# Duncan Family Institute for Cancer Prevention and Risk Assessment


## Annual Report – Year 3

THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center
Making Cancer History®

## A Message from the Vice President

I am delighted to provide you with our third annual report detailing the progress we've made towards accomplishing the founding goals of the Duncan Family Institute. In the three years since its inception, we have made considerable strides in developing and establishing research programs and resources aimed at gaining a better understanding of cancer in its earliest stages, providing safer and more effective prevention strategies and advancing cancer risk assessment in both the clinic and the population overall. Just as importantly, we've done this together as a leadership team focused on fostering new discoveries and seeing them transformed into tools to benefit everyone at risk for, or living with a diagnosis of cancer. Therefore, the Institute enjoys widespread support by our faculty who are deeply grateful for the opportunities it provides to transform our research and clinical practice.

To those ends, this past year has seen the Duncan Family Institute establish two new Strategic Research Initiatives. The *Integrative Health* initiative and the *Center for Translational and Public Health Genomics* enable us to add new clinical prevention services and engage all patients in research, and complement the three previously established initiatives, the *Pre-malignant Genome Atlas, Energy Balance* and the *Tobacco Transdiciplinary Research Program*. Descriptions of the five Duncan Family Institute initiatives and their latest research results can be found in the *Strategic Initiatives* section of this report.

Our Seed-funding Research Program has been expanded to faculty throughout MD Anderson, resulting in awards to eight of 27 investigators who applied for funding. We collaborated with the Survivorship Research Working Group to contribute support to five awards from a pool of 35 proposals, a large number which signals expanding research on issues important to this rapidly growing patient population.

Additionally, the Institute has enhanced its overall research infrastructure with the funding of the *Clinical Cancer Prevention Research Core (CCPRC) and its High Risk Breast Cancer Cohort*. The CCPRC will work in conjunction with the four other resources — the *Personalized Risk Prediction Program (PRPP),* the *e-Health Technology core,* the *Mexican-American Cohort Study*, and the *Center for Community, Implementation, and Dissemination Research (CCIDR)* — to strengthen the quality and impact of cancer prevention research across the continuum from basic through translational to clinical and population-based science. Details of this new core, as well as the latest findings from research supported by the four existing resources, can be found in the *Research Resources* section.

Finally, we are pleased to report that we have awarded a third Duncan Family Institute Mentored Junior Faculty Fellowship to Jian Wang, Ph.D. in the Department of Epidemiology and that the previous two fellows, Francesco Versace, Ph.D. in the Department of Behavioral Science, and Larkin Strong, Ph.D. in the Department of Health Disparities Research, have successfully competed for tenure-track assistant professor positions. More details regarding all of the Institute's educational and training initiatives can be found in the *Education and Excellence* section of the report.

The coming year promises excitement and continued expansion as the Institute reaches out to form new collaborations, both within MD Anderson and with academic and community partners, through initiatives such as the Center for Health Equity and Evaluation Research which pairs MD Anderson and the University of Houston.

In closing, I sincerely thank all those who are affiliated with the Duncan Family Institute for their hard work and support of this past year's accomplishments. And I extend my deepest appreciation to the Duncan family and to all of our new and sustaining donors, whose generosity and recognition of the importance of cancer prevention made possible this Institute and its many advances in 2011.

Sincerely,

Ernest Hawk, M.D., M.P.H., Vice President and Division Head, Division of Cancer Prevention & Population Sciences

**TABLE OF CONTENTS**

# OVERVIEW

***"Advancing the discovery and translation of new knowledge about cancer risk and prevention in the laboratory, the clinic and the community"***

Created to bring together scientists, clinicians and community practioners committed to advancing the science and practice of cancer prevention, the Duncan Family Institute for Cancer Prevention and Risk Assessment is pleased to provide this annual report. Cancer prevention is a broad field and the Institute supports a wide range of research and engages scientists from multiple disciplines. Below are examples of Institute-supported research from this past year that illustrate the Institution's commitment to discovery and translation of new findings:

- **Discovery –** supported through our Personalized Risk Prediction Program and Center for Community, Dissemination and Implementation Research, contributions to a study led by a consortium of scientists at the University of Oxford and Harvard Medical School that has constructed the most detailed genetic map to date in African Americans. These findings, published in *Nature,* are expected to help researchers understand the roots of specific congenital conditions that occur more often in African Americans and to discover new disease genes in all populations; and

- **Translation -** supported by our Center for Community, Implementation, and Dissemination Research (CCIDR) Resource, a novel behavioral intervention for smokers demonstrated significantly increased access to and use of smoking cessation services, especially among minority and medically underserved populations, as compared to a traditional intervention.


**Figure 1** The Duncan Family Institute is based in MD Anderson's Dan L. Duncan Building but, as with all of MD Anderson's Institutes, it engages faculty from across the campus.

The Institute's 2011 investments in promising new research directions and in the expansion and integration of MD Anderson's cancer prevention program include:

- Thirteen seed-funding awards totaling $700 thousand to help researchers expand their studies in areas such as a study to understand genetic variation in colorectal cancer for risk prevention, automation of a biomarker for early detection and screening of lung cancer, and addition of an exercise intervention to an endometrial cancer prevention clinical study in a genetically high risk cohort. Five of these awards are in collaboration with MD Anderson's Survivorship Research Program;

- Continued investment in high-priority areas of investigation, including tobacco use prevention, energy balance, and the Premalignant Genome Atlas;

- Creation of the Center for Translational and Public Health Genomics with its goal of bridging the gap between epidemiologic discoveries and their translation into public health and the clinic;

- Infrastructure and resource investments, such as our e-Health Technology platform and the Personalized Risk Prediction Program's (PRPP) MD Anderson Cancer Patient Cohort, to support 30 newly proposed studies and 63

funded research projects, six of which are intervention studies with 2900+ participants and five of which are population studies with over 47,000 participants;

- One new mentored junior faculty fellowship to support a scientist developing novel statistical approaches for risk prediction with application for smoking cessation studies; and

- Development of the intellectual environment for cancer prevention research through sponsorship of scientific lectures and retreats, including a working group in energy balance.

The coming year will see continued growth and expansion of the Duncan Family Institute, with plans for support for new competitively awarded seed-funding grants and fellowship awards, strengthening of research resources and advancement of strategic initiatives. We are confident that the investments made and collaborations forged in 2011 strategically position the Institute to continue to seed and support high-impact, transdisciplinary cancer prevention research.

# RESEARCH PROGRAMS – STUDIES TO UNDERSTAND AND REDUCE CANCER RISK

The Duncan Family Institute currently invests 40% of its funding into two research programs, a Seed-Funding program and a Strategic Research Initiatives program.

The Institute's Seed-Funding Research Program is designed to provide financial support to innovative investigators working to develop preliminary data into full-fledged, hypothesis-driven investigations. New this year, the Duncan Family Institute has partnered with the Survivorship Research Group and has supported a number of projects addressing quality of life issues in this area. The focus of Survivorship Research is on the health and life of a person with a history of cancer beyond the acute diagnosis and treatment phase. It seeks both to prevent and control adverse cancer and treatment-related outcomes. With improvements in cancer treatment, there will be an increasing need to address the issues survivors face. There are an estimated 13 million cancer survivors in the U.S. with long-term needs. The Institute aims to make critical contributions to this developing area of research through support for MD Anderson's Survivorship Program and through the leadership role many of our faculty play in setting the national and international agendas for cancer survivorship research and treatment. For example, Lewis Foxhall, M.D., vice president for health policy and a member of the Duncan Family Institute Executive Committee, is a member of MD Anderson's Cancer Survivorship Management Textbook editorial board. This group is developing the text that will accompany MD Anderson's Cancer Survivorship curriculum. Faculty engaged with the Institute will continue to form new collaborations to assist us in addressing the key issues in survivorship research at both the state and national levels.

The second research program funds the Strategic Research Initiatives, a set of high-priority research areas determined by the Executive Committee of the Duncan Family Institute. This year our Strategic Research Initiatives were expanded from three to five with the addition of the Integrative Health initiative and the Center for Translational and Public Health Genomics. Both of these complement the previously existing Premalignant Genome Atlas, Energy Balance and the Tobacco Transdiciplinary Research initiatives, all of which continued to mature in 2011.

## *AN ENGINE FOR DISCOVERY – SEED-FUNDING RESEARCH PROGRAM*

The Duncan Family Institute provides individual seed-funding grants to help investigators develop the preliminary data necessary to advance their research ideas and compete successfully for external peer-reviewed funding for larger studies. We competitively awarded eight of 27 proposed projects. Through a new collaboration with MD Anderson's Survivorship Research Group, the Institute contributed to the award of five of 34 proposed projects specifically targeted to quality of life issues and prevention of secondary cancers in survivors.

Each of the six investigators receiving awards in prior years provided progress reports and an update to the Duncan Family Institute Executive Committee. All are progressing well with two of the investigators securing additional funding, an NCI R03 grant to Dr. Wei and a Prevent Cancer Foundation grant to Dr. Peng, and the remaining investigators are preparing or awaiting review of extramural grant submissions.

Scientists receiving seed grant awards are studying a diverse range of discovery-oriented and translational research questions aimed at the individual and population level. Studies include research to:

- Investigate the effect of adding an exercise intervention to an endometrial cancer prevention clinical study (Basen-Engquist);
- Design a cognitive rehabilitation intervention for brain tumor survivors, with potential application for patients reporting cognitive decline during and after chemotherapy ("chemobrain") (Wefel);
- Discover drug combinations that are more effective and less toxic for cancer prevention – for those at high risk of breast cancer (Uray);
- Develop further a novel method to target genetic abnormalities implicated in the development of pancreatic cancer and prevent this cancer from developing and progressing (Wu);
- Investigate the role of PPAR-delta, a nuclear receptor, in promoting colon cancer development and progression in preclinical studies (Shureiqi);
- Understand genetic variation in colorectal cancer for risk prediction and, potentially, prevention strategies (Hildebrandt);
- Determine if inhibition of mTOR signaling will suppress polyp formation in a mouse model of the Peutz-Jeghers Syndrome, with implications for other cancers (Wei);
- Automate a biomarker assay for early detection and prediction of lung cancer risk which has the potential to be translated into a lung cancer screening tool (El-Zein);
- Elucidate genetic brain markers that differentiate non-smokers, smokers and ex-smokers for predicting smoking risk and tailoring prevention strategies for those at risk and personalizing cessation strategies for smokers whose brain markers suggest they will have difficulty remaining abstinent (Robinson);
- Learn how head and neck cancer patients make sense of body image alterations resulting from their cancer treatment to guide development of psychological interventions to help these patients adapt to their changed appearance (Fingeret);
- Develop population simulation models to predict and compare potential benefits, harms and costs of cancer prevention strategies (Peng); and
- Estimate the prevalence of health problems and health behaviors by gender, race, ethnicity and SES and insurance status to contribute to guidelines for care of cancer survivors (Elting).

