffee, we presented our research work in a more interactive poster format, leading to in-depth discussions, constructive critiques, suggestions, and feedback. After a delicious lunch, the poster

## Science, Community, and a Milestone Celebration (continued)

session continued, allowing adequate opportunity for conversation and networking across labs and disciplines.

Then, following the poster sessions, the next slot was reserved for other social activities. Some of us joined the guided tour of the Botanical Garden and Botanical Museum of Freie Universität, learning about the garden's long history, its scientific importance, and its outstanding plant collections from different areas of the world. We were amazed by the collection and the scent of many types of plants and flowers. Some joined the botanical garden tour, and a few relished their leisure time in Berlin restaurants and the city, while others took part in the Allied Museum tour, "How Enemies Became Friends," which offered historical insights into Berlin's post-war era and the shift from former conflict to collaboration. The guided tours offered us a refreshing change of pace and allowed us to experience Berlin beyond the conference rooms.

Saturday, 5<sup>th</sup> July, was the final day of our PhD retreat, and it began with the short presentations by the first-year PhD students. In their concise presentations, the newcomers presented their fascinating research ideas and interesting outcomes. These short talk sessions were full of engaged discussions, meaningful questions, and encouraging feedback, establishing a supportive environment for newcomers at the outset of their PhD journey. This was followed by the alumni career speeches, featuring alumni from varied professional backgrounds: Michael Ratz (Karolinska Institute), Juan Daniel (Chepe) Flórez Weidinger (Genedata), Shama Sograte Idrissi (Oliver Wyman), Christian Schulz (Heliyon, Cell Press), and Valentyna Zinchenko (Bayer). Rather than focusing on technical aspects, the alumni shared their personal professional



Excursion to the amazing Botanical Garden of Freie Universität Berlin



Open-air speed-dating with Christian, Valentyna, Chepe, Shama, and Michael (alumni group photo; from left to right) in the gardens of Harnack-Haus

paths, including insights into academia, industry, consulting, scientific publishing, and machine learning. Their honest accounts of transitions, obstacles, and decision-making resonated strongly with us. After lunch, the retreat concluded with the alumni speed-dating session, "What to Do with a PhD – Opening the Black Box," which took place at the Hahn-Hörsaal, Meitner-Saal, Planck Lobby, and outdoors on the lawn. Discussions with alumni allowed us to ask direct career specific questions and we received some best candid advice. The speed dating sessions with alumni underscored that there is no single "correct" career path and that skills

and interests developed during a PhD can lead to many fulfilling directions.

With farewell coffee and snacks, our PhD retreat came to an end. We then departed for Göttingen, some by bus and others by train, carrying back not only new scientific insights but also renewed motivation, broader perspectives, and strengthened connections. The PhD Retreat 2025 was a memorable blend of science, the history of Dahlem campus, and community, one that truly reflected the spirit of interdisciplinary research and shared growth.

Shantnu Kumar, Luis Camacho



## All eyes on this Horizons...

### 22<sup>nd</sup> Horizons in Molecular Biology

This September brought with it an exciting week for the MolBios, as we had the 22<sup>nd</sup> Horizons in Molecular Biology symposium, followed by the 25<sup>th</sup> Anniversary celebrations of the IMPRS for Molecular Biology and Neuroscience programs.

Horizons in Molecular Biology is a vital part of the MolBio community and has been organized by the students for over two decades, bringing together eminent scientists and participants from all over the world. The 22<sup>nd</sup> edition of Horizons took place from September 8-11, where over 200 participants and 22 speakers from diverse scientific backgrounds were hosted at the Max Planck Institute for Multidisciplinary Sciences for an exciting week of scientific exchange and networking.

As a past tradition, the first day of Horizons began with the Career Fair, with exciting talks from experts who come from non-academic fields, guiding the audience to a world of science outside academia. Mateusz Mendel and Elisa Buchberger shared their personal journeys through academia that led them to become scientists in the field of drug discovery. Christiaan Stuut explained how the skills acquired during his PhD were instrumental in securing his role as an application scientist. Finally, Madhobi Sen and Maria Luitkute, proud MolBio alumni, described their journey from the MolBio program to

their roles as medical writer and biopharma consultant, respectively. Elena Hoffer offered two workshops for students to help improve their networking and job-acquiring skills.



