Clifford A. Hudis, MD, chief of the breast cancer medicine service at Memorial Sloan-Kettering Cancer Center, has been elected president of the American Society of Clinical Oncology (ASCO). He will be introduced as president-elect during the organization’s annual meeting in June and will serve a 1-year term as president beginning in June 2013.

Hudis will work with ASCO’s 30,000 member physicians to improve access to cancer care, as well as the effectiveness and affordability of care.

A graduate of the Medical College of Pennsylvania, Hudis focuses his research on preventing and treating breast cancer recurrence after surgery. He works on clinical and translational studies to develop more effective hormone therapies, less toxic chemotherapy drugs, and new targeted agents.

Pasi A. Jänne, MD, PhD, and Kwok-Kin Wong, MD, have been named scientific codirectors of the Belfer Institute for Applied Cancer Science at Dana-Farber Cancer Institute (DFCI). Jänne directs DFCI’s Translational Research Laboratory. His work combines laboratory-based experiments, translational research, and clinical trials of novel therapeutic agents in patients with lung cancer. He also studies mechanisms of acquired resistance to targeted therapies and strategies to effectively treat drug-resistant cancers.

Wong is a medical oncologist at DFCI’s Lowe Center for Thoracic Oncology. A recognized leader in the development of mouse models of cancer, Wong studies the origins of cancer and the molecular determinants of treatment responses. He is particularly interested in genetic alterations in lung cancers and testing novel targeted lung cancer therapies in vivo.

3D Imaging Spots Cancer Cells

Three-dimensional images of single cells can be used to pick out telling differences between malignant breast cancer, benign tumors, and normal cells. Researchers at Arizona State University in Phoenix hope that this imaging technology will help provide more accurate diagnosis and staging of cancers.

Led by Deirdre Meldrum, PhD, director of the Center for Biosignatures Discovery Automation in Arizona State’s Biodesign Institute, the researchers characterized the nuclei of breast cancer cells using a 3-dimensional light microscope created by VisionGate, Inc., of Phoenix, AZ (PloS One 2012;7:e29230).

Meldrum and colleagues prepared samples of 3 types of human breast epithelial cell lines: normal, benign fibrocystic, and malignant. VisionGate has developed a way of treating cells so that they maintain their normal architecture, instead of placing them on glass slides that encourage the cells to flatten out. The cells are flowed through a capillary and then held in place while the capillary rotates so that the microscope can capture hundreds of 2-dimensional images of each cell from different angles, much like a computed tomography scanner. These images are then processed and combined to make a 3-dimensional image.

The Arizona group focused on the cell nucleus, which pathologists have long used as a hallmark for diagnosing and staging cancer. “We showed we can derive a biosignature for normal cells, benign ones, and breast cancer cells, based on shape and texture measurements,” says Roger Johnson, PhD, research laboratory manager at the Center. The group came up with about 50 nuclear features that can be used to distinguish the 3 cell types.

“Little is known about the nucleus,” comments John Sedat, PhD, a professor of biophysics at the University of California, San Francisco, who studies the nucleus via imaging. “Three-dimensional data provide a different wrinkle, which is good.” However, he notes that patient data are likely to present a more complex picture than one would get from cell lines adapted to thrive in the lab.

NHGRI Beats a Path to Clinical Genomics

To accelerate the use of genomic data in patient care, the National Human Genome Research Institute (NHGRI) will invest $40 million over 4 years in multidisciplinary research projects at 5 institutions. Two of the institutions—Baylor College of Medicine in Houston and the University of Washington in Seattle—will focus on how to introduce sequencing into cancer genetics clinics, while the others will examine its role in various noncancerous conditions.

“At NHGRI, we foresee genome sequencing becoming a routine part of medical care,” says Bradley Ozenberger, PhD, program director for Genomic Medicine. “These projects are exploring the best ways to widen the use of genomic medicine in an effective, responsible, respectful way.”

In one of the cancer studies, 280 children diagnosed with brain and other solid tumors at Texas Children’s Cancer Center will have exome sequencing of tumor and blood samples performed while they receive standard treatment for their cancer, says Baylor’s Will Parsons, MD, PhD, a pediatric oncologist and co-principal investigator of the project. The exome sequencing results will then be reported to the treating oncologists, who will share them with the patients’ families.
3D Imaging Spots Cancer Cells


Updated version
Access the most recent version of this article at:
doi:10.1158/2159-8290.CD-NB2012-006

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