2025

Benvenuto Memorial Lecture

featuring

Dr. Dario C. Altieri

Tumor Plasticity

The presentation will address novel mechanisms of mitochondrial reprogramming in cancer associated with increased adaptation to cellular stress pathways, improved survival advantage, and greater cell motility and invasion, conferring heightened metastatic potential, in vivo.

Wednesday, June 4, 2025



Making Cancer History®



r. Dario C. Altieri is President, CEO, and Director of the NCI-designated Ellen and Ronald Caplan Cancer Center at The Wistar Institute in Philadelphia. Born in Milan, Italy, and educated at the University of Milan School of Medicine, Altieri is a physician-scientist trained in internal medicine and holds a postgraduate degree in clinical and experimental hematology. In 1987, he joined the Scripps Clinic and Research Foundation in La Jolla, California, first as a research fellow and later as a faculty member. In 1994, Altieri became an associate professor at the Boyer Center for Molecular Medicine at Yale University School of Medicine, where he was named professor with tenure in 1999 and a member of the Yale Cancer Center executive committee. In 2002, Altieri became the founding chair of the Department of Cancer Biology at the University of Massachusetts Medical School and Director of the UMass Memorial Cancer Center. Altieri joined the Institute as the Wistar Cancer Center Director and its first Chief Scientific Officer in September 2010.

Altieri is interested in how mechanisms of cellular adaptation or "plasticity" are universally exploited in cancer for disease maintenance and progression. A detailed, molecular, cellular, and genetic understanding of tumor plasticity could uncover new therapeutic targets and identify novel approaches to interfere with metastatic competence, which remains the primary cause of death for cancer patients. The Altieri laboratory studies the role of mitochondria in cancer. The lab pursues the overarching hypothesis that multiple mitochondrial functions in bioenergetics, buffering of reactive oxidative species (ROS), interorganelle communication with the endoplasmic reticulum (ER), and retrograde gene expression are invariably reprogrammed in malignancy and exploited to enable extraordinary plasticity and tumor heterogeneity for disease progression. Altieri's work has demonstrated that therapeutic targeting of mitochondrial reprogramming in cancer is feasible and may uniquely disable multiple mechanisms of disease progression, including metastatic competence across a broad spectrum of genetically heterogeneous tumors. Accordingly, a first-in-class, mitochondria-targeted small molecule inhibitor of the molecular chaperone Heat Shock Protein-90 (Hsp90) was developed and characterized by the Altieri laboratory (Gamitrinib) and has recently entered a first-inhuman clinical trial in patients with advanced cancer (ClinicalTrials.gov NCT04827810).

JOHN A. BENVENUTO, PH.D.

orn in Detroit, Michigan on January 30, 1944, John A. Benvenuto, received a Bachelor of Science degree in chemistry from Wayne State University. He went on to attend West Virginia University in Morgantown, West Virginia, earning a Master of Science degree and a Doctor of Philosophy degree, both in chemistry. Dr. Benvenuto joined The University of Texas MD in 1973 and Anderson Cancer Center received postgraduate Medicinal Chemistry training in and Pharmacology in the Department of Developmental Therapeutics under Ti Li Loo, D.Phil., D.Sc. In 1975, he became a member of the MD Anderson faculty. Additionally, he was a faculty member of The University of Texas Graduate School of Biomedical Sciences in Houston.

Widely recognized in the scientific community for his expertise in clinical and biochemical pharmacology, Dr. Benvenuto published extensively on the mechanism of action of anticancer drugs. He was a member of the American Chemical Society, the American Association of Cancer Research, the American Society of Pharmacology and Experimental Therapeutics, the American Association for the Advancement of Science, the World Health Organization International Agency for Research on Cancer, Alpha Chi Sigma and Sigma Xi.

In 1986, Dr. Benvenuto learned he was afflicted with a metastatic carcinoid tumor. Through the efforts of staff at MD Anderson and his own indomitable spirit, Dr. Benvenuto made a miraculous recovery and returned to work in 1987. He continued to work full time until his death on December 22, 1996 – nearly 10 years later.

Often in pain and discomfort as he battled systemic cancer in the last years of his life, Dr. Benvenuto never complained. Indeed, his major concern was for the welfare of his friends and colleagues. A man of great dignity and personal warmth, Dr. Benvenuto left a lasting impression on all who knew him; his tremendous courage and unwavering optimism are an inspiration. Dr. Benvenuto's family and friends designed this lectureship as a tribute to perpetuate his memory.

Benvenuto Annual Award Recipients

Emil J. Freireich, M.D. 1999 Emil Frei, M.D. 2000 Ti Li Loo, D.Phil. 2001 Sidney Wallace, M.D. 2002 Jaffer Ajani, M.D. 2003 David Farquhar, Ph.D. 2004 William G. Dunphy, Ph.D. 2008 Tony Hunter, Ph.D. 2009 Ferid Murad, M.D., Ph.D. 2010 Michael B. Kastan, M.D., Ph.D. 2011

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Ronald A. DePinho, M.D. 2012 Victor R. Ambros, Ph.D 2013 Frank McCormick, Ph.D., F.R.S. 2014 James P. Allison, Ph.D. 2015 Levi A. Garraway, M.D., Ph.D. 2016 Jennifer A. Doudna, Ph.D. 2017 Bert W. O'Malley, M.D. 2018 Alfred L. Goldberg, Ph. D. 2019 Guillermina (Gigi) Lozano, Ph.D. 2021 Steven Rosenberg, M.D., Ph.D. 2022 Joseph Schlessinger, M.D., Ph.D. 2023 Craig M. Crews, Ph.D.

2024