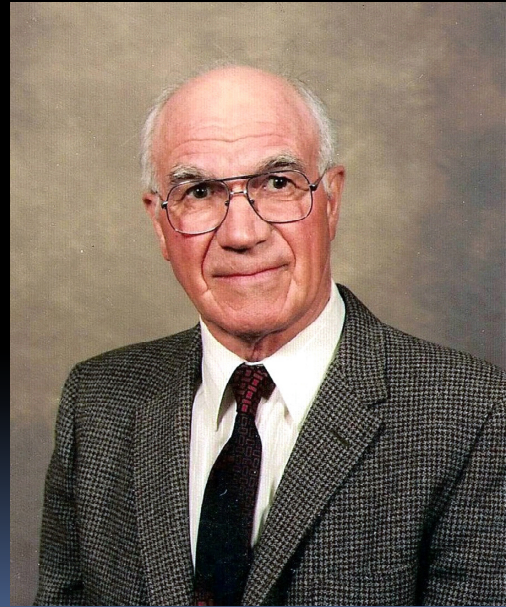


# Pioneers in Avian Medicine

## The Life and Times of Stephen B. Hitchner (1916-2011)



A presentation by Bruce W. Calnek  
at the AAAP Meeting, Chicago, IL  
July 22, 2013

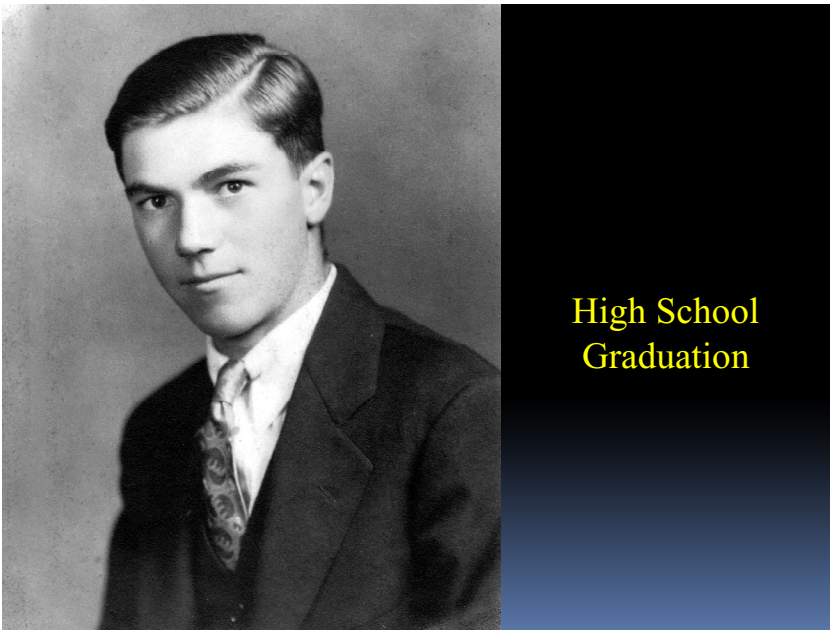
This lecture is the first of a new series of History Lectures which will focus on celebrating the lives and careers of persons who were pioneers in our chosen field of avian medicine. Who could be a better subject to lead off the series than Stephen Ballinger Hitchner, truly one of our most prominent and respected pioneers. As a person who was both a colleague and friend of Steve's, I am honored and delighted to have the pleasure of reviewing some of the highlights of his life and career.

### Birthplace in Daretown, New Jersey



Steve in 1916

Stephen Hitchner was born and raised under modest circumstances on a farm in the small community of Daretown, New Jersey. In later life, he wrote a piece which he titled "Reminiscences of a Plowboy, which describes a typical farm background during his growing-up years. He graduated from High School with the thought of farming for a career.



**High School  
Graduation**

Upon graduation, he helped his father on the farm for three years. However, in his words, he aspired “to more than working with horse-drawn equipment and spreading manure with a fork” and he followed in his brother’s footsteps with a decision to go to College. He later related that the year after he left for college, his father bought a tractor and a mechanical manure spreader. How lucky for the field of avian medicine that the equipment came too late to keep Steve down on the farm!

## Education

So, in 1936, he enrolled in the College of Agriculture at Rutgers University. There, he worked his way through, in part by raising a flock of leghorn pullets in a chicken house that was provided by the university, and he saved money by living in an upper floor room in the Poultry Department administrative building. It was the midst of the Great Depression and, as he noted in one of his writings, he had only \$100 in savings to use for his education.



**All American  
Lacrosse player  
at Rutgers**

Steve earned academic honors, played in the band and participated in sports – 2 years on the 150-pound football team, and 4 years on the lacrosse team. He was named an All-American in lacrosse twice, remarkable given the fact that he never played the sport before college. This facility in sports was particularly evident when the presenter of this biography tried to compete with him on the handball court or tennis court during his later years at Cornell. In short – No Contest!

Most importantly, in his junior year he was given a job working in Dr. Fred Beaudette's laboratory preparing media and doing cleanup tasks.



