

Moving to a different location was hard on everyone in the family. This also meant that in the 8th grade I had to transfer to a different school. The school I had attended until then was small and very near to our house. Our school's Head Master's family lived just across the school's soccer field from us and our two families were close friends. Other teachers of the school also knew my family, and generally we were treated well.

The new school brought upon me new difficulties. I am not sure if it was the first or the second day at my new school when I was punished for violation of the school's dress code. An afternoon math class was in session when the Head Master walked in. All students stood up, as it was a custom to do when a teacher entered the classroom. Pointing his cane at me he asked me to come towards him. He asked me to spread my hand out and forcefully hit my palm with his cane. He looked into my tearful eyes and said "don't forget to wear your cap next time". As he left and I returned to my seat, I could hear giggling from my classmates. I had never felt so low, so insulted before. Being my first or second day there, I had not known that wearing a cap was part of the school's dress code.

That painful and humiliating experience left a lasting impact on me. I was afraid to go to school. I remember while walking to class, considering if I should skip school altogether. But thinking of my parents, I could not betray their hopes. I knew they expected me to get a degree from college and have a good job. I was not a good student in my school, especially in math and math-oriented subjects. I was good in science and literature. I finished my high school with a C average in most of the courses.

My college life: Despite my low grades, I obtained admission into Osmania University's City Science College in Hyderabad on the basis of being an athlete. I was a good cricket player, a fast bowler. This college offered a two-year preparatory program for university-bound students. My subjects were biology, chemistry and physics, but no math, of course. Those two years were good because I was doing better in my classes and enjoying playing cricket for the college. I was the fastest bowler in my team and had the support of my teammates and my coach.

I passed the intermediate program with good enough grades to enter Osmania University College of Veterinary Medicine and Animal Husbandry in 1956. It was a 4-year program. There were 60 students in my class with one girl. This was the first time a female student had ever been admitted to the program in my college. She quit the school in the second year. By the way, when I recently visited my alma mater in India, I found approximately half of the enrolled students were female. This was a welcome change indeed, which was the result, I was told, of a phenomenal growth in the local economy with increased job openings in the small animal practice, pharmaceutical and biologics manufacturing, and in the government sector.

As I was about to begin my first year of veterinary college, a tragedy struck my family. My youngest brother, Hussain, who was 8 years old, developed autoimmune nephritis, suffering painfully for some six months before he died. The scar of his untimely death has remained with me even today. My father, who dabbled in writing poetry in our

native language Urdu, wrote a stanza that reflected his grief. The following is an approximate translation of it:

My youngest son was the light of my eyes
I had named him Hussain (the beautiful)
A calamity so painful came from nowhere
To take him away when he was just eight years of age.

Our lives went on as before, but without Hussain, an emptiness would remain with us forever.

My introduction to poultry: The four years of veterinary college were generally good. I had good professors, particularly my Principal and Dean, Ahmed Hussain, was especially nice to me. I had developed a personal attachment to him that lasted my years at the college as a student. Perhaps the most life-changing relationship I developed in the fourth year of the college was with Dr. Earl Moore, an American advisor to our college under the Technical Cooperation Mission, later named Agency for International Development, AID. Dr. Moore was previously affiliated with both Cornell University and Ohio State University, before joining international service under the auspices of the Kansas State University-AID program. After I finished my veterinary school, I was hired by Dr. Moore to work as a research and extension assistant on the KSU-AID payroll. My job was to work at a pilot poultry project that Dr. Moore had started at the Veterinary College Livestock Farm. There, I became a colleague of Mr. B.V.Rao who at that time was the manager of the facility. B.V. Rao, called Vasu by us, later left that job and established his own poultry business named Venkateswara Hatchery. Mr Rao later became one of the most successful agri-business men in India.

My three years of association with Dr. Moore and his poultry projects had put me on a path that became not only my future, but also my life. One of the most enjoyable projects for me was to train small groups of villagers in raising day-old chicks that were provided to them by AID. This initiative became popular beyond our expectations. In subsequent years, recognition of the economic potential in poultry farming, poultry production in India grew by leaps and bounds. Today, India is one of the major egg producing countries in the world. In this growth of the poultry industry, contributions by Dr. Earl Moore and B.V. Rao had a very significant role.