Group photo with participants, speakers and organizers



Speakers Thomas C. Südhof (Keynote, left) and Jonas Reis (right)

Speed dating sessions were also conducted for the participants to interact more closely with the speakers.

The scientific session was kick-started by our keynote speaker and Nobel laureate, Thomas C. Südhof, who explained his impactful research on synaptic mechanisms in long-term memory formation. Over the next three days, we had fascinating talks from diverse fields of molecular biology, highlighting cutting-edge research and deep scientific exchange. This year had some interesting talks on the nuclear pore complex, with experts

Martin Beck and Karsten Weis talking about the structural properties of the NPCs and how viruses like HIV pass through this barrier. In immunology, Michael Heneka walked us through immune activation mechanisms in neurodegenerative diseases, and Anne Willis talked about the off-target effects of modified mRNAs. Sabeeha Merchant introduced the audience to the world of algae, whereas Jesse Veenvliet described his work on stem-cell-based embryonic organoids.

In genome biology, Ken Zaret showcased his groundbreaking work on chromatin organization and cell fate, and Simona Giunta described her interesting work on the organization of centromeres. Susan Mango's talk highlighted the features of genome organization during embryogenesis. Moving on to mitochondrial biology, Christian Münch talked about mitochondrial dysfunction and senescence, and Angelika Harbauer described a multi-organelle mechanism of mitophagy in neurons. Julius Brennecke talks about the interesting mechanisms of Transposon-host conflict, whereas Onn Bradman's talk sheds light on ribosome quality control mechanisms. Finally, shifting into molecular neuroscience, Alex Walter talked about the regulation of presynaptic release sites.

Several talks described exciting and new cutting-edge methods, with Patrick Müller describing his

## All eyes on this Horizons... (continued)

work on deep-learning-based tools for studying embryonic development. Sinem Saka described her exciting work on the development of multiplexed imaging approaches. Evangelia Petsalaki introduces multiple new computational tools to study cell signalling. Finally, Jonas Ries talked about the exciting world of dual-colour MINFLUX microscopy.

This year, five IMPRS alumni who have achieved significant success in academia were featured as speakers. This included Patrick Müller, Gabriella Ficiz, Sinem Saka, Alex Matthias Walter and David Haselbach. We also had the honor of hosting the talks by Christian Münch and David Haselbach, sponsored by the EMBO Young Investigator Programme (YIP).

Over 70 PhD and master's students from all over the world got the opportunity to present their research as posters. Two students presented their research as part of our awarded student talks. Janine Sachs (Constructor University, Bremen) and Raz Ben-Uri (Weizmann Institute of Science, Israel) were the awarded student talks this year, and their talk were met with high praise. The best poster (Arian Sadeghi, MPI-NAT) and both student talks were awarded with cash prizes for their excellent scientific work.

Horizons has always been a platform for students to interact with renowned scientists and learn from their journeys. This year, around 25 participants had the opportunity to meet with our keynote speaker, Thomas C



Speed dating and poster sessions

Südhof, for an hour of discussion on navigating a scientific career in today's world.



Organizing team of Horizons 2025

To provide a break from the scientific sessions, the MPI-NAT choir delivered a captivating performance, filling the lecture halls with harmony. Finally, after an intense day of scientific exchange, the evening social events were the perfect setting to unwind, connect, and network beyond the lecture halls. From beer at Café & Bar Celona to the

conference party at DT Keller and happy hour, the speakers and participants came together for good food and great conversations. Seeing speakers trade slides for dance moves brought a welcoming energy to the evening.

This Horizons had everything, from great scientific networking to fun social evenings and was met with praise and positive feedback. The credits for the smooth conduct of the event go to the organizing team for their dedicated work for over a year. The preparations for the next Horizons are already underway. The organizing team is looking forward to welcoming you next September for another edition of Horizons in Molecular Biology.

