

Add-on Fellows for Interdisciplinary Life Science Fifth Cohort

Julia Ahlfeld

Postdoc (Chemical Biology) at the Ludwig-Maximilian's-University of Munich

Julia Thorn-Seshold (née Ahlfeld) researches functional neuroanatomy and neurogenesis. She also considers her expertise to be in the fields of developmental tumor biology, virology, and immunobiology. Julia studied biology in Bonn and Munich. With the help of the Add-on Fellowship, she strives to develop metabolically sensitive small molecules out of the chemistry lab and to follow their action through early cell biology to in vivo application in the diagnosis and therapy of inflammatory diseases.

Carolin Andresen

Doctoral candidate (Bioinformatics) at the German Cancer Research Center (DKFZ) and the Ruprecht-Karl's-University of Heidelberg



Carolin Andresen works on her doctoral projects at the German Cancer Research Center in Heidelberg. She is analyzing and integrating multidimensional datasets (transcriptomics, methylation, and metabolomics) to learn more about acute myeloid leukemia and inborn neurotransmitter diseases. The Add-on Fellowship allows her to expand her knowledge in metabolomics analysis. A funded research stay at the ETH Zurich gave her the opportunity to use an innovative metabolomics approach that complements her previous work. Beforehand, Carolin graduated in Molecular Biotechnology at Heidelberg University and focused on bioinformatic analysis.



**Marcel Bermudez**

Postdoc (Pharmaceutical chemistry) at the Free University Berlin

Marcel Bermudez focuses his research on in-silico pharmacology, using an interdisciplinary approach of molecular pharmacology and computational methods. He studies G protein-coupled receptors, which is an important drug target. He is also interested in other protein classes such as bacterial toxins, ion channels, and Toll-like receptors. Previously, he studied pharmacy and received his doctorate from the FU Berlin. Marcel is now a professor at the University of Münster at the Institute of Pharmaceutical and Medicinal Chemistry.

**Jadna Bogado Lopes**

Doctoral candidate (Neuroscience) at the Technical University of Dresden

Jadna Bogado Lopes focuses on the psychopharmacology of addictive behavior in combination with behavioral biology, molecular biology, and mathematical analyses. She focuses on individual behavior rather than group effects. Previously, she studied biology at the Federal University of Sanata Catarina, Brazil, with a study abroad in Coimbra, Portugal.



**Benjamin Buchmuller**

Doctoral candidate (Chemical biology) at the Technical University of Dortmund



Benjamin Buchmuller has a perpetuate interest in the interface between animated and unanimated matter. During his studies he became intrigued by next-generation sequencing and high-throughput screening methods. Previously, he studied B.Sc. Life Sciences and M.Sc. Molecular Biosciences at the University of Konstanz and Heidelberg. With the help of the Add-on Fellowship, he will intensify his knowledge in bioinformatics and combined these approaches to develop molecular probes for exploring the role of oxidized DNA nucleobases with epigenetic function in the human genome. Benjamin will be joining the Princeton Chemistry Department as a postdoc to continue his journey in chromatin biology.

**Philipp Burt**

Doctoral candidate (Biophysics) at the German Rheumatism Research Center (DRFZ) and at the Humboldt University in Berlin



Philipp Burt received his M.Sc. in biophysics from Humboldt University, Berlin. During his M.Sc. studies, he conducted wet lab research on plant osmotic stress (UC San Diego) and was trained in mathematical modeling of circadian clocks (Herzel lab, Charité Berlin). In his doctoral project, he is interested in combining high-throughput data with mathematical models to predict T helper cell fate-decisions in chronic and acute inflammation.





Eric Danner

Alumnus Doctoral candidate (Molecular Biology) at the Max-Delbrück-Center for Molecular Medicine (MDC) in Berlin in Helmholtz-Association.

Eric Danner has shifted his focus to genetic engineering and is investigating different ways to make targeted specific changes in the genome. Eric studied biochemistry and molecular biology at the University of California, Santa Barbara, USA. The Add-on Fellowship will allow him to develop his bioinformatics skills for sequencing analysis and data visualization.



Leander Dony

Doctoral candidate (Bioinformatics) at the Max-Planck-Institute (MPI) for Psychiatry in Munich

After completing his European Baccalaureate in Munich, Leander studied Chemistry and Bioinformatic at the Imperial College of London. Following internships in research and industry, he started his doctorate between the groups of Prof. Elisabeth Binder at the MPI of Psychiatry and Prof. Fabian Theis at the Institute of Computational Biology (Helmholtz Munich). Through the Add-on Fellowship he would like to do a lab exchange to and explore spatial transcriptomics approaches. He is currently working on developing machine learning approaches for the analysis of single-cell gene expression data with applications in psychiatry.



