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2004 WILLIAM ALLAN AWARD ADDRESS
Introductory Speech for Louis Kunkel*

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The William Allan Award of the American Society of Human Genetics was established in 1961 in memory of William Allan, one of the first physicians in America to conduct research in human genetics. This award is the premier recognition by our Society, presented for substantial and far-reaching scientific contributions carried out over a sustained period of inquiry and productivity.

Since its inception, 34 men, five women, and one project have received the Allan Award. Past awardees have defined our field by gently shaping our inquiry and by creating the tools needed to answer fundamental questions. Others have made scientific contributions of such blazing insight that they have set the field on a new course altogether. Several past award winners have gone on to win the Nobel Prize, and some who haven't should.

This year, we honor Louis M. Kunkel, Ph.D., Professor of Pediatrics and Genetics at the Harvard Medical School. It is my pleasure to introduce him to you.

I first came to know Lou Kunkel 20 years ago, at this same meeting and in this same city. We each gave a presentation in what was then an informal and unscripted workshop session—session number 5, to be exact—and it was held in the concert hall of the Royal York Hotel on the evening of Wednesday, October 31, 1984. The session's moderator, Larry Shapiro, graciously provided the opportunity for young scientists, like myself and Lou, to describe our exciting findings on the "molecular genetics of disease." Despite my own nervous excitement about presenting hard-won data at my first ASHG meeting, I recall being blown away by Lou's talk.

Lou, who is only a few years my senior, was a junior faculty member at Harvard at the time. Wearing blue jeans and wielding overheads, he described his efforts to specifically clone DNA sequences from the X chromosome, sequences that were deleted in a patient named "B.B." B.B. was a boy who suffered from four inherited disorders, including Duchenne muscular dystrophy, and who had been demonstrated as having a cytological deletion in Xp22. Lou described a technique called "phenol-enhanced reassociation," or PERT, that allowed *Mbo*I-digested female DNA to hybridize to sheared DNA derived from the patient, leaving only reassociated DNA fragments, with *Mbo*I sticky ends available for cloning. He planned to use these clones for gene discovery for Duchenne.

I was struck by how clever he was and how fearless an experimentalist he was. And I was amazed that his presentation was so lucid that I actually understood it. It is these attributes of clarity, preparation, insight, fearlessness, dedication, and choice of a really interesting problem that are characteristics of constancy in this outstanding and mature scientist we honor today.

Lou is a third-generation scientist. His grandfather, Louis Kunkel, was a botanist at the Rockefeller Institute for Medical Research. It was in his laboratory that Wendell Stanley performed his Nobel Prize–winning work on crystallization of the tobacco mosaic virus, and it was

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from him that his grandson and namesake cultivated his interest in plants.

Lou's father, Henry G. Kunkel, was also a professor at Rockefeller, and it was in Henry's lab that Gerald Edelman purified the Benz-Jones protein—again, a Nobel Prize–winning discovery. When Lou was inducted into the National Academy of Sciences in 1990, he found his father's and grandfather's signatures waiting for him as he added his own name to the roster. Looking at this pedigree, you might hypothesize that scientific prowess is an autosomal dominant trait.

Lou was born October 13, 1949, in New York. He attended public elementary school in Westchester County, followed by Lutheran Middle and Senior Day schools, in the German Lutheran tradition. He went to Gettysburg College in Pennsylvania and was graduated in 1971, fully intending to pursue botany as his life's work, in the footsteps of his grandfather.

But circumstances combined to interfere with these plans. During summer break before his senior year, Lou worked with Alexander Bearn at Cornell Medical School. Bearn had in interest in Marfan syndrome and sent young Kunkel to retrieve samples from Victor McKusick, who was just starting up the human-genetics graduate program at Johns Hopkins. Lou had intended to take a break before starting graduate school, but Victor recruited him for the nascent program. With the Vietnam draft breathing down his neck, Lou grabbed the chance to enter graduate school immediately and embarked upon his career.

Those were good times to be a graduate student at Hopkins. Summers were spent at Bar Harbor working on the course, and monthly meetings were held at Victor's house to update the Mendelian Inheritance of Man, with each student responsible for monitoring the contents of a journal or two.

Lou joined the lab of Kirby Smith, where he developed methods for isolating Y-chromosome–specific DNA sequences, methods that later proved useful in cloning the Duchenne gene. Lou had a brief postdoctoral sojourn at UCSF, and then he joined Sam Latt at Harvard Medical School for an additional fellowship.

Sam was using fluorescent dyes to sort human chromosomes, and Lou's goal was to collect human X chromosomes and make an X-specific genomic DNA library from them. He received funding from the Muscular Dystrophy Association. Today, hanging from the wall of Lou's crowded office is a letter dated 1989 from Jerry Lewis, writing "I'm more convinced than ever that the smartest thing MDA ever did was to give you a post-doctoral fellowship."

As a junior faculty member, Lou flourished. He teamed up with his first student, Tony Monaco, and he met and married his wife Susan, who worked in Sam's lab. In 1986, within 24 hours of his first daughter's birth, Tony called Lou from the lab to report that he had found the first exon coding for the protein we now call "dystrophin." I did not press Lou to ask him which event was more thrilling, but I can say that Lou delights in his three daughters, the youngest of whom, Ellen, is in the audience.

We honor Lou today not only for this initial discovery but also for his sustained and successful push over these past 20 years. The discovery of dystrophin has led to vastly improved genetic counseling and patient care, an explosion in our understanding of muscle-membrane biology and other muscular dystrophies, and real promise for stem-cell replacement therapy. On each of these fronts, Lou has been a gracious and modest leader.

Please join me in warmly acknowledging Lou Kunkel for a job very well done.