

Editorial

Preface of the special issue in memoriam and celebration of Donald S. Coffey from special issue senior guest editor

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This special issue of the American Journal of Clinical and Experimental Urology is in memoriam and celebration of Donald S. Coffey, Ph.D.. Enclosed you will find a series of articles, in Editorial and Mini-review format, that reflect upon Don's scientific contributions and their current and future impact in biology and medicine. Moreover, these articles recall Don's enormous heart, his willingness to put everyone before himself, to encourage, inspire, and celebrate his students and fellows, and finally, to make science fun and always interesting. We asked several scientists and clinicians who have trained with Don, or worked closely with him, to write a manuscript in a unique style to not only provide scientific review, but to also memorialize Don's remarkable charisma, mentorship style, creativity, charity, and compassion. I sincerely hope that you enjoy these articles, and that they will help to carry on Don's spirit and wisdom in your own research, in your labs, and in your lives.

Don was a one-of-a-kind mentor, teacher, thinker, pioneer, and leader in urologic, biologic, and cancer research. He made immeasurable contributions at the laboratory bench and in the training and success of numerous leaders in the fields of biology, urology, oncology, and medicine. Throughout his career, he was recognized with a number of prestigious honors including the Eugene Fuller Prostate Award from the American Urological Society, the Achievement Award from the American Urological Association (AUA), the St. Paul's

Medal from the British Association of Urological Surgeons, the Margaret Foti Award for Leadership and Extraordinary Achievements in Cancer Research from the American Association of Cancer Research (AACR), two NIH MERIT awards, a named lectureship at the annual Society of Basic Urologic Research (SBUR) Spring Meeting, and a named professorship at the Johns Hopkins University School of Medicine [1, 2]. What was more remarkable was his ability to humbly accept these honors, while giving full praise and credit to his trainees. Don had an incredible ability to inspire and lead his trainees into discovery, in an almost sly or covert manner, such that they could naturally take control and ownership of the ideas, projects, and breakthroughs. He would then tirelessly promote and nurture the trainees and the science. Let us review some of the discoveries that came from Don's lab, starting with the identification of a nuclear protein matrix [3], its function as a fixed site of DNA replication [4, 5], and as a scaffold through which supercoiled DNA loops move during DNA replication [6], with the aid of topoisomerase enzymes [7]. His lab helped to establish the role of the nuclear matrix in DNA organization, gene expression, cell shape, tissue specificity, and disease, particularly BPH and cancer [8-14]. Don's work also contributed significantly to our current understanding of sex steroids in prostate growth, hormone dependence, prostate function, stem cells, hyperplasia, and malignancy [15-22]. Don's lab applied and expanded the Dunning model of rat prostate cancer to study hormone

sensitivity, castration resistance, tumor immunogenicity, genetic instability, cell shape and motility, metastasis, tumor metabolism, tumor cell heterogeneity, and adaptive versus selective therapeutic resistance [23-31]. Over the years Don's research has also brought several new ideas and concepts into prostate cancer research including the development and application of RNA aptamers, temperature enhanced therapy, chaos theory, mathematics, nuclear morphometry, population dynamics, and physics [32-38]. Again, if you presented these accomplishments to Don, he would humbly take no credit. Don selflessly supported, motivated, and championed his students, fellows, and colleagues like no other. This sentiment rings through in each review and editorial of this special AJCEU issue.

Don's journey to the halls of the Johns Hopkins School of Medicine, its faculty, and its leadership is rather unique. Don himself best tells this story, which thankfully you can experience directly through a wonderful film and biography called, *The Donald Coffey Story*. This film can be freely viewed at the James Buchanan Brady Urological Institute Website [39, 40]. Don was born in the small town of Bristol, on the border of Virginia and Tennessee, in 1932. He attended King College and the University of East Tennessee, married his sweetheart Eula, and began a career in engineering at North American Rayon. His college years were challenging, due to dyslexia that was not diagnosed until years later. Nevertheless, Don's brilliance, diligence, and people skills were apparent, and he became very successful at North American Rayon and, later, at Westinghouse. It was during these years that Don developed an interest in cancer, through his regular practice of meditation. In an almost unbelievable series of events that included moving his family from Tennessee to Baltimore, volunteering at Johns Hopkins, washing glassware at night and sometimes sleeping on the laboratory floors, and finally leaving a successful job at Westinghouse, Don Coffey began his career in cancer research at the Brady Urological Institute [2]. Don earned his Ph.D. in 1964 and was appointed assistant professor in the department of pharmacology and experimental therapeutics in 1966. In 1969, Don became the director of the Brady Urologic Laboratories. In 1973, he helped found the Cancer Center, which he briefly ran in 1987 without ever earning a medical degree. In 1974, he became the director of the

Department of Pharmacology and Molecular Sciences and eventually became one of the first professors at Johns Hopkins to hold titles in four departments, including Urology, Oncology, Pharmacology and Molecular Sciences, and Pathology. He was elected president of the SBUR in 1988, president of the AACR in 1997, and he served on the National Cancer Advisory Board from 2006-2012. His career was truly remarkable. Again, if asked, he would never remark on these accomplishments. He was most proud of his students and fellows, whom he treated like family.

Through the years, Don Coffey trained and mentored a number of notable urologists, oncologists, biologists, and pharmacologists including Jun Shimazaki, Ronald Berezney, Leland Chung, Warren Heston, Barry Zirkin, David Brown, Evelyn Barrack, John Isaacs, Drew Pardoll, Bert Vogelstein, Andy Feinberg, Mitchell Benson, Ken Pienta, Bill Nelson, Jonathon Simons, William Isaacs, Jim Mohler, Alan Partin, Steve Ward, Robert Getzenberg, Dan Epner, Markham Luke, Ed Posadas, Alan Meeker, and Angelo De Marzo, just to name a few. His passion for teaching expanded beyond Johns Hopkins, where he regularly volunteered and taught high school students at annual AACR meetings, and mentored young investigators through the Prostate Cancer Foundation. Donald Tindall fittingly described Don Coffey as a "father figure for many and an inspiration for many young investigators in their pursuit of careers in academic medicine" [41]. Don sought out the important questions in cancer, and he asked them in such a clear manner that anyone could relate and become curious and inspired. Some great examples include "Evolution: Back to the future to understand and control prostate cancer" [42] and Hyperthermic biology and cancer therapies: a hypothesis for the "Lance Armstrong effect" [33]. Most inspirational were his "Science, Creativity, and Human Destiny" lectures, which he delivered every St. Patrick's Day to ponder the universe, creation, evolution, human creativity, self-organization, quantum mechanics, morality, society, thermodynamics, and time. You might wonder how he could fit all of this into a one-hour seminar. He used between three to five projectors at the same time! Another series of inspirational seminars from Don were the Brady Long Rifles, where he equated the pursuit of scientific discovery to a patient hunter. *The Creed of the Brady Long Rifles* can be

found in a recent appreciation of Don Coffey, by Ken Pienta [43]. Finally, one of the greatest examples of Don's teaching and inspiration is The Real Final Exam [44], an article published in The Prostate that includes sixteen wise statements that every scientific student, fellow, and faculty should know. How lucky were we to have such a joyous and inspirational leader in our field and in our lives.

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