

Understanding developments in cells and organs

New methods help to unravel the mysteries of cell and organ development and expand the prevailing knowledge. The laureates of the GSCN Awards 2023 deepen this knowledge. Young scientist Meike Hohwieler and laureate Anne Grapin-Botton both research the pancreas in its healthy and diseased development - this is the only way to understand the developmental biology and disease progression of this multi-layered organ. The publication by Ruzhica Bogeska, on the other hand, describes the previously unimagined effects that inflammation of blood stem cells can have. With the GSCN Awards 2023, the German Stem Cell Network recognizes outstanding stem cell researchers on their way to expanding basic research and opening new avenues for therapeutic options.

- The **GSCN 2023 Young Investigator Award** goes to **Meike Hohwieler** from the Institute of Molecular Oncology and Stem Cell Biology at Ulm University Hospital.
- The **GSCN 2023 Hilde Mangold Award** goes to **Anne Grapin-Botton** from the Max Planck Institute for Molecular Cell Biology and Genetics (MPI-CBG) in Dresden.
- The **GSCN 2023 Publication of the Year Award** goes to **Ruzhica Bogeska, ...and Michael D. Milsom** from the Department of Experimental Hematology, German Cancer Research Center (DKFZ) and HI-STEM in Heidelberg, for the publication "Inflammatory exposure drives long-lived impairment of hematopoietic stem cell self-renewal activity and accelerated aging" in the journal *Cell Stem Cell*, Aug. 2022.

About the Awardees:

Meike Hohwieler receives the **GSCN 2023 Young Investigator Award** from the German Stem Cell Network (GSCN). The stem cell biologist conducts research on the early development of pancreatic diseases at the Institute of Molecular Oncology and Stem Cell Biology at Ulm University Hospital. Meike Hohwieler develops pancreatic organoids from human pluripotent stem cells. These models serve to deepen the still largely unknown understanding of the developmental biological processes of both the healthy human pancreas and its diseases. Organoids reproduce the developmental steps of human cells much more adequate than mouse models and can thus also partially replace animal experiments. For this purpose, Hohwieler developed a kind of cell chip which can read the early developmental stages of the cells and which enables a systematic development of the pancreatic organoids. The IMOS researchers were able to publish their work in highly renowned journals such as "Cell Stem Cell" and "Nature Medicine". Her findings pave the way for innovative possibilities in the early detection of pancreatic carcinomas, in the deciphering of pathological mechanisms of inherited disorders of the exocrine pancreas and in the development of personalized therapies. Pancreatic cancer is a tumor that is often detected very late, is very heterogeneous and has an exceedingly poor prognosis: Five years after the diagnosis, only twelve percent of patients are still alive.

***Meike Hohwieler** completed her Master studies in Molecular Biotechnology at the Technical University of Munich and joined the lab of Alexander Kleger at the Ulm University hospital in 2012. Here, she participated in the International PhD program in Molecular Medicine of Ulm University and obtained the doctoral degree with her work on "Human Pluripotent Stem Cell-derived Pancreatic Organoids to Study Cystic Fibrosis in a Dish". To conduct research projects, she received funding by*



the Baden-Württemberg Stiftung and the Else Kröner-Fresenius Stiftung. Since October 2022 she is deputy head of the newly founded Institute of Molecular Oncology and Stem Cell Biology led by Alexander Kleger.

[Link: Meike Hohwieler's research group](#)

Anne Grapin-Botton receives the **GSCN 2023 Hilde Mangold Award** for her long-standing and significant research on the development of the pancreas in animal models and in human tissue. Currently, the French scientist and her research group at the Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG) are focusing on pancreas development with the overall goals of understanding how pancreatic cells differentiate during embryogenesis, and determining what limits the pancreatic cells' regeneration in adults. Grapin-Botton investigates the impact of the cellular and organ architecture on the cells' fate choices and the dynamics of decision processes. Anne Grapin-Botton has a background in developmental biology and initially studied nervous system and endoderm development. The GSCN Hilde Mangold Award recognizes the scientist for her sustained research and achievements as a researcher – who studied the original findings of the scientist Hilde Mangold in German for her doctoral degree in Paris. “She inspired me very much”, says Anne Grapin-Botton about the German scientist, and is exceedingly pleased about the award.

***Anne Grapin-Botton** (b. 1967) studied biology at the UPMC University Pierre and Marie Curie (Paris VI), graduating in 1991 with a degree in molecular and cellular pharmacology. In 1995, she obtained her PhD there with a research focus on brain development, followed by several years of postdoctoral research at Harvard University (Cambridge, USA). In 2001, she became research group leader of the Pancreas Development and Cancer Group at ISREC (Swiss Institute for Experimental Cancer Research) and subsequently at EPFL (Ecole Polytechnique Fédérale de Lausanne, Switzerland). In 2012, she moved to the Danish Stem Cell Center at the University of Copenhagen as Professor of Developmental Biology. Since August 2018, Anne Grapin-Botton has been director at the Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG).*

[Link: Anna Grapin-Botton's research group](#)

Ruzhica Bogska, ... Michael D. Milsom from Division of Experimental Hematology, German Cancer Research Center (DKFZ) and HI-STEM, receive the **GSCN 2023 Publication of the Year Award** for the publication “**Inflammatory exposure drives long-lived impairment of hematopoietic stem cell self-renewal activity and accelerated aging**” in the journal *Cell Stem Cell*, Aug. 2022.

The manuscript examines the long-term consequences of inflammation and infection challenge on hematopoietic stem cells, leading to the surprising observation that these stem cells never functionally recover from such challenges. This data supported a model where the inhibitory effect of such challenges can accumulate during an individual's lifetime, even if the exposure to such agonists is separated by weeks, months or even years. In support of this hypothesis, mice exposed to inflammatory challenge in early to mid-life demonstrated an accelerated hematologic aging phenotype and developed features of normal human aged hematopoiesis that are not routinely observed in laboratory mice.

[Link to the publication](#)

Press Release



GermanStemCellNetwork

The three GSCN Awards are endowed with 1,500 Euro each and the laureates will give a lecture at the Presidential Symposium on Thursday, 14 September 2023, at this year's [GSCN Conference in Ulm](#).

The GSCN has been networking stem cell researchers working in Germany nationally and internationally since 2013 and communicates 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 closely cooperates with the Berlin Institutes of Health (BIH) in the jointly founded "Dialogue Platform Stem Cell Research".

More general information can be found on the website www.gscn.org.

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