

# William Earl Petersen, 1892–1971: A Brief Biography

Edward V. Caruolo<sup>1,2</sup>



William E. Petersen was “Professor” or “Doctor Petersen” to dairy producers, undergraduates, and the academic and scientific communities. But his colleagues and his almost 100 grad students affectionately addressed him as “Doc Pete.” He was fiercely Danish and pointed out that names ending in “en” were Danish; those ending in “on” were Swedish. Doc Pete was born on February 3, 1892, in Pine City, Minnesota, and grew up on a dairy farm. He earned a

B.S., M.S., and Ph.D in 1916, 1917, and 1928, respectively, from the University of Minnesota. His wife, Alma Agnes Lindstrom, was affectionately known as “Mrs. Pete.” They were married in 1917 and were parents of five children, three boys and two girls. Doc Pete had three true loves: his wife and children, his work (academia), and his state (Minnesota). He was employed by Kansas State College as a dairy extension specialist from 1917 to 1920 and as field secretary for the Minnesota Holstein-Friesian association in 1910–21. He accepted a faculty position at the University of Minnesota in 1921 and remained until his forced retirement in 1960.

Doc Pete believed passionately that administrators are not an end unto themselves but a means to an end. The end is to facilitate work for teachers and researchers. He was concerned that there is risk of abuse when someone has power. His graduate students became very familiar with the story about A. J. Carlson who was invited to speak at the University of Minnesota. All of the administrators were in the front-row seats and the president of the university introduced him. From the podium on stage, Dr. Carlson said he appreciated the opportunity to address the faculty and especially to be introduced by the president. He supposed he must be an important visitor because many of the top administrators were seated in the front row. But he wanted them to know that he wouldn’t hold that against them because, “I don’t look up at administrators, I don’t look down at administrators, I yooost look at them.”

Doc Pete emphasized a point during his lectures by raising his slightly curved index finger on his right hand, cocking his head slightly, looking straight at his audience, and making his point in a kindly yet authoritative manner. There was never any question as to who was in command. During his lectures he integrated relevant real-life experiences with the theoretical aspects so undergraduate students actually understood the basic biological mechanism. When he spoke to a group of dairy industry people, he used explanations that were meaningful and understandable. For example, when he was trying to convince dairy producers to select good sires in their breeding program, the title of his talk was, “Marry not the only good girl in a poor tribe,” taken from an old American Indian adage. His *take-home* message was remembered. If the topic was complex, he told a story on the “professor” to imply his fallibility as well. He knew how to “work the crowd”; they loved him and in the process he was extremely effective.

<sup>1</sup>Professor, Animal Science and Physiology, NCSU, Raleigh, NC 27695.

<sup>2</sup>John Donker, Ed Frederick, Ralph Grant, Don Otterby (all Univ. of Minn.), and Knud Jorgensen, Danish Dairy Federation, were enthusiastic in sharing their information and experiences. Culminating a quest of an unfaded copy of the photo, John Wilk, NCSU, *trusted* me with his. Dr. Carol Vreeland, NCSU, was my “seeing eye” for the library material. I shamelessly used information from the Awards Presentations published in the journals (ADSA, ASAS) and from the W. E. Petersen Foundation Memorial Fund Brochure.

Received December 2, 1996.

Accepted December 3, 1996.

All graduate students were housed in one room, almost shoulder to shoulder. The philosophy was this would foster intellectual growth through interaction. It also fostered intellectual growth for Doc Pete. He was usually the first to arrive in the morning and later would walk in the graduate room and start a discussion on a current topic or ask specific questions about course work. Topics ranged from the importance of red calves and polled cattle to the involvement of dairy products in atherosclerosis in humans. Correlations and concomitant variation versus cause and effect were discussed with gusto! Questions on course work were included, and he would expect discussion to clarify the explanation. If there were uncertainties in the explanation he would allow further clarification that evening before going home.

Doc Pete lectured in the British Isles in 1947 and a year later in New Zealand and Australia on dairy production problems with emphasis on machine milking and milk ejection. Subsequently, he lectured in Sweden, Denmark, Germany, France, Holland, Mexico, Peru, Central and South America, and Canada. He is the only dairy scientist from a foreign country whose name is familiar to Danish dairy producers. He made a film on milking practices and the film was used worldwide. The message was this: prepare the cows by cleaning the udder and teats, apply the milking unit as soon as milk ejection is evident, remove the unit as soon as milk flow ceases, and do not strip by hand. His narration was in English. In Denmark, his voice was turned off, and a Danish translation was synchronized to the movements of Doc Pete so well that showing of his film became an event.

