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Virginia Zakian

Biology caught Ginger Zakian's imagination in the ninth grade and she decided at that time to become a scientist. After graduating from high school in a Philadelphia suburb as class valedictorian, Zakian attended Cornell University. She recalls that after 12 years of boredom, Cornell was "fantastic, I thought I had gone to heaven." During her freshman year, she was even able to do research in behavioral biology, studying the effects of crowding on guppy behavior. (One of the side benefits of this research was that it exempted her from the nightly curfew to which all female undergraduates were subject.) Her undergraduate research advisor was Tonie Blackler who was "the first teacher to challenge me academically."

The first semester she worked in his lab, Blackler gave her a B+, not because she hadn't worked hard or well but because he felt she was 'intellectually lazy'. Presumably as planned, Blackler's lesson stayed with Zakian and motivated her to work harder. Zakian graduated cum laude in Biology in 1970.

Following Cornell, Zakian moved to Yale because it had an excellent developmental biology program, a field that she thought she wanted to pursue. After a year of sampling various labs and not finding what she wanted, Joe Gall returned from sabbatical to Yale. The day he returned, Zakian and two other students were camped outside his door hoping to join his lab. Gall, unable to choose among them, took all three (the other two were Sharyn Endow and Patricia Pukkila). In Gall's lab, Zakian worked on the replication of satellite DNA and was introduced to the wonders and complexity of eukaryotic chromosomes. During this time, she also joined the ASCB and, at Gall's urging, attended the annual meetings of the Society. The quality of the science in the Gall lab made it an exciting place for all its members. But it was an especially good environment for women since there was a history of women who had trained with Gall and gone on to become successful scientists (two of Gall's earlier graduate students included Mary Lou Pardue and Susan Gerbi, who would later become presidents of the ASCB).

After earning her Ph.D. in 1975, Zakian did a one-year postdoc with Arnold Levine at Princeton to gain some experience in biochemistry, and then moved to the University of Washington to do a two-year postdoc with Walt Fangman where she started work on yeast chromosome structure. At that time, says Zakian, the genetics Department at the University of Washington was "the premier place to do yeast genetics." Next she was recruited as a faculty member to the Fred Hutchinson Cancer Research Center by the late Hal Weintraub, about whom she remembers many positive things, including his emphasis on the importance of doing "bold" rather than "safe" science. One of Zakian's first graduate students was Ann Pluto, now at Johns Hopkins, who remembers being "truly fortunate to have Ginger as a mentor because she was intellectually critical, highly enthusiastic, supportive, and patient." She provided an environment and opportunities conducive to doing novel and exciting science. Moreover, the lab "food orgies" were legendary: "Maida Heatter's Chocolate Cookbook was considered as essential a reference tool in Ginger's lab as was Maniatis' Molecular Cloning Manual." Zakian stayed at the

Fred Hutchinson Cancer Research Center for sixteen years, until she moved back to Princeton in 1995, where she is now a Professor in the Department of Molecular Biology.

Princeton University is a markedly different environment from a research institute, Zakian observes. She has been favorably impressed with Princeton's strong commitment to teaching at both the undergraduate and graduate level. Zakian feels that this commitment to education affects in a positive way many aspects of the department, in addition to students, including the environment for postdoctoral fellows and junior faculty.

In her lab, Zakian is interested in eukaryotic chromosome structure, specifically in understanding how the high fidelity replication and segregation of eukaryotic chromosomes is achieved. Most of her lab's work focuses on the telomere or physical end of the chromosome, and most experiments are carried out using the single-celled eukaryote, *Saccharomyces cerevisiae*.

Zakian has been an active member of the ASCB and has taken a lead in promoting women's issues in science. As a graduate student, she made a presentation to the Women in Cell Biology to draw attention to sexism in scientific advertising. As a postdoc, she successfully petitioned the ASCB not to hold its annual meetings in states that had not ratified the ERA. She was awarded the Senior Award from the WICB Committee in 1995 for her role in increasing the visibility of women in science. Since she was a graduate student and through the present, Zakian finds the WICB a wonderful organization because it provides the ASCB membership a forum for issues that face women in science and, more generally, career development issues that all scientists face, men and women.

Zakian believes that the Society has evolved in positive ways in its responsiveness to women. For example, in 1980 Zakian served on the Program Committee for the ASCB Annual Meeting. The original list of speakers in the plenary sessions (which at that time were not organized by the Program Committee) included no women speakers. Many members of the Society wrote to complain, and the Chairman of the Program Committee, Bob Goldman, responded by asking each symposium chair to add an additional speaker, urging that these additional speaker slots be used to redress the gender imbalance of the program. Zakian also served on the Program Committee for the 1995 ASCB Annual Meeting and notes with satisfaction the contrast with the 1980 meeting. She feels that safeguards are now built into the procedures used to develop meeting programs such that she finds it very unlikely that the ASCB would ever sponsor a major meeting that did not have adequate representation of women scientists. Zakian feels strongly that women can be included without any lessening of rigorous scientific standards.

Zakian advises young women scientists to choose the department and lab that they work in carefully. She believes that not all institutions or labs are equal in providing environments where talented women can succeed. She is particularly grateful that she did her graduate and postdoctoral training with individuals who had strong records training successful women scientists.

Zakian has two children, Megan, age 17, and Eric, age 10. She believes that it is not easy for anyone, man or woman, to do cutting edge science and raise a family. However, it can be done if you're willing to work very hard, if you prioritize, and if you don't do much else. Zakian feels that she is fortunate to have found a balance between professional and personal rewards and she feels her ability to do so derives in large part from being married to someone who has always thought that her career was as important as his and that children were a joint responsibility. Her husband, Bob Sandberg, is a playwright who teaches Theater and English at Princeton.

Zakian says that she will always be interested in women's issues. However, her advice for all women scientists is to remember that the quality of their work is what is critical; "it makes no sense to take a stand if your science or the science of the person you are promoting is not good."