American Association of Avian Pathologists
Biographies of Professionals in Poultry Health

Pedro Villegas
1943 -

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Date: 8-25-2020
Revised: 2020 (Karel A. Schat)

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THE LIFE OF DR. PEDRO VILLEGAS, DVM, MSc. Ph.D., DACVM, DACPV

Education

I was the second of 12 children born in Líbano, a small coffee growing town in the northern part of the state of Tolima in Colombia. My father was a farmer, and he had all sort of animals around him. It was only natural that I should develop an interest in veterinary medicine.

I completed part of my primary school and high school in my hometown, and then I enrolled at the veterinary school of the University of Tolima in the city of Ibagué, the state capital. To support myself during the school year, I was a student assistant at a government veterinary institute, the *Instituto Zooprofiláctico Colombiano*, where I necropsied many chickens and would have them ready for the veterinarians to make final diagnoses (at that time, usually *coccidiosis* and tumor diseases). This was my first experience with poultry medicine, and it really started thanks to my professor, Dr. Jorge Gutiérrez Donoso.

After five years, I earned my veterinary degree with honors, and I started working at the Veterinary Research Laboratory, the *Laboratorio de Investigaciones Médicas Veterinarias* or LIMV, of the Colombian Agricultural Institute (*Instituto Colombiano Agropecuario*, ICA), Colombia's national department of agriculture. The LIMV was located across the street from the veterinary school on the campus of the National University in Bogotá. At that time, the United States Agency for International Development (USAID) had an excellent program in Colombia, and there were many veterinarians from the United States directing diagnostic and research activities at the LIMV. I was very lucky to start working at the research lab under the direction of Dr. Theodore (Ted) Vera, a DVM from Kansas State University who was my mentor.

Texas A&M University

From the beginning, I understood that to be able to communicate with many of the scientists from the United States, I needed to learn and have good command of the English language. I started taking English classes after work, and Dr. Vera told me that if I was able to pass the English exam, I would be eligible to obtain a scholarship to travel to the United States for graduate work. The lab at the LIMV was very well equipped, and it was great to work with so many scientists who mentored me and encouraged me to pursue graduate work in avian medicine. I was very lucky to have worked at LIMV and also extremely lucky to have found my future wife, Angela, who was a medical microbiologist working at a laboratory headed by Dr. Harry Mussman, a professor from Iowa State University. I always tell people that I won the lottery very early in life when I met my wonderful wife.

I successfully passed the English exam and qualified to be accepted to graduate school at a university in the United States. Due to my interest in poultry medicine, Dr. Ted Vera, who had a Ph.D. from Texas A&M University, facilitated several contacts at Texas A&M. I was later accepted into the Master of Science program at A&M. Along with nearly twenty other professionals from ICA, I first traveled to the University of Nebraska at Lincoln for one month of intensive training in English. After the English training program concluded, each student departed to the universities where we had been accepted. I flew to Dallas and then to College Station, Texas, to start my masters work at Texas A&M University.

At that time, Texas A&M played an important role in the field of avian diseases. Dr. Leland Grumbles was the head of the department of Veterinary Microbiology, and he was also the President of the American Association of Avian Pathologists (AAAP). Dr. Charlie Hall was the Secretary of the AAAP, and he was my major professor during my tenure at A&M. I had a hard time getting adjusted to the language and to the different classes. I remember my first test in the class of my virology professor, Dr. Stuart McConnell, who was bilingual English and Spanish. I did not get a satisfactory grade, and he graciously offered me an opportunity to take the exam in Spanish. I decided, however, that I had to try harder and do everything in my poor English. I finally passed the class. Few people would have thought at that time that one day I would be teaching avian virology to graduate students at the University of Georgia.

Finally, with a lot of effort, I was able to finish my Master's degree in May of 1971. My first son, Pedro, was born at the end of April, just about 10 days before I graduated. We were very happy with our first son, and, a few days after graduation, we returned to Colombia.

I was working at the same laboratory at ICA in Bogotá where I had worked before. I was honored to be named head of the Veterinary Microbiology program at the LIMV. I was also cooperating with the graduate program at the National University across the street, teaching graduate students and directing their research. I also taught a Fundamentals of Microbiology course to graduate students at the Universidad Javeriana in Bogotá.