**Dr. Fred  
Beaudette**

**Mentor to  
Steve Hitchner**

I think you all are well aware of Dr. Beaudette's very significant role in establishing avian medicine as an important aspect of veterinary medicine. Luckily for Steve, Dr. Beaudette took him "under his wing," becoming his mentor. At the time of graduation from Rutgers, he encouraged him to continue his education by going to veterinary college. After Steve and two classmates received negative responses from three colleges, Beaudette took the three of them directly to the University of Pennsylvania to meet with the Veterinary College Dean. All three were promptly accepted!

## Marriage and Family

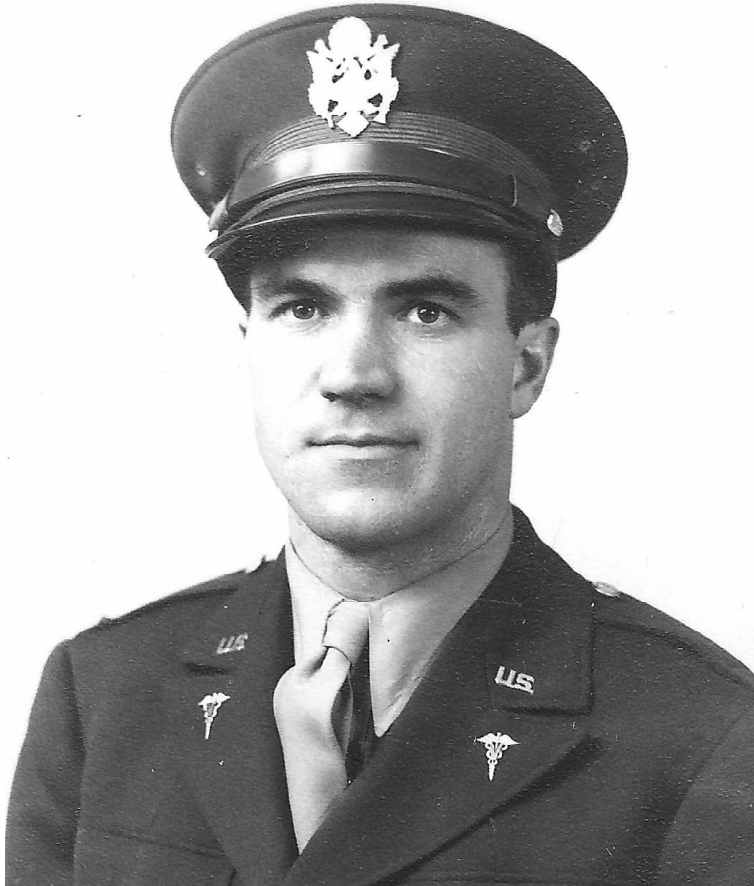


**Steve and Mariana  
Hitchner**

**1943**

A week before he graduated in 1943, he married Mariana White, a coed in a neighboring college. They were to spend the next 68 years together and raise 5 children.

## Military Service



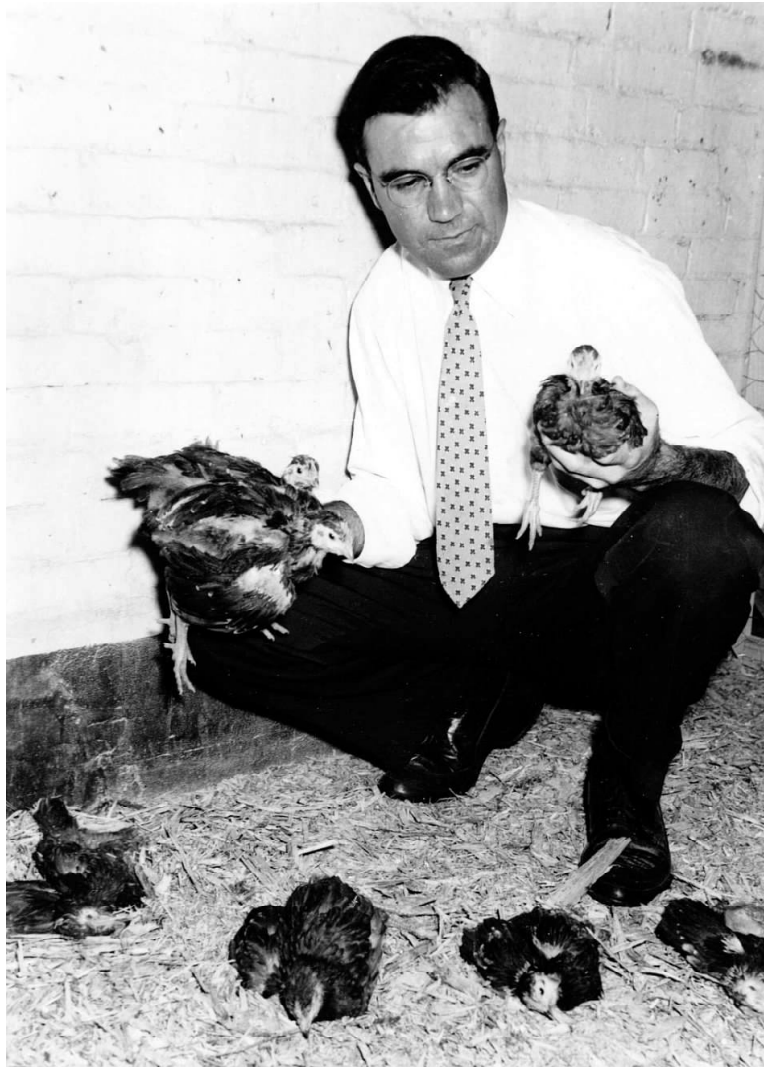
Three years in  
the military  
service:

