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Susan A. Gerbi

A native New Yorker, Susan Gerbi attended Barnard College, developing a particularly strong background in developmental biology, molecular genetics, and cell biology. At Barnard, John Moore and Lucinda Barth were two teachers that nurtured Gerbi's growing interest in research. As a sophomore, she took J. Herbert Taylors molecular genetics course, and this confirmed her interest in eukaryotic chromosomes.

During her senior year at Barnard, Gerbi did an independent research project at Columbia P&S under Reba Goodman, who introduced Gerbi to the giant polytene chromosomes of the fungus fly, *Sciara coprophila*. These flies were obtained from Helen Crouse, a research associate of J. Herbert Taylors, and years later upon her retirement she gave the *Sciara* stock center to Gerbi to maintain. The DNA puffs of *Sciara* chromosomes are sites of DNA amplification and provide an excellent model system to study DNA replication, a subject that had interested Gerbi since high school and which she is still actively studying. She wanted to work on DNA puffs for her Ph.D. thesis, but the time was not yet ripe, and instead she worked on *Sciara* ribosomal RNA (rRNA) genes. However, recently her lab has mapped a DNA puff origin of replication, which, as a result of her studies, now ranks among the best characterized metazoan origins. Her lab is now investigating regulation of this origin by the steroid hormone, ecdysone.

Moving to Yale for her Ph.D., Gerbi studied under Joe Gall (both Gerbi and Gall were later to become Presidents of the ASCB). Gall remembers his young student as bright, articulate, and strongly motivated. Gerbi wanted to study amphibian lampbrush chromosomes, but was encouraged to work on *Sciara* polytene chromosomes instead.

One of Gerbi's classmates was Mary Lou Pardue, also an ASCB President to-be. Joe Gall established the method of in situ hybridization using amphibian rDNA, and then, working with his two students, they applied this technique to polytene chromosomes. *Sciara* chromosomes were the first ones used from any organism for in situ hybridization. Pardue shared an office and many adventures with Gerbi during their student years at Yale. Pardue recalls that Susans energy and enthusiasm were remarkable, and she already showed the organizational abilities that she has used so well for the ASCB. Susan and I had to campaign as second year students to attend the sixth annual ASCB meeting, held in Houston. Yale supported graduate students to attend one meeting a year after they passed their preliminary exam, but the exam was held in the spring and the ASCB meeting was in the fall. There were other meetings in the spring, but Susan and I were determined to go to ASCB. The airlines were just beginning to advertise fly now, pay later, so our campaign was based on fly now, pass later. We prevailed and were allowed to go. Pardue and Gerbi have continued to room together at ASCB meetings ever since. That was Gerbi's second ASCB meeting, having attended the fifth annual meeting in Philadelphia the previous year as a first-year graduate student.

Gall says that the work Gerbi displayed in those early years showed the same qualities that show through in everything she has done. As a lecturer, she knows how to present

complex subjects in an understandable way for a general audience. She is a strong role model for the students and postdocs who have been in her laboratory at Brown insightful, critical, and scrupulous in her evaluation of data, and personally supportive. She feels strongly about the vital role of basic research, and she has been an effective spokesperson for cell biology as President of the ASCB, as a member of various public policy committees, and as someone willing to find the time and effort to testify before Congress.

After obtaining her Ph.D. in 1970, Gerbi spent two years as a NATO and then Jane Coffin Childs postdoctoral fellow at the Max-Planck-Institut in Tubingen, Germany. She soon found herself working independently on the evolution of rRNA as an outgrowth of her Ph.D. thesis, and continued this study after she became Assistant Professor at Brown in 1972. Her lab sequenced the first metazoan 28S rRNA and showed that regions within rRNA have been highly conserved during evolution, suggesting their functional importance. Also, the secondary structure rRNA is highly conserved, even between kingdoms. Currently, her lab is exploring the biogenesis of rRNA. A few years ago, they provided the first in vivo evidence (using *Xenopus* oocytes) that a small nucleolar RNA plays a role in rRNA processing. Her lab continues to study the mechanism by which small nucleolar RNAs work, as well as the signals that localize them to the nucleolus.

Gerbi has been a member of the ASCB for almost thirty years. While President of the ASCB in 1993, Gerbi formed the International Affairs Committee, and asked Doug Murphy to serve as its founding Chair. She was instrumental, together with Bob Trelstad and Emma Shelton, in initiating the effort to establish the archives of the Society. She also provided leadership to successfully help establish National Biomedical Research Day in Congress.

Prior to her election as President, Gerbi served on Council, as Chair of Women in Cell Biology, and as Program Chair for the 1986 annual meeting in Washington, D.C. Since her many accomplishments as President of the ASCB, Gerbi has continued to be an active member of the ASCB Public Policy Committee. Prior to her presidency, she testified on two occasions before Congress on the importance of funding biomedical research. She says it was truly awesome to realize that an individual citizen can speak before Congress, and urges ASCB members not to underestimate the importance of their individual abilities to educate members of Congress, which is of utmost importance in these times of budget austerity. Gerbi also serves as the ASCB's representative on FASEB's Public Affairs Executive Committee, as well as on the Advisory Panel for Biomedical Research of the Association of American Medical Colleges.

Two years ago, Gerbi was given the Governors Award of the State of Rhode Island for scientific achievement. Her husband, James McIlwain, also a Professor at Brown, is Editor-in-Chief of the *Journal of Visual Neuroscience*.

Gerbi, who currently serves as Chair of the newly formed Department of Molecular Biology, Cell Biology, and Biochemistry at Brown, credits her accomplishments in great part to her parents. Her mother, still energetic at 83, was a school teacher, and her late father was a physician at Columbia P&S. He also carried out research, and took his

young daughter while she was still in high school to lectures at the New York Academy of Science.

Gerbi is an accomplished equestrienne, and has successfully competed in dressage and over fences. She holds certification from the British Horse Society and was a District Commissioner in the U.S. Pony Club. Her horse, an imported Hannoverian, is named Wynnwiht which is an old English word meaning joy creature. Riding him every day helps keep her mind sound and her body fit.