The University of Georgia

My two years at Texas A&M helped me improve my English. When I returned to Colombia, I was selected to serve as translator for Dr. Caswell Eidson, Professor of the University of Georgia (UGA), who was attending one of numerous international professional meetings in Colombia. Dr. Eidson went to Colombia to give a presentation on the new Marek´s Disease vaccine that had been recently discovered at UGA and other places in the United States. Very quickly, I established contact with Dr. Eidson, and, after obtaining a scholarship from the Rockefeller Foundation with the help of Dr. Vera, I was ready to pursue my Ph.D. at UGA in the Fall of 1972.

Upon arriving in Athens, Georgia, I was blessed to be assigned to Dr. Stanley Kleven as my major professor. Dr. Caswell Eidson also helped me a lot in the area of Marek's disease, where he trained me to titrate the vaccines that later on were produced by Select Laboratories in Gainesville, Georgia. I spent many hours into the night at Dr. Eidson's lab counting "plaques" to titrate the vaccines, a procedure that was not commercially available at that time.

My Mentors

Dr. Kleven gave me the orientation, encouragement, and guidance during my tenure as a graduate student at UGA. He supported me along with many other graduate students that were having a lot of trouble with the biochemistry graduate class that almost caused me to quit. Dr. Kleven patiently supported me, and I finally passed this difficult class. In 1974, when I was studying for my preliminary Ph.D. exams, Dr. Kleven also encouraged me to travel to Chicago to participate at the Veterinary Research Workers meeting and to take the American College of Veterinary Microbiologists (ACVM) exam. I had no idea how to prepare for this exam, but Dr. Kleven had plenty of confidence in me, and I passed this difficult exam not knowing the tremendous implications that it would have on my professional career. Of course, preparing for my preliminary Ph.D. exams helped me to take and pass the ACVM exam. Dr. Kleven knew that. I didn't at the time.

The research topic for my Ph.D. was Newcastle disease, since this disease had been present in California in 1971, and there was great interest and money available to do research in this area. Along with Drs. Kleven, Eidson, and David Anderson, who was later named Associate Dean and Dean of the UGA Veterinary School, a position he held for 21 years, we started working on a vaccination against Newcastle disease. I specialized in aerosol vaccination against Newcastle disease, where I was able to measure the different particle sizes of the aerosol delivered from the generators or sprayers that were available at that time. Together, we vaccinated many chickens in the field using this procedure. I finished my dissertation in 1975. Its preamble began with the following sentence taken from Dr. Robert P. Hanson from the University of Wisconsin: "It is evident that the practice of vaccination which keeps the poultryman in business does not necessarily put the virus out of business."

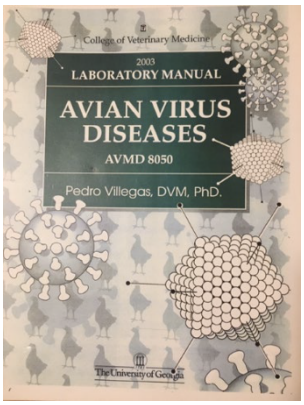
After I finished my Ph.D., I returned to Colombia to work at ICA. In the two years that we were in Bogotá, my second son, Andrés, was born. His arrival was another blessing for our family. At the time, I did not know that a different blessing was on the way. I received a letter from Dr.

Kleven, asking me to apply for a job opening at the Poultry Disease (now Diagnostic) Research Center (PDRC) at the University of Georgia. Soon thereafter, I traveled to Athens to give a seminar on the research projects that I had been working on in Colombia. Later, I was accepted to the Assistant Professor position at PDRC.

This move from Colombia to Athens changed the trajectory of my professional career and the trajectory of my entire family – my wife, two sons at the time, my parents, my eleven brother and sisters, and their families. I will always be thankful to Dr. Kleven for selecting me to be a part of the University of Georgia, the School of Veterinary Medicine, and PDRC.

Teaching and Research
The University of Georgia

I started teaching in 1977. One of the first things that I did at PDRC was to organize a class on avian virus diseases, an idea that I acquired from my major professor at Texas A&M, Dr. Charlie Hall, who taught this course. I later learned that Dr. Hall had taught "Poultry Pathology" at Michigan State University, and Dr. Richard Witter was one of his students. This new course at UGA has now been taught for many years, and it has proven helpful for students by giving them close contact with avian virology.