Mariia Efremova

Postdoc (Biochemistry) at the Technical University of Munich



Mariia Efremova has been working on a project "Magnetoencapsulins: bioengineering genetically controlled magnetic nano compartments in living cells". She is a recipient of the Humboldt Research Fellowship for Postdoctoral Researchers. Before, she studied chemistry and materials science and defended her doctoral thesis at Lomonosov Moscow State University, Russia, where she acquired expertise in the synthesis, characterization, and biomedical application of magnetic nanoparticles. The

Add-on Fellowship gave Mariia a lot of flexibility, including traveling to collaboration partners to perform unique experiments at their facilities and attending the most important conferences in her field.



Christine Gäbel

Doctoral candidate (Biopsychology) at the Ruprecht-Karl's-University of Heidelberg



Christine Gäbel is a doctoral candidate at the Institute of Medical Psychology at the Center for psychosocial Medicine, Heidelberg University Hospital. She is a fellow for her doctoral research at the Graduate Academy at the University of Heidelberg and the Christine Nüsslein Volhard foundation. Her primary research interests concern psychobiological effects of music therapy in major depressive disorder. After a Bachelor program in Health Care Management at the University of Applied Science Zwickau, Christine attained her master's degree in Clinical Music Therapy at the School of Therapeutic Sciences at SRH University Heidelberg.



Mercè Garí

Postdoc (Biomedicine) at Helmholtz Center in Munich



Mercè Garí studied Human Biology and obtained her doctorate on Biomedicine at the University Pompeu Fabra (UPF) in Barcelona. She has been dedicated to investigating the environment-health linkages of chemical pollutants for the past decade, mostly in universities and research centers in Barcelona and in Munich. Already as a young scientist, she has developed a robust research record, including more than 30 publications, leading and participating in numerous European and national research projects, lecturing at International Conferences, and mentoring Master and doctoral candidates. Through the Add-on Fellowship, she deepened her knowledge on machine learning applications for the life science.



Holly Giles

Doctoral candidate (Biomedicine) at the European Molecular Biology Laboratory (EMBL) in Heidelberg and at the Ruprecht-Karl's-University of Heidelberg



Holly Giles is focusing on leukemia cancer in the laboratory of Wolfgang Huber and Sascha Diedrich. Her current topic is "Multi-*omic* analysis of the role of the tumor microenvironment in leukemia". Holly studied natural sciences with a focus on genetics at the University of Cambridge. With the help of the Add-on Fellowship, she is gaining deep insights into statistical methods for large biological datasets and is taking on clinical challenges in haemato-oncology.



**Ruth Großholz**

Postdoc (Systems biology) at the Ruprecht-Karl's-University of Heidelberg



Ruth Großholz is a computational biologist who is analyzing plant physiological processes using multiscale computational modeling. She studied molecular biosciences with a focus on systems biology at the University of Heidelberg, and she completed her doctorate at the BioQuant/Centre for Organismal Studies at Heidelberg University in computational biology. Through the Add-on Fellowship, she would like to gain a deeper insight into the field of agent-based modeling to analyze plant physiological processes not only at the cellular but also at the tissue and organ level. Her current research topic is analysis of the fast brassinosteroid response using computational modelling.

Hannah Jeckel

Doctoral candidate (Physics) at the Phillips-University of Marburg



Hannah Jeckel wants to understand the swarming behavior of bacteria in biofilms. Biofilms consist of populations of uni- and multicellular organisms often in an slimy system. Biofilms do not represent whole organisms, but the collective to cooperative behavior can be in some instances pronounced but is poorly understood. Earlier, Hannah studied physics and mathematics at the Marburg University. Her master's thesis on the collective behavior of bacteria eventually led her to work at the interface of physics, mathematics, and biology. Add-on Fellowship allows her to dive deep into the world of biology, to learn new techniques, build quantitative skills, and thus understand biological systems.



**Xenia Kobeleva**

Postdoc (Medicine) at the University Hospital Bonn

Xenia Kobeleva focuses on neurodegenerative diseases and the search for biomarkers that underlie pathological cognition loss and disease pattern. Her research has also taken her to the Computational Neuroscience group at UPF Barcelona and the Institute of Ageing and Health in Newcastle. Previously, she studied medicine at RWTH Aachen University and completed a postdoctoral fellowship at Hannover Medical School. With the help of the Add-on Fellowship, she is able to combine her experience in neuroimaging with mathematical modeling and faces the challenges at the interface of clinicians' problems and basic scientists.

