OBITUARY

William Martin Gelbart 1945–2015

Kristi Wharton

On 11 August 2015, we lost a great geneticist and an ardent advocate for genetic and genomic resources. William Martin Gelbart, professor of molecular and cellular biology at Harvard University, died prematurely after a valiant battle with cancer. Bill's enthusiasm for solving scientific problems was infectious, with his lifelong devotion living on through those he mentored. Bill was a "geneticist's geneticist," as Thom Kaufman remembered him recently, but his mark on the field of genetics and genomics is also due in part to his extraordinary skill in "making science social and fun."

Bill got his start in genetics earning his PhD in 1971 with Allen S. Fox at the University of Wisconsin. Following postdoctoral work with Ed Lewis at the California Institute of Technology and Art Chovnick at the University of Connecticut, he started his own research group at Harvard, exploring genome organization and its impact on gene regulation. He relished solving complex problems, a lifelong trait according to childhood friends, that he applied fruitfully to the study of genetics. His seminal studies on transvection demonstrated that this form of allelic complementation depends on chromosome pairing, highlighting how gene expression is influenced by nuclear organization. Further work in this vein explored the role of transposons and what turned out to be chromatin-modifying factors, such as *Drosophila*'s Enhancer of Zeste (E(z)).

It was transvection that led Bill to decapentaplegic (*dpp*), a *Drosophila* locus encoding an ortholog of the conserved bone morphogenetic protein (BMP) family of signaling molecules. Although BMPs and related TGF-β (transforming growth factor-β) and activin ligands were known to have profound effects on cells and tissues, the transducers of these signals were not known. Genetic screens performed in Bill's lab, coupled with collaborative efforts involving groups working in mammals and *Caenorhabditis elegans*, led to their discovery.

The ability to get people excited, working to solve a problem together as a community, as a family, was a theme in Bill's life. In the early 1990s, Bill built another family whose efforts would benefit an even larger community. He exhibited tremendous foresight and advocated tirelessly to consolidate the ever-expanding findings from the *Drosophila* community into a single database, Flybase. At the time, *Drosophila* geneticists' bible was the "Red Book," a compilation of genetic information stemming from the 70-plus years of *Drosophila* research on inheritance. But as the range of questions addressed by *Drosophila* researchers grew, the amount of data mushroomed. Thus, in 1991, the Flybase Consortium was born. The immediate drive for the group, initially composed of Bill at Harvard, Michael Ashburner and Rachel Drysdale at Cambridge University, Gerry Rubin at Berkeley, and Thom Kaufman and Kathy Matthews at Indiana University, was to compile the genetic and molecular findings of the *Drosophila* community. With the success of Flybase, one critical aspect quickly became a central focus: Flybase would not be limited to the *Drosophila* community but open to any researcher or clinician who wanted to make use of the extensive knowledge gathered.

As principal investigator of the National Human Genome Research Institute (NHGRI)-funded Flybase grant, Bill worked tirelessly to adapt the database as new data flowed in. This required considerable organizational skills, a deep knowledge and appreciation of *Drosophila* genetics and an ability to integrate technological advances. For his work with Flybase, Bill was awarded the 2010 Genetics Society of America George W. Beadle Medal for outstanding contributions to the community of genetics researchers (see photo). Flybase was the first biological database centered on a model organism. Others have followed suit, and Bill played an important advisory role for WormBase, ZFIN (Zebrafish Information Network), Mouse Genetics Informatics (MGI) and the Human Genome Project.

Susan Russo Gelbart

Bill Gelbart (left) receiving the 2010 Genetics Society of America George W. Beadle Medal, with Thom Kaufman (right).

Throughout his career Bill demonstrated a sincere commitment to sharing his knowledge through teaching. Aside from teaching genetics in the classroom, Bill spent hours alongside his trainees in the fly room. Like all of the best teachers, he challenged us to work through problems, guiding us when we were off track but enabling us to come up with the answer in the end. His mentorship was marked by a strong belief in inclusion. Bill served for many years with the Harvard Foundation for Intercultural and Race Relations to promote diversity and equity and was honored with the Harvard Distinguished Faculty Award in 2014. Bill was also instrumental in developing the Frontiers in Genomics program at the University of New Mexico, where he fostered a sense of community, regardless of ethnicity, to which the students responded with passion and deep gratitude.

Bill embodied the love of family and zest for science in equal parts, always supplemented with a mischievous sense of humor. He gave fatherly advice to the expectant parents in his lab, and taught his children 'Mr. Potato Head genetics' to explain the appearance of a grandparent's eyes in a newborn child. Bill is survived by his beloved, devoted wife, Susan; his loving daughters Marnie Carey, Courtney Phelon and Jennifer Walsh; his adoring grandchildren Delilah, Theodore and Amelia; his sons-in-law James Carey and Scott Phelon; brother Herb and sister-in-law Susan; and other in-laws, nieces, nephews and dear friends. Bill leaves behind a community, his family, of geneticists, genomic explorers and lay enthusiasts who will transmit the wonders of genetics to future generations.

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