I also designed a laboratory manual describing step by step different basic virologic techniques. This manual is still in use today. I also did a lot of diagnostic virology using chicken embryos and cell culture to grow viruses. I remember that companies would send tissues to isolate infectious bronchitis virus. At that time, it would take one to two weeks to make a final diagnosis, which was too long to wait. In the late 1970s, the modern molecular laboratory techniques of today had not been discovered and were unavailable to be used in routine diagnoses.

Creating the Newcastle Vaccine

I have been going to AAAP meetings for many years because I consider these meetings the most important ones in my profession. Several times at these meetings, I saw presentations by researchers regarding avian rotavirus in turkeys. Georgia's poultry companies had very few turkeys, but I decided that I had to try to isolate and identify rotaviruses. Dr. John Glisson, a faculty member at the department, and I agreed that he would obtain intestines from turkeys, and I would try to isolate rotavirus. After several attempts using cell culture (chicken embryo liver or kidney cells), the cell culture materials showed some type of cytopathogenic (CPE) effect. They had to be prepared to be analyzed at the Veterinary School by electron microscopy, which was the appropriate "rapid" procedure to identify unknown viruses. There were no PCR or other modern molecular techniques that are currently in use today. It was frustrating that many times either the results were negative or there was an avian paramyxovirus present in the cell culture samples. However, no avian rotavirus was identified.

One night, I had the idea to test this avian paramyxovirus in chickens to see what type of results I would obtain. I had a few specific pathogen-free (SPF) chickens in the isolation units, and I inoculated them with the virus. I obtained blood samples from the birds at different times after the inoculation and tested the blood for the presence of antibodies against Newcastle disease using the HI (hemagglutination inhibition) test, since we did not have the popular and faster ELISA test used today.

I was surprised when we detected different amounts of antibodies against Newcastle disease. I then decided to challenge the chickens with a pathogenic strain of Newcastle (Texas GB) that I had used before during my graduate research. Another surprise: the chickens were protected with the antibodies induced by the paramyxovirus that I had isolated. Therefore, paramyxovirus could be used as a vaccine to protect chickens against Newcastle disease.

Along with Dr. Glisson, we showed the results to Dale King who was the Director of Select Laboratories in Gainesville, Georgia. He told us that the first thing that we had to do was to name the strain. He suggested that we use our names to identify it. The strain was then "baptized" the VG/GA strain, the initials for Villegas-Glisson/Georgia.

After numerous satisfactory experiments, a "new" commercial vaccine to protect against Newcastle was placed on the market under the commercial name Avinew, joining the B1 and LaSota strains that have been discovered more than 40 years before. We continued our research with VG/GA, showing that the post-vaccination reaction was minor compared with the other two strains. This was due to the fact that the VG/GA strain has the ability to multiply in the intestinal track from where it was originally isolated. To sum up: "From frustration to success - serendipity."

Another success during this time was the arrival of my daughter Patricia that brought many happy feelings for the entire family. I remember my two boys jumping in the bed when they knew they had a sister.

My Students

I was very lucky to have students that contributed to my development and success as a professor at the University of Georgia. During my tenure at the University, I directed 11 Ph.D. and 22 Master's students, and I was a member of committees for numerous graduate students. I am very proud to know that all my students have succeeded in the poultry industry of the U.S. and overseas, occupying important positions in leading companies as well as engaging in research and teaching positions in various areas. One of my previous Ph.D. students, Dr. Holly Sellers, took over my lab and teaching responsibilities when I retired.

I think that one of the most important things that I did as a professor was to encourage all the technicians that worked in my lab to enroll in the graduate school and take one class every semester/quarter. I did this in order for them to better communicate and understand the work of our graduate students, but it had the great effect of leading most of my technicians to graduate with Master's or Ph.D. degrees of their own.

The list of graduate students and their main research topics is long:

Master's and Ph.D.
Gregorio Rosales (avian reovirus, infectious bursal disease)
Holly Sellers (infectious bursal disease virus)
John El-Attrache (avian adeno-associated viruses, avian leukosis virus)
Alejandro Banda (infectious bursal disease virus)
Carlos Estévez (infectious bronchitis virus genomic recombination, avian adeno-associated virus)
Iván Ricardo Alvarado (infectious bronchitis virus).