Below is a brief description of each of the projects awarded during this last year, and an update on progress for projects previously awarded:

***Pilot Test of a Lifestyle Intervention Arm in an Endometrial Cancer Prevention Trial: Effects on Endometrial Proliferation and Related Biomarkers***

*Karen Basen-Engquist, Ph.D., Professor, Department of Behavioral Science*

Women who are obese and have low levels of physical activity are more likely to develop endometrial cancer, but we do not yet know if losing weight and becoming more active will decrease a woman's risk of this disease. The goal of our research is to answer this question. We are collaborating with investigators from MD Anderson's SPORE (Specialized Program for Research Excellence) in uterine cancer who are doing a trial to test whether metformin, a drug usually used to treat diabetes, can help reduce cell growth in the endometrium of women who are obese. We will add another arm to this trial in which the participants will receive a diet and exercise program to help them lose weight. All women in this study will have endometrial biopsies to assess cell growth as well as blood tests to measure markers that may be related to the risk of developing endometrial cancer. This pilot study will help us determine whether there is enough evidence that changing diet and exercise behavior affects endometrial cancer risk to justify doing a larger, more definitive clinical trial.

***Health Status and Health Behaviors Among Cancer Survivors: A Population-based Study***
*Linda Elting, Dr.P.H., Professor, Department of Biostatistics*

Improvements in cancer detection and treatment have led to increased survival after cancer and a growing number of cancer survivors. Using data from the Behavioral Risk Factor Surveillance System (BRFSS), a population based telephone survey conducted annually by the Centers for Disease Control and Prevention, we will estimate the prevalence of health problems (cardiovascular disease, hypertension, diabetes, arthritis obesity) and health behaviors (exercise, diet, smoking cholesterol and blood sugar screening, immunizations, and cancer screening) for adult cancer survivors and controls without cancer and examine differences in the prevalence of health behaviors and problems in subgroups of the population by gender, race, ethnicity, education, income and insurance status. The results of this study will provide information critical to the design of further intervention studies, further our understanding of health disparities among cancer survivors, and contribute to further development of guidelines and collaborative care models for cancer survivors.

***A Feasibility Study for High-Throughput Application of a Novel Early Detection and Risk Assessment Biomarker***
*Randa El-Zein, M.D., Ph.D., Associate Professor, Department of Epidemiology*

In this project, we will test the feasibility of automating a biomarker that comprehensively allows the measurement of cellular genomic instability. We have shown that cytokinesis blocked micronucleus assay is a sensitive predictor of lung cancer risk. Automation of this powerful assay will provide a strong, rapid and unbiased quantitative analysis tool for cancer risk assessment. We envision using this biomarker in lung cancer screening programs as a prescreening tool for current and former smokers prior to CT screening. This prescreen will allow the identification of individuals at high risk of development of lung cancer, and therefore warrant further screening and follow-up using CT. Given the low cost, accuracy and safety, this biomarker could be potentially valuable for screening of large populations.

***Toward an Understanding of Body Image Adaptation Following Surgical Treatment for Head and Neck Cancer***
*Michelle Fingeret, Ph.D., Assistant Professor, Department of Behavioral Science*

Body image is recognized as a critical psychological issue for individuals with head and neck cancer, as the disease and its treatment can significantly alter physical appearance and bodily functioning in a highly visible and socially significant part of the body. Our goal is to learn how patients make sense of appearance and body image changes after surgical treatment for head and neck cancer. Further understanding the process by which patients adapt to body image changes may help identify essential factors that contribute to psychosocial adjustment over time. We also plan to investigate the experiences of clinical staff related to their observations of patients and involvement in psychosocial care. The results of this research project are anticipated to significantly enhance knowledge regarding fundamental body image issues for head and neck cancer patients and can be used to guide future studies and the development of novel psychosocial interventions for these patients.

***Germline Genetic Variants in the Wnt/beta-catenin Stem Cell Pathway as Predictors of Colorectal Cancer Risk***
*Michelle Hildebrandt, Ph.D., Instructor, Department of Epidemiology*

Colorectal cancer is the 3rd most common malignancy with nearly 150,000 new cases diagnosed each year in the United States. This study will shed light on the effect of common, germline genetic variation within the Wnt/beta-catenin stem-cell signaling pathway on colorectal cancer risk. The results can contribute to a personalized risk prediction model that will help to explain an individual's risk of colorectal cancer development and can be used to provide recommendations of suitable prevention strategies with the goal of reducing the incidence and burden of this deadly disease.

### *Pilot Biomarker Study of Trace Metals and Prostate Cancer Risk*

*Ashraful M. Hoque, M.D., Ph.D., Associate Professor, Department of Clinical Cancer Prevention*

The purpose of this research study is to investigate the role of essential and toxic trace metals and their association with prostate cancer among African-American and white men. The incidence of prostate cancer in the United States varies widely by race/ethnicity, with African-American men at almost twice the risk of prostate cancer compared to Hispanic and white men and African-American men are about 2.5 times as likely to die as a result of prostate cancer. Although there is substantial laboratory and epidemiologic evidence that supports an association of exposure to dietary trace metals with cancer in humans, the role of metals in prostate carcinogenesis is not investigated comprehensively. Common exposure to metals occurs in the workplace, or by living in an environment that is located in close proximity to industrial sources, or through dietary intake of metal contaminated food and water. In this pilot case-control study, researchers in Dr. Hoque's laboratory are measuring levels of essential and toxic metals in blood among both prostate cancer patients and healthy men to determine if there is an association of low levels of essential metals or high levels of toxic metals with prostate cancer. In addition, Dr. Hoque's group will examine whether certain dietary factors, such as fruit and vegetable consumption and dietary supplements, reduce the toxic effects of heavy metals and ultimately decrease prostate cancer risk. During the first year of this project, Dr. Hoque and colleagues were able to complete analyses of trace metals in serum and estimate dietary intake for 200 prostate cancer cases and 200 healthy controls, as well as to perform preliminary statistical analyses, stratified by race, for a subset of the study population. The next step is to merge the laboratory, dietary and clinical data and complete comprehensive statistical analyses. Dr. Hoque and team will also extend this analysis to Hispanic prostate cancer patients from whom data and biospecimens were collected in a previous study. Data generated from this study could have significant public health implications through the identification of a population with deficient essential trace metals that could be at high risk for prostate cancer and, therefore, could benefit from targeted primary and secondary prevention interventions.

### *Glioma Susceptibility in African-American and Hispanic Populations*

*Yanhong Liu, Ph.D., Instructor, Department of Epidemiology*

Gliomas, the most common type of brain tumors, have a very poor prognosis and are associated with considerable morbidity and mortality. Investigators have long known that gliomas are more common in caucasians than in African Americans and Hispanic Americans. This research focuses on discovering genetic markers for glioma among African-American and Hispanic-American populations. Results of this project may help explain why glioma affects caucasians more often than African Americans and Hispanic Americans, and will potentially lead to new and improved modes of diagnosis and better prevention strategies for patients with glioma. Dr. Liu's move to Baylor College of Medicine provides an opportunity to extend the Duncan Family Institute collaborations to the Dan L. Duncan Cancer Center at Baylor through continued support of Dr. Liu's seed-funded project.

### *Cost-effectiveness Studies of Novel Cancer Prevention Strategies*

*Bo Peng, Ph.D., Instructor, Department of Epidemiology*

Many genetic and environmental risk factors have been identified for complex human diseases such as lung cancer. Whereas environmental factors (e.g., smoking) have been frequently targeted to reduce the public health burden of these diseases, it is often unclear how to efficiently apply individual genetic information for the prevention, early detection and treatment of these diseases. For example, although screening strategies that incorporate individual genotype profiles are expected to be more efficient than those based solely on exposures and family histories, the benefit of these integrated strategies depends heavily on the role of genetic risk factors in these diseases and the additional cost of obtaining individual genetic information. The long term goal of this study is to incorporate family history and genomic information into population models and investigate the population impact of using this information to stratify the population to more appropriately target prevention, early detection and treatment strategies. In this project, Dr. Peng will develop a microsimulation tool that simulates evolving

populations with realistic environmental and genetic risk factors and detailed tumor initiation and progression models of cancers. The near-term goal is to implement the microsimulation tool in a general purpose population genetics simulation environment, termed simuPOP, and to provide simulation tools, preliminary results and peer-reviewed publications. These will allow Dr. Peng to compete for R01 or other extramural funding to support a larger project to extend this methodology from lung to more cancers and to more realistic models of cancer prevention strategies, which may include cost-effectiveness components. As a measure of his success, Dr. Peng was recently awarded a grant from the Prevent Cancer Foundation, "Utility of individual genetic profile in the prevention of lung cancer," $80,000 total costs.

### *Identifying Neurocognitive risk Markers that Differentiate Smokers from Never-Smokers and Ex-Smokers*

*Jason Robinson, Ph.D., Assistant Professor, Department of Behavioral Science*

Even though most smokers know that smoking is unhealthy, and despite most wanting to quit, only 6% of those who make a serious quit attempt are still abstinent one year later. The problem is that smoking, like other drugs of abuse, alters the brain after repeated use, alterations that make it difficult to quit and to stay abstinent. We want to examine whether a variety of brain markers that we previously identified in smokers also exist in never smokers and ex-smokers. The ultimate goals of these studies are to use these brain markers to predict which nonsmokers are at risk of becoming smokers and which ex-smokers are likely to have problems remaining abstinent.

### *Role of PPAR-delta Overexpression in Colonic Tumorgenesis*

*Imad Shureiqi, M.D., M.S., Associate Professor, Department of Clinical Cancer Prevention*

In this discovery project, the primary aim is to enhance our understanding of the role of a nuclear receptor, PPAR-delta, in promoting colon cancer. Colorectal cancer is the second most common cause of cancer death in the United States. Despite the progress that has been made, with death rates from colorectal cancers remaining around 50%, therefore better preventive interventions for this disease are needed. We know that increased production of a protein, peroxisome proliferator-activated receptor delta (PPAR-d), is associated with colon cancer development, but we do not know if the increased production of this protein is critical to the promotion of colon cancer development. Progress during the first year of this project demonstrated for the first time the ability of PPAR-d overexpression to reverse the resistance to chemically induced colonic tumorigenesis in B6 mice and supports the hypothesis that PPAR-d overexpression promotes colorectal tumorigenesis. The next step in this study is to continue preclinical studies to test the tissue bioavailability of a newly-developed PPAR-d antagonist. These preliminary data will be used to develop a larger study to test the chemopreventive activity of the PPAR-d antagonist as an initial step in the preclinical testing of this drug for the chemoprevention of colon cancer. Discovering PPAR-delta's role in colon cancer development may lead to identification of this receptor as a drug target for prevention in people at high risk for the disease. This seed grant was a contributing factor to securing an NCI-funded R01 project "Molecular targeting of PPAR-delta in colon cancer."