1943-46

Students at the veterinary college at Penn were given commissions in the army but service was deferred until after graduation. Immediately after his student days, Steve was inducted in the U.S. Army and then after basic training, he spent three years studying animal diseases in Mexico and Central America, part of it conducted in bat caves. He later thought that this work was related to the possibility of biological warfare, with the objective being to determine exactly what diseases were already present so that any new ones could be recognized..

## Virginia Polytechnic Institute

Dr. Beaudette's influence was responsible for Hitchner's selection of avian pathology as a career choice – lucky, indeed, for our profession! In 1946, an initial job as Instructor in Avian Medicine at the University of Illinois was short-lived due to lack of housing, a matter of great importance given that Steve and Mariana had started their family by then. To the rescue came an offer that was to be the real springboard for him. Dr. E. P. Johnson at Virginia Polytechnic Institute (now Virginia Tech) provided a position as Associate Professor and, very importantly, the assurance of an apartment. Even in those days, Universities did whatever was necessary to recruit the best! Thus Steve moved to Blacksburg, VA in January 1947. As we now know, Dr. Johnson made a superb choice.



Early research  
period

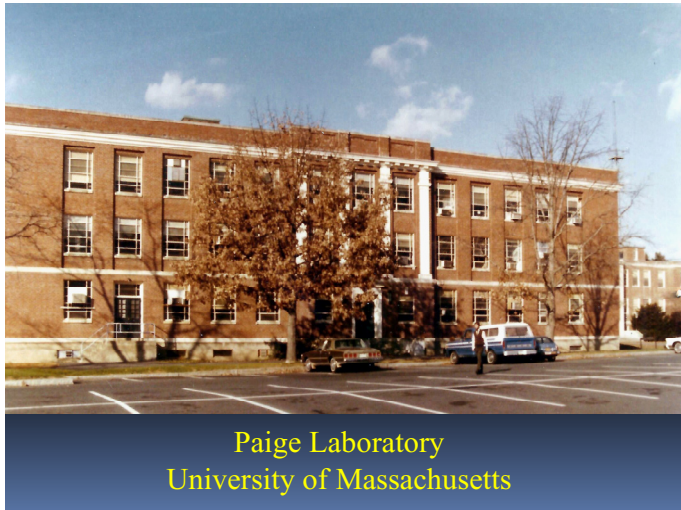
(Newcastle  
studies?)

Anyone who has been involved in research knows that many notable findings are something other than those initially aimed for. This was the case with Steve's research at VPI. In a paper published in *Avian Diseases*, he told the story of his memorable discovery of the B1 strain of Newcastle disease virus, a finding he characterized as serendipitous. It seems that Newcastle disease was the topic of choice at that time and so to get a start with his research, he contacted his mentor, none other than Fred Beaudette. He asked for an assortment of NDV strains and also a strain of infectious bronchitis virus that he could use as a control. To his surprise, the strain labelled as IBV, which he labelled B1, caused hemagglutination of chicken red blood cells. This, of course, is a characteristic of NDV but not IBV. Upon inoculation into young chicks, the B1 strain caused no apparent disease and, very surprisingly, the inoculated chicks were later found to be resistant to challenge with virulent NDV.

Egads! What to say to Dr. Beaudette? Could his revered mentor have made a mistake? In Steve's recounting, he related his results to Dr. Beaudette who adamantly refused to accept the fact that he had sent a misidentified virus. Rather, he declared that it was Hitchner who must have made a mistake. This caused a rift that deeply saddened Steve for many years. He once told me that if you value a friendship with a person, it is best to not compete with that person in your chosen field. Luckily, this is not always the case, but it was certainly true in this one. In the end, Beaudette did suggest, but only indirectly, that the error was in his lab, a point that was made more openly in correspondence Dr. Hitchner received from persons that had been associated with Beaudette's laboratory and were involved in the passage history of the virus strains.

