

Science Awards 2024 of the German Stem Cell Network (GSCN)

August 2024

Shedding light on biological mysteries with organoids

With the GSCN Awards 2024, the German Stem Cell Network recognizes outstanding stem cell researchers on their way to expanding basic research and opening up new avenues for therapeutic options. This year's award winners are researching old puzzles with new methods: Which molecular biological processes enable the development of the placenta, this temporary organ without which no mammal could develop? Why do different animal species require different times for pregnancy and development and which cellular processes accompany and underlie this timing difference? Fundamental biological questions of this kind about the hidden source of life can only now be explored vividly and experimentally with the help of technologies such as organoids based on stem cells. If it becomes possible to produce organoids in large numbers by machine, they can be used to elucidate disease processes and test drugs. The 2024 GSCN prizewinners are researching these questions and the development of related technologies:

The "GSCN 2024 Young Investigator Award" goes to [Claudia Gerri](#) of the Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG) in Dresden.

The "GSCN 2024 Hilde Mangold Award" goes to [Mina Gouti](#) from the Max Delbrück Center in Berlin.

The "GSCN Publication of the Year Award 2024" goes to [Jorge Lázaro](#), ... [Miki Ebisuya](#) for the publication "**A stem cell zoo uncovers intracellular scaling of developmental tempo across mammals**", 2023, Lázaro J, et. al., Ebisuya M., Cell Stem Cell, 30: 938-949.

[Claudia Gerri](#) receives the **GSCN 2024 Young Investigator Award** for her research at the interface between fetus and mother in various species. Gerri wants to investigate a mysterious process of reproduction in mammals: the development of the placenta. In her laboratory at the Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG) in Dresden, the young Italian scientist is investigating how cell lines are formed and how they communicate with each other and with the surrounding microenvironment in order to build an organ. Gerri is driven by the interest in understanding how the environment and neighboring tissues influence early cell fate decisions and how progenitor cells interpret and respond to these signals. Studying the formation of fetal placental progenitor cells and their interactions with maternal tissues will shed light on the interaction of two tissues and organisms and understand their development. Gerri wants to shed light on a still unknown biological phenomenon: the principles of robust organ morphogenesis during development.

[Link to Claudia Gerri's working group.](#)

Claudia Gerri studied Biology at the University of Milan in Italy, where she obtained her BSc in Biological Sciences and MSc in Molecular Biology. In 2012, she moved to Germany to do her PhD at the Max Planck Institute for Heart and Lung Research in Bad Nauheim, where she studied vascular biology in developing zebrafish embryos in the lab of Didier Stainier. In 2017, she joined Kathy

Niakan's lab at the Francis Crick Institute in London as a postdoctoral fellow before moving 2022 to the MPI-CBG as a research group leader.

Mina Gouti receives the **GSCN 2024 Hilde Mangold Award** for her achievements as a stem cell researcher and pioneer in the generation of human neuromuscular organoids (NMOs). Mina Gouti and her team use human pluripotent stem cells to develop advanced organoid models to study the normal and pathological development of the neuromuscular system. These cutting-edge *in vitro systems* open up new possibilities for studying the mechanisms of neuromuscular diseases, as they uniquely enable the simultaneous generation of spinal cord neurons and skeletal muscle cells that form functional connections. Building on these models, her research team aims to uncover how certain types of spinal cord neurons and skeletal muscle cells arise during development, how they interact, and how defects in the early development of these tissues can lead to a different predisposition to neuromuscular diseases in adulthood. Her scientific excellence is reflected in the organoid technologies she has developed, which aim to standardize reproducibility and scale up organoid production using automated robotic systems and AI for high throughput drug screening approaches. Gouti's ultimate goal is to establish these advanced human-specific models as platforms for drug testing and personalized medicine.

Link to [Mina Gouti's working group](#)

***Mina Gouti** received her Master's degree in Molecular Medicine from Imperial College London and her PhD in Stem Cells and Developmental Biology from the Biomedical Research Foundation of the Academy of Athens (Dr. A. Gavalas). During her postdoctoral research, she developed an inducible system to generate neurons from pluripotent stem cells with refined rostral-caudal identity. She was awarded a long-term FEBS fellowship to continue her postdoctoral research in the lab of Dr. James Briscoe at the NIMR - Francis Crick Institute in London, where she established the method for generating neuromesodermal progenitors from pluripotent stem cells. In 2016, she joined the Max Delbrück Center in Berlin as head of the research group "Stem Cell Modeling of Development and Disease". She has received numerous awards and grants, including the EMBO Young Investigator award, an ERC Consolidator grant and most recently, an ERC Proof of Concept Grant to establish the automation of her organoid technology.*

Jorge Lázaro, ... **Miki Ebisuya** receive the "**GSCN 2024 Publication of the Year Award**" for their joint publication "**A stem cell zoo uncovers intracellular scaling of developmental tempo across mammals**", in the journal *Cell Stem Cell* 2023. Jorge Lázaro is part of Miki Ebisuya's scientific team at EMBL Barcelona, where the current professor at Cluster of Excellence Physics of Life at TU Dresden is also conducting research. They are investigating basic biological embryonic development in relation to different physiological times and forms of different animal species using organoids. Using pluripotent stem cells from different animals, or the "stem cell zoo", the group mimics embryonic development and thus recapitulates the time and development of morphogenesis. In the publication, they report that the speed of biochemical reactions and the gene expression correlate with the duration of the segmentation clock.

Links to [Jorge Lázaro and Miki Ebisuya](#)

The three GSCN awards are endowed with 1,500 Euros each and the winners will give a lecture at the Presidential Symposium on Thursday, 26 September 2024, at the [GSCN Conference](#) in Jena.

Since 2013, the GSCN has been networking stem cell researchers working in Germany both nationally and internationally and communicating their results and research to a broad public. The promotion of young scientists and the presentation of outstanding female scientists receive special attention at the GSCN with the "GSCN Hilde Mangold Award". Since 2021, the GSCN has been cooperating closely with the Berlin Institute of Health (BIH) in the jointly founded "Dialogue Platform Stem Cell Research".

You can find more information on the website www.gscn.org

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