He was elected to the Royal Swedish Academy in Agriculture, knighted by the king of Denmark in 1952 (Knight, order of Dannebrug), and presided over a section of the World Dairy Congress in 1962. His portrait hangs in the Dairy Shrine Club and in the Minnesota Livestock Hall of Fame. He received the Borden award in 1942; the Morrison award in 1956; the first ADSA Teaching Award in Dairy Production, 1956; the Award of Honor, 1960; and is listed in "One Hundred Living Great in Minnesota." He served on the ADSA editorial board and was abstract editor, director, and president in 1949. He had a radio program for 13 years before his retirement and continued with that and a weekly morning TV program after retirement.

Doc Pete met hundreds of people both at home and abroad. It was amazing how he remembered details about someone after having met them only one time. When he didn't remember a name or recognize the individual, he asked questions until he zeroed in on the person's identity, all the while seemingly interested in the person's family, farm operation, or research project, thus allowing the person to identify him/her self.

He was often away from the University visiting other countries or laboratories. During such times he

had tremendous faith in the ability of his students to proceed independently with their research, yet seek out direction when needed. His faith was placed in the older graduate students, and he expected them to direct and nurture the newer, less experienced ones.

Doc Pete expected one to fabricate much of the laboratory equipment, forcing one to use an understanding of physics or electronics. He didn't tolerate "black boxes." He favored the kymograph (using smoked paper) and the inductorium (inductance coil) because in using this system one was forced to contrast the limitations in sensitivity imposed by the recording system with those in the biological system. For detecting and "recording" small electrical signals, the string galvanometer was the choice. When asked to purchase a barometer for the laboratory to allow correction to a standard barometric pressure, he responded, "Make it from glass tubing and mercury, after all we have both in stock and that is *the* standard isn't it?"

He was compassionate. If a paycheck was processed too late, he would write a personal check to tide someone over. He invited many a grad student to his home for dinner when a visiting scientist was in town. He had weekly meetings, often at his home, with grad students who were studying for their preliminary exams. During these meetings both subject matter and current events were discussed, since one being awarded the Doctor of Philosophy Degree should be equally at home with current events as with discipline-oriented subject matter.

His compassion had limits. He enjoyed smoking his pipes and had two pipes with him at all times. When one became too hot it went into his pocket and was replaced by the cooler one. Occasionally he smoked a cigarette until it was too short to hold between his fingers, then he would place it into his pipe bowl to complete the smoke. The internal diameter of his pipe bowls were so narrowed that they barely accommodated a cigarette. While Doc Pete was in "Danmark," one of his graduate students found a pipe in the lab and noted that the bowl was almost occluded with hardened ashes. He felt that this was due to sheer neglect, so he proceeded to scrape the bowl clean of all debris until it was refurbished to a like-new condition. When Doc Pete returned and discovered his "new" pipe, he exploded and spent 20 minutes lecturing on the merits of hardened ashes in the pipe bowl and on the length of time necessary to "condition" such a pipe.

Doc Pete's research spanned the range from applied to basic. If one reads his almost 400 publications, including his classic textbook, *Dairy Science, Its Principles and Practice*, one is struck with the breadth of his interests and the depth of his knowledge. His first research paper was concerned with adulterated sulfuric acid and its influence on accuracy of the Babcock test. This was followed by a paper suggesting that feeding flax to lactating cattle within two days of the DHIA test day resulted in increased milk production and fat percentage. He published on use of

nose prints for identification of the bovine and pursued milk fat analysis from a methodological and biological viewpoint. His papers reflect his interest in mastitis, milking machine function, milk ejection, milking practices, nutrition, milk composition, relationships of circulating blood composition to milk composition, the unique synthetic ability of the mammary gland, ova transfer, and semen evaluation. He ended his career with studies on the immunological aspect of the mammary gland. In concert with Dr. Berry Campbell, he championed the role of the mammary gland in actively producing antibodies, a controversial issue at that time. He espoused the now accepted role of milk in transferring immunity to the nursing young.

Doc Pete was dedicated to dairy producers, to the dairy industry, and to the dissemination and advancement of knowledge. His keen mind, imagination, unquenchable enthusiasm, distrust of conventional wisdom, and colorful personality made him an outstanding scientist and teacher. He used his understanding of the basic biological processes to leap over many potential projects to get right to the heart of the question he perceived. He was fortunate to live during an era when he was allowed a broad license to use experience and insight in interpretation of research results. He lived during a time when the strong individual was as hallowed as the team is today. He was a man made for his time.