Ph.D.
Roy Montgomery (avian reovirus)
Roberto F. Larsson (avian reovirus reassortants)
Patricia Wainright (infectious bronchitis virus)
Mohamed Hamoud (infectious bursal disease virus)
Francisco Perozo (avian adeno-associated virus, the VG/GA strain of Newcastle).

Master of Science
Hope House (Egg drop syndrome)
Dale Hieronymus (now Dale Chute - malabsorption syndrome)
Luis F. Andrade (ciliary activity in infectious bronchitis virus)
Camila Pardo (Newcastle disease VG/GA strain)
Gloria Avellaneda (infectious bronchitis virus)
Claudia Marín (Newcastle disease virus)
Taylor Barbosa (Reticuloendotheliosis virus)
Guillermo Zavala (Avian leukosis J virus and Marek's disease)
Tabitha Mathews (avian adenovirus)
Linda Purvis (infectious bursal disease and chicken anemia virus).

Master in Avian Medicine
Rafael Fernández
Mark Goodwin
Simón Leal
Guillermo Zavala
Luis Gómez
Miguel Ruano

I consider Dr. Manuel Contreras as my student, although I was not his major professor.

My Work

I am very proud to have published a total of 100 articles in peer reviewed Journals, as well as numerous technical articles in proceedings at different meetings in a total of 56 countries around the world. I am also very proud to have founded the magazine *Avicultura Profesional* (Professional Poultry) along with Drs. Nick Dale and Roger Wyatt. Edited and published in Spanish, *Avicultura Profesional* circulated for almost 15 years throughout all Spanish- and Portuguese-speaking countries.

Events
The International Seminar in Avian Pathology and Production
Seminario Internacional de Patología y Producción Aviar

In 1981, I organized two small courses in Spanish to train people in virus isolation, cell culture techniques, and virus identification. We had approximately 15 people attend this class, and they were very happy to learn all these "new" techniques. One of the participants, Dr. Jorge Castro from Costa Rica, suggested that I should try to organize a larger meeting to bring many people from Latin America for an entire week. This idea was very well received, and in 1983, I organized the first international seminar with the participation of approximately 330 professionals.

To help me in this endeavor, I invited the Directors of the Colombian Veterinary Poultry Association (AMEVEA) to be participants and co-organizers of the event. From 1993 to 2018, we held 10 international seminars in Spanish at the University of Georgia. Most of the presentations were given in English with simultaneous translation provided by Dr. Victor Mireles from Mexico. Interestingly, the need for simultaneous translation has changed considerably during the last two seminars, as there are more Spanish-speaking professionals that are very respected in their fields.

This seminar, held every four years, is known as "Pedro's seminar" and draws an attendance of 300 to 380 participants. The proceeds of this seminar have been used to build and maintain the headquarters of the Colombian Veterinary Poultry Association (AMEVEA) in Bogotá and to support the research of graduate students at PDRC at the University of Georgia and at universities in Colombia.

The Latin Dinner at AAAP

In 1990, when the AAAP meeting was held in San Antonio, Texas, the Spanish speaking participants of the conference had a very nice dinner in one of the restaurants by the river. There were less than ten of us, including my students Drs. Gregorio Rosales and Luis Fernando Andrade. This was the beginning of the famous annual Latin dinner of the AAAP conference.

The Latin Dinner has grown from a few participants to near 100 at the Denver convention in 2018 and the Washington, DC, conference in 2019. Most participants are from Latin America, but we also invite English-speaking participants from different companies and universities. Graduate students are invited for free, and companies take care of their dinner expenses. We

also welcome several non-Spanish speaking colleagues from other parts of the world to enjoy this dinner every year. It has been an excellent event, where each person self-introduces by announcing their name, country of origin, place of work, and anything else that is concise and relevant at that particular moment. During the last few years Dr. Jaime Ruiz has taking care of the organization of this dinner, but I still participate and coordinate the individual presentations. Initially, we were very selective about the restaurant and type of cuisine for the Latin Dinner. However, finding a place for 100 Latinos and guests to get together for dinner can prove to be difficult. For the last few years, we have selected restaurants for their ambiance and private room to hold this important dinner and event, and less so for the cuisine.