In the initial development of the poultry industry in India, I too, had a small role. In 1962, while working on Dr. Moore's project in Hyderabad, I was contacted by owners of a transportation company, asking my help in starting a commercial poultry business. That year, I worked with the above company and started a poultry unit in Hyderabad City with 5000 day-old chicks. It was the first commercial poultry farm in my state of Andhra Pradesh. It was named Patni Poultry Farm. The State of Andhra Pradesh later became a major poultry producing center in India.

Travel to the USA: I got married in the May of 1964 to Safia and our first daughter Sayeda was born in 1965. In September of the following year, I left India for the USA to

study poultry science at Texas A&M University (TAMU) College Station, Texas. My wife and daughter did not accompany me at this time. I was privileged to spend my first year as a graduate student under the tutelage of Professor John Quisenberry, Department Head of Poultry Science. While working for my Master's degree, I transferred to Texas A&M University's Department of Veterinary Microbiology to pursue a doctoral program.

When I joined TAMU in September 1965, College Station was a very small town and there were some 7000 students on campus. Almost all TAMU undergraduate students at that time were ROTC cadets and wore military uniform while on campus. Girls were not admitted in the college at the undergraduate level, making it essentially a male school. It was only in 1972 that girls were admitted as undergraduate students at the University.

My research for Master's degree was to assess the variation of dietary energy levels, called energy phase feeding, on the egg production of commercial layers. I defended my thesis in 1967 and received an M.S. degree in Poultry Science.

My time as a PhD student in the Department of Veterinary Microbiology was packed with varying events and experiences - some good and others not so good. Although a foreign student, a person of color and a Muslim, I was generally treated fairly; but I also witnessed attitudes reflecting a lack of acceptance from time to time. After all, it was the 1960s and 70s when color-based segregation in the USA, especially in the Deep South, was a fact of life.

It was my good fortune that I joined a department whose many faculty members were engaged in poultry disease research. Indeed, some of them, such as Leyland Grumbles and Charlie Hall were also the founding members of the AAAP.

I did well as a PhD student. My grades were excellent, my research on transmissible enteritis (blue comb disease) of turkeys had progressed well and my seminar performances received good reviews. In my third year as a PhD student, I received the John Paul Delaplane Award, given to students who excelled in poultry-related research. In 1969, I received my doctoral degree and became a AAAP member. The same year, I made my first oral presentation in the AAAP annual meeting in Las Vegas. I passed the American College of Veterinary Microbiologists board exam in 1973 to become an ACVM diplomat.

Employment: The first job offer came from Campbell's Soup Company. I visited their laboratory facilities in Fayetteville, Arkansas and I was contemplating accepting the job offer, but Dr. Grumbles offered me a Research Associate position in the Department and counseled me to stay in academia. My family bought our first house in 1971 and my roots were getting deeper in Texas. In 1972, I was promoted to Assistant Professor position and in 1978, to Associate Professorship with tenure. My duties included teaching, research and service.

Teaching at TAMU: My early teaching assignments at the veterinary college were mostly as a laboratory instructor. As time went by, I began to feel that students liked my teaching. My later teaching of microbiology and immunology courses to DVM classes earned me the coveted Norden Laboratories Distinguished Teacher Award in 1980. This was a college-wide award and the recipient was selected from all of the veterinary faculty. The year 1981 brought me an unexpected honor when I received the University-wide award titled 'The Association of Former Students of Texas A&M University Faculty Distinguished Award in Teaching.' I was one of three university faculty members who received this award that year. It consisted of \$5000 and an Omega wristwatch with my name inscribed on its back. In 1982, I was promoted to full professorship.

Employment at Cornell University: In 1986, I was humbled to receive simultaneously two offers of faculty position, one from The University of California, Davis and the other from Cornell University. It was a hard decision for me and my family to leave Texas after twenty years. After some weeks of agonizing on it, I accepted Cornell's offer and moved to Ithaca, NY in March of 1987. As for the Davis offer, it was a difficult decision to decline it. There, I had received an enthusiastic welcome from the faculty during my interviews. Indeed, to date, I remain indebted to Professors Richard McCapes and Arnold Rosenwald for their hospitality and courtesy.