Hari Krishnan

All pictures for this article were taken by Irene Böttcher-Gajewski and Swen Pfortner

### Horizons speakers 2025

Martin Beck, Onn Brandman, Julius Brennecke, Gabriella Ficiz, Simona Giunta, Angelika Harbauer, David Haselbach, Michael Heneka, Susan Mango, Sabeeha Merchant, Patrick Müller, Christian Münch, Evangelia Petsalaki, Jonas Ries, Sinem Saka, Thomas C. Südhof, Jesse Veenvliet, Alexander Matthias Walter, Karsten Weis, Anne Willis, Ken Zaret.



## Proud to be a Chemist

A chronicle of my experience at the 74<sup>th</sup> Lindau Nobel Laureate Meeting

When I was a kid, I remember having one never-ending question about everything: Why? That question led me to discover the world of science. I crawled through a swamp of books and primitive webpages, searching for answers but finding new questions. Slowly, I found my passion in two different fields: physics and medicine. It was at that crossroads of my life when I discovered chemistry, the central science, the bridge between the realms of physics and biology. Clinical chemistry led me to biochemistry, which led me to molecular biology. The Molecular Biology Program took me by the hand and gently guided me to my own niche in science, opening a world of opportunities.

One of these opportunities happened in October 2023, when Molecular Biology Program nominated me to participate in the 73<sup>rd</sup> Lindau Nobel Laureate Meeting, with emphasis on Physics. Starting in 1951, this meeting has allowed the interaction between international students and young scientists and Nobel Laureates. Each year, a group of 30 – 40 Nobel Laureates meets ~600 students, who participate in a series of lectures, forums, and social gatherings.

As a structural biologist, the invitation felt like a dream. Due to the fields involved in my PhD project (structural elucidation of multienzyme complexes by Cryo-EM), I felt that my area of expertise was far from the topics explored at the conference. It was a big surprise when I received a conditional acceptance letter, stating that, even though my profile was adequate for the conference, I would benefit more by delaying my application one year, to the 74<sup>th</sup> Lindau Nobel Laureate Meeting,



Eduardo at the 74<sup>th</sup> Lindau Nobel Laureate Meeting, with emphasis in Chemistry (#LINO25)



Some of the Latin American Young Scientists participating at #LINO25



From left to right: Lynn Marie Ostersehl, Mira Hesselink, and Roswitha Junker, fellow PhD students at the MPI-NAT

with emphasis on Chemistry (#LINO25). It seemed like chemistry was still guiding me towards new adventures.

And so, on June 28<sup>th</sup>, 2025, my Lindau adventure started. The city of Lindau is located on the eastern side of Lake Constance in Bavaria. I was astonished by the paradisiac vibe of the city. As soon as I checked in at my hotel, I immediately felt the energy of Lindau and the excitement for the week to come. I was surprised to realize that I had been allocated to a hotel designated mostly for young Latin American Scientists, and as anyone can imagine, the party atmosphere was evident. I made great friends from nine Latin countries on my first day in Lindau, each one a fellow young scientist, working in a diversity of branches of chemistry.

On Sunday, June 29<sup>th</sup>, the conference started. We were welcomed by Countess Bettina Bernadotte, president of the Council for the Lindau Meetings, followed by a series of insightful talks by Frances Arnold (Nobel Prize in Chemistry, 2018) and Ben L. Feringa (Nobel Prize in Chemistry, 2016), who delivered a quote that resonated with me until this very moment: “Be proud to be a Chemist!”. Alongside some friends from the MPI-NAT (Roswitha Junker, Mira Hesselink, Lynn Marie Ostersehl, and Michael Schwarzer), I had the wonderful opportunity to network with an amazing group of scientists from all over the world.

Our second day started intensely, beginning with a talk by John Jumper about the development of AlphaFold and ending with an astonishing talk given by Reinhard Genzel about the science of black holes (after all, I had the pleasure of enjoying a bit of astrophysics). Later that day, I experienced a unique privilege: a Science Walk with Joachim Frank,

## Proud to be a Chemist (continued)

Nobel Prize in Chemistry, 2017, for the development of single-particle Cryo-EM, the very field I am working on. After an overwhelming amount of scientific exchange, the day ended in an exhilarating party in the conference hall of Lindau. Again, the Latino energy was present on the dance floor.