## University of Massachusetts

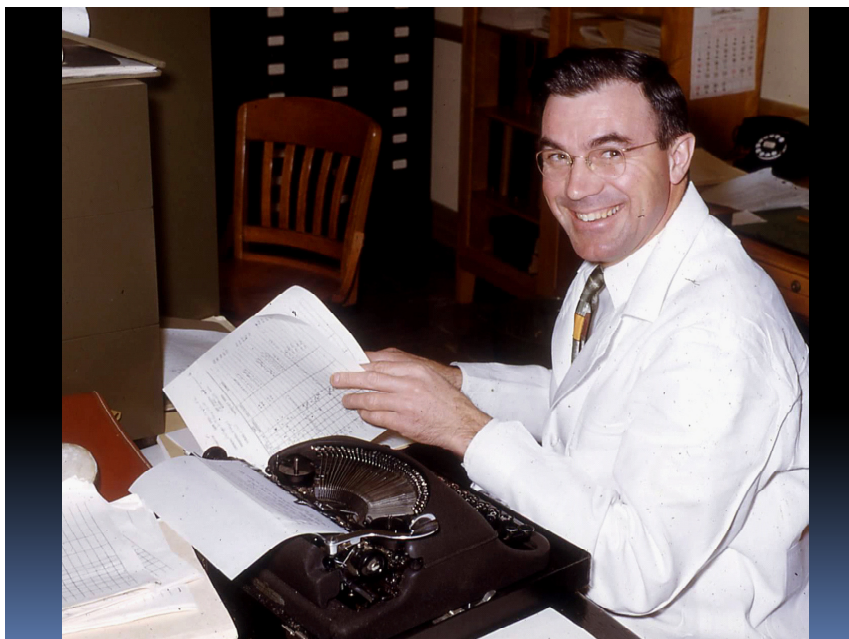
The discovery of the B1 strain of NDV was of immense worldwide importance as a vaccine against Newcastle disease. Unlike other vaccine strains, it was sufficiently mild to allow its use in newly hatched chicks that needed protection until they were old enough to stand up to stronger strains of the virus being used as vaccines. The finding could not have been a better springboard for Dr. Hitchner. Within a couple of years after starting his career at VPI, he was offered a Full Professorship at the University of Massachusetts in Amherst.

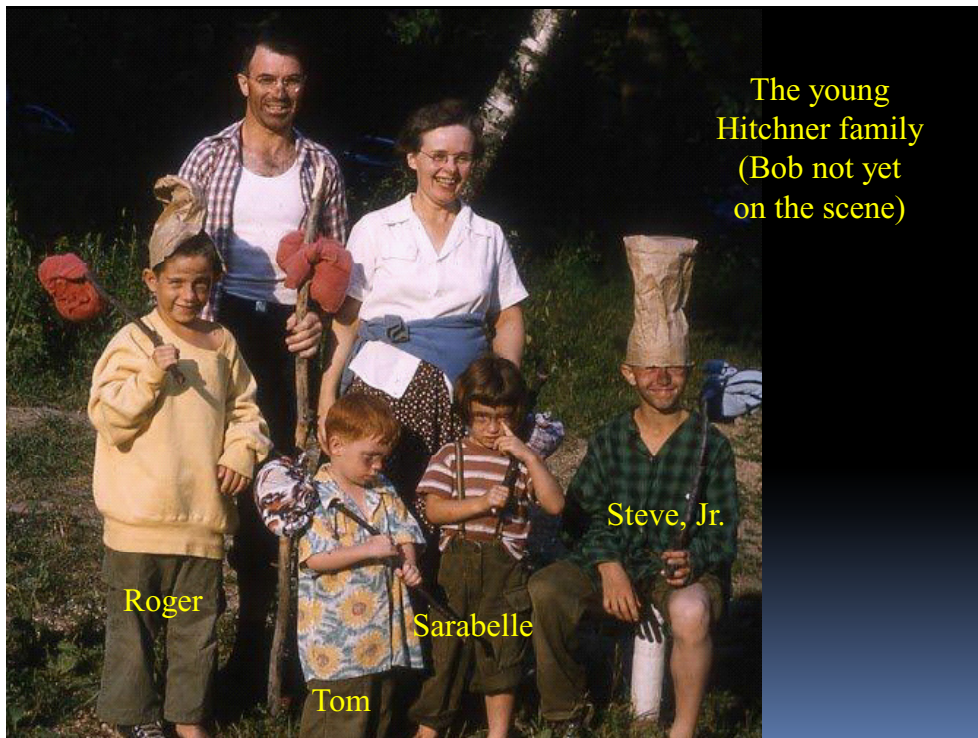


So, beginning in 1949, he spent four years at UMass where he conducted research on laryngotracheitis, and, of course, on Newcastle disease, making spray vaccination a safe procedure for the latter. These studies added to his reputation for significant findings with practical applications, and in turn they resulted in his recruitment to an industry position with American Scientific Laboratories in Madison, Wisconsin.

## American Scientific Laboratories

During a seven-year stint at ASL, beginning in 1953, Steve carried out full-time research on avian diseases and vaccine development. Through all of this, he continued to strengthen his well-deserved reputation as a “straight shooter” whose work could be trusted to be first-rate.





The young  
Hitchner family  
(Bob not yet  
on the scene)

During this same time period, he and Mariana were raising their family. This photo suggests that times were “a bit tough” during the early years. According to a 2011 article in *Aerosols*, a newsletter from the World Veterinary Poultry Association, he also operated a small poultry farm.

Interestingly, Steve’s replacement at UMass, Roland Winterfield, followed in Steve’s footsteps after 3 years and joined ASL as a colleague. I might note as an aside that your biographer and speaker followed Winterfield in the UMass position in 1957. In due course, I, too, was asked if I was interested in a position at ASL. Maybe they considered UMass to be their personal training facility.

