

[<< back](#) 

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Joseph C. Hall

Growing up in Harlem, Joe Hall's mother raised him and his brother and sister alone and on welfare. Hall joined a gang; his brother ultimately died of AIDS. Hall isn't quite sure himself how he traveled from the hard life of the ghetto to one of only six African American National Science Foundation Presidential Young Investigators. But he remembers that a distinct turning point was when one of his teachers at Charles E. Hughes High School in New York City, Janet Freeman, noticed that despite the absence of any studying, Hall was earning B's in his classes (Hall confirms that his high school years were devoted to "hanging out listening to music").

She placed him in a special program called College Bound offering an accelerated academic program for underprivileged students. He credits the program for emboldening him to leave his gang by sophomore year and for sharply raising his academic self-expectations.

After high school, Hall entered Roanoke College in Virginia, on a track & field scholarship, the first member of his family to go to college. He ran cross-country and the half-mile. Hall reflects that, "when I started college I was quite ignorant, because I had been told what to think, but in college I began to think critically." He became interested in science in his sophomore year. The Dean of the College told him idealistically but prophetically, "your legs can only take you so far, but your mind can take you as far as you want to go." Additional guidance came from his Chemistry professor, whom he remembers simply and respectfully as "Dr. Henderson," who advised, "cells don't violate any laws of nature Ñ if you really want to understand how they work, you have to understand their chemistry." Once Hall was hooked on science, the wise Dean arranged to convert Hall's track scholarship to an academic scholarship, and his fate was sealed.

From Roanoke, Hall went to Old Dominion University in Norfolk, Virginia to earn a Masters degree in molecular biology, after which he spent a few years doing research and teaching at Norfolk State University. But Hall was determined to "go the distance," so he enrolled at Kent State to earn his Ph.D. in Chemistry. Studying biochemistry under Fred Waltz, Hall recalls his years at Kent State as "the toughest thing I ever did," reflecting that then it was less difficult to get into graduate school than it was to earn his doctorate.

Hall's interest in reproductive biochemistry was partly inspired by a dare from his wife, Carleen. Immersed in the demanding years of bearing and raising their five children, she one day, exasperated, blurted, "you're a chemist, why don't you come up with a male contraceptive?" Hall has been working towards that goal ever since. It hasn't done anything for his wife but he's hopeful for his children and their future spouses.

Following graduate school, Hall did a postdoc at Penn State and later remained on the faculty as a research associate and assistant professor there for five years. With a NASA grant, he looked at how microgravity effects reproduction. He found the academic environment at Penn State stimulating, but the social environment isolated. Hall and his wife were raising their children in a small white town and they longed for more ethnic diversity. Hall notes that "92% of Pennsylvania was Caucasian and central Pennsylvania is basically without diversity." The majority of African-American children in the local school were his own children.

So the family moved to North Carolina State University, where Hall took a position as Assistant Professor in the Department of Biochemistry. At NC State, Hall encountered what he terms "the politics of students," in which students want courses tailored to their interests and classes to be strictly fun, which was a frustration and challenge to Hall's more traditional ideal of education. This realization also coincided with the period in the late-80s and early-90s when it was increasingly difficult to find federal funding for research.

Hall took another dramatic leap by complementing his academic work with starting his own company, Innovative Reproductive Technologies, based in Virginia Beach, Virginia, which seeks to develop a male contraceptive. Hall made the decision to start the company because "I was spending half my time chasing down dollars and half of it wasn't even going to my research [but to the university in indirect cost recovery]." He reasoned that if he had his own firm, more of the research funding he could attract could be used for research and development.

While his main focus is on Innovative Reproductive Technologies, Hall still loves teaching and continues to teach at Norfolk State, Old Dominion and East Virginia Medical School. By associating with different schools, Hall feels he has more freedom to teach what and when he wants. Hall also spends a few days a month teaching at a local junior high school (after his daughter procured his promise "not to talk about sperm.") He reflects that, "teaching has taught me that you have to take each individual separately. This

was a tough lesson for me to learn given my background." His guiding principle is not to teach students what to think but rather how to think. Hall hopes to inspire some of these students, especially the junior high schoolers, to become scientists (although he still has to regularly reassure them that even though he's a chemist he's not going to blow something up.)

Hall has received NIH and NSF funding to understand how the egg recognizes the sperm (but don't tell his daughter), looking at enzyme function. Speaking of his field of research, Hall notes that, "in a sense we are looking at what the future will hold with regard to morals. In the 1980's, reproductive morals changed from what they were in the 60's and 70's. Now couples are having children later and we want to give men some options. If men are given an option for birth control, they will use it."

In 1991, Hall received the National Science Foundation Presidential Young Investigator Award for his work. This \$500,000 award gave him the freedom he desired to pursue his research interests. Hall has been an active member of the ASCB Minorities Affairs Committee. He believes that the Committee has had a significant impact on increasing diversity in biomedical research laboratories. Hall would like to see the ASCB "take an even greater leadership role in promoting diversity in science." He is concerned that the pool of minority applicants for graduate school has remained constant and especially concerned about the loss of affirmative action. "We need to face the fact that affirmative action is being eliminated and begin to think about how to address the problem of attracting and retaining minorities in science in new ways." Hall is hopeful that science can lead the way in developing new ways of recruiting and maintaining minorities to higher education without affirmative action. For Hall "it is not scientific to only have one approach to solving a problem." He also thinks more should be done to ensure that women continue to enter scientific disciplines. Hall is proud that "of all the societies, the ASCB is the most active and effective with regard to issues of minorities."

Carleen Hall works part time for Innovative Reproductive Technologies as Vice President for Marketing and Public Relations. Three of their five children, Vincent, Joseph, and Chris, attend North Carolina State; their youngest son, Joel, and their daughter, Carleen, are still at home. So far, says Hall, "only my daughter is interested in science."