Technical Translation

Dr. Arnold Rosenwald from the University of California, Davis, suggested that we translate the *Avian Diseases* summaries to Spanish for the benefit of the Spanish-speaking professionals. Then, when Dr. David Anderson of the University of Georgia was the editor of *Avian Diseases*, I started the translation to Spanish of all the summaries of the articles published in the Journal. I did the translations for more than 20 years. I am proud that the Journal still has the summaries translated by one of my former students, Dr. Alejandro Banda. It was hard work, but I had the help of all my Spanish-speaking graduate students. They were paid a small amount of money for the translations, but this money for a graduate student meant a lot. I remember one of the students telling the others to review each translation several times because Dr. Villegas will return your summary "bleeding" with corrections in red ink.

Consulting Work

The College of Veterinary Medicine at the University of Georgia allowed two days per month for private consulting. This was and remains a very helpful way for the faculty to be in contact with the "Real World" and gain practical experience in the field. Since most of my consulting was overseas (in Spanish- and Portuguese-speaking countries), I would consult at the end of the month, using two days at the end of one month and two days at the beginning of the next month. This, along with one day of annual leave, allowed me to take one full week for consulting.

I consulted on a regular basis for companies in Colombia: Pimpollo and Mr. Guillermo Alarcón; Incubadora Santander and Mr. Enrique Muñoz for seven years; Incubadora del Oriente and Mr. Reynaldo Ruiz for nine years; Indunal and Dr. Hernan Parra; Laboratorios Laverlam and Dr. Luis A. Mazariegos for 18 years; Avícola Colombiana for close to 30 years.

In Venezuela, I consulted for Avinsa in Barcelona for eight years and Protinal del Zulia for seven years. I consulted in Spain for Avicu and Dr. José Luis Valls for 24 years, in Ecuador for Pronaca and the Bakker family for 33 years, in Panamá for Productos Toledano and Mr. Robert Toledano for 22 years, in México for Farm Laboratories Boehringer-Ingelheim in Guadalajara for ten years, and sporadically for companies in different countries in Europe and Asia.

Honors and Awards

Of course, I am very thankful to have been recognized by the AAAP, the World Veterinary Poultry Association, and several universities.

In 2015, I was honored to be one of 50 members recognized at the 50th year celebration at the World Veterinary Poultry Association in Nantes, France.

In 2010, from the AAAP, I received the Lasher-Bottorf Award for avian diagnostic work and/or technical service to the poultry industry in the past ten years.

In 2007, from the AAAP, I received the Animal Health Excellence in Poultry Research Award for sustained excellence in independent poultry disease or health research for over 20 years after the completion of his/her training program. In 2007, I also was honored to receive an honorary doctorate in Veterinary Medicine from the Universidad Mayor de San Marcos in Lima, Perú.

In 2003, I received the AAAP Special Service Award for outstanding contributions within the field of avian medicine. In 2003, I also received an honorary doctorate (Doctor Honoris Causa) in Biology from my alma mater, the Universidad del Tolima, Colombia. The following year, I received an honorary doctorate in Veterinary Medicine from the Universidad Complutense de Madrid in Spain.

In 1999, I was the co-recipient of the University of Georgia Inventor Award for the discovery of the Villegas-Glisson/GA strain of Newcastle disease virus vaccine.

I became a charter member of the American College of Poultry Veterinarians (ACPV) in 1991.

Family Life

When people ask me the question of what is most important to me in my life, I answer, "My family is first, and then my students, and then my research and publications."

My wife Angela obtained her Master's degree at the University of Georgia, working initially under the direction of Dr. David P. Anderson and, when Dr. Anderson went to the Dean's office, she continued under the direction of Dr. Stanley Kleven. She worked in several places at the University and had the honor to work as technician in the area of *coccidia* with Dr. Malcom Reid and in virology with Dr. Phil Lukert. She retired from the University after working at the University Health Center as a clinical microbiologist.

My oldest son, Pedro, graduated from the University of Notre Dame and then obtained his graduate degree at the University of California in San Diego. He is an executive for the San Diego Gas and Electric Company. My second son Andrés graduated from the University of Georgia College of Agriculture and worked with several forestry companies, including The Langdale Company in Valdosta, Georgia, and Weyerhaeuser in Montevideo, Uruguay, where my grandson Alejandro Andrés was born, and in North Carolina and Oregon. He and his family now

live in Macon, Georgia, which has been a blessing to have our grandson just two hours away. Andrés is the President & CEO of the Georgia Forestry Association. Our daughter Patricia Elena also graduated from the University of Georgia and obtained her Master's degree from Duke University. She currently lives in Athens, but spends most of her time traveling throughout the country organizing tours and concerts in different cities for well-known musical groups. She manages different aspects of the concerts and bands depending on the group and tour.
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I should also mention that I have brought from Colombia three of my numerous nieces to pursue graduate studies at the University of Georgia. All of them have finished their graduate work and have also married…… veterinarians, of course. I think it is also important to mention that one of my sisters did her graduate studies in France and the University of Georgia before moving on to teach at the University of Tennessee and Louisiana State University. She now lives in Philadelphia, where she teaches at Chestnut Hill College.