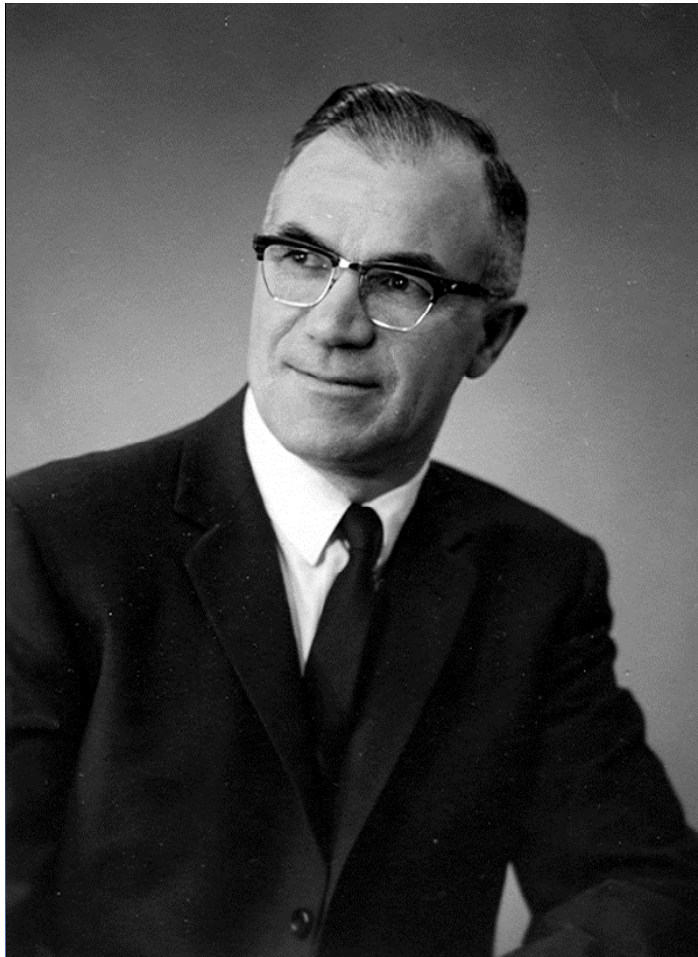
ASL vaccine sales were very good during Hitchner’s tenure with the company, and, in his words, “as a consequence, the company was purchased by Schering Laboratories in 1959.” In 1960, Steve, Roland, and a colleague, George Appleton, left ASL and joined a new poultry vaccine company named L&M Laboratories in Maryland.

## L & M Laboratory

The venture in Maryland was very successful, no doubt in large measure because of the trust the poultry industry had in vaccines developed and produced by Steve and his colleagues. Indeed, the company flourished to the point that it was attractive for purchase by Abbott Laboratories, and after it was acquired by Abbott, the scientists were moved to Illinois where Steve was appointed to the position of Director of Research. This turned out to be of particular importance to those of us at Cornell University, since it turned out that corporate life was not especially attractive to Dr. Hitchner.

## Cornell University

In 1966, Dr. P. P. Levine elected to step down as the Chair of the Department of Avian Diseases. Steve Hitchner was the standout first-choice recruitment target for those of us in the Department at that time. We implored Dean Poppensiek to bring Dr. Hitchner to Cornell. Unfortunately, Steve felt an obligation to stay with Abbott Laboratories since he had just sold them his business, and they wanted him to head up a research and development program. Therefore, he declined the offer that was made to him, and other candidates were interviewed. None seemed to be the right “fit” and so those of us on the faculty urged the Dean to try once again to recruit Dr. Hitchner. The Dean then personally went to Chicago and convinced Steve to change his mind and accept the Cornell position. Thus he came to Cornell as the Department Chair in 1966, a position he held for 10 years.

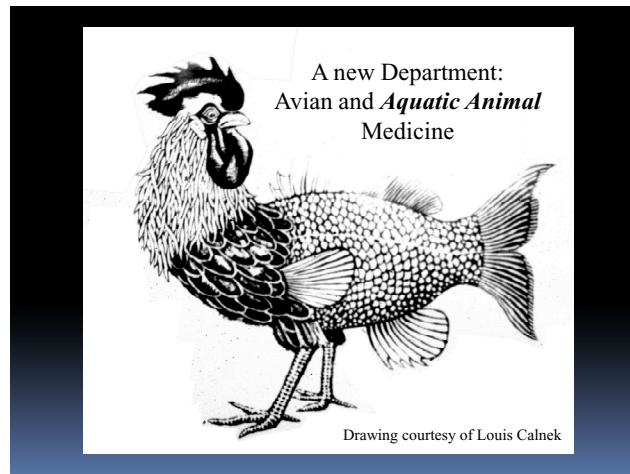


1966: The year  
Steve joined  
the faculty at  
Cornell  
University

At Cornell, Steve Hitchner led by example. In addition to his administrative duties, he carried out independent and collaborative research, directed work by assistants, mentored graduate students (Ben Lucio, Barrett Cowen, Thomas Toth), taught a course on avian diseases to veterinary students, and worked with visiting scientists. He ran the Department with quiet skill and innovation. An example of the latter was his role in broadening the scope of the Department to include aquatic animal medicine.