**Simon Krooss**

Doctoral candidate (Molecular Medicine) at the Hannover Medical School (MHH)



Simon Krooss studied at Hannover Music School, Hannover, and Ireland University and MHH. He accomplished internships in the field of virology, toxicology, and neurosurgery. His doctorate at MHH on liver gene therapy and RNA processing was supported by the German Academic Scholarship Foundation and Hannover Biomedical Research School. He achieved the Basic Research Award of the Bayer Hemophilia Program. The Add-on Fellowship provides him insights into genome analysis, evolutionary biology, oceanology and geobotany. His current research topic is "The protective role of a retrotransposable element in the human coagulation factor IX 3'UTR" and its relevance of primate evolution.



Annemarie Lang

Postdoc (Veterinary medicine) at the Charité – University Hospital Berlin

Annemarie Lang develops human-based in vitro models to simulate musculoskeletal diseases such as osteoarthritis, rheumatoid arthritis, and fracture healing. Previously, Annemarie studied veterinary medicine and received her doctorate from the FU Berlin where she worked under the supervision of Professor Buttgereit in the Department of Rheumatology at Charité - Universitätsmedizin. The Add-on Fellowship will allow her to expand her knowledge and skills in mathematical modeling with a particular focus on cartilage homeostasis and degradation.



Mohammad Lotfollahi

Doctoral candidate (Bioinformatics) at the Helmholtz Center in Munich



Mohammad Lotfollahi is interested in modeling drug responses and drug behavior using single-cell sequencing data and machine learning. Previously, Mohammad studied artificial intelligence at Sharif University of Technology in Tehran. With the help of the Add-on Fellowship, he will get a deeper insight into cell biology.



**Max Masthoff**

Postdoc (Medicine) at the University Hospital Münster

Max Masthoff's postdoc follows on from his doctoral thesis on cell tracking in magnetic resonance imaging. However, he is now turning his attention to clinical applications and to further molecular imaging techniques, such as optoacoustic imaging. Prior to this, Max studied human medicine at the University of Münster and worked on new methods of cell tracking in magnetic resonance imaging during his doctoral studies. The add-on fellowship will enable him to lay the financial fundamentals for evaluating the so-called time-lapse MRI for tracking individual immune cells in inflammatory diseases.

**Pedram Mehrabi**

Postdoc (Structural biology) at the Max-Planck-Institute (MPI) for Structure and Dynamics of Matter in Hamburg



Pedram Mehrabi moved to Hamburg upon being awarded an Alexander von Humboldt fellowship and continued the topic from his thesis on X-ray crystallography as being a postdoc. He completed his doctorate at the University of Toronto specifically in time-resolved S-ray crystallography. Before that, Pedram earned his bachelors at the University of Waterloo in Canada, and his master's at York University. Using the Add-on fellowship, he will continue his work in method development for time-resolved crystallography experiments. After his postdoctoral fellowship, he began as a group leader as an Emmy Noether fellow in the department of physics at the University of Hamburg.



Aditi Mehta

Alumna Postdoc (Pharmaceutical technology) at the Ludwig-Maximilian's-University of Munich



Aditi Mehta is becoming a junior research group leader and is conducting research in the field of pulmonary nucleic acid delivery. Previously, she completed her doctoral degree in lung cancer at the Max-Planck-Institute for Heart and Lung Research. With the help of the Add-on Fellowship, she is continuing her education on polymer synthesis, with a focus on biodegradable and biocompatible polymers used for drugs and drug delivery.



Signe Penner-Goeke

Doctoral candidate in (Biological psychiatry) at the Max-Planck-Institute (MPI) for Psychiatry in Munich

Signe Penner-Goeke applied for a fast-track doctoral program and is focused on identifying functional genetic variants that play a role in the stress response system and depression. Previously, she studied biology at the University of Winnipeg, Canada. In graduate school, she gained research experience as an assistant characterizing chromosomal instability in ovarian cancer. Through the Add-on Fellowship, she is deepening her knowledge of data analysis, especially for integrating multi-*omics* datasets.



Pedro Pablo Rojas

Doctoral candidate (Theoretical physics) at the University of Kassel

Pedro Pablo Rojas conducts research on "Design principles of biological clocks at multiple scales". Pedro studied mechanical engineering at the Balserio Institute in Bariloche, Argentina and has worked in computational mechanics for the nuclear and aerospace industries and as a technology transfer consultant. He is using the Add-on Fellowship to understand biological processes and to become skilled in neural circuits and electrophysiological techniques.