REFLECTIVE STATEMENT and ACKNOWLEDGMENTS

From the personal side of my professional life, I am indebted to many people, and I want to acknowledge here some of the most important people who influenced me in my career:

At the University of Georgia, Dr. Stanley Kleven was my major professor and mentor, and, later, recruited me to be part of the department. I have so many people that I have to thank, but I am certain that Dr. Kleven is the first one on my list.

Dr. Jorge Gutiérrez Donoso, my Microbiology and Avian Diseases professor at the Veterinary school at the *Universidad del Tolima* in Colombia. He is responsible for my selection of Avian Medicine as my main area of work.

Dr. Theodore Vera, DVM, Ph.D., gave me orientation and was responsible for starting my graduate career at Texas A&M University, where Dr. Charles Hall was my major Professor, and Dr. Leland Grumbles provided so many lessons on how to succeed in graduate school and in a foreign country.

I would credit Dr. Caswell Eidson for establishing my first contact with the department of Avian Medicine at the University of Georgia and for his patience in teaching me techniques to titrate Marek's disease vaccines.

Dr. David P. Anderson helped in my research in field trials for my dissertation. As Editor of *Avian Diseases*, we shared many moments commenting about the articles and summaries published in the journal. Also, in the translation of summaries for *Avian Diseases*, it was a pleasure to work with other editors like Dr. Louis van der Heide, who was always very helpful and went through the transition from the typewriter to the computer. I also remember him for his small booklets in the left pocket of his shirt. Those booklets were his "computer." Dr. Jagdev Sharma was also very helpful and friendly in my time as translator for the journal.

As an AAAP Member, it has been an honor to get to know so many members of this "family." I would not attempt to name some because I am sure I will miss too many of them, but the AAAP can be considered as part of my extended family.

Of course, my family has also shared all my accomplishments because they have always helped and encouraged me in the different goals where I have succeeded. My wife, Angela, is a medical microbiologist and worked at hospitals and health centers in Bryan, Texas, and Athens, Georgia. She also earned a Master's degree in medical microbiology at the University of Georgia. She did all of this while taking care of our three children – Pedro, Andrés and Patricia - who have succeeded in their respective careers. I have been blessed with their love and support.

Finally, to my graduate students, who have been such a tremendous joy and satisfaction to have shared time with over many years, thanks to all of them. Regarding my graduate students, I should mention some important personal anecdotes:

Alejandro Banda: During my trips to México as a consultant, I travelled to different cities and companies located throughout México, and Alejandro used to meet me to talk about his interest in coming to the University of Georgia for graduate school. He made a tremendous effort to pursue his goal to come to the United States for his graduate training. In the end, he enrolled at the University of Georgia and obtained both his Master and Ph.D. degrees under my direction. Years later, he would meet Dr. Martha Pulido from Colombia, and they are now a couple at Mississippi State University.

Gregorio Rosales: I was very lucky to have Gregorio as my graduate student. He came from the National University of México (UNAM) and enrolled in the Master's program where he worked with avian reovirus associated with "Malabsorption syndrome." He continued his studies in the Ph.D. program, doing research on infectious bursal disease virus. He was responsible for recommending two additional graduate students: Guillermo Zavala and Holly Sellers.

Dr. Guillermo Zavala: Gregorio Rosales told me that there was a student at Texas A&M doing work on basic science and that he wanted to come to a place where he could be closer to the poultry industry, working in the area of pathology and clinical poultry medicine. Guillermo finally came to the University of Georgia and enrolled in the Master's degree program in medical microbiology. He gave up his program at A&M, despite the fact that I could only pay him half the amount of money that he was being paid at A&M. The risk paid off for Guillermo. Some of the clinicians at that time were impressed with his abilities, and they decided that he should enroll in the Master of Avian Medicine (MAM) program. Guillermo finally enrolled in that program, where he was very lucky to find his future wife, Dr. Louise Dufour, who came from Canada and was in the MAM program at the same time. When Guillermo finished his MAM, he enrolled in the Ph.D. program under the direction of Dr. Mark Jackwood, graduated, and went to work for a major primary breeding company. I kept on insisting that he should continue on and finish the work that he was doing in my lab. He finally wrote his thesis and also graduated with a Master in Medical Microbiology degree, the original program he enrolled in under my direction. Guillermo finished with three degrees from the University of Georgia.