We then became the Department of Avian and Aquatic Animal Medicine with the lovely acronym of DAAAM. He had fun with that, requiring occasional DAAAM reports by the faculty. Also, we had a new mascot in the department.

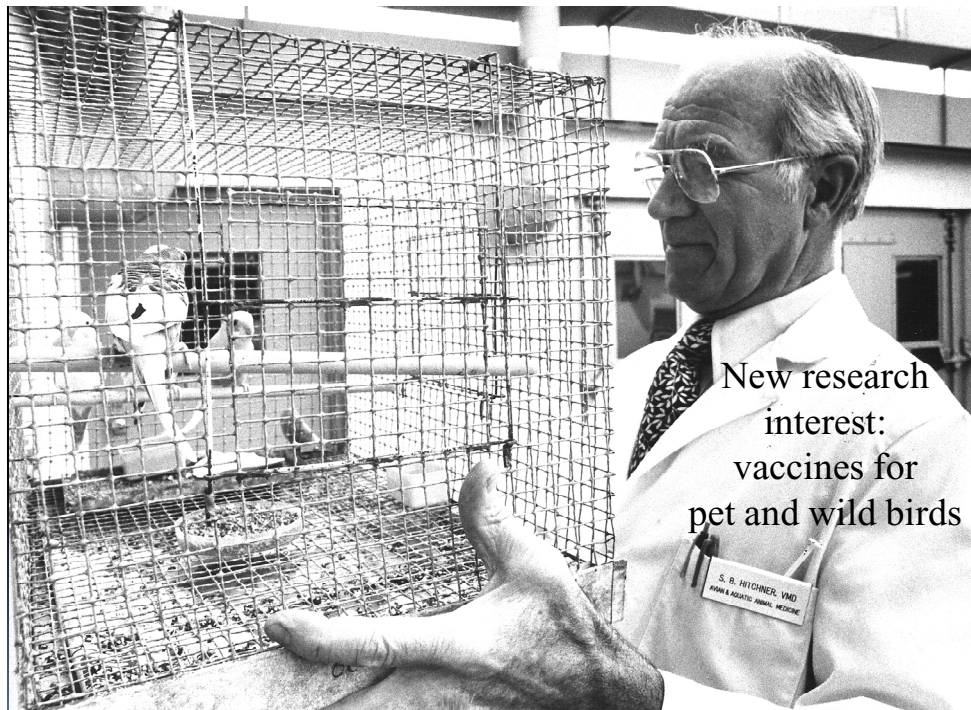


His expertise in the field of vaccine production and licensing came into play two ways at Cornell. At the Cornell Duck Research Laboratory on Long Island, he instituted a program that resulted in a USDA-licensed biologics facility to produce duck vaccines and bacterins. This was crucial to the survival of the duck industry on LI.



**Collaborative  
research which  
resulted in a  
patented  
process for the  
extraction and  
lyophilization  
of HVT  
vaccine**

Also, collaborative research on Marek's disease with the author of this biography resulted in patenting a method for the production of a freeze-dried HVT vaccine. It was Steve's background in lyophilization of vaccine viruses that stimulate the studies that led to this discovery (plus a bit of serendipity). And, he was a collaborator in the study that identified the feather follicle as the sole site of complete MDV replication important to the bird-to-bird transmission of the virus.



His initiation of a program involving viral infections of pet and exotic birds was another of his major contributions at Cornell, one he started after he stepped down as Chair of the Department. Canaries, budgerigars, and parrots were species he concentrated on with his new focus. Together with Katsuya Hirai, a visiting microbiologist from Gifu University in Japan, he isolated paramyxoviruses, orbiviruses and herpesviruses. One of the herpesvirus isolates was used in an inactivated vaccine to immunize birds against Pacheco's disease, and he and I attenuated the virus for immunization of budgies.

He also attenuated a canary pox virus which has been used as a commercially produced vaccine. Other research was directed toward infectious laryngotracheitis, Newcastle disease, Marek's disease, infectious bronchitis, and infectious bursal disease.