**Publications**

Moussalli MJ, Wu Y, Zuo X, Yang XL, Wistuba II, Raso MG, Morris JS, Bowser JL, Minna JD, Lotan R, **Shureiqi I**. Mechanistic contribution of ubiquitous 15-lipoxygenase-1 expression loss in cancer cells to terminal cell differentiation evasion. Cancer Prev Res (12):1961-72, 2011.

***Integrative Genomic Analysis of Actinic Keratoses: Using Inter-lesional and Cross Species Analysis to Predict Progression to Cutaneous Squamous Cell Carcinoma***
*Kenneth Tsai, M.D., Ph.D., Assistant Professor, Department of Dermatology*

Skin cancer is the most common malignancy in humans, of which there are over 3 million cases a year in the United States, costing an estimated $500 million in treatment-related costs and $2 billion in overall economic impact. Cutaneous squamous cell carcinoma (the 2nd most common skin cancer) has a well-ordered sequence of development beginning with chronically sun-exposed skin, progressing to the most common precancerous lesion in humans, the actinic keratosis (AK), and then ultimately to invasive cancer. The tremendously high incidence of AK presents a vast opportunity for secondary skin cancer prevention, and Dr. Tsai's studies to identify the important genetic alterations that result in AK formation will enable the design of better interventions to eliminate them and prevent their progression to cancer.

***High-throughput Search for a Combination Cancer Preventive Treatment***
*Ivan Uray, M.D., Ph.D., Assistant Professor, Department of Clinical Cancer Prevention*

The two most fundamental criteria for the development of cancer preventive agents are achieving high effectiveness and low toxicities because chemopreventive medications are typically administered over a long period of time. This research addresses both issues. Its goal is to identify drug combinations which more effectively suppress cell growth and prevent cancer than either individual component alone. At the same time this research will develop new treatment options that reduce the effective dosage by combining cancer preventive agents to achieve equivalent or synergistic effects. Achieving these goals may have a tremendous impact on the acceptance of pharmacologic preventive strategies.

***The Role of Tryptophan Metabolism in the Chronic Fatigue Experienced by Chronic Myelogenous Leukemia (CML) Survivors***
*Javier Valenzuela, Ph.D., Instructor, Department of Symptom Research*

Unlike other cancer survivors recovering from short-term treatments, CML survivors must remain on tyrosine kinase inhibitor (TKI) therapy for years, if not for the rest of their lives, to avoid disease recurrence. In phase II clinical trials, fatigue was recognized as one of the most common grade 1-2 complications of long-term TKI therapy. However, it is not known what causes TKI-induced fatigue in CMS survivor, although some progress has been made through inhibition of tryptophan degradation in preclinical studies. In order to translate these studies into clinical practice for cancer survivors, further research is needed with CML patients to assess the association between different CML treatments, tryptophan degradation, fatigue and quality of life. The results of this project will help to identify the specific populations of CML survivors that are most likely to benefit from the inhibition of tryptophan degradation for the treatment of TKI-induced chronic fatigue.

***Impact of Past Chemotherapy on Emotional Processing: An fMRI study in Breast Cancer Survivors***
*Francesco Versace, Ph.D., Instructor, Department of Behavioral Science*

Breast cancer accounts for nearly 1 in 4 cancers diagnosed in U.S. women. Although, the 5-year relative survival rate can be as high as 90%, with excellent quality of life, over half of surviving women suffer long-term treatment-related problems in the specific domain of sexual function, particularly if they had chemotherapy. Serum androgen levels do not appear to correlate with women's reports of loss of desire for sex after breast cancer. In general for women, neither pharmaceutical nor sex therapy treatments have had more than modest success in treating loss of sexual desire. Our central hypothesis is that chemotherapy does long-lasting damage to neural networks in the brain that are necessary for emotional processes, contributing to the loss of desire for sex commonly observed in breast cancer survivors. To test this hypothesis, the research team will

collect pilot data from breast cancer survivors using functional magnetic resonance imaging (fMRI) to measure brain activity while viewing standardized sets of pictures showing pleasant, unpleasant, or neutral contents. Results of this study will lead to further research on the impact of chemotherapy on the brain's emotional pathways. These pilot data will contribute to the design of further studies aimed at developing more effective remedies for the frequent problem of long-term loss of desire for sex after treatment for breast cancer.

***A Brain Plasticity-based Computerized Intervention to Treat Attention and Memory Problems in Adult Brain Tumor Survivors***

*Jeffrey Wefel, Ph.D., Assistant Professor, Department of Neuro-Oncology*

Survival times have improved for individuals with brain tumors (BT), but the vast majority of BT survivors suffer from cognitive dysfunction that is associated with reduced independence, difficulty maintaining roles in the home and work environments, decreased ability to participate in daily living activities, and increased caregiver burden and distress. There is currently no empirically supported standard of care cognitive rehabilitation to manage and treat these cognitive deficits. Rehabilitation efforts to date have attempted to train survivors to compensate for lost functions in order to manage the adverse impact of these cognitive deficits on their lives, but this therapy is intensive, long-term and often not locally available or affordable for BT survivors. An at-home, web accessible, brain-plasticity based computerized training program designed to enhance attention and memory processes, such as The Brain Fitness Program (Posit Science, San Francisco, CA) would be of tremendous value to BT survivors. In this study, the researchers will determine the feasibility, acceptability and efficacy of the Brain Fitness Program in BT survivors to develop preliminary data for a larger clinical trial. Given the ubiquity of cognitive dysfunction in the BT survivor population as well as the large number of non-BT cancer survivors suffering from cognitive dysfunction following chemotherapy (often called "chemobrain"), developing an empirically supported treatment for these issues is of great importance to patients and caregivers.

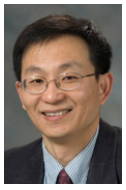
***Novel Use of the Niclosamide: Targeting mTOR Signaling in Peutz-Jeghers Syndrome***

*Chongjuan Wei, Ph.D., Assistant Professor, Department of Epidemiology*

Peutz–Jeghers Syndrome (PJS) is a genetic disorder characterized by benign polyps called hamartomas which occur mainly in the stomach, small intestine, and colon. Patients with PJS are at higher risk for developing various types of cancer. To date, therapy for PJS has been limited to surgical removal of clinically significant polyps. Over-activation of mTOR signaling, a pathway which promotes cell growth and proliferation, has been associated with PJS suggesting that an mTOR inhibitory drug may be useful for PJS treatment. In this proposed project, we will use niclosamide, a novel mTOR inhibitor, to determine whether interruption of mTOR signaling suppresses polyp formation in the PJS mouse model. Considering that the mTOR pathway is aberrantly activated in most common cancers in addition to PJS, the resulting findings could impact not only cancer prevention and treatment in patients with the Peutz-Jeghers Syndrome, but also in others with cancers harboring dysregulated mTOR signaling. During the first year of this project, Dr. Wei generated preliminary MRI data to support her R03 resubmission, resulting in the award of the R03 grant from NCI, which will support further data generation leading to a larger individual investigator extramurally-funded study. ("Chemoprevention of Peutz-Jeghers Polyposis in a Mouse Model by Niclosamide" NCI R03CA153905, $158,000 total costs)

***Chemoprevention of Pancreatic Cancer by Induction of Synthetic Lethality in Mutant K-ras Cells***

*Xiangwei Wu, Ph.D., Associate Professor, Department of Head and Neck Surgery –Research*



Pancreatic cancer is often diagnosed at an advanced stage and has a poor prognosis. Activating mutations of the K-ras oncogene are possibly the single most common genetic abnormality in pancreatic cancer. Therefore, mutant K-ras gene or its gene product represents an obvious target for the treatment and prevention of pancreatic cancer. In this study, we are developing a novel method to specifically abolish oncogenic Kras-expressing cells for pancreatic cancer prevention and treatment.

### *Preclinical Chemoprevention of Esophageal Adenocarcinoma*

*Xiaochun Xu, M.D., Ph.D., Associate Professor, Department of Clinical Cancer Prevention*

The incidence of esophageal cancer, a deadly disease with a poor prognosis, has been increasing in the U.S. The actual origin of esophageal cancer remains unclear, but we do know esophageal cancer is more likely to occur in individuals who have frequent gastroesophageal reflux carrying toxic acids, bile and proteases out of the stomach and into the esophagus, resulting in the formation of Barrett's esophagus. The latter is considered to be a premalignant condition that may lead to the advancement of esophageal cancer. Tobacco smoke can also enhance the effects of bile acid, which may in and of itself be a risk factor for esophageal cancer. These risk factors contribute to development of esophageal cancer by causing multiple genetic changes. In this study, in animal models, Dr. Xu and associates are exploring whether a combination of chemopreventive agents can block these genetic alterations, thus preventing the growth of esophageal cancer cells. In the first year of this project, Dr. Xu was able to determine the effects of the FXR inhibitor, guggulsterone, in regulating growth and apoptosis of Barrett's and cancerous esophageal cells in vitro. In addition, he explained gene expression patterns that may be responsible for guggulsterone's antitumor activity and FXR-promoted tumor cell growth. The laboratory began its investigations of the effects of amiloride and acid in esophageal cancer cell lines and will continue these in year two of the project. The group will use the data from this project to develop two larger preclinical studies with the long-term goal of informing development of preventive interventions for individuals with Barrett's esophagus who may be at risk for esophageal cancer.

**Publications**

Ye F, Zhang G, Guan B, **Xu, X-C**. Suppression of esophageal cancer cell growth using curcumin, (-)-epigallocatechin-3-gallate, and lovastatin. World J Gastroenterol 18(2):126-35, 2012.

Guan B, **Xu X-C**. Farnesoid X receptor-mediated carcinogenic effects of bile acid in esophageal cancer: A potential chemoprevention target. Proceedings of the Am Assoc for Cancer Res 51: 5676, 2010.