Ben L. Feringa, Nobel Prize in Chemistry 2016, for the design and synthesis of molecular machines

The third and fourth days of the conference continued at a very intense pace, with talks about the development of the Lithium-ion battery, electrochemical CO<sub>2</sub> capture, and the COVID-19 pandemic. The scientific program ended with a pleasant surprise: a panel discussion about the impact of AI in chemistry, with John Jumper as one of the participants, and Derek Muller (science communicator and host of the YouTube channel Veritasium) as moderator. As a structural biologist, the topic was of particular interest to me, and having the chance to ask questions to such a distinguished panel was an enriching experience.

On our fifth day, I had the opportunity to meet Dan Shechtman and to listen to his talk about quasicrystals. His words and those from Joachim Frank about the power of resilience in scientific research felt deeply personal, especially during the moments of failure in my PhD journey. At the end of the day, we were greeted with



Joachim Frank, Nobel Prize in Chemistry 2017, for developing cryo-EM for the high-resolution structure determination of biomolecules in solution

a wonderful Bavarian night, during which my friend Roswitha Junker introduced me to Brian Mallow, a science comedian and science communicator. He offered me to give a live interview for the YouTube channel of the Lindau Meeting. To say that I was nervous about a fully improvised, live interview would not do justice to the feeling of the moment, since everything was unscripted; however, I was extremely grateful for this exciting experience and the chance to share my feelings about the importance of science and critical thinking during our convoluted times, where anti-scientific ideologies permeate politics and our daily lives, fueled by the influence of social media.

On the last day we did a boat trip to Mainau Island, which had holiday vibes since the scientific program had already concluded. We enjoyed a delightful reception on a cruise through Lake Constance, and after a couple of hours, we found ourselves docking. We witnessed the closing ceremony of the



Derek Muller, science communicator and host of the YouTube channel Veritasium

conference and were officially granted the status of Lindau Alumni. After a science picnic and tour through the gardens of the island, we departed back to Lindau, having a vibrant party on the cruise. We ended the conference on the highest of notes.

The Lindau Nobel Laureate Meeting was one of the most insightful experiences of my life, and the opportunity to attend it was one of the greatest honors I have ever received. I am deeply grateful for all the support given to me by the MolBio Program and my department at the Max Planck Institute for Multidisciplinary Sciences.



## Joining the Program

**Michael Altenbuchinger** has been offering bioinformatics courses for MolBio students for several years. In addition to his current course on single-cell and spatial transcriptomics, he offers lab rotation projects and co-supervises a MolBio PhD student. Michael earned his PhD at the Technical University of Munich and subsequently held postdoctoral positions at the University of Regensburg and the Harvard T.H. Chan School of Public Health. In 2020, he established an independent research group for computational biology at the University of Hohenheim. Since 2021, he has been Professor for Bioinformatics in the Department of Medical Bioinformatics at the University Medical Center Göttingen. His research group focuses on developing methods for integrating diverse data sources, including multiple omics layers, and in medical applications, such as optimizing the treatment of cancer and chronic kidney disease patients.

<https://www.uni-goettingen.de/en/650701.html>



**Salma Balazadeh** was recently appointed Full Professor at the University of Göttingen, where she heads the Department of Molecular Stress Physiology of Plants in the Faculty of Biology and Psychology. She received her doctorate from the University of Potsdam and subsequently continued there as a research associate, before becoming a research group leader at the Max Planck Institute of Molecular Plant Physiology in Potsdam. From 2019 to 2025, Salma served as Associate Professor at Leiden University in the Netherlands. Her research focuses on how plants, including crops, cope with environmental stresses, particularly heat and drought, and on how interactions with beneficial microbes modulate plant responses to stress. Her group employs molecular, physiological, and genomic approaches. As a new faculty member of the Molecular Biology program, Salma teaches the lecture on Plants and offers lab rotation projects.

<https://www.uni-goettingen.de/en/703723.html>



## Thank You Gerhard!

**Gerhard Braus** was one of the founding members of the Molecular Biology graduate program. Together with Kurt von Figura, Reinhard Jahn, and Tomas Pieler, he developed the program's study concept and curriculum 25 years ago, which — despite continuous updates — remain in place to this day.