Hector Sanchez-Iranzo

Postdoc (Biophysics) at the European Molecular Biology Laboratory (EMBL) in Heidelberg



Hector Sanchez-Iranzo is interested in the physics of cell rearrangements during early embryonic development. Previously, Hector studied pharmacy and biochemistry at the University of Valencia, Spain. After this, he received his doctorate from the Spanish National Research Center for Cardiovascular Research in Madrid, Spain, where he studied heart regeneration in zebrafish. Then, he started his postdoc at the EMBL Heidelberg. The Add-on Fellowship allows him deeper training into mathematical modeling of notch patterns and physics of cell rearrangements. After his postdoc at the EMBL, he started his research group at the Karlsruhe Institute of Technology (IBCS-BIP KIT). He was awarded the Add-on Special Grant. 2021.



Frederic Strobl

Postdoc (Developmental biology) at the Goethe University in Frankfurt

Frederic Strobel investigates the embryogenesis of insect species. He wrote his diploma thesis at the Max-Planck-Institute for Heart and Lung Research in Bad Nauheim on fibrotic diseases. Frederic studied biology at the Goethe University in Frankfurt, specializing in animal physiology, neurobiology, genetics, and cell and developmental biology. With the help of the Add-on Fellowship, he is expanding his bioinformatics skills and creating an open-access image database for developmental fluorescence microscopy data of insects.



Chao Sun

Postdoc (Neuroscience) at Max-Planck-Institute (MPI) for Brain Research in Frankfurt



Chao Sun obtained his doctorate in chemistry at Cornell University, USA, where he studied molecular interactions in two-dimensional nanomaterials. He now uses single-molecule techniques to investigate protein homeostasis of neuronal synapses at the MPI for Brain Research. Through the Add-on Fellowship, he would like to understand the sociology of resource allocation among neuronal synapses. His current research topic is the "Synaptic allocation of nascent proteins during neuronal plasticity". As a chemist in neuroscience, he is fascinated by the emergent complexity of biomolecular organization for information storage.



**Anna Svirina**

Doctoral candidate (Biophysics) at the Technical University of Dresden



Anna Svirina has received both her bachelor's and master's degree in Physics in Saint Petersburg, Russia, and decided to address fundamental biological questions for her doctoral studies, which she started at the TU Dresden in the group of Prof. Dr. Michael Schlierf. Anna's main biological interest is in membrane biophysics and her research is focused on the bacterial outer membrane protein BAM, which is potentially of use as a novel antibiotic target.

Felix Wiedmann

Postdoc (Medicine) at the Ruprecht-Karl's-University of Heidelberg



Felix Wiedmann is addressing the cellular mechanisms of atrial arrhythmogenesis and the pharmacology of potassium channels in the heart. Identifying new therapeutic targets for the treatment of atrial ventricular fibrillation is one of his goals. Felix studied medicine and received training as a cardiologist. His doctoral thesis, "Cardiac role of wo pore domain potassium channels," was awarded the Ludolf Krehl Prize. With the help of the Add-on Fellowship, he gains deeper insights into mathematical modeling of cellular electrophysiology.



**Manon Wigbers**

Alumna Doctoral candidate (Biophysics) at the Ludwig-Maximilian's-University of Munich

Manon Wigbers studies how proteins organize robustly in space and time in cells. Previously, she studied physics at the Vrije Universiteit in Amsterdam, Netherlands, alongside her work as a teacher for secondary school students and teaching assistant for physics lab courses. As a visiting student, she spent a year at Princeton University working on bacterial colony dynamics. Aiding the Add-on Fellowship, she explores biophysical theories in both living systems and in synthetic biology.

**Karina Witte**

Doctoral candidate (Pharmacy) at the Albert-Ludwig's-University of Freiburg

Karina Witte works on the biosynthesis and biocatalysis of ephedrine as well as the establishment of a concept of 'sustainable pharmacy'. She studied pharmacy in Freiburg and did her diploma thesis at a research institute in Lucknow (India). Additionally, she does further training as "Fachapothekerin" for toxicology and ecology. The Add-on Fellowship supports her in fostering interdisciplinary aspects in her research. Main topics for this are: environmental aspects of pharmaceuticals (biodegradability, risk assessment), sustainability, transformation, and change management as well as the concept of planetary health.

**► Ansprechpartner**

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