### *Predicting the Risk of Developing Lung Cancer: A Multigenic Statistical Approach to MicroRNA*

*Yuanqing Ye, Ph.D., Assistant Professor, Department of Epidemiology*

Lung cancer is the leading cause of cancer-related death in the U.S., with almost 90% of lung cancers attributed to cigarette smoking. There is substantial evidence that lung cancer's development is driven by key interactions between carcinogens in tobacco and inherent genetic traits. In this study, Dr. Ye will identify novel genetic variants in miRNA related genes, a type of RNA that plays an important regulatory role in many biological processes and diseases, which are associated with the development of lung cancer. During the first year of the project, Dr. Ye assessed the association of 75 tagging and potential functional single nucleotide polymorphisms (SNPs) in 8 miRNA biogenesis pathway genes with lung cancer risk in a case control study of 1135 lung cancer cases and 803 healthy controls among caucasians. Initial results suggest genetic variants in miRNA biogenesis pathway genes may affect an individual's risk for lung cancer, although much work remains to be done. In year two of this project, Dr. Ye will further develop the preliminary data for a larger multi-year study to develop novel and more powerful statistical methods for joint analysis of multiple SNPs utilizing both genetic and biologic information. He will then apply the proposed method to the data generated from this project and further validate the findings, perhaps extending the method to more advanced analyses including GWAS data. Over the long-term, this study may shed significant additional light on causes of lung cancer and lead to new techniques to identify those at highest risk for this disease, with the potential to engage them in preventive trials.

**Publications**

**Ye Y**, Spitz MR, Yang H, Wu X. Genetic variations in microRNA biogenesis pathway genes as susceptibility loci for lung cancer risk. AACR, Orlando, FL, April 4, 2011.

## *INVESTMENT IN NOVEL AND HIGH PRIORITY RESEARCH DIRECTIONS – DUNCAN FAMILY INSTITUTE STRATEGIC RESEARCH INITIATIVES*

With the goal of bringing a focus of expertise and resources to promising new and high-priority cancer prevention research areas, the Duncan Family Institute Executive Committee established the Strategic Research Initiative program. Funds are designated for high-priority areas. During this reporting year, we provided continued supported to the **Premalignant Genome Atlas, Energy Balance** and **Tobacco Research programs,** and established the **Integrative Health** initiative and the **Center for Public Health and Translational Genomics**.

### *Premalignant Genome Atlas*

*Co-directors:* *Xifeng Wu, M.D., Ph.D., Professor and Chair, Department of Epidemiology*
*Ernest Hawk, M.D., M.P.H., Vice President for Cancer Prevention and Division Head, Cancer Prevention and Population Sciences*

**"Stopping cancer before it starts…."**

The best hope to improve the prognosis of cancer is early detection or, better yet, preventing a premalignant lesion from progressing into a malignant, or cancerous, one. One of the primary obstacles to earlier detection and better prevention strategies is our inability to effectively predict who will develop cancer among the many individuals who develop premalignant lesions. Through the Premalignant Genome Atlas Program, we will systematically study premalignant lesions, with the goal of developing comprehensive, integrative risk prediction models for the different cancers and to then use these to personalize cancer prevention strategies.

Three specific aims established at the inception of this program in 2009 were to:

- Establish a BioBank to include collection of tissues, epidemiologic data, clinical variables, and demographic information;
- Construct a cohort of patients with premalignant lesions and prospectively follow them, collecting additional information, such as exposure data, to comprehensively assess cancer risk; and
- Perform molecular profiling (genetic, epigenetic, and expression) of normal, premalignant and cancer tissues to compare and identify the spectrum of differences to elucidate markers that have the best predictive value for progression of normal tissue to premalignant lesions and these lesions to cancer.

These remain the specific aims of the Premalignant Genome Atlas and continue to guide the development of the program. During this past year, investigators have made great strides in each of these areas. In this report, we are highlighting three of the past year's research accomplishments:

- A discovery study has demonstrated that serum microRNA profiling can distinguish among control individuals, those with polyps, and those with colorectal cancer. These are exciting results because of the potential for being developed as a non-invasive biomarker and provide the impetus for a much larger study to validate the candidate microRNAs and further explore these as potentional biomarkers of premalignancy and progression (Figure 2).

- A genome-wide expression profile of miRNA was performed using 119 tissues to learn more about the role miRNAs play in the progression of Barrett's esophagus (BE) to esophageal cancer (EAC). Initial results have lead to a larger replication study in order to clearly identify microRNA profiles that characterize progression through BE to EAC that potentially can be developed into biomarkers; and

- A whole-genome methylation array was used to examine differences in methylation patterns between normal, Barrett's esophagus, and esophageal adenocarcinoma tissues. Scientists identified multiple hypermethylated genes that are candidates for future study and are currently replicating these analyses in a larger study to confirm the findings.

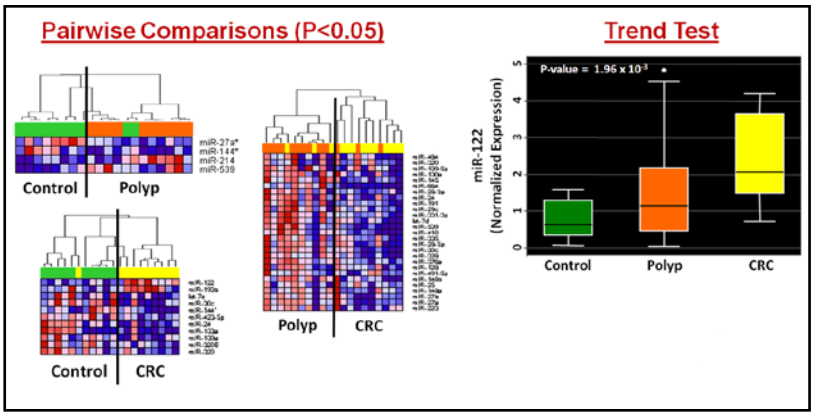



**Figure 2** Serum microRNA Expression Profiles showing a distinction between microRNAs associated with Healthy Controls vs. Polyps vs. Colorectal Cancer.

Plans for the next year include the expansion of the leadership team to add Lopa Mishra, M.D., Professor and Chair, Department of Gastroenterology, Hepatology and Nutrition, to further engage clinical endoscopists in the next phases of the program which are focused heavily on collection and analysis of precancerous colorectal tissues. The program's premalignant foci will remain oral premalignant leukoplasia, Barrett's esophagus, and colon polyps, with a continued emphasis on molecular and phenotypic profiling, whole genome DNA methylation, miRNA, expression and exome profiling and an expansion to study the effect of energy balance and its associated molecular mechanisms on cancer prevention. The long-term goal is to develop novel tools to better predict which patients are at high risk for progression from normal to premalignancy and from premalignancy to cancer.

**Publications – Study Results for Research Supported by the Pre-Malignant Genome Atlas Strategic Research Initiative**

Kim SM, Park YY, Park ES, Cho JY, Izzo JG, Zhang D, Kim SB, Lee JH, Bhutani MS, Swisher SG, Wu X, Coombes KR, Maru D, Wang KK, Buttar NS, Ajani JA, Lee JS. Prognostic biomarkers for esophageal adenocarcinoma identified by analysis of tumor transcriptome. PLoS One 5(11):e15074, 2010.

Gu J, Ajani JA, Hawk ET, Ye Y, Lee JH, Bhutani MS, Hofstetter WL, Swisher SG, Wang KK, Wu X. Genome-wide catalogue of chromosomal aberrations in barrett's esophagus and esophageal adenocarcinoma: A high-density single nucleotide polymorphism array analysis. Cancer Prev Res (Phila) 3(9):1176-86, 2010.

***Energy Balance***

*Working Group Co-leaders:* *Powel Brown, M.D., Ph.D., Chair and Professor, Department of Clinical Cancer Prevention*
*Karen Basen-Engquist, Ph.D., Professor, Department of Behavioral Science*

Developing a program in energy balance, which is a term used to describe the relationship between energy intake (calories eaten) and energy expended (calories used), remains a high priority for the Duncan Family Institute, as obesity increases the risk of cancer in numerous organ sites (Figure 3). The goals for this strategic research program include:

- Increasing our knowledge of how the factors that influence energy balance - principally nutrition and physical activity - are implicated in disease progression from healthy tissue to pre-cancer to cancer and how these factors interact with genetic and environmental influences in cancer development and progression; and

- Developing research studies of diet, exercise, psychosocial and medical interventions to determine how best to reduce an individual's cancer risk and thus improve our ability to prevent cancer.

Studies highlighting research in this area include:

- A large-scale cohort study of Taiwanese patients receiving preventive services in a screening center, which suggests that 15 minutes a day or 90 minutes/week of moderate-intensity exercise might be of benefit, even for individuals at risk of cardiovascular disease (Figure 4). Results were recently published in The Lancet (Wen, et al., Lancet 2011);

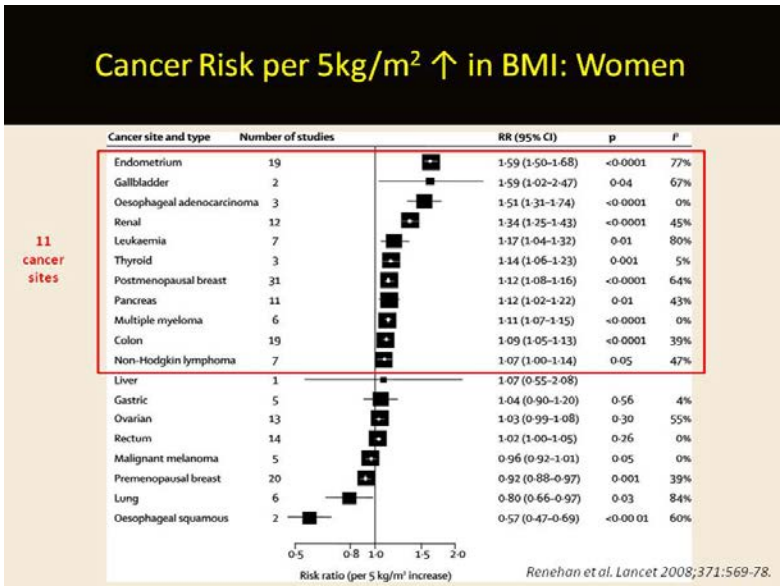



**Figure 3** An increase in cancer risk is associated with an increase in Body Mass Index (BMI) for 11 cancer sites.

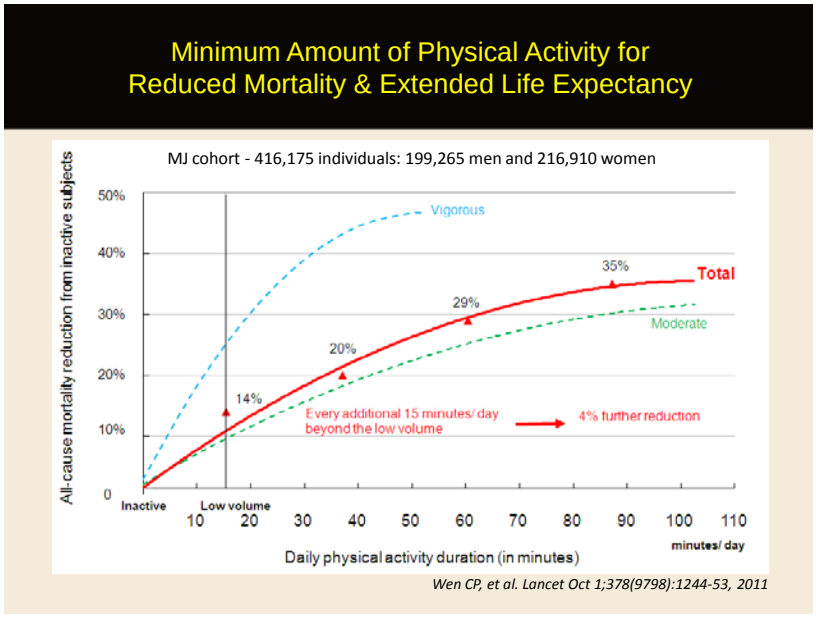



**Figure 4** Graph depicting results from the Wu, et al. study published in Oct. 2011 in The Lancet. Graph demonstrates a 4% further reduction in all-cause mortality for every additional 15 minutes of daily physical activity.

