

## In Memoriam

## Dennis L Murphy

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Thou met'st with things dying, I with things new-born.

William Shakespeare, *A Winter's Tale*

Dennis L Murphy, MD passed away unexpectedly on 23 September 2017, in Bethesda, MD, where he lived and worked for the majority of his career. His middle name was given for a favorite great uncle, Luke Murphy, who was a pharmacist in tiny Fox Lake, WI, where Dennis spent summer vacations with his family. Dennis was inspired by his uncle, who kindled his interest in science and medicine.

Dr Murphy received his undergraduate degree from Marquette University, and Master of Science and Doctor of Medicine degrees from the Medical College of Wisconsin in 1963. He then trained as a resident in Psychiatry at Johns Hopkins, and would become among this program's most distinguished graduates. Following residency, he signed on as a clinical fellow at the National Institute of Mental Health (NIMH), and never left. He became Chief of the Clinical Neuropharmacology Branch in 1977, retiring from his position as Chief of the Laboratory of Clinical Science in 2014 at age 78 years, succeeding Irwin Kopin and Seymour Kety in this position.

While at the NIMH, Dr Murphy became one of the world's leading investigators in biological psychiatry, publishing over 900 papers and four books, with a focus on obsessive compulsive disorder and the serotonin transporter. Dr Francis McMahon, another Johns Hopkins trainee who moved to NIMH, said of Murphy: "[He] was...the most soft-spoken, gentlemanly person you could imagine. He didn't

believe in heavy-handed promotion of his own work. I think he truly felt that the best would rise itself and the rest should sink out of sight."

Dr Murphy's initial first-author paper at NIMH was published in the *Lancet*, on the biology of lithium response. His next first-author paper was published in *Nature*, on the induction of hypomania by L-DOPA in bipolar patients. He went on to publish 11 papers in *Science*, with the most important being the landmark report in 1996, "Association of anxiety-related traits with a polymorphism in the serotonin transporter gene regulatory region," on which he was the senior author. This was the paper that put the serotonin transporter gene on the map as the most interesting gene in psychiatry. This report showed that a gene variant, discovered by Murphy and his collaborator Dr Peter Lesch and referred to as 'long' vs. 'short' variants, made a difference in how the human serotonin transporter gene functions. Dr Murphy and his collaborators showed an association between the short variant and the anxiety-related personality trait, neuroticism. This paper has been cited more than 5000 times, reflecting the intense interest the psychiatric genetics field has had in determining how this critical variant in this critical gene relates to mental illness and its treatment.

Dr Murphy received many distinguished honors resulting from his years of scientific research, and service and dedication to the NIH Intramural Program. These include the US Public Health Service Superior Service Award, a Department of Health and Human Services Distinguished Service Award, an Alcohol, Drug Abuse and Mental Health Administration Meritorious Service Award, and two Presidential Meritorious Executive Rank Awards. He was an ACNP Fellow Emeritus, having been inducted into membership in 1974. He received the AE Bennett Award for Clinical Research, the American Psychiatric Association Hofheimer Prize for Research, and was an International Society for Serotonin Research Maurice Rappaport lecturer.

Dr Murphy's legacy includes having spawned many new careers. He trained over 100 students and fellows; more than 30 of whom went on to be Chairs of psychiatry or basic science departments. Two of us were among those who benefitted from Dr Murphy's tutelage. Following are some of our reflections:

I (AH) was a former collaborator and informal mentee of Dennis's while I was Visiting Fellow at the NIMH. It was inspiring to work with a giant in the field. He was so down-to-earth and unfailingly enthusiastic about the science—from the big concepts to the nitty gritty of designing experiments. He was one of those rare people with the ability and intellectual authority to draw upon and effortlessly shift between the human and animal literature to inform the work currently at hand. Coming out of a meeting with Dennis, whether the venue was his cramped NIH office, with seemingly

every available surface piled high with papers that he'd read, or on one of his favorite hiking trails along the Potomac river, you were left with the sense that we were doing truly important work. Though Dennis is no longer here to convey his love of and dedication to science, there's no doubt he's still doing so through his influence on the many of us who were fortunate enough to have trained and been inspired by him over the span of decades.

I (AMA) was mentored by Dennis while a graduate student, and postdoctoral and senior staff fellow at the NIMH. He taught me many important lessons. Among these—shoot with a loaded gun. I remember the first time I carried out a dose-finding experiment. I wanted to eek up the dose range cautiously. I was afraid of disastrous results. Dennis taught me to plan experiments that are likely to yield definitive answers. He also taught me about the value in avoiding micromanaging. He only asked me three times in ten years to do a specific experiment or to change course when I was resistant. On all three occasions, his advice was spot on. Either he was incredibly lucky or more likely, he had excellent insight *and* restraint. Other things I remember about Dennis: he valued his privacy. He was not very interested in awards or career advancement that would take him away from science. He loved his science. He loved tennis. He loved travel and photography. He loved his dogs. And he loved his wife Nancy and his daughter Julia. What I will miss most in the wake of Dennis's passing is that I can no longer call him to ask his opinions on the latest rage in the

genetics-of-depression literature (or other hot topics). Dennis was a voracious reader and synthesizer of the literature. I will miss sharing successes and failures, and hatching plans. We will all miss not knowing where his next scientific adventure would have taken him.

Dr Murphy majored in English as an undergraduate, and he maintained his love of literature, especially Shakespeare, throughout his life. The quote that opens these recollections comes from a scene in *A Winter's Tale*, involving a shipwreck during a dark and stormy night. An elderly man encounters a dying sailor on the beach, while his son encounters a woman giving birth. Father and son meet at daybreak and the son utters the words quoted, which speak to the inevitability of life cycles, and the hope that comes from constant rebirth and rejuvenation, even as we face turmoil and loss.

Rest in peace, dear friend and mentor.

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