President's Message **January 10, 2019**

Dear Friends,

The still-New Year will be a special one for the Society for Developmental Biology. In 2019, the Society will celebrate its 80th Birthday during the 78th SDB Annual Meeting, which will take place on July 26-30 in Boston. As SDB President I have the honor of organizing this meeting along with a talented program committee, including Maria Barna, Stanford University; Samantha Morris, Washington University School of Medicine in St. Louis; Maria Angela Nieto, Institute of Neuroscience in Alicante, Spain, who currently serves as the International Society of Developmental Biologists President; Scott Poethig, the University of Pennsylvania; Alex Schier, Harvard University and the University of Basel's Biozentrum in Switzerland; and Dustin Updike, the Mount Desert Island Biological Laboratory in Bar Harbor. Our local organizing committee, composed of Olivier Pourquie from Harvard Medical School, Hazel Sive from Massachusetts Institute of Technology, and Mary Wallingford from Tufts University, together with our expert SDB Staff will help with the meeting logistics in Boston.

Given its historical significance, we envision that this 78th SDB annual meeting will highlight the remarkable scientific advances in developmental biology over the last eight decades, featuring speakers who made some of these foundational discoveries, while also looking into the future. The main meeting will be preceded by two satellite symposia (and you can still propose one! proposal guidelines). During the meeting, there will be plenary and concurrent sessions featuring talks by invited speakers and talks chosen from submitted abstracts; there will be workshops on securing grant support and education; and an awards ceremony, during which the Society recognizes those who transformed the field through their research, educational, or mentoring efforts. The meeting will also feature a Hilde Mangold Postdoctoral Symposium, which, according to our surveys, is one of the favorite sessions and during which we will hear talks from postdoctoral fellows selected from submitted abstracts. Many invited speakers have already accepted our invitation. Therefore, I welcome you to check the meeting website for updates (http://www.sdbonline.org/2019mtg), submit an abstract to share your exciting work, and join us in Boston this summer!

During our 2019 SDB Annual Meeting we will be celebrating 80 years of the Society, as the first symposium on Growth and Development was held in August 1939 in North Truro on Cape Cod. These were exiting times in the young field of developmental biology, as just a few years earlier Hans Spemann and Hilde Mangold reported the remarkable--indeed almost magical--inductive properties of the dorsal blastopore lip of the amphibian gastrula, now known as the Spemann-Mangold gastrula organizer. This discovery inspired a several decades-long, and often frustrating, hunt for the organizer's molecular actors. However, revolutions in molecular biology and forward genetics cracked the organizer's enigma with discoveries of Goosecoid, Noggin, Chordin, Siamois, Bozozok, Dickkopf, Nodal, and others in the 1990s. Through molecular and genetic screens, developmental biologists started to decipher the genetic logic of development in fruit fly, worms, sea urchin and Arabidopsis plant. However, instead of discovering hundreds of signaling pathways, these studies revealed that embryogenesis is instructed by a handful of pathways, permutations of which regulate axis specification, induction, and patterning of the germ layers, and organogenesis. Moreover, these signaling pathways and many transcription factors implicated in embryogenesis of invertebrate animals, have conserved functions during vertebrate development and have also been implicated in human disease. While John Gurdon's

nuclear transplantation and frog cloning experiments of the 1960s and '70s demonstrated that diversification of cell fates during development does not entail irreversible alteration of genetic material, it wasn't until several decades later, together with cloning of the sheep Dolly by Ian Wilmut's team and reprogramming of fibroblasts into pluripotent stem cells by Shinya Yamanaka's group, that Gurdon's pioneering discoveries brought down the dogma of the irreversibility of cellular differentiation. This very exciting time for developmental biology continues, as the methods of single cell RNA sequencing now provide us with almost complete lists of genes expressed in individual cells of our favorite organisms, as they develop. New culture, genome editing and imaging methods afford the first insights into postimplantation stages of mammalian development. With these advances, developmental biologists have not only deconstructed developmental processes, but have also used their knowledge of normal development to generate organoids and synthetic embryoids that provide new experimental platforms to study aspects of human development, model birth defects, and generate tissues for regenerative medicine.

But why, you could ask, is it the 80th Birthday but only the 78th meeting? This becomes clear when considering the dates: just a month after the symposium on Growth and Development took place on Cape Cod, World War II started with the Nazi German army invading Poland; these were dark times in Europe, with rising nationalism, fascism and antisemitism. Thus, 2019 marks another rather solemn anniversary for human kind. For me as a native of Poland, in which the horrors of this war are still vividly remembered, this anniversary resonates. The war raged in many parts of the world for the next six years, and when the US engaged, the scientific symposia on Growth and Development were suspended in 1943 and 1944.

I feel additional personal links when examining the photograph shown here from this first meeting of developmental biologists. Sitting in the first row (second from the left) is Viktor Hamburger, a famous chick embryologist. Raised in Germany, Viktor Hamburger studied embryology in Freiburg with Hans Spemann, who encouraged him to look beyond "the upper lip" of the amphibian embryo, advice that led Hamburger to investigate inductive interactions between other embryonic tissues. Following a Rockefeller Fellowship in Chicago, where Hamburger's fascination with the avian embryo started, and due to the political environment in Europe, in 1935 he joined the faculty at Washington University in St. Louis, the school that has also become my scientific home. His influential tenure at Washington University lasted more than five decades and included 25 years as Chair of the Zoology (now Biology) Department. While Viktor Hamburger was establishing his young lab in St. Louis in the late 1930s, a very talented Italian medical student of Jewish origin, Rita Levi-Montalcini, was studying chick embryos in a homemade laboratory. Out of this laboratory, which she frequently had to move to escape Nazi persecution, she was remarkably able to publish her findings. Soon after the war, Viktor Hamburger became interested in Levi-Montalcini's work and invited her to visit St. Louis. Rita accepted the invitation and the rest is history; as she later wrote in her memoirs "he invited me…for about a few days, a few weeks. I stayed there 30 years". During her time in St. Louis, Rita Levi-Montalcini discovered nerve growth factor, for which she was awarded the 1986 Nobel Prize in Physiology and Medicine.

The story of Viktor Hamburger, a developmental biologist who participated in the first meeting of the Society on Growth and Development in 1939, and who invited a young Italian Jewish female scientist to his lab in St. Louis and enabled her to make transformative discoveries, when the wounds of World War II were still open, exemplifies the philosophy and all we aspire to as scientists and individuals. This spirit of openness and collegiality still embodies SDB, even as the voices of nationalism are being raised again in this and many other countries. Therefore, I invite all of you to come to the 78th Annual Meeting of the Society for Developmental Biology in Boston this summer, to celebrate our great community, share your science, and view of the world.

I am also eager to hear your opinions about the Society and our activities, what are important issues in the field of developmental biology you would like to be addressed at the meeting in Boston. Wishing you many exciting discoveries and adventures in 2019,

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