- A study on exercise and endometrial cancer by Karen Basen-Engquist, Ph.D., which is one of the Institute's seed-funding research projects; and

- An NIH-funded project of an exercise intervention involving African-American women in a community setting and which is supported in part by the Institute's e-Health Technology research resource (Lorna McNeill, Ph.D., iMOVE project).

The approach to developing this program is to bring together laboratory, preclinical and clinical investigators in working groups and retreat formats and to provide seed-funding for pilot projects to engage investigators from multiple disciplines. In the longer-term, we anticipate seeking extramural support for a center or multi-project research program.

During this past year, a working group was convened to learn about the energy balance research interests of investigators across MD Anderson. The group, comprised of 14 researchers from 11 departments, agreed to host a retreat in late fall 2011 and to issue a seed-funding call for applications to stimulate multi-disciplinary projects and, thus, begin to build a collaborative multi-disciplinary research environment in this strategic area. Recruitment is ongoing in all four of the departments within the Division of Cancer Prevention and Population Sciences for senior faculty with expertise in energy balance to join with working group members to further develop this important research area.

**Publications – Study Results for Research Associated with the Energy Balance Strategic Research Initiative**

Wen CP, Wai JP, Tsai MK, Yang YC, Cheng TY, Lee MC, Chan HT, Tsao CK, Tsai SP, Wu X. "Minimum amount of physical activity for reduced mortality and extended life expectancy: a prospective cohort study." Lancet 1;378(9798):1244-53, 2011.

***Integrative Health***
*Co-leaders:*
*Ernest Hawk, M.D., M.P.H., Vice President for Cancer Prevention and Division Head, Cancer Prevention and Population Sciences*
*Lorenzo Cohen, Ph.D., Professor, General Oncology and Behavioral Science; Director, Integrative Medicine Program*
*Therese B. Bevers, M.D., Professor, Clinical Cancer Prevention; Medical Director, Cancer Prevention Center*
*Richard T. Lee, M.D., Assistant Professor, General Oncology; Clinical Director, Integrative Medicine Program*

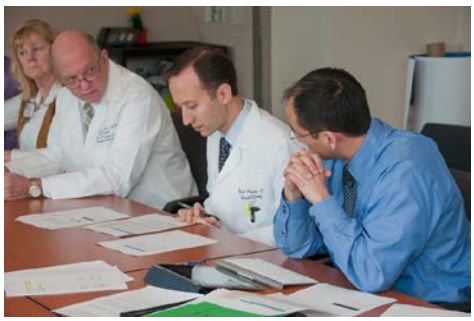


**Figure 5** Integrative Health Working Group members, Fran Zandstra, RN/MBA and Drs. Ernie Hawk, Gabe Lopez and Richard Lee discuss plans for the implementation of new integrative health clinical services for MD Anderson patients.

An MD Anderson hallmark is its research-driven care, facilitated by the integration of research into clinical settings. During this past year, the Cancer Prevention Center, MD Anderson's clinic for prevention and cancer survivor patients, saw a growth in its clinical activity, driven in large part by the growth in its survivorship care. Because behavior and lifestyle are significant contributors to risk factors associated with the development of cancer and recurrence in survivors, the Cancer Prevention Center medical staff and Division of Cancer Prevention researchers and staff collaborated with clinicians and researchers in MD Anderson's Integrative Medicine Program to develop long-term strategic and operational plans for what we call **"**Integrative Health," new and expanded clinical services and research to address behavior and lifestyle factors for individuals at risk for cancer, patients in treatment and cancer survivors (Figure 5). These services include addition and expansion of nutritional, exercise and psychosocial counseling, complementary therapies, and tobacco cessation services. Plans for the upcoming year include developing support to implement and

expand these services on a pilot basis, with a key feature of the program being the newly defined role of an Integrative Health Navigator to work closely with patients to assess, educate, navigate and motivate them. Each patient referred for services will be provided with a personalized prescription for behaviors to reduce cancer risk. In consultation with the patient's clinical care provider, individuals will be guided to those integrative health services most appropriate to their care. The research in this program is expected to complement the research in the Energy Balance Program.

***Tobacco Transdisciplinary Research Program***

*Working Group Co-leaders:* *Ellen R. Gritz, Ph.D., Professor and Chair, Department of Behavioral Science*
*David Wetter, Ph.D., Professor and Chair, Department of Health Disparities Research*

Building on MD Anderson's strength as a leader in tobacco research, this developing transdisciplinary research program is targeted to developing multi-disciplinary studies to understand the myriad of issues associated with tobacco as a risk factor for cancer – a "cells to society" approach. We still do not know all of the factors that explain why some people who use tobacco do not get cancer and others do; nor do we fully understand why some people can easily stop using tobacco products and others have great difficulty in doing so. Scientists from the four disciplines within the Division of Cancer Prevention are considering ideas for studies to:

- Better understand the basic science, as well as the genetic and molecular epidemiology, of tobacco use;
- Employ cutting-edge imaging techniques to study the neurobiology of addiction;
- Address inequities in the burden of tobacco use by studying the influence of race/ethnicity, socioeconomic status, gender, neighborhood environment, and social context on use and cessation;
- Develop combined behavioral and pharmaco therapies to assist patients in their quit attempts; and
- Target individual perceptions of risk and create effective prevention and cessation interventions using traditional communications approaches and mobile technologies.

Examples of progress in this area include:

- A major new research program, Tobacco TIPS (Translation Into Practice Systems), is being submitted to the Cancer Prevention and Research Institute of Texas for funding. The goal of this proposed $11.5 million collaborative research program with investigators at The University of Texas School of Public Health is to increase the reach, efficacy, adoption, implementation, and sustainability of evidence-based cancer prevention services, particularly among the underserved. This proposal is based upon a novel intervention that utilizes the electronic health record to directly link smokers to evidence based Quitline tobacco cessation treatment. Details of this groundbreaking intervention, "Ask-Advise-Connect," developed by Jenny Irvin Vidrine, Ph.D., in the department of Health Disparities Research are provided within the ***Duncan Family Institute Research Resources Section*** under the *Center for Community, Implementation, and Dissemination Research;* and
- A preliminary data analysis for a potential collaborative study between Lorraine Reitzel, Ph.D., Department of Health Disparities Research, Xifeng Wu, M.D., Ph.D., Department of Epidemiology, and Carol Etzel, Ph.D., Department of Epidemiology, to study the impact of menthol cigarette use on tobacco dependence and quitting motives and behavior among cases and controls from MD Anderson's well-established Lung Study to see if previous findings can be replicated in this setting, and to improve upon existing research by additionally adjusting for smoking topography (i.e., self-reported level of inhalation of cigarettes). Previous research

suggests that menthol cigarettes may be more addictive than non-menthol cigarettes, that menthol cigarette users may have a more difficult time quitting, and that, because of the higher rates of menthol cigarette use among racial/ethnic minority smokers, this may be a contributor to racial/ethnic smoking-related health disparities. Data analysis is currently underway. This research is particularly timely given that it has the potential to inform legislation pursuant to the Family Smoking Prevention and Tobacco Control Act, which greatly expands the federal government's ability to enact new public health policies related to the use of menthol in cigarettes in the United States.

The working group will continue to meet in the upcoming year and provide opportunities for researchers to engage across disciplines to identify new multi-disciplinary ideas including, potentially, a collaborative neuro-imaging program.

***Center for Translational and Public Health Genomics***
*Director: Xifeng Wu, M.D., Ph.D., Professor and Chair, Department of Epidemiology*

The newly created Center for Translational and Public Health Genomics (CTPHG) of the Duncan Family Institute was established to bridge the gap between epidemiologic discoveries and their translation into clinical and public health applications to benefit individuals at elevated risk for cancer, cancer patients and the general population. With the rapid development of new high-throughput biomedical technologies that generate genomic information at an unprecedented pace, scientists are poised to make major breakthroughs in the pursuit of personalized risk prediction, prevention and therapy.

Leveraging MD Anderson's large patient population and its well-established foundation of epidemiologic research, the Center will serve as an institutional hub for drawing leaders from across the campus to create a critical, foundational resource that will provide an opportunity to engage all MD Anderson patients in research, advance knowledge for the next generation, and will enable the future development of personalized cancer care by providing germ-line insights. As part of this, the Center will provide translational genomics support and expertise to studies of behavioral genetics, health disparities and survivorship. Research priorities will be focused on studies that systematically assess multiple layers of information, including epidemiologic, genomic and clinical data, across the continuum of cancer development and care to provide an integrative view of cancer development, prognosis and interventive response.