Gregorio Rosales was also responsible for recruiting Holly Sellers to my lab. When he was working for a primary breeding company in Nacogdoches, Texas, he met Holly, and she wanted to pursue graduate work. She came to my lab, where she obtained her Master's degree. Holly supported my lab research and diagnostic virology work.

John El-Attrache: As previously mentioned in this biography, I encouraged my technicians to take one course per semester/trimester/quarter. This allowed John to obtain his Ph.D. degree in seven years. John was patient and persistent, as he served as the head technician in the lab while taking one class per semester/trimester/quarter. John is currently working for CEVA Animal Health. Other technicians who also obtained graduate degrees while working in my lab were Dale Hieronymus (now Dale Chute), who also went on to obtain her DVM degree at Georgia, Miguel Ruano (MAM), and Linda Purvis (MS).

Mohamed Hamoud: Mohamed started graduate school at the University of Georgia in the Department of Poultry Science working in *coccidiosis*. He later came to our department and worked in the area of avian histopathology. He was not satisfied with this change, and, after long conversations, he decided to try my laboratory, where he worked on infectious bursal disease for his Ph.D. program. He is now working for a large poultry company in Egypt, his country of origin.

The Venezuelan group: Venezuela used to have excellent scholarships for graduate students, one program was known as "Mariscal Ayacucho," where the student was paid the salary in the country and the assistantship at the university overseas. Through this program, I had the fortune to have Drs. Rafael Fernández and Simón Leal, and Luis Gómez (MAM) and Luis Fernando Andrade (MS) as students. From Venezuela, I also had Dr. Francisco Perozo, who obtained his Ph.D. degree in Medical Microbiology and is currently working in Bogotá, Colombia, for Boehringer-Ingelheim (previously Merial).

Dr. Carlos Estévez: Carlos came from Dominican Republic to obtain his Ph. D. at my lab. He finished his degree and also met his wife, Luciana Sarmento, from Brazil, who was a graduate student in Veterinary Pathology. Carlos is currently working for Boehringer-Ingelheim.

Ivan Alvarado: Ivan came from Colombia with a loan from an agency supporting graduate students. After the first semester working in my laboratory, I was able to obtain some funding and provide him the financial assistance to continue his graduate program. He was able to finish his Master's degree and then continue on for his Ph.D. degree. He met one of my nieces, Angela María, who was working on a Ph.D. degree in Food Science and Technology. I might have been the last to know that they were dating, and they later married in Athens, where they still live along with two beautiful daughters. Ivan is widely known in the poultry industry in the United States and has been able to rise through the ranks at Merck Animal Health.

Rafael Fernández: Rafael came from the University of Zulia in Venezuela and enrolled in the MAM program. It was a real pleasure to have him as my first student as a major professor. In a strange twist of fate, my first student, Rafael, and my last student, Francisco Perozo, were both from the same University in Venezuela.

Another great satisfaction in my career has been to be able to transmit current technical knowledge to many professionals from Spanish- and Portuguese-speaking countries through the International Seminar that has been held 10 times during my tenure at the University of Georgia. I consider the sharing of technical knowledge to be the highest goal of an educator, and I am proud to have been able to contribute to all my colleagues and the collective knowledge in so many different countries.

I have also been pleased to be able to contribute to the funding of the Colombian Veterinary Poultry Association (AMEVEA). Funds raised by the international seminar have help in the construction of an excellent private facility that is the headquarters of AMEVEA. This place is located in Bogotá, Colombia, it is and forever will be a place of pride for our generation and future generations of veterinarians.

Throughout my career, I have been blessed with many opportunities and many wonderful people, and for this, I am very grateful. I have always tried to exhibit that gratitude through my dedication to my work and colleagues, my assistance in mentoring roles, and my sincere love for the people who have helped to shape my career and my life. Thank you, all.

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