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## 1998

### Lydia Villa-Komaroff

Lydia Villa-Komaroff transformed her career from successful bench scientist to successful administrator: after ten years at Harvard, she shut down her lab to become Vice President for Research at Northwestern University.

Villa-Komaroff is the oldest of six children. She was born and raised in New Mexico; her parents were the first in their respective families to go to college. Her mother's Spanish ancestors came to the New World with the Conquistadores and settled in Arizona. Her father's family is from Mexico, descended from Spanish and indigenous Indian people. The Villa family moved several times within New Mexico when she was growing up, finally settling in Santa Fe when Lydia was nine. Her father was a violinist in the Santa Fe orchestra and a teacher of music, math and English at all pre-college levels. Her mother was a social worker for much of her career, but also worked for the state as a registrar.

Villa-Komaroff began her undergraduate career at the University of Washington in Seattle, transferring in her sophomore year to Goucher College in Maryland. The change was inspired by her then-boyfriend, now husband, Anthony Komaroff, who had accepted a job with the Public Health Service in Bethesda. The two were married when Lydia graduated from college. Villa-Komaroff feels fortunate to have happened upon this small women's college because "it had very good chemistry and biology departments and had connections with the NIH, enabling me to get summer jobs there." Loretta Leive, the NIH microbiologist who took her on, "browbeat me into applying to MIT for graduate school." Villa-Komaroff wanted to go to Boston because Tony took a residency at Beth Israel, but she had not intended to apply to MIT. Ironically, it was the only school that accepted her.

At MIT, Villa-Komaroff somehow found herself under the guidance of two renowned thesis advisors, David Baltimore and Harvey Lodish. She characterizes her graduate school experience under their tutelage as "spectacular," no less than "the most fun part of my life," and calls MIT "graduate school heaven." When Villa-Komaroff started MIT, she wanted to be a developmental biologist, but decided that molecular biology was much more active, preferring to work with viruses as a "superior model." Villa-Komaroff describes Baltimore and Lodish, who shared a lab, as "wonderful, but very different. They were demanding, and you had to be a self-starter and enjoy competition. At the time I thought of Harvey as a bit more accessible, but later I realized that David was simply a more private person." She illustrates their relationship as like a "push-me-pull-you," and, in fact, dedicated her thesis to "Baltish-Lodimore."

Following graduate school, Villa-Komaroff took a postdoc with Fotis Kafatos in Harvard's Biology Department. She later learned that both her advisors were upset with her for taking the position, each imagining that the other advisor had arranged it for her without informing the other; in fact, she arranged it independent of both of them. This would prove a valuable lesson to Villa-Komaroff in the years to come.

In 1975 the City of Cambridge, in a famously misguided decision, banned the use of recombinant DNA, forcing Villa-Komaroff and others to move to Cold Spring Harbor. She worked for a year there as a postdoc for Tom Mantiatis, who was just beginning as an assistant professor.

When Villa-Komaroff returned to Cambridge, she resumed her training at Harvard with Wally Gilbert, with whom she published a paper on the expression of insulin in bacteria. "This was an incredibly exciting time to be working in recombinant DNA," Villa-Komaroff reflects on that period, "everyone was just realizing what a powerful tool it was. Our lab was showing the world how to sequence."

As a result of the work described in the paper, Villa-Komaroff worked as a consultant for biotechnology and law firms, using her expertise in recombinant DNA. Following her postdoc, Villa-Komaroff went to the University of Massachusetts Medical Center where she set up a lab in molecular genetics and microbiology, maintaining her connection with her colleagues at Harvard, where she returned after seven years and receiving tenure at UMass.

Villa-Komaroff's lab at Harvard was never more than ten people, but she is particularly proud of those who worked there and what they are doing now. She also found time for committees, teaching and research. But in closing her lab, Villa-Komaroff made the difficult realization that her "diffuse approach to science" was no longer viable. It would, however, prove very useful in her new role at Northwestern.

Villa-Komaroff's scientific interests have been many and varied: as a student she was involved with protein synthesis, particularly polio virus. In Kafatos' lab, she studied the eggshell protein of the silk worm. Her plan was to use the study of protein synthesis to learn more about the development of the silk worm. At Cold Spring Harbor, she tried to clone the silk moth genome. While this experiment failed, she learned techniques that enabled her to successfully clone insulin in bacteria when she returned to Harvard. When she set up her own lab, Villa-Komaroff studied insulin-related proteins in the brain. She found that "if

insulin is made in the brain it is made at very low levels, while insulin growth factors one and two are made abundantly in the brain." This led to the discovery that IGF2 is a factor in regulating the cell cycle and the advent of cell death in an animal. She also contributed to understanding of the neuropeptides somatostatin and vip. She is particularly proud that Bruce Yankner was a fellow in her lab when he proposed that beta amyloid was a neurotoxin whose action led to Alzheimer's disease.

Fate and timing played large roles in Villa-Komaroff's move to Chicago. Northwestern approached her just as she was thinking about what she would do next. She had had no intention of leaving Boston, and her first reaction was "why on earth would I want to move to Chicago?" — especially when it was clear that Tony couldn't go. In the end, she moved to Chicago while he stayed in Boston. Of the commuting marriage, Villa-Komaroff reports, "we were determined to make it work, and it has. We get together once every two weeks in either Boston or Chicago. For two workaholics, it may be ideal." Villa-Komaroff calls Chicago "one of the great unsung secrets of the country."

In preparation for her responsibilities at Northwestern, Villa-Komaroff took classes at MIT's renowned Sloan School of Management, which focuses particularly on research management, development and technology-based innovations. Villa-Komaroff found her crash course in management "extremely valuable," to her work in technology transfer at Northwestern.

Villa-Komaroff's siblings pursued varied but interesting careers: her oldest brother is an investigator for a federal defense agency; her oldest sister is a former District Attorney in Portland, Oregon, now in private practice. Another brother teaches music in Santa Fe like their father, and plays in a jazz trio and a big band group. Her youngest brother is a fifth grade teacher in Texas, and her youngest sister is the Vice President of a small bank in Los Angeles. Villa-Komaroff is devoted to her large family, immediate and extended; she has over 100 first cousins. She does not have children, but has perfected the role of "Aunt Lydia" to her many nieces and nephews, the oldest of whom is in medical school at Northwestern.

Of her many honors, Villa-Komaroff says she is particularly proud of her selection as one of the "100 Most Influential Hispanics" in 1997, in recognition of her scientific work in insulin cloning.

Villa-Komaroff was elected to the ASCB Council in 1996, service which has solidified her loyalty to the Society notwithstanding her departure from bench science. She is especially fond of the ASCB because of its activist approach to public policy as well as to women's and minorities affairs. She notes that, "work being done in public policy is phenomenally important."

Work, commute and extended family permitting, Villa-Komaroff is an amateur photographer. She hopes to broaden her longstanding portraiture to macro-photography. She is also an avid reader of mysteries: "it's how I relax my mind."