

President's Message

March 2003

In 1978, as an undergraduate student, I attended my first scientific meeting, the 37th Symposium of the Society for Developmental Biology in Madison. The excitement about science and the encouragement and support I received from scientists at this meeting contributed greatly to my decision to become a developmental biologist. It is therefore a special honor for me to serve as the 2002-2003 President of the Society for Developmental Biology. Since its inception in 1939, the Society has played a leading role in communicating scientific progress in the field of developmental biology. Testimony to its success is the steady increase in membership numbers and the broad participation of scientists at the SDB's annual meetings. The society's [website](#) is one of the top sites selected by science teachers and students. The site also provides up to date links to inform members about Regional and Annual Developmental Biology Meetings as well as in depth information and views of the Society on important issues that reach beyond the laboratory and into the public arena. The Society's journal *Developmental Biology* published by [Elsevier Science](#) under the editorship of Eric Olson and several other prominent developmental biologists reflects the breadth and strength of the field. This year online access to Developmental Biology will be available free to every full member of the Society.



The annual meeting of the Society of Developmental Biology provides an excellent platform for top quality, in depth scientific exchange. I feel strongly that a high level of attendance to a broad meeting that serves all members of the society is essential. This year's meeting will be held jointly with the [International Society of Developmental Biologists](#) at the Marriot Copley Place Hotel in Boston from July 30th to August 3rd. Please check the [SDB Website](#) for program information and deadlines. More than 30 oral presentations are open to be selected from submitted abstracts. So, if you are a student, a postdocs or a young or not so young faculty member, please submit your cutting-edge research and contribute to the success of the meeting!

The Society has made a special effort to strengthen our educational efforts and to include, support and encourage young scientists within the society. The SDB's Professional Development and Education Committee provides resources for teaching biology to undergraduate and graduate students. At this year's annual meeting the committee has put together an exciting program, including a symposium on teaching strategies in different countries. To emphasize our dedication to education, the SDB chose to honor outstanding teachers with a special prize presented each year at the Annual Meeting. This prize is named in honor of one of developmental biology's most influential teachers, Victor Hamburger. The first Victor Hamburger Outstanding Educator Prize was awarded to Scott Gilbert at last year's meeting in Madison. This year's winner is Lewis Wolpert, who will present a lecture after the education symposium on the first day of the Annual Meeting, July 30th.

Developmental biology has taken center stage in biological research. Three developmental biologists, Sydney Brenner, John Sulston and Bob Horvitz were awarded the 2002 [Nobel Prize](#) in Physiology or Medicine for their groundbreaking work in deciphering the genetic pathway that controls cell death in *Caenorhabditis elegans*. This recognition came only a few years after Ed Lewis, Eric Wieschaus and Christiane Nusslein-Volhard were awarded the Nobel Prize for their work in determining the genetic pathways that govern pattern formation in *Drosophila*. These studies had broad impact because they

demonstrated the remarkable conservation of signaling pathways and regulatory mechanisms that control development throughout the animal kingdom. I am happy to announce that Sydney Brenner, whose creative spirit led to the discovery of mRNA, the foundation of the worm community and the rapid characterization of the *Fugu* genome, will give a keynote address at the Presidential Symposium at this year's Annual Meeting.

With the genomes of most model systems including yeast, *C. elegans*, *Drosophila*, *Arabidopsis* and the mouse sequenced, new approaches can be applied to characterize the regulatory networks that control every aspect of development. These approaches will require a combination of microarray expression analysis, functional studies using a variety of knock-out techniques and computational methods to comprehend and connect the magnitude of data points. So, with all these tools and information in hand, what's left to discover? In my mind, one of the greatest excitements for the future is that we will no longer be confined in our experimentation to the traditional model systems. During the molecular-genetic revolution of developmental biology a few model organisms were chosen for in depth genetic and molecular experiments; entire communities of "worm, fly, *Arabidopsis* and mouse people" formed to gather the needed tools for detailed analysis. While the study of these organisms revealed the basic and conserved building blocks of development, many aspects of development could not easily be studied in these organisms. Given the ease with which a genomic framework can be generated for any organism and the availability of knockdown techniques such as RNA interference, which do not require labor-intensive genetic analysis, the limits of our studies are no longer set by the choice of organism but by our ability to identify outstanding problems.

A lesson from the striking degree of conservation between the human genome and the genomes of model organisms is that the study of any organism bears the enormous potential to reveal important insight into the biology of normal human development and disease. While the connection between developmental biology and medicine has long been evident, communication between disciplines has been difficult. We therefore need to focus our attention on approaches to educate a new generation of scientists who are able to interface between the disciplines of biology and medicine to tackle medical problems from the experimental side.

Developmental biology has gone public. Consequently, it is important that the Society provides in depth and accurate information to the public on pressing ethical and political questions, ranging from why stem cell biology and cloning is important for science and medicine, who "owns" the genome, and how to explore and control genetically altered crops. The Society has taken stands on these and other issues in the past, and I encourage discussion within the Society and communication with the public. As professionals, it is our obligation to inform the public and not to hide in the laboratory.

I cannot end this message without referring to the fact that in the aftermath of 9/11/2001 our world has changed at many levels. The government has proposed funding increases to support research in the areas of pathogens and immunization. Targeted funding approaches have their strengths and weaknesses, as a community of biologists we need to participate in advising agencies that funds should be distributed through peer reviewed grants to the most qualified scientists at universities and research institutes without debilitating consequences for non-targeted research areas. In addition, strengthened security measures have caused delays or resulted in suspension of visas for foreign visitors including students and postdoctoral fellows. While one needs to be wary of insincere applicants, we must remain an open scientific community, receptive to new scientific ideas and contributions from colleagues throughout the world, irrespective of their country of origin, race or religion.

Ruth Lehmann