A major initiative of the Center is the creation of the MD Anderson Cancer Patient Cohort (MDACPC), an exciting and high-impact initiative that will couple the newly created institutional Blood Specimen Research Resource (BSRR) to multiple patient data resources, such as the Patient History Database (PHDB), our electronic medical records system, other databases, and to genomics expertise. The ability to link inherited genetic variations, circulating biomarkers, epidemiological variables, behavioral characteristics, clinical data, and somatic molecular data (e.g., mutation, DNA copy number, mRNA and miRNA expression arrays, methylation array, and tissue microarray) of tumor tissues would make the MDACPC a unique resource for functional genomics and systems biology research. The MDACPC is poised to become a tremendous resource and make MD Anderson a leader in translational epidemiology. The recruitment of over 12,000 (as of August, 2011) newly-registered patients with biospecimens collected in just nine months is indicative of the productive path towards realizing this resource's potential. A recently-submitted $10 million National Institutes of Health grant aims to secure external funding to support expansion of the MDACPC. Importantly, this also provides every newly registered patient an opportunity to participate in clinical research to develop better approaches for future generations.

The CTPHG has a fully-functioning Genotyping Facility equipped with the most advanced genotyping technology, including a 384-well ABI TaqMan system, Illumina's iScan and BeadXpress, and the Ion Torrent next-generation sequencing platform. These instruments allow us to use comprehensive candidate SNP-based, whole-genome scanning, and targeted-sequencing approaches. They also enable molecular profiling of patient specimens, such as chromosomal

aberrations through array CGH, global methylation, gene expression, and microRNA and other non-coding RNA expression analysis. This is the only such resource at MD Anderson focused on cancer risk and prevention.

Aside from establishing patient cohorts and providing access to state-of-the-art genotyping equipment, the Center's success in building patient biospecimen and data resources has prompted the codification of departmental processes for assuring the highest and best use of these precious resources, which is serving as a "Best Practices" guideline for the entire Division and Institution. These practices will serve to guide investigators through the complexities of accessing scarce research biospecimens, increasingly important to advance prevention research in this genomic era.

In addition to the above, the CTPHG also serves to stimulate the intellectual environment for multidisciplinary interaction through its regular lectureship series, which has included noted scientists such as Michele Carbone, M.D., Ph.D., director of the University of Hawai'i Cancer Center; Ping Yang, M.D., Ph.D., Professor, Epidemiology, at the Mayo Clinic; and Thomas Sellers, Ph.D., director of the Moffitt Research Institute.

# RESEARCH RESOURCES - PROVIDING THE CRITICAL INFRASTRUCTURE TO ADVANCE THE SCIENCE OF CANCER PREVENTION

Critical to research progress is investigator access to cutting-edge scientific technologies, biospecimens, data, and expertise to enhance scientific interaction and productivity. These essential research infrastructure components are often not funded through traditional grant mechanisms or other sources of funding dedicated to research projects and programs, but are necessary for scientists to compete successfully for external funding from the National Institutes of Health (NIH), National Cancer Institute (NCI) and other peer-review funding agencies. The Duncan Family Institute, after careful consideration, invested 40% of its budget to support five research resources:

- Personalized Risk Prediction Program (PRPP);
- e-Health Technologies Core;
- Mexican-American Cohort Study;
- Center for Community, Implementation, and Dissemination Research; and
- Clinical Cancer Prevention Research Core.

During this reporting period, the Institute established the fifth of its research resources, the **Clinical Cancer Prevention Research Core.** This new resource was established to support core clinical cancer prevention research activities as well as to support the goal of strengthening the quality and impact of our basic, translational, clinical, and population-based research through superior infrastructure, expanded resources and increased efficiencies.

We are pleased with the return on our investment, as the Institute's research resources contributed to 30 grant proposals totaling more than $50M. These resources also provided core services essential to conducting 63 actively funded research studies for which total costs exceeded $72M. Highlights, which are described in more detail in the pages that follow, include:

- Support for a large-scale study led by a consortium of scientists at the University of Oxford and Harvard that resulted in the most detailed genetic map to date in African Americans published in *Nature;*
- A study involving our e-Health resource that will explore the feasibility of collecting near real-time critically important behavior-related data through sensors worn by patients or positioned in their homes and then feeding the results back to researchers (the CYCORE study);
- A novel behavioral intervention for smokers was developed in collaboration with the Harris County Hospital District and the Kelsey-Seybold clinics that significantly increased access to cessation services, especially among minority and medically underserved populations; and
- Two clinical trials for treatment of breast cancer and the High Risk Breast Cancer Cohort and Biorepository are capitalizing upon the Cancer Prevention Research Core. More than six-hundred women at elevated risk of developing breast cancer have already been identified and will be invited to join the Cohort.

***Personalized Risk Prediction Program (PRPP)***

*Co-directors:* *Chris Amos, Ph.D., Professor, Department of Epidemiology (through 8/2011)*
*Carol Etzel, Ph.D., Associate Professor, Department of Epidemiology (as of 9/2011)*
*Marsha Frazier, Ph.D., Professor, Department of Epidemiology (through 8/2011)*

**"Cancer Prevention – Personalized and Predictive"**

Personalized molecular medicine techniques are becoming valuable for prevention, screening, and early cancer diagnosis. In order to develop *tailored* interventions based on individual risk profiles, scientists are studying ways to characterize risk using state of the art techniques.

The Duncan Family Institute Personalized Risk Prediction Program (PRPP) was originally established in 2009 to promote research targeted to earlier cancer diagnosis, tailored interventions to appropriate high risk populations and advancement of effective personalized preventive approaches, thereby improving patient outcome over the entire spectrum of patient management.

Biospecimens and data are essential to research across the cancer continuum – from healthy individuals to cancer survivors. Progress in genomic medicine is made possible, in part, through the availability of large volumes of biospecimens and data. Through the generosity of our patients combined with that of the Duncan Family, MD Anderson's cancer prevention inventory of research biospecimens and data continues to grow to a scale that provides increasing statistical power to population-based studies such that investigators can use these specimens and data in novel cancer risk-prediction and outcome studies.

Long-term outcomes of the research studies supported by the PRPP include:

- Identification of genetically high risk subgroups (who might benefit disproportionately from more intensive screening, behavioral, pharmacologic, or chemoprevention interventions);
- Development of more effective screening and prevention approaches; and
- Identification of cellular pathways and networks that underlie cancer development.

The PRPP supported research project proposal development for two projects budgeted at $1.4 million. It provided services to eight funded research projects ($3.4 million in total costs) during the past year and distributed 2,500-plus biospecimen samples to support new and ongoing studies. Projects supported include:

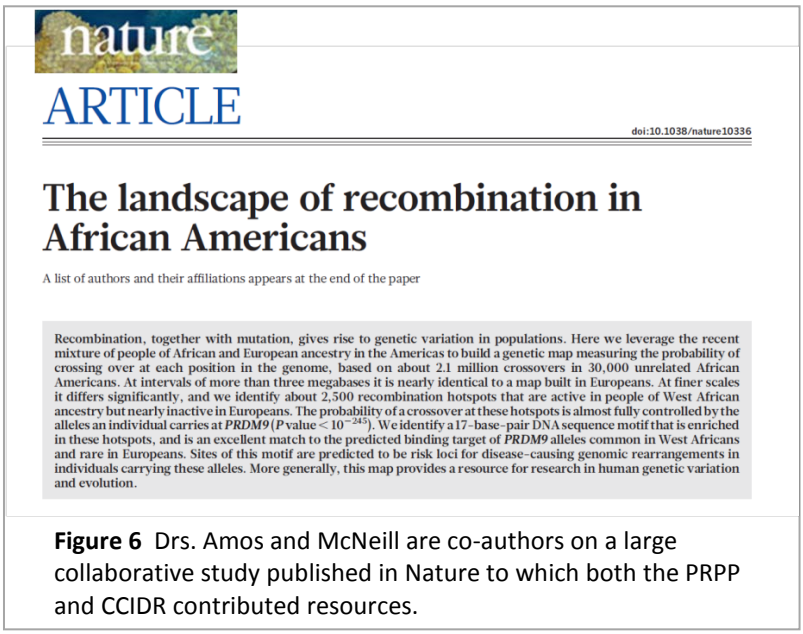
- A collaboration between Therese Bevers, M.D., and Carol Etzel, Ph.D., and others with Assurance Biosciences, Inc. (ABI) to develop a saliva-based biomarker test as a companion to mammography to assist in distinguishing benign from malignant breast disease; and
- A collaboration between the departments of Clinical Cancer Prevention, Epidemiology and the Cancer Prevention Center with Lab Discoveries, a company developing a blood test that examines differences in the expression of specific autoantibodies that may indicate the presence or absence of breast cancer.

Results of several of the projects to which PRPP contributed biospecimens and data were published, as noted in the publication list at the end of this section.

*Additional PRPP-Supported Plans and Projects*

- Support for Large-Scale Genetics and Genomics Studies:

Notably, the PRPP contributed a large pool of African-American samples to a study led by a consortium of scientists at the University of Oxford and Harvard Medical School that has constructed the most detailed genetic map to date in African Americans (Figure 6). These findings were published in *Nature* and are expected to help researchers understand the roots of specific congenital conditions that occur more often in African Americans and to discover new disease genes in all populations. Two MD Anderson investigators, Christopher Amos, Ph.D. (Department of Genetics) and Lorna H. McNeill, Ph.D., M.P.H. (Department of Health Disparities Research), contributed to the report. (*Hinch, A. G., Tandon, A., Patterson, N., Song, Y., Rohland, N., Palmer, C. D., et al. (2011). The landscape of recombination in African Americans. Nature, 476(7359), 170-175.)*


nature

ARTICLE

doi:10.1038/nature10336

The landscape of recombination in African Americans

A list of authors and their affiliations appears at the end of the paper

Recombination, together with mutation, gives rise to genetic variation in populations. Here we leverage the recent mixture of people of African and European ancestry in the Americas to build a genetic map measuring the probability of crossing over at each position in the genome, based on about 2.1 million crossovers in 30,000 unrelated African Americans. At intervals of more than three megabases it is nearly identical to a map built in Europeans. At finer scales it differs significantly, and we identify about 2,500 recombination hotspots that are active in people of West African ancestry but nearly inactive in Europeans. The probability of a crossover at these hotspots is almost fully controlled by the alleles an individual carries at *PRDM9* ($P$ value $< 10^{-245}$). We identify a 17-base-pair DNA sequence motif that is enriched in these hotspots, and is an excellent match to the predicted binding target of *PRDM9* alleles common in West Africans and rare in Europeans. Sites of this motif are predicted to be risk loci for disease-causing genomic rearrangements in individuals carrying these alleles. More generally, this map provides a resource for research in human genetic variation and evolution.

**Figure 6** Drs. Amos and McNeill are co-authors on a large collaborative study published in Nature to which both the PRPP and CCIDR contributed resources.

There are plans between investigators in the departments of Behavioral Science and Epidemiology to study genotype and phenotype relationships between tobacco cessation and cancer treatment. These plans rely upon the PRPP-supported collection of Tobacco Treatment Program patient data and biospecimens. Such data are proving to be a rich resource as collaborators mine the smoking cessation and cancer outcomes data and develop manuscripts to disseminate findings as an early step towards developing a larger study.