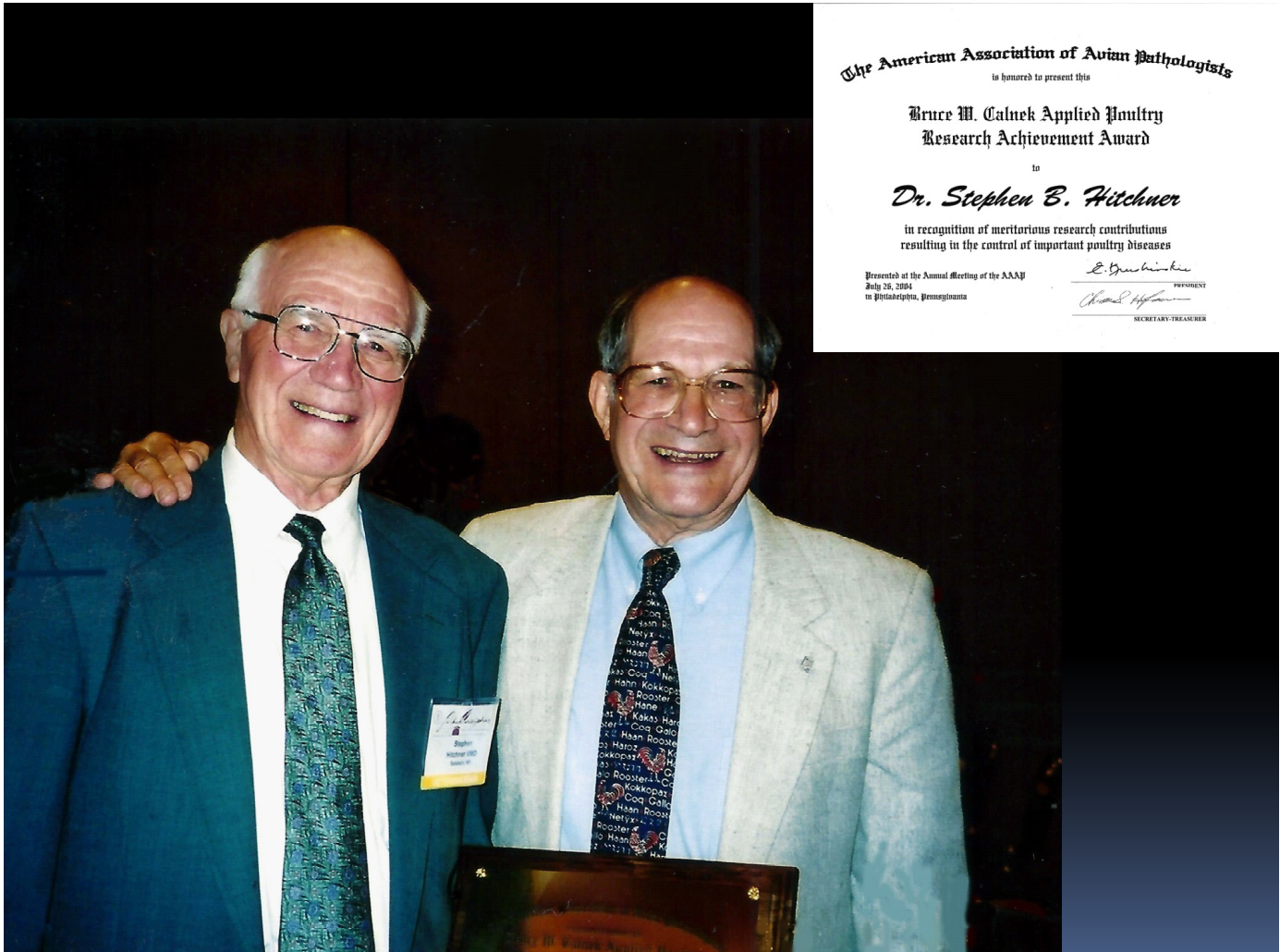
During his career in avian medicine he authored or coauthored 55 publications, 31 of which represented work at Cornell.

## Other Activities and Achievements

There were a number of contributions other than in the laboratory or in the role of a Department Chairman. His "extracurricular" activities included: Consultancies to the Pan American Health Bureau in Argentina in 1967 and the Department of Agriculture and fisheries in Bermuda in 1970; serving as an advisor to the USDA in 1970 and 1972; chairing the editorial committees of the AAAP which published two editions of the manual Isolation and Identification of Avian Pathogens in 1975 and 1980; serving on the USDA Technical Advisory Committee on Newcastle Disease in 1972; an AID assignment in Egypt in 1983; serving on the editorial committee of Avian Diseases in 1979, 1983, and 1989; helping to establish the AAAP in 1957 and serving as President in 1960-61

## Awards

I am certain that Steve Hitchner was the recipient of a number of awards, but in his low-key style he never recorded a list of such, at least in the material I had available for the preparation of this review. However, two stand out regarding our own AAAP. In 1981, he received the AAAP Special Service Award, arguably the finest honor that our organization can bestow. This certainly took into account his role in helping to establish the organization in 1957, his serving as its President in 1960-61, and his activities with AAAP publications and committees. He was made a Life Member in 1982.



Another AAAP award that he received, is especially meaningful and gratifying to me. In 2007, he was the inaugural recipient of the AAAP's Applied Poultry Research Award. More than anyone else I knew, he embodied the essence of the award. Practically every bit of research that he did had an aim of application in the field of avian medicine, from the early work on the B1 strain of Newcastle disease virus, to the development of new or improved vaccines and methods for their application, and the investigation of viral diseases and vaccine development for pet and wild birds. And, his research had an impact. Our field of avian medicine needs this type of dedicated investigation with practical application, and Steve Hitchner most certainly fulfilled that need.

