



**Jay Donald Andrews
Honored Life Member**

Jay Andrews, affectionately known as “Andy” by his many friends and colleagues, is widely respected for his fundamental research on the ecology of the major oyster pathogens in the Chesapeake Bay, *Haplosporidium nelsoni* and *Perkinsus marinus*. Less well known, but equally important, are his 22-y dataset on oyster spatfall patterns in the Chesapeake Bay and the disease management strategies he developed for industry.

Andy was born on September 9, 1916 in Bloom, Kansas. He grew up on a wheat and cattle farm in western Kansas south of Dodge City during the Depression and drought of the 1930s. Andy attended high school in Bloom and was the top student in a class of 10. Studies were apparently easy for him and he spent much time reading Zane Gray wild-west stories and following baseball scores and players. When Andy graduated from high school in 1934, the nation was in full depression, and the western plains were in a severe ten-year drought that was making farming very difficult, if not impossible. Lack of moisture prevented raising wheat or fodder for cattle. Over time, Andy remembers, pastures of the family farm were filled with annual weeds, prickly pear cactus, and an explosion of jackrabbits. After graduation, Andy’s father took him to a bank in Dodge City, borrowed \$100 and sent him to Kansas State College in Manhattan. College opened a new world for Andy, and he worked hard. In addition to classes, he worked 40 hours each month in the state 4-H Club for 25 cents an hour and participated in the ROTC, which paid \$15 a month. He was designated the top agricultural student and obtained a degree in agriculture in 1938, but farming in western Kansas was not an attractive proposition for Andy. Instead, he began graduate study at the University of Wisconsin in Madison, where he obtained a teaching assistantship in biology. He earned a salary of \$600 a year and had money for extracurricular activities for the first time. His love of opera developed during these years. Andy earned an M.S. in 1940 and continued on for his Ph.D.

Andy’s graduate studies were interrupted by World War II; he was called up in January 1941 and spent four years in the infantry. He saw action in the South Pacific at the battle of Leyte Gulf and the battle of Bataan and survived multiple kamikaze attacks on his troop ship. In 1946, he returned to Madison to finish his degree, which he earned in 1947. In the spring of 1946, Andy and fellow student, Willard Van Engel, attended a fisheries meeting in St. Louis, where they met the Director of the Virginia Fisheries Laboratory in Yorktown, VA (the precursor of VIMS), who offered them jobs that they both accepted. Van Engel was requested to work on blue crabs, and Andy was asked to concentrate on oysters. A few months later, he was advised by a visiting professor from Yale not to work on oysters, because there was already a large literature and “everything had been done already.” Thankfully, Andy ignored the advice. When Andy and “Van” arrived in Virginia in the fall of 1947, they learned that the three scientists who had been at the laboratory had left that summer for positions at Texas A&M. They had been working with mussels on some compound important to the war effort. The three scientists were John Mackin, Sewell Hopkins, and Winston Menzel.

Shortly after he arrived in Virginia, Andy began monitoring oyster spatfall patterns in the tributaries. After years of monitoring, it became clear that setting patterns could be easily separated into two distinctive types. The large tributaries and the Chesapeake Bay proper require very large stocks of brood oysters to acquire regular spatfall because of the large tidal exchange and flushing. Only the upper James River estuary met this requirement and that was because of its special circulation patterns and the large beds of transplanted oysters in the lower James being grown by private industry. Such other large rivers as the York, Rappahannock, and Potomac never had enough broodstock to produce regular spatfall, but occasional large sets did occur. The small tributaries, with low runoff, exhibit a completely different setting pattern than the large tributaries. These coastal plain subestuaries have moderate annual setting patterns, even though oyster populations are low because of high larval retention caused by the winding channels and shallow flats. Uncharacteristically, Andy never published these data on spatfall patterns. Beginning in 1950, Andy tried to persuade managers in Virginia to use the small estuaries to produce seed oysters for transplantation to larger tributaries, but this advice was ignored until long after he retired. When the reef restoration strategy was initiated in Virginia in 1996, the first few reconstructed oyster reefs were placed in these small tributaries because of the larval retention patterns that Andy had documented.

Andy's research on oyster diseases began when John Mackin visited VIMS from Texas to determine if *Perkinsus marinus* (Dermo disease) was present in Chesapeake Bay oysters. The discovery of this pathogen in an area lacking oil drilling confirmed that oyster mortality in the Gulf of Mexico was the result of *P. marinus*, not the oil industry. Andy produced fundamental papers on the epizootiology of Dermo disease during the 1950s, and his 1988 review on the pathogen is a classic paper still widely read and cited. When *Haplosporidium nelsoni* (MSX disease) appeared in the Chesapeake Bay in 1959, Andy immediately began conducting research on this organism and produced many seminal papers on the ecology of this pathogen as well as on *Haplosporidium costale*. One of Andy's most important traits was that he published his results in a timely manner. In 1960, Andy initiated a monitoring program for *H. nelsoni* at VIMS using imported susceptible oysters. This program continues to the present day and provides a 42-year database on *H. nelsoni* prevalence and intensity that has proved invaluable for examining climate effects on pathogen abundance. Because of his broad training and experience and his inquisitive nature, Andy was very insightful. For example, he was the first to hypothesize, in 1980, that *H. nelsoni* was an introduced pathogen. It wasn't until 2000 that molecular data were obtained that support his supposition.

Andy worked hard and expected hard work of others. You arrived on time, and you didn't leave early. Andy loved the rigors of fieldwork and scoffed at suggestions for an easier way to do things. He hauled oyster trays by hand and cleaned them by throwing countless buckets of water that he dipped by hand. After such trips he returned to the campus at VIMS wet, covered with mud, shirtless, in shorts, and barefoot. He surely startled more than one unsuspecting graduate student.

Andy is internationally recognized for his fundamental research on oyster diseases, but he was also a long-time educator. During his career at VIMS he taught Ichthyology, Field Biology, Taxonomy and Systematics, Marine Ecology and Biologic Oceanography.

Andy was a capable and energetic volleyball player. In the "interesting" lunch time volleyball games at VFL/VIMS he played with gusto, spiking near net-balls down the throats of opposing players with great vigor and glee. Road trips with Andy were always an experience. Once, while driving north for a meeting, Andy spied a walnut tree along the road. He pulled over and took an old pair of coveralls out of the trunk. He tied off the end of each leg, walked over to the tree and began filling the legs with walnuts that had fallen to the ground, commenting that he hoped we would not be shot by the owner.

Andy is an avid vegetable gardener and has a large plot near VIMS. He can still be seen hauling countless old milk jugs full of water in his old truck during drought periods and undoubtedly still cursing the varmints that take half his crop.

Andy is a long-time member of the National Shellfisheries Association and served as President and Editor. He was elected Honored Life Member in 1983. In 1998, he received the David Wallace Award in recognition of his career-long efforts to use science for the betterment of shellfish management and a sustainable industry.

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