The department I joined as Professor at Cornell was the Department of Avian and Aquatic Animal Medicine in the College of Veterinary Medicine. The position I took was that of Dr. Julius Fabricant who had retired that year. The Department Chair was Professor Bruce Calnek. It was his persuasion, kindness and my respect for him that made me decide to join Cornell University.

In my fifteen years of service at Cornell, Bruce Calnek always had my back. He supported me and provided more than he promised to make my stay meaningful and comfortable. My other colleagues in the department were Antoni (Ton) Schat, Benjamin Lucio, David Graham, and Tirath Sandhu. Julius Fabricant, who was now an Emeritus Professor, was still active in the Department. Tirath was in Long Island, NY serving as director of Duck Research Laboratory. I will always remain indebted to my above-named colleagues for their friendship and help.

At Cornell University, I taught diseases of poultry. My other teaching assignments were in two team-taught courses, namely pathobiology to DVM students, and immunology to graduate students.

Research: At Texas A&M my research was on the pathogenesis of transmissible enteritis of turkeys, infectious bursal disease of chickens, hemorrhagic-aplastic anemia and viral arthritis of chickens. We also studied the influence of maternal antibody at hatching on immune response of chicks to early vaccination. Under the TAMU Experiment Station and my Department were three diagnostic laboratories in Texas located at Center, Gonzales, and College Station. Coming from the Directors of these laboratories, namely Dr. Tom Blount, Dr. Sam Glass and Dr. B. Panigrahi, respectively, was a constant flow of field-collected material for further investigation that kept us busy. Our laboratory

technicians Billy Cox and Vera Sherill were experienced and skilled to efficiently manage the routine operations of the lab. Many undergraduate and graduate students especially, Dan Miller, Tim Miller, Jeany Cook, Roberta Pugh, and postdoctoral fellow Nigar Sahin conducted dedicated research and kept a cheerful environment in the lab.

While at Cornell, my research was mainly on infectious bronchitis of chickens. Laboratory technicians and graduate students who worked with me were an asset. Among those were technicians Beverley Bauman, Dean Lamoureux, Alice Andriquetto and S.P. Mondal, and graduate students Wei Jai, Kemal Karaca, Gertrude Thompson, and Kathryn Gay. Their contributions were central to most of the research done in my lab. Together we investigated infectious bronchitis virus (IBV) biology, genetics and host immune responses to infection. Our genetic studies mapped genomes of current IBV isolates and compared those with genomes of isolates recovered in the mid- 1900s. This was an effort to assess the incidence of mutations and their possible role in the emergence of variants. Antibody and cellular immune responses to IBV were measured both at the local (upper respiratory) and systemic levels. IBV persistence in various tissues and its potential role in genetic mutation of the virus were studied. Oligonucleotide probes were made for identification and diagnosis of IBV isolates. Monoclonal antibodies (McAbs) specific to IBV serotypes were developed for quick identification of the specific serotype. This, for the first time, allowed the use of a vaccine that will provide immunity specific to the virus affecting a flock. Using those McAbs various ELISA and immunoperoxidase based techniques were developed to detect IBV infection both in the blood and tissues. McAbs against the chicken immunoglobulin classes were produced that served as valuable tools for research on chicken immune responses.

Our research was published in refereed journals including Avian Diseases, Avian Pathology, Applied Microbiology, Archives of Virology, Archives of Toxicology, Gene, Hybridoma, Journal of Virological Methods, Journal of Virology, Poultry Science, Veterinary immunology and Immunopathology, and Veterinary Microbiology.

My retirement from Cornell University: In the mid-1990s, the Department of Avian and Aquatic Animal Medicine lost its independent status and merged with the Department of Microbiology and Immunology. When Bruce Calnek retired, I briefly served as Director of the Avian Medicine Program. In 2002, I too retired and received Emeritus Professor status from Cornell University.



(At my retirement event with my friend and mentor Bruce Calnek)

After retirement, my family moved back to College Station. This allowed me to re-establish my connections with my alma mater Texas A&M University and the College of Veterinary Medicine. In 2002, I was appointed Adjunct Professor in the Department of Pathobiology and served in an advisory capacity to the Avian Medicine program until 2016.