Recognition of his achievements also is evidenced by his posthumous induction by the World Veterinary Poultry Association into their newly formed Hall of Honour. This will be formally announced at the meeting of the WVPA in Nantes, France, in August of this year.

## Stephen B. Hitchner, the Person

Steve Hitchner never (at least in my experiences with him) raised his voice in anger. His family shared with me a number of his personal reflections which I considered to be perceptive and very thoughtful. He rejected a dictatorial approach to leadership; instead guiding by example and gentle nudging. But he did not shrink from taking positive and sometimes difficult actions when they were necessary.

I don't recall him ever swearing, with one exception, when after a frustrating game of handball in which he courteously hit the ball only to my right hand because of an injury I had, he slammed the ball to my left side and said "There, damn it, take that!!!!" Of course, it goes without saying that when I played with both hands, I rarely won a game (how does a clumsy non-athlete compete with an All-American sportsman?). He was not one to tell a lot of jokes, but he certainly enjoyed listening to them.

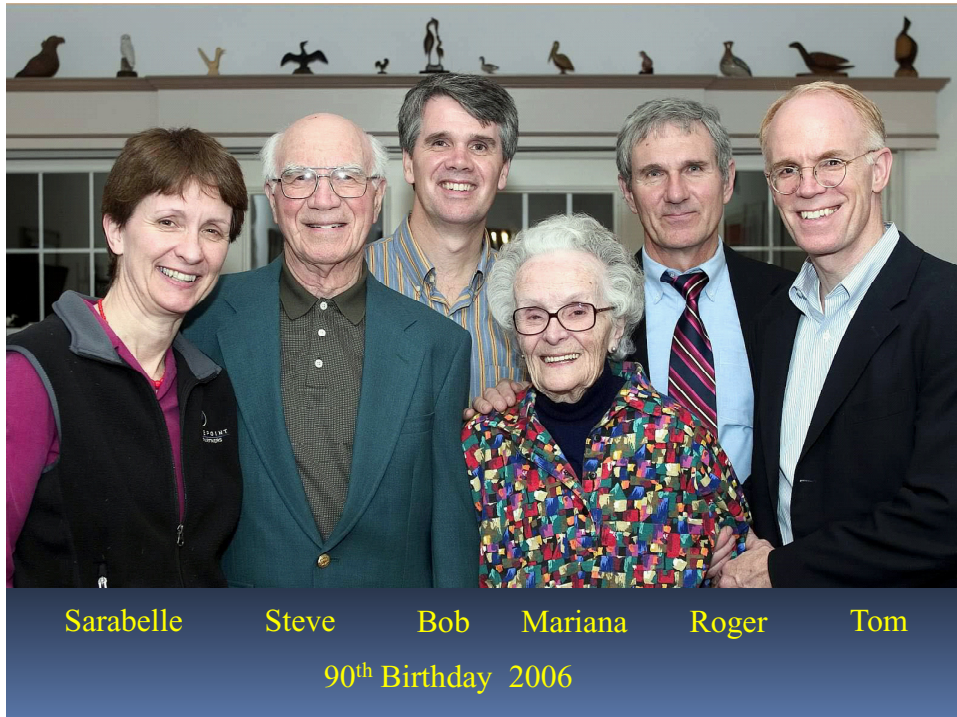
Steve had a number of hobbies. In addition to his addiction to Handball, he played tennis, and stole off to the lower campus at Cornell whenever the lacrosse team was playing at home. As retirement neared, he learned to play the organ. He loved to work with other ornithologists after his move to Maryland where he enjoyed gardening and trying to outwit the deer and squirrels that populated the grounds of their home. And he spent time committing to paper his memoirs and his philosophy of life. Both make interesting reading.

A plaque was given to Steve Hitchner by his children on his 80th birthday. It read:

*"Presented with love and gratitude to our exemplary father. Raised on simple farm values of honesty and frugality, self-disciplined to tolerance, moderate in all things, imbued with courtesy, foreign to anger, attuned to animals and the natural world, appreciative of the gentle world, vigorous, rugged, and modest, you have provided us with the model of an unselfish contented life."*

*A plaque given to Steve Hitchner by his children on his 80<sup>th</sup> birthday*

That tells you a lot about the nature of the person who is the focus of this presentation. He lived a full and active life that influenced all who were around him, and he contributed in many ways to the world in which he lived. Today's talk concentrated a bit on what made him tick, and what that ticking did for our field of avian medicine. Stephen B. Hitchner was truly a pioneer in the field of avian medicine.



He had a marvelous life with lovely family and enviable career. He passed away at age 95 on New Year's Day in 2011. Mariana survived him by nearly 2 years, passing away on Thanksgiving day in 2012. They lived a life full of gifts, both to and from their personal world.

## Acknowledgments

I am deeply indebted to Steve Hitchner's family who provided me with memoirs and reminiscences that he wrote describing his childhood, life and philosophies, and also for sharing a collection of family photos, several of which are used in this presentation. Other invaluable resources included his own scientific writings and the biography he prepared for our AAAP collection. Of course, my personal interactions with him, particularly during his 15 years at Cornell, gave me a bit of insight into his scientific acumen as well as his delightful and admirable personality.