- Support for DNA and Tissue Bio-Banking:

During the past year, resource leaders and staff made great progress in integrating the Patient History Database (PHDB), the Texas Genetic Consortium banks (TexGen; focused on Gastrointestinal and Genitourinary cancers), and the Lyndon B. Johnson General Hospital (LBJ) bank into the Biospecimen and Data Repository and, with support from the Duncan Family Institute as well as other sources, continued to collect biospecimens and data on healthy controls, individuals at risk, cancer patients, and survivors.

The PRPP now supports sample collection and processing for the Repository of Tissue, Blood, and Saliva on Patients in the Cancer Prevention Center and is working closely with the newly developed Clinical Cancer Prevention Research Core to coordinate efforts. To date, this data and biospecimen collection inventory stands at 2,400 samples with detailed epidemiological data. Furthering the focus on breast cancer, the PRPP joined with Francisco Esteva, M.D., Ph.D., Breast Medical Oncology, to provide serum collection and processing for DNA extraction and archiving services for breast cancer cases and matched controls. As of summer 2011, there are 423 cases and 723 controls archived, providing an important component of the research infrastructure for studies of biomarkers for the presence of breast cancer. When combined with the biospecimens and data on individuals at elevated risk for breast cancer collected through the Cancer Prevention Center, scientists can launch studies to better understand markers of breast cancer progression.

The PRPP continued its close collaborations with the departments of Behavioral Science and Health Disparities Research. Sample collection and DNA extraction for Project CHURCH was completed, resulting in an inventory of over 1,200 saliva samples from this African-American population. PRPP continues to bank DNA samples for two of Dr. Wetter's research projects, *Reducing Tobacco Related Health Disparities Study (Project HEALTH)* and *Por Nuestra Salud.*

The PRPP also banks DNA for Dr. Cinciripini's Tobacco Treatment Program, prospectively for new patients seen in this clinic, and retrospectively for patients who have already completed the smoking cessation program. To date, the PRPP has collected over 350 prospective samples and 70 retrospective samples and has archived detailed epidemiological and tumor registry data on all of these samples. These types of projects are of particular interest for Cancer Prevention researchers, as they support studies to examine genetic factors associated with smoking cessation, nicotine dependence, and other behavioral risk factors related to the etiology and treatment of nicotine dependence and other co-morbid conditions using behavioral or pharmacological interventions.

*Operational Milestones Achieved*

Consistent with the goal of leveraging the Duncan Family Institute support to attract other sources of funding for research infrastructure, the resource established a charge structure to provide a mechanism for federal and other sponsored research support for the activity supported by the PRPP. The PRPP received nearly $50,000 in user fees through its charge structure mechanism. Other operational milestones achieved include completion of the website, a resource for investigators, and substantial progress in developing standardized operating procedures for biospecimen processing, supporting consistency across both the Population Science Lab (PSL) and the Biospecimen Extraction Resource.

*PRPP Infrastructure Improvements and Future Plans*

Leadership of the PRPP has transitioned to Carol Etzel, Ph.D., associate professor - Department of Epidemiology. Dr. Etzel is a biostatistician by training and has been recognized with a Faculty Scholar Award effective September 1, 2011. She is a member of the NCI U19 lung research program steering committee and co-leader of Area 3 of this program, which focuses on risk assessment model development.

Leaders of the PRPP program continue to envision a multidisciplinary, integrated program that will leverage existing faculty expertise and funding to promote transdisciplinary cancer prevention research. Scientists leading this program will interact closely with many departments, centers and research entities throughout the institution. The program will also build upon and welcome new collaborations with Baylor College of Medicine and its Dan L. Duncan Cancer Center in the areas of breast, brain, and bladder cancer, as well as with the joint Childhood Epidemiology Program with Texas Children's Hospital. Similarly, it will seek collaborative opportunities with other institutions where joining expertise and resources together allows investigators to ask and answer scientific questions beyond the reach of those in only one institution.

The resource infrastructure was strengthened through development of standard operating procedures for sample requests and new project development and data/sample inventory queries. These were published on the resource website, making access broadly available to any MD Anderson investigator. As of summer 2011, the resource has collected and banked over 20,000 samples and abstracted over 225,000 patient records from the medical records system to the MD Anderson Patient History Database (PHDB). In the past year, the resource distributed 2620 biospecimen samples to support ten requests, with an additional 15 requests in progress or pending evaluation.

New and existing complementary programs will allow the PRPP to be a leading participant in risk evaluation across the full spectrum of cancer risk prediction and provide the means to integrate and expand these efforts at MD Anderson so that we may fulfill the ultimate promise of personalized molecular medicine. To do so the resource plans the following:

- To continue the centralized collection of serum, plasma and DNA under *SampleBank – Centralized Biospecimen Repository,* but under a PRPP-managed protocol such that *cancer specific risk factor data* relevant to multidisciplinary complex disease/cancer research will be collected on all participants. Linking of PRPP biospecimen and data resources with patient-based repositories and with well-characterized epidemiological, clinical and follow-up data will enhance the value of all of these resources, and provide necessary resources to make use of new technologies in genomics and proteomics.

- To establish *RiskBank,* a web-based risk-modeling and statistical support system and repository of risk prediction methods to provide investigators with the tools needed to construct, test and implement risk assessment models across the full spectrum of cancer risk prediction. Plans for *RiskBank* also include individualized and expanded assessment tools for various cancers that build upon the existing CLEAR web-based risk tool that enables smokers to estimate their risk for lung cancer. Researchers can request services or support from RiskBank through a web-based form, currently in development (Figure 7). Scientists creating risk prediction tools will be able to download the available statistical tools at no charge.

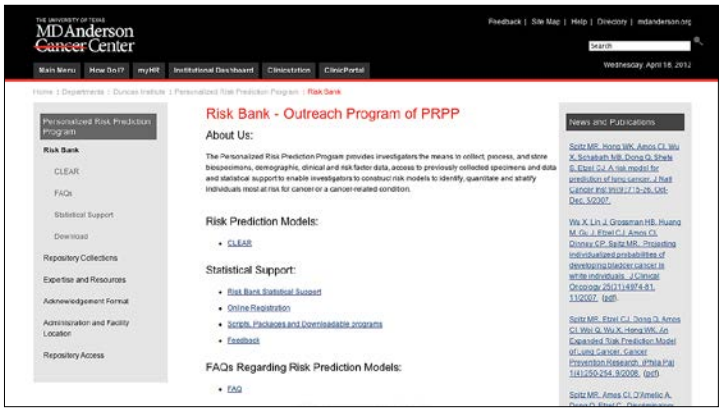



**Figure 7** RiskBank website design for implementation in 2011-2012 to make web-based risk modeling statistical support tools and methods available to investigators who construct, test and implement risk assessment models.

In the upcoming year, the PRPP will:

- Consolidate components of its sample collection, processing and archiving activities to the newly established Center for Translational and Public Health Genomics and Clinical Cancer Prevention Research Core, both supported by the Duncan Family Institute. This transition will provide economies of scale, allowing the PRPP to focus on providing tools and methods to investigators who wish to use these resources in their studies;

- Augment its inventory of data, biospecimens and associated information;

- Create a centralized repository of risk prediction tools and methods; and

- Facilitate access to expertise to support research studies targeted to risk evaluation for developing cancer, early diagnostics, prognostics, prediction of response and toxicity.

**Publications – Study Results for Research Supported by the Personalized Risk Prediction Program**

Balasenthil S, Chen N, Lott ST, Chen J, Carter J, Grizzle WE, Frazier ML, Sen S, Killary AM. A migration signature and plasma biomarker panel for pancreatic adenocarcinoma. Cancer Prev Res (Phila) 4(1):137-49, 2011.

Chang BL, Spangler E, Gallagher S, Haiman CA, Henderson B, Isaacs W, Benford ML, Kidd LR, Cooney K, Strom S, et al. Validation of genome-wide prostate cancer associations in men of African descent. Cancer Epidemiol Biomarkers Prev. 20(1):23-32, 2011.

Chen J, Wu X, Pande M, Amos CI, Killary AM, Sen S, Frazier ML. Susceptibility locus for lung cancer at 15q25.1 is not associated with risk of pancreatic cancer. Pancreas 40(6):872-5, 2011.

Cheng H, Zhang L, Cogdell DE, Zheng H, Schetter AJ, Nykter M, Harris CC, Chen K, Hamilton SR, Zhang W. Circulating plasma MiR-141 is a novel biomarker for metastatic colon cancer and predicts poor prognosis. PLoS One 6(3):e17745, 2011.

Haiman CA, Chen GK, Blot WJ, Strom SS, et al. Characterizing genetic risk at known prostate cancer susceptibility loci in African Americans. PLoS Genet 7(5):e1001387, 2011.

Haiman CA, Chen GK, Blot WJ, Strom SS, et al. Genome-wide association study of prostate cancer in men of African ancestry identifies a susceptibility locus at 17q21. Nat Genet 43(6):570-3, 2011.

Hinch AG, Tandon A, Patterson N, Song Y, Rohland N, Palmer CD, et al. The landscape of recombination in African Americans. Nature 476(7359):170-175, 2011.

Pande M, Amos CI, Eng C, Frazier ML. Interactions between cigarette smoking and selected polymorphisms in xenobiotic metabolizing enzymes in risk for colorectal cancer: A case-only analysis. Mol Carcinog 49(11):974-80, 2010.

Purdue MP, Johansson M, Zelenika D, Toro JR, Scelo G, Moore LE, Prokhortchouk E, Wu X, et.al. Genome-wide association study of renal cell carcinoma identifies two susceptibility loci on 2p21 and 11q13.3. Nat Genet 43(1):60-5, 2011.

Rothman N, Garcia-Closas M, Chatterjee N, Malats N, Wu X, et al. A multi-stage genome-wide association study of bladder cancer identifies multiple susceptibility loci. Nat Genet 42(11):978-84, 2010.

Walsh KM, Choi M, Oberg K, Kulke MH, Yao JC, et al. A pilot genome-wide association study shows genomic variants enriched in the non-tumor cells of patients with well-differentiated neuroendocrine tumors of the ileum. Endocr Relat Cancer 18(1):171-80, 2011.

Zhang Y, Bellows CF, Kolonin MG. Adipose tissue-derived progenitor cells and cancer. World J Stem Cells 2(5):103-13, 2010.