Start of a new Career: In 2003, a new chapter started in my professional career that lasted for fourteen years. Dr. David Robertshaw who was my faculty colleague at Cornell Veterinary College had joined the newly started Weill Cornell Medical College in Qatar (WCMCQ) as Associate Dean. In that capacity he was recruiting teaching faculty for the pre-medical program that had started at WCMCQ in 2002. Knowing that I had just retired, Dr. Robertshaw offered me a teaching position as Professor of Microbiology and Immunology, which I accepted. First, I taught a 6-week introductory course in immunology to the second year pre-med class in the Spring semester of 2003. Subsequently, I taught the pre-med immunology as well as Host Defenses course offered to the first year medical class. I taught the Host Defenses course for six years, then to the premedical class for eight additional years. I found Qatar to be a wonderful place and my teaching assignment uniquely enjoyable. I was happy that my teaching was well received by pre-med and medical students who voted me (a total of eight times), to receive Teaching Excellence Awards during my 14-year tenure. I retired from the WCMCQ in 2017.

Service to avian medicine: Since Dr. Earl Moore hired me in 1962 to work with his poultry project, avian health and nutritional issues have been the centerpiece of my professional career. Both my Master's degree and PhD research were on avian nutritional and avian health issues. As a faculty member at Texas A&M, I taught courses to undergraduate, graduate, and DVM students, and later taught an avian diseases course to DVM students at Cornell University. At both the above institutions, I performed avian diagnostic duties and extension work to help the poultry industry. At Cornell, I also worked closely with Dr. Tirath Sandhu Director of Cornell's Long Island Duck Research Laboratory. In 1999, I received the Pharmacia & Upjohn Animal Health Achievement Award at the annual AAAP meeting, and in 2001, I was the recipient of the funny sounding "Good Egg Award" from the New York poultry industry for my service.

Overseas, while at Cornell University, I conducted short courses and workshops in avian diagnostics and immunology in Ithaca New York, Brazil, China, India, Iran and Sri Lanka. From 2003 to 2006, I served as Professor and External Assessor at University Putra Malaysia. In this capacity, I evaluated dossiers of faculty for appointment, promotion and awarding of tenure.

Association with AAAP: My association with AAAP dates back to 1969, and was rewarding in many ways. Through it, I developed lasting relations with my fellow AAAP members whose knowledge and friendship enriched my professional career as well as my personal life. I was honored to serve on numerous AAAP committees, Avian Diseases editorial board, and was President of the association from 2002 -2003. Currently, I am a

lifetime member of AAAP and Honor Roll Member of the American Veterinary Medical Association.

My present life: My family and I now live happily in a farmhouse that we built in 1978 on a small acreage of land in College Station, Texas. I spend my time listening to audio books (introduced to me by my grandson Aadil), doing yard work, some gardening, watching wild birds, and in football season watching a lot of TV. My wife who worked at both TAMU and Cornell University in plant and soil sciences retired after forty years of service. In addition to all the responsibilities of the family, she does significant charity work. We have been married for nearly sixty years and have three children. Our eldest daughter Sayeda lives in Houston Texas. She has a nursing degree and a postgraduate degree (MBA) in Healthcare Management. She works for a medical conglomerate. Our second daughter is a physician with Baylor Scott and White Hospital in College Station. Our son Hussain has degrees in Labour Relations, Law and business (MBA). He has specialized in Sports Management and lives in the United Kingdom. We have six grandchildren and four great grandchildren. They are the source of joy for us. Age-wise my wife and I are in our eighties and still have reasonably good health. We feel so fortunate for all we have.

My biography won't be complete without acknowledging the blessings of our adopted country, the U.S.A. We achieved things here that would not have been possible anywhere else. My family and I have truly lived and realized the "American Dream" for which we shall remain perpetually indebted.

Finally, I must recognize the contributions of our parents who sacrificed so much to raise us, educate us, and instill in us ethical values. No words of thanks will adequately express our gratitude to them. May their souls be in eternal peace.

Biography solicited by the Committee on the History of Avian Medicine, American Association of Avian Pathologists.

Additional biographical materials may be available from the AAAP Historical Archives located at Iowa State University. Contact information is as follows:

*Special Collections Dept. & University Archives
403 Parks Library
Iowa State University
Ames, IA 50011-2140*