

## Progress Report

2009 The first research project focused on micro-RNA, or microscopic breast cancer markers that circulate in blood. Lead investigator, Hari Nakshatri, PhD, made the discovery that the micro-RNA, U6, was present in breast cancer patients. This was a tremendous finding as researchers had never before documented this discovery. Without funding from 100 Voices of Hope this discovery would have never been made.

2010 100 Voices of Hope allowed Dr. Nakshatri to confirm the presence of U6 in women with estrogen-sensitive breast cancer. Through this validation, not only has Dr. Nakshatri been awarded a \$400,000 grant from the National Cancer Institute to continue studying U6, but also he has been published in the prestigious peer-reviewed journal *Breast Cancer Research* and, most recently, the university has secured a patent for his U6 discovery.

2011 Two research projects were funded. The first focuses on identifying genes that will predict late recurrence of breast cancer. Breast tissue taken at the time of diagnosis will be compared with tissue from women who are taking hormonal therapies at five and 10 years out from initial diagnosis. This will determine which genes are involved in late recurrence in hopes of developing a treatment to prevent it. Currently, Kim Ziner, RN, PhD, is individually assessing thousands of patient records for eligibility in the study. To date 85 cases have been identified which will allow pathologist, Sunil Badve, MD, to begin assessing microarrays of these tissue samples. This project is significant because currently there is no test to predict late recurrence at the time of diagnosis.

The second project in 2011 focuses on studying novel drug targets for Triple Negative Breast Cancer (TNBC). These targets were identified by using cutting edge genomics technologies that compared TNBC tissues to normal breast tissues. Already Milan Radovich, PhD, has identified several genes that are overexpressed in TNBC and is in the testing phase of targeted treatments.

2012 A second Triple Negative Breast Cancer research project has been funded. The goal is to learn what causes this type of cancer to recur so rapidly in patients after standard therapy. Currently Dr. Radovich is collecting plasma in TNBC patients enrolled in a clinical trial that is testing standard treatment against a novel treatment of cisplatin and a PARP inhibitor. The plasma will then be evaluated using genomic sequencing technology to measure circulating tumor DNA in patients on trial. The hope is to find markers that will identify patients that will relapse with the hope of understanding treatment interventions to prevent the development of metastatic disease.

**Researchers left to right: Drs. Nakshatri, Badve, Radovich**

