THE FACULTY OF MEDICINE
Harvard University

Nancy K. Mello

Dr. Nancy Mello was recognized nationally and internationally as a leader in the field of alcohol and drug abuse research. She began her research career at Harvard Medical School and at Harvard College studying with BF Skinner before establishing a research laboratory at the Stanley Cobb Laboratories for Psychiatric Research at the Massachusetts General Hospital. From there she moved to National Center for Prevention and Control of Alcoholism where she developed and directed a laboratory focused on the behavioral aspects of this disorder.

In 1974 Dr. Mello, along with her late husband Dr. Jack Mendelson, returned to Boston to found McLean Hospital's Alcohol and Drug Abuse Research Center, where, over the next 40 years, they, along with a multidisciplinary team of researchers, carried out pioneering studies on the biological and behavioral effects of alcohol, cocaine, and other drugs of abuse in both primates and humans. Their work on compounds that block the effects of these drugs on the brain and behavior, paved the way for the development of more effective treatments for these disorders.

Over a 40 year period Dr. Mello's contributions to the knowledge base in this field were recognized and supported by grants from the National Institute on Alcohol Abuse and Alcoholism, the National Institute on Drug Abuse and numerous other government agencies and foundations. She was the author of more than 400 publications and a generous contributor to numerous textbooks and, with Dr. Mendelson, the co-author of several textbooks that are standards in the field of alcohol and drug abuse research.

While Professor Mello's research accomplishments often were intertwined with those of her husband and co-director of McLean Hospital's Alcohol and Drug Abuse Research Center, Professor Jack Mendelson, her colleagues in the field of drug addiction research fully appreciated her unique contributions in the field of substance abuse. Strongly influenced by her exposure to groundbreaking work in behavioral pharmacology by Peter B. Dews and his colleagues at Harvard Medical School, she undertook her

In tribute to their dedicated efforts to science and medicine, deceased members of the Harvard Faculty of Medicine (those at the rank of full or emeritus professor) receive a review of their life and contributions with a complete reflection, ***a Memorial Minute.***

independent research with an early appreciation of behavioral determinants in the control exerted by abused drugs. Her work began with her groundbreaking work on alcoholism. Professor Mello was among the first to study both behavioral and biological determinants and consequences of alcohol drinking and withdrawal in chronic alcoholics. In these seminal studies, she applied rigorous, systematic operant methodology to the analysis of drinking behavior. This approach proved to be a significant step forward in the understanding of drinking behavior, as it moved past the traditional approach of collecting retrospective accounts of drinking from sober individuals to more scientific analyses of drug taking patterns in controlled laboratory settings.

Professor Mello also was an early proponent of highly translational research in laboratory animals, and this approach eventually became the defining feature of her scientific approach. Whenever possible, she extended her experimental methodology of obtaining basic information on drug-taking behavior in controlled laboratory contexts to include preclinical studies that provided in-depth examination of different aspects of drug addiction and its determinants. Alcoholism was the focus of her early work, but Professor Mello would go on to apply similar experimental models to conduct translational research on marijuana, opiates, nicotine, and cocaine. In concert with her colleagues at the Alcohol and Drug Abuse Research Center, Mello ushered in the scientific study of substance abuse and, within the larger medical and scientific communities, revolutionized the understanding of alcohol and drug addiction as multifaceted medical disorders.

While Professor Mello was a pioneer in understanding drug addiction per se, her abiding interest lay in the discovery of medications for the management of substance abuse. Her groundbreaking work in laboratory animals and man identified the opioid partial agonist buprenorphine as an effective drug for managing opioid dependence, suggesting a new approach to treating patients addicted to opioids. Some 20 years later, FDA approval of buprenorphine marked the first time that physicians in office-based practice in this country could prescribe a medication for opioid addiction to patients under their care, thus revolutionizing the treatment of this highly prevalent and serious disorder. Professor Mello's extensive work with buprenorphine also helped pave the way for an important new avenue of addiction research, that of the discovery and development of agonist-based treatment medications for the management of all types of substance use disorders. The development of the nicotine partial agonist varenicline for smoking cessation is a well-recognized example of the importance of this intellectual contribution by Professor Mello and her colleagues.

Throughout her career, Nancy Mello remained a strong champion for translational science in the understanding of drug addiction and the development and evaluation of candidate treatment medications. She understood the value of preclinical studies in laboratory animals and helped integrate such studies into the fabric of multidisciplinary preclinical and clinical research within the Alcohol and Drug Abuse Research Center. In particular, Professor Mello was an early and strong proponent of drug self-administration procedures that now are commonly used to study reward systems in the brain and, based on her own trendsetting work, the effectiveness of promising pharmacotherapies for drug addiction disorders. Her appetite was not diminished by her early success with buprenorphine and, in the latter part of her career, she applied the same determination and rigorous methodology to the search for novel treatments of other substance use disorders, including cocaine, nicotine, and various forms of polydrug abuse. This research effort in laboratory animal and human subjects also led the way in establishing the importance of gender-related factors in the study of drug addiction. Professor Mello early on appreciated the interplay of hormonal and pharmacological factors in the abuse-related effects of drugs. Her studies were among the first to show that not only is female hormone function influenced by drug

use but that differing levels of hormone function in women could subtly influence drug-taking behavior. Professor Mello's work was critical to the now-common acceptance of these ideas, and her body of work served as a springboard for current research into the role of hormonal factors in substance use disorders among women.

In addition to her research accomplishments Dr. Mello was a generous and supportive mentor to several generations of young investigators, including many who have gone on to make major contributions in the field. She also established research collaborations with numerous other investigators and research groups across the country and internationally, lending her insights and expertise to projects ranging from medicinal chemistry to cultural anthropology. In these efforts she was a knowledgeable collaborator, steadfast supporter, generous mentor and a consistent source of innovative ideas for research in this field.

Respectfully submitted,

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