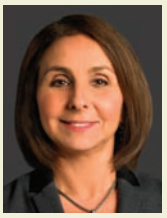
PEOPLE


Penn Medicine

Chi Van Dang, MD, PhD, began his role as editor-in-chief of *Cancer Research*, a journal of the American Association for Cancer Research (AACR), on January 1. Dang is the scientific director of the Ludwig Institute for Cancer Research and a professor in the Molecular and Cellular Oncogenesis Program at The Wistar Institute in Philadelphia, PA. He also serves on the Blue Ribbon Panel of the National Cancer Moonshot Initiative, is a fellow of the American Academy of Arts and Sciences, and chairs the NCI's Board of Scientific Advisors, and he previously served on the editorial board of the AACR's *Cancer Discovery*. Dang's lab established a link between *MYC* and energy metabolism in cancer cells, and his current research focuses on developing cancer therapies that exploit metabolic vulnerabilities of cancer cells.



Elizabeth Barrett, MBA, was named CEO of Novartis Oncology and a member of the Executive Committee of Novartis, effective February 1. She succeeds Bruno Strigini, MBA, PharmD, who retired. Most recently, Barrett was the global president and general manager of Oncology at Pfizer, where she had worked since 2009. Previously, Barrett spent 3 years as vice president and general manager of Oncology at Cephalon and 13 years as vice president, Oncology Franchise, at Johnson & Johnson. She earned her business degree in marketing from Saint Joseph's University in Philadelphia, PA.

Advancing Cancer Screening with Liquid Biopsies

A new blood test for tumor-specific mutations and proteins may bring cancer screening with liquid biopsies closer to reality (Science 2018 Jan 18 [Epub ahead of print]). The procedure can identify 70% of patients who have any of eight common tumors, including five tumors for which no screening test is currently available.

Researchers have been trying to develop liquid biopsies to spot cancers early, but to date the techniques have had several shortcomings. For early-stage cancers, when detection is more likely to benefit patients, the blood levels of tumor DNA may be insufficient for tumor detection. Furthermore, the tests' specificity has remained unclear because researchers haven't tested them in large populations of healthy volunteers.

To overcome these limitations, Nickolas Papadopoulos, PhD, of Johns Hopkins School of Medicine in Baltimore, MD, and colleagues developed CancerSEEK, a blood test that combines sequencing with analysis of protein biomarkers. The test searches for tumor-specific mutations in 16 genes and, to improve detection, uses approaches such as barcoding the DNA fragments isolated from the blood.

Because many early-stage tumors release minuscule amounts of DNA, CancerSEEK then evaluates the levels of eight proteins produced in large quantities by cancer cells, including CA-125 and carcinoembryonic antigen. Papadopoulos and colleagues designed an algorithm that weighs the protein and DNA data to determine whether a patient is likely to have a tumor.

To evaluate their approach, the researchers applied CancerSEEK to blood samples from 1,005 patients with one of eight cancers—breast, colorectal, lung, esophagus, pancreas, ovarian, stomach, or liver—the last five of which don't have screening tests. The scientists also analyzed samples from 812 healthy subjects.

CancerSEEK identified 70% of the patients with cancer. It worked best for ovarian cancer, detecting tumors in 98% of the patients with the disease, and worst for breast cancer, where the detection rate was 33%. The false-positive rate for all cancers was less than 1%.

Because liquid biopsy techniques that rely only on genomic information usually cannot determine a tumor's location, the researchers asked whether CancerSEEK could do that. In the 626 patients who tested positive, CancerSEEK narrowed the tumor's location to either of two organs in 83% of patients and pinpointed the site in 68%.

Papadopoulos and his colleagues estimate that the test would cost about $500.

"I would say it's a step on the way" to a feasible liquid biopsy screening test, says Ian Cree, MBChB, PhD, of the World Health Organization's International Agency for Research on Cancer in Lyon, France. Cloud Paweletz, PhD, of Dana-Farber Cancer Institute in Boston, MA, agrees, saying the researchers "have done a really good job to maximize the information that they get at a reasonable price."

Both scientists also agree that the approach requires refinement before it could be clinically useful. Cree notes that the sensitivity declined from 73% for stage II cancers to 43% for stage I. "We do need something that will do even better in low-stage disease," he says.

The authors should strive for even higher specificity, says Paweletz, because the control group isn't likely to be representative of the patients who would undergo cancer screening. "We need to get the specificity higher to use it in a broader population." *–Mitch Leslie* ■

First PARP Inhibitor OK'd for Breast Cancer

The FDA has approved the oral drug olaparib (Lynparza; AstraZeneca) for patients with metastatic breast cancer who also bear germline *BRCA1* or *BRCA2* mutations. The January 12 approval marks the first targeted therapy approved for this indication as well as the first PARP inhibitor approved for breast cancer.

Olaparib was initially approved in late 2014 for *BRCA*-mutated advanced ovarian cancer, the first PARP inhibitor approved for any cancer. Expanding its indication to another population of patients is "a plus for science," says Lori J. Goldstein, MD, director of The Naomi and Phil Lippincott Breast Evaluation Center at Fox Chase Cancer Center in Philadelphia, PA. "It's a plus for patients, especially for triple-negative *BRCA*-mutated cancer patients, for