Feature Book Review

A Life in Science

Review of: *Breaking Through the Spiral Ceiling: An American Woman Becomes a DNA Scientist*, by Laura L. Mays Hoopes; 2010; 176 pp.; Lulu Publishing, Raleigh, NC; ISBN-13: 978-0-557-92320-5

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The process of “becoming” is inherently unique for each young mind that chooses a career of scientific exploration and experimentation. Yet within each scientist’s story are themes of energizing curiosity, fulfillment emerging from discovery, and an instinctual desire for the freedom to explore and investigate. Laura L. Mays Hoopes, the Halstead-Bent Professor of Biology at Pomona College in Claremont, CA, has authored a book highlighting her remarkable path in science over the past 50 yr. In this fascinating memoir, you will find the story of a woman in science, drawn with wonder into the biosciences, specifically the study of DNA and aging. Interwoven through her research career is the career of a teacher, a mentor who has welcomed hundreds of undergraduate students into her research laboratory, and who has taught thousands of students in college courses. This is a woman who distinctively chose a scientific career path in the early 1960s, a time when few women entered PhD programs in research science. This is also a story of her pursuit of balance between career and family, and offers painfully honest details of her struggle for that balance. When I picked up this book, I expected a history lesson; what I found was an inspirational experience, walking with this extraordinary woman through her life as a scientist.

Hoopes earned her PhD in biology from Yale University, served postdoctoral fellowships at Scripps Clinic and Research Foundation and the University of Colorado School of Medicine, and was subsequently recruited to a faculty position at Occidental College in Los Angeles. She has enjoyed a wide-ranging career in research, teaching, administration

(Vice President, Dean at Occidental College), and has been a national leader in the development of the Council for Undergraduate Research and the Genome Consortium for Active Teaching. This honest and compelling memoir offers insight into both the historical and modern challenges facing anyone choosing to pursue a career in the sciences, but is particularly effective at revealing the struggle of young women

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Breaking Through the Spiral Ceiling

Laura L Mays Hoopes

within this career track. This book will be valuable reading for any student beginning a science-focused career in research or academia.

Hoopes highlights her beginnings as an undergraduate research student at the Marine Biological Laboratory at Woods Hole, MA. She applied to the Woods Hole summer course in marine ecology during her freshman year at Goucher College. She knew little about the program beyond the colorful brochure, but applied and was accepted. She enjoyed the hands-on nature of the coursework, and ended up working with a scientist from the Woods Hole Oceanographic Institute (WHOI) on an embedded 3-wk research project. She decided to extend her stay at Woods Hole, working as a student research assistant through the end of the summer (and returning the following summer). She was hooked, and began to imagine a career in the research sciences. A devastating disappointment during that first summer at Woods Hole involved an opportunity for students completing the marine ecology course. Students were invited to apply to join the famous WHOI research vessel, *Atlantis*, during a 1-wk cruise at sea. Hoopes recalls being told that she could not go on this cruise with the other students because the sailors viewed women as “bad luck” on the open seas. Her disappointment over this strange disposition (especially for a research vessel) stands in profound contrast to the encouragement she received from her research mentor during the research project she engaged in at Woods Hole.

In 1963, a letter of interest written to Princeton regarding her potential application to graduate school was met with: “We have not sent the catalog and graduate application which you requested. Unless there is a peculiar need for our facilities, we do not consider admission of women to the graduate program here.” She experienced a similar response when visiting the California Institute of Technology to investigate opportunities for graduate school. With the challenges and frustrations of graduate work, it is hard to imagine the lasting discouragement that must have come from such a letter. Hoopes examines issues related to sexism only through the description of events in her own career; there is little dissection of these events beyond an expression of thankfulness for the changes she has witnessed and hope for further progress.

Hoopes delivers her story as a mentor might discuss her career with a young undergraduate research student, and perhaps this book mirrors the many conversations she

has had with her students during her years as a college professor.

She is a national leader in the area of undergraduate research, pedagogical styles in the science classroom, and the development of funding mechanisms to enhance the training of young scientists. I am grateful for her leadership in these areas. I enjoyed learning more about the life of her research laboratory, the style of guidance she provides her students, and her advice for those students. What an extraordinary experience it would have been to join her lab as an undergraduate research student.

At times, this book is hard to read, as Hoopes describes the struggles of being a busy college professor, a mother, and a wife. She tried to “have it all,” refusing to choose career over a healthy personal life, and writes openly about the challenges associated with such a decision. The constant tight wire of time shared among home life, teaching, and research is not an uncommon story for women building an academic career. No simple solutions to these challenges are presented, only the compelling and honest description of the choices she made, and the consequences of such choices. Her story of balance brought up memories of two of my favorite books: *Time, Love, Memory* by Jonathan Wiener, and *Natural Obsessions* by Natalie Angiers. These books explore the world of laboratory research and describe researchers searching for some kind of balance between home and the laboratory.

The final chapter is entitled “Who am I really?,” and offers a very personal assessment of her career path and the people who have truly influenced her life, along with an analysis of the critical choices she has made along the way. She considers other women who completed their graduate training with her, and wishes that more of them had become independent researchers or professors. She also examines her own path, defending her choices to teach more than is usual for a typical research scientist; to train undergraduates, who require tremendous amounts of time and energy as they learn the basics of research; and to protect the precious time needed for children and family. Her story is compelling, offering painful details regarding personal frustrations, insecurities, and failure, yet offering a story that is familiar to anyone who has chosen science as a lifelong pursuit. Who is Laura L. Mays Hoopes? She is a model to guide generations of scientists to come. I highly recommend this book to you; the words within will encourage and inspire.