New Faculty

The Albert Einstein Cancer Center welcomes Eleni Andreopoulou, M.D., assistant professor in the department of medicine (medical oncology). She was previously a faculty member in the department of breast medical oncology at the University of Texas M. D. Anderson Cancer Center. Dr. Andreopoulou completed her clinical and research training at St. Bartholomew’s Hospital and the Royal Marsden Hospital/Institute of Cancer Research in London, and at New York University School of Medicine. Her academic interests include metastatic and locally advanced breast cancer, neoadjuvant drugs (tumor-shrinking drugs that are given prior to surgery) and assessing the genes expressed in tumors to help physicians choose the best drugs for particular patients. Her research focuses on bringing more-effective drugs into the clinic and developing innovative designs for clinical trials that will lead to better outcomes for patients with breast cancer. She is the principal investigator for a number of clinical trials and also has an active clinical practice.

A Stem Cell Shield Against Radiation

Chandan Guha, M.B.B.S., Ph.D., professor of radiation oncology and of pathology and vice chair of the department of radiation oncology, has shown that mice can survive a lethal dose of radiation if they receive transplanted stromal stem cells from the bone marrow of other mice within 24 hours of radiation exposure. The Centers for Medical Countermeasures Against Radiation (funded by the National Institutes of Health) has awarded Dr. Guha a five-year, $11.8 million grant to continue his research on these stem cell transplants, which could save the lives of victims of radiation overexposure. The techniques that Dr. Guha is developing could also be applied to minimize toxicity in patients with abdominal cancers treated therapeutically with ionizing radiation.

Breathalyzing for Cancer

Simon D. Spivack, M.D., M.P.H., professor of medicine (pulmonary medicine), of epidemiology & population health and of genetics, is working to detect lung cancer at the earliest possible time—when prospects for treatment success are highest. Using a technique he developed, Dr. Spivack analyzes DNA and other nucleic acids recovered from cells in exhaled breath. If the DNA contains abnormally high numbers of methyl groups (chemicals known to be involved in turning genes off), that’s a sign that cells of the lung or other parts of the airway are being transformed into cancer cells. This noninvasive technique could lead to a valuable test for detecting early-stage lung cancer.

ON THE WEB
To learn more about the Albert Einstein Cancer Center, please visit www.einstein.yu.edu/cancer.

Blocking a Metastasis Booster

What molecules contribute to the deadly process of cancer spread known as metastasis? Working with mice, Anne R. Bresnick, Ph.D., professor of biochemistry, and her colleagues have identified and determined the function of S100A4, a protein found in elevated concentrations in several metastatic cancers.

High levels of S100A4 are synthesized by macrophages—immune cells that normally roam the body and attack disease-causing microbes. S100A4 controls the movement of macrophages and may promote metastasis by recruiting macrophages to the primary tumor. Macrophages contribute to metastasis by helping cancer cells escape the primary tumor and invade blood vessels, which transport the cancer cells to distant sites. Identifying S100A4’s key role in metastasis could lead to drugs that block cancer spread by targeting this protein. The team reported its findings in a 2010 issue of Molecular Biology of the Cell.

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