

TUDÓSKLUB

ismeretterjesztő programok közérthető nyelven helyi kutatók előadásában

A Massachussets-i Magyar Egyesület szeretettel vár minden érdeklődőt a tudósklub következő előadásán

2008. május 4-én, vasárnap este 6-kor
az MIT 4-237-es termében.

Dr. Kornelia Polyak

Darwin's evolutionary theory: the link between breast cancer and the Galapagos Islands

Breast cancer is a heterogeneous disease comprised of distinct tumor subtypes associated with different clinical outcomes. In addition to inter-tumoral variability significant intra-tumoral heterogeneity also exists. Understanding the mechanisms underlying these heterogeneities is key for the development of targeted cancer preventative and therapeutic interventions. Current models explaining breast cancer diversity are the cancer stem cell and the clonal evolution hypotheses. My lab has been focusing on the experimental testing of these models using various approaches. Human tumors and biological ecosystems share many similarities. In evolutionary sense a tumor is a population of genetically diverse individual cells. As a consequence of this the laws of population genetics and evolutionary biology can be applied for the better understanding and treatment of human disease. My several recent trips to the Galapagos Islands made me realize the striking similarity between cancer biology and Darwin's evolutionary theory and also gave me the opportunity to combine my work with my personal interest-exploration of the unspoiled world. In my talk I will present some of our recent studies addressing clonal evolution of breast tumors as well as share some of my photos and stories of my Galapagos trips.

Dr. Kornelia Polyak was born and raised in Hungary. She has been interested in science from the very beginning of her education and majored in mathematics, physics, and biology. She was also interested in arts and languages and at various points during her education she studied painting, English, Latin, Russian, French, and Spanish languages. Following her graduation from high school in 1985 she was admitted to the Albert Szent-Gyorgi Medical School in Szeged Hungary. However, since her major interest was always science and medical research, while she was in medical school she also worked in the Biological Research Center of the Hungarian National Academy of Sciences. Just two days after receiving her MD degree in 1991, she moved to New York and enrolled in a PhD program at Cornell University Graduate School of Medical Sciences to pursue her interest in biomedical research. Under the guidance of Joan Massague at Memorial Sloan-Kettering Cancer Center, her research led to important new discoveries about what

controls how cells divide. She obtained her PhD in a record three years and her PhD work was ranked among the top five in North America in 1995 (North American Finalist, Pharmacia-Science prize). Dr. Polyak continued her training as a post-doctoral fellow in the laboratories of Bert Vogelstein and Kenneth W. Kinzler at the Johns Hopkins Oncology Center in Baltimore. Her post-graduate work involved the characterization of the mechanism of the p53 gene, which controls cell death, in human colorectal cancer cells and the role of mitochondria in tumor growth.

Dr. Polyak joined the faculty of Dana-Farber Cancer Institute and Harvard Medical School in 1998 as Assistant Professor of Medicine and she has been an Associate Professor since 2006. The focus of her laboratory is to investigate the molecular basis of breast cancer initiation and progression with special emphasis on the role of the microenvironment and stem cells in these processes. Her work is focusing on identifying molecular alterations between normal and cancerous breast tissue using various technologies, determining their consequences, and utilizing them to improve the clinical management of breast cancer patients.

Dr. Polyak have received several awards including the Julienne Rachele Prize (1995, Cornell University), the W. Barry Wood, Jr. Research Prize (1998, Johns Hopkins University), Kimmel Scholar Award (1999, Sidney Kimmel Foundation), V Scholar award (2001, V Foundation), the Tisch Family Outstanding Achievement Award (2005, Dana-Farber Cancer Institute), the Claire W. and Richard P. Morse Research Award (2006, Dana-Farber Cancer Institute), and the 27th Annual AACR Award for Outstanding Achievement (2007, AACR). Dr. Polyak is an author of over 50 publications, most of them in high profile journals, is on the editorial boards of several journals, has served on national scientific review boards, and given talks at numerous international conferences.

Dr. Polyak's personal interests include art; she continues to be an avid painter. She also enjoys adventure travel to the "unspoiled world" as well as learning about other cultures, and sports. She also supports organizations protecting the environment and human rights.

<http://whereis.mit.edu/map-jpg?mapterms=4-237&mapsearch=go>

A terem foglaltsága esetén a szomszédos, 4-231 tereben lesz az előadás megtartva.