For the first three years, he led the program as its speaker before assuming the role of Dean of the Faculty of Biology and Psychology in 2004. Upon his appointment as Professor at the University of Göttingen and head of the Department of Microbiology and Genetics, he succeeded

the renowned microbiology chair of Günter Schlegel.

Gerhard's research has focused on fungi, including their control of developmental programs, protein turnover, pathogenicity and the interplay between development and primary and secondary metabolism. Since October 2025 he leads an Emeritus group for a DFG-funded research project, investigating fungi as a model to better understand Morbus Parkinson in humans.

We thank Gerhard for his long-standing dedication to the Molecular Biology program and wish him all the best for the years ahead.



<https://www.uni-goettingen.de/en/57919.html>

## Joining the Program

**Katherine Bohnsack** has been actively involved in the training of MolBio students for many years, hosting methods courses, lab rotation projects, MSc and PhD projects. In November 2025, the third GGNB doctoral researcher successfully defended her PhD thesis under Katherine's supervision, thereby completing the formal requirements for general examination accreditation within the MolBio program and other GGNB doctoral programs. Katherine earned her PhD from Newcastle University in 2012 and joined the University Medical Center Göttingen in 2013. Since 2018, she has been a group leader in the Department of Molecular Biology. Her research focuses on understanding how different types of RNA-binding proteins (RBPs) and RNA-dependent enzymes contribute to the regulation of gene expression. In addition to her methods courses, Katherine now also teaches the MolBio lecture on RNA-based regulation.

<https://www.uni-goettingen.de/en/631184.html>



**Rubén Fernández-Busnadiego** was appointed Full Professor at the University Medical Center Göttingen in 2019, where he heads the research group "Structural Cell Biology" at the Institute of Neuropathology. He carried out his PhD work at the Max Planck Institute for Biochemistry in Martinsried, and a postdoctoral stay at Yale University School of Medicine before returning to Martinsried as project group leader. Rubén's research group employs cutting-edge electron microscopy to uncover the intricate detail of cellular architecture. By combining cryo-focused ion beam milling with cryo-electron tomography, the group images vitrified cells in a near-native state at molecular resolution. As a new faculty member of the Molecular Biology program, Rubén teaches the special methods course on cryo electron tomography and also offers lab rotation projects.

<https://www.uni-goettingen.de/en/616529.html>



**Dörthe M. Katschinski** is head of the Department of Cardiovascular Physiology at the University Medical Center Göttingen (UMG). She earned her doctoral degree at the University of Lübeck and subsequently held postdoctoral positions at the University of Wisconsin and the University of Lübeck. From 2003-2006, she led a research group at the University of Halle, before being appointed Professor of Physiology at UMG in 2006. From 2013 – 2022 she has served as speaker of the International Research Training Group "Phosphorylation and redox mediated signaling in the failing heart" in collaboration with King's College London. Since 2022, she serves as speaker of the Research Training Group 2824 "Heart and Brain Diseases: Integrative Research Across Organs". In 2020, she founded the GGNB doctoral program "Cardiovascular Science", which she has chaired as a speaker since its inception. Her research focuses on hypoxia sensing and redox signaling. As a new faculty member of the Molecular Biology program, Dörthe teaches the lecture on Mouse as a model organism and also offers lab rotation projects.

<https://www.uni-goettingen.de/en/652728.html>



**Andreas Küffner** was recently appointed Max Planck Foundation Research Group Leader for Sustainable Biocatalysis at the Max Planck Institute for Multidisciplinary Sciences. He received his doctorate from ETH Zürich and has worked as a postdoctoral research fellow at the Max Planck Institute for Terrestrial Microbiology in Marburg since 2022. Andreas is a chemical engineer, biochemist, and microbiologist with a strong passion for carbon utilization, enzymes, and organelles. His research group aims to understand and engineer biological carbon capture using novel approaches to combine protein engineering and systems biology. As a new faculty member of the Molecular Biology program, Andreas teaches the lecture on metabolic networks and also offers lab rotation projects.

[www.mpinat.mpg.de/kueffner](http://www.mpinat.mpg.de/kueffner)





# Impressions of our 25<sup>th</sup> Anniversary



## IMPRINT

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