***e-Health Technology***
*Co-directors: Alex Prokhorov, M.D., Ph.D., Professor, Department of Behavioral Science*
*Ludmila Cofta-Woerpel, Ph.D., Assistant Professor, Department of Behavioral Science*

e-Health Technology supports technology-enabled primary, secondary, and tertiary cancer prevention research through the development and implementation of multi-media intervention and data-capture tools that address research questions in the areas of: 1) health information, 2) behavioral change, 3) symptoms, and 4) quality of life issues. For interventions and tools with demonstrated efficacy and broad applicability, e-Health Technology can support dissemination and implementation research. e-Health Technology-developed products can deliver information to and capture data from study participants, and can be tailored individually, consistent with the study design. An advantage of using these technologies in research studies is the ability to reach a broad range of participants in terms of geographic location, socioeconomic status and ethnicity. The Duncan Family Institute's e-Health Technology resources serve as a hub for technology-enabled research and draws investigators from across MD Anderson, contributing to the resource's role in fostering collaborations with the potential for researchers from diverse disciplines to design cancer prevention studies that attack multiple risk factors with complementary strategies.

The e-Health Technology resource developed technology platforms and tools to support 17 active and completed projects integral to over $20 million in research. Several projects are highlighted here.

- **COMBAT**
  (Principal Investigator: Alexander Prokhorov, M.D., Ph.D. and Professor, Behavioral Science).

  In this Department of Defense funded project ($3.7 million total costs), the investigators are developing and evaluating an innovative, behavioral theory-based intervention designed to address prevention and cessation of tobacco use (i.e., cigarette smoking and smokeless tobacco) among active junior enlisted Army members at Fort Hood, Texas. The primary hypothesis is that the group randomized to receive the intervention, which includes video messaging and an educational video game, will have fewer persons initiating tobacco use and will demonstrate higher tobacco cessation rates than personnel assigned to standard care. e-Health Technology has produced six 15 to 30 second video segments to be included in the educational game (Figure 8).

**Figure 8** Alex Prokhorov, Ph.D. and Joel Dunnington, M.D., discuss the e-Health supported video game with Captain Williams, their collaborator on the Department of Defense-funded COMBAT study to prevent tobacco use initiation and to increase tobacco cessation rates among junior active duty Army personnel.

- **Comparative Effectiveness Research for Cancer in Texas (CERCIT)**
  (Principal Investigator: Linda Elting, Ph.D., Professor, Biostatistics).

  The Center for Comparative Effectiveness Research for Cancer in Texas (CERCIT) is a multi-institution consortium (MD Anderson, The University of Texas Medical Branch, Rice University, Baylor College of Medicine, The University of Texas School of Public Health-Houston) funded by the Cancer Prevention Research Institute of Texas ($1.3 million total costs). CERCIT researchers will use administrative claims data linked to Texas tumor registry data to study effective and ineffective screening, prevention and treatment patterns in cancer care, as well as social, economic, and geographical disparities in the quantity, distribution, and effectiveness of cancer care in the state. The goal is to communicate findings to a broad audience including a national audience of health services researchers and providers of clinical cancer care, as well as state of Texas policy makers, cancer patients, and the general public. e-Health has been supporting this project by designing and developing a web-based tool to support dissemination goals.

- **Cyberinfrastructure for Comparative Effective Research (CYCORE)**
  (Principal Investigator: Susan Peterson, Ph.D., Associate Professor, Behavioral Science).

  This two-year project ($3.8 million total costs) is creating and testing a comprehensive state-of-the-art cyber-platform called CYCORE. It explores the feasibility of collecting behavior-related data through sensors worn by patients or positioned in their homes and then feeding the results back to researchers. e-Health is collaborating with Calit2, a partner in this study, to integrate the Ecological Momentary Assessment (EMA) platform, which allows for real-time collection of behavioral information, with mobile devices and to integrate the data collected from the devices into CYCORE's infrastructure.

- **Prevail: Indentifying and Monitoring Barriers to Smoking Cessation in Low Socio-economic Status Populations**
  (Principal Investigators: Michael Businelle, Ph.D. and Darla Kendzor, Ph.D., assistant professors at UT Health Science Center School of Public Health in Dallas, TX.

  The aim of this project is to identify key predictors of smoking relapse in a sample of low income smokers (i.e., incomes no greater than twice the poverty line) in Dallas, Texas. Participants receive a smart phone that is carried for two weeks to capture response patterns in key variables (e.g., recent alcohol use, negative affect, craving, self-efficacy for quitting) that may be predictive of relapse. e-Health has developed an EMA application for use on Android mobile devices for the study and has also created various user interfaces for both the mobile devices and desktop computers, as well as providing software installation, training and support. Drs. Businelle and Kendzor trained at MD Anderson and developed research studies leveraging the EMA platform. Now at UT Health School of Public Health in Dallas, these tenure-track faculty members are collaborating with MD Anderson colleagues to carry out their research studies.

**Figure 9** Increasingly, iPads are being evaluated for use in clinical settings to capture patient reported information electronically.

- **CAMPad – an iPad Application for Complementary and Alternative Studies**
  (Principal Investigator: Michael Fisch, M.D., Chair and Professor, General Oncology).

  The major goals of this project are to develop and install an iPad application featuring a combination of images and text-based questionnaires, secure data storage and transfer services through available network connections to send collected data back to a database server to identify and potentially address issues related to patient

adherence to cancer treatment regimens. e-Health is developing a software solution to be used on mobile devices, in particular the Apple iPad, for an off-site clinical trial (Figure 9).

e-Health Technology staff contributed their ideas and expertise, as well as project approach and estimates, to seven proposed research projects totaling over $1.3 million in budgeted costs.

Other significant accomplishments of the e-Health resource include:

- Delivering the Ecological Momentary Assessment (EMA) platform (Android), a customizable shell that can be tailored to address multiple projects with similar platform requirements. The platform includes a complex database that can serve as the blueprint for future projects that are designed to capture various types of study participant data (Figure 10). A number of research projects that will use this platform are in the development pipeline;

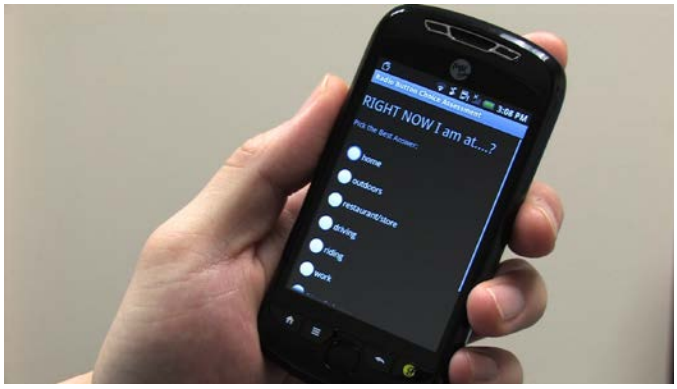



**Figure 10** Smart phones are increasingly used in assessment and intervention research studies to capture data from participants or send messages. The Android platform shown is now supported by e-Health and is being used to support an NIH-funded study on physical activity.

- Strengthening the development and delivery capability of the resource through broadened engagement with research projects, ensuring alignment of technology directions with the research directions of key investigators;

- Expanding its advisory board to engage broader cancer prevention expertise and institutional research information technology leadership;

- Developing capability through attendance at industry conferences and external training sessions, adding Apple and Android capabilities to its portfolio of development platforms, and expanding its database development expertise. Pilot versions of web-based interventions and iPad applications were delivered to test feasibility for use in research study settings;

- Investigating leasing options with a major cell phone vendor and providing an attractive and cost-effective program for their use in intervention studies;

- Overhauling its website to better support dissemination of e-Health industry news and funding opportunities, and to acquire user feedback via web-enabled survey capability; and

- Co-sponsoring a seminar series in collaboration with Faculty Development and the Division of Cancer Prevention and Population Science's Grand Rounds.

Future plans include expansion of collaborations and capability in the area of secure wireless data transfer, equipment leasing, and development of new research/educational/intervention tools (e.g., interactive avatars, mobile phone interventions, and motion sensing applications). Resource staff will expand dissemination efforts through development of a video presentation describing e-Health capabilities for posting on the e-Health website. Expanded collaborations with internal (IS, IT, Academic Technology) and external cutting-edge IT groups (Arch Image, Radiant) are planned so that the e-Health resource can facilitate bringing new technology ideas to its investigators. Efforts to identify funding for the program and researchers will continue, as will activities to organize program presentations to departments and support the e-Health lecture series, both of which are intended to strengthen the intellectual environment for researchers using technologies in their assessment and intervention research. A technical advisory committee to complement the guidance provided by the scientific advisory board may be established.

### *Mexican-American Cohort Study*

*Co-directors:* *Melissa Bondy, Ph.D., Professor, Department of Epidemiology (through 8/2011)*
*Michelle Forman, Ph.D., Professor, Department of Epidemiology (through 7/2011)*
*Sara Strom, Ph.D., Associate Professor, Department of Epidemiology (as of 8/2011)*

The Mano a Mano Cohort Study was launched in 2001 by the Department of Epidemiology at The University of Texas MD Anderson Cancer Center with resources from Texas Tobacco Settlement and philanthropic funds (Figure 11). This study forms one of the first longitudinal comprehensive cohort studies of a census-based, representative population of Mexican Americans. Data collection from primary and secondary participants focuses on the household level to provide contextual information about the environment, familial and social support systems, economic and other resources, barriers, family history of disease by nativity, and residency.


**Figure 11** Mano a Mano team members recruit cohort participants at Santa Maria Virgen Episcopal Church in Southwest Houston.

Mexican Americans are an understudied population, yet comprise the largest and fastest growing ethnic minority in the U.S. They are also the largest subgroup in Texas. The cohort has been designed specifically to:

- Understand cancer-related risk factors as they emerge in a population undergoing dramatic social change due to recent immigration and inter-generational acculturation within the construct of the family and community settings;
- Identify behavioral and genetic risk factors for cancer prevention strategies and to reduce cancer-related morbidity and mortality among MAs residing in Harris County and beyond; and
- Advance the mission of MD Anderson Cancer Center to eliminate cancer through outstanding programs that integrate patient care, research, prevention, and education.

As of May 2011, the Cohort is comprised of 15,303 households and 22,507 participants, an increase of 2,467 participants since the last report in 2010, and represents an average recruitment of 128 new households and 180 participants per month, a rate reflective of the focus this year on deploying staff to focus on research project support. Cohort staff members were able to pilot a new recruitment strategy, using negotiated enrollment sites, such as Humble Area

Ministries, North Pasadena Community Center, Kelsey-Seybold Pasadena Clinic and the Independence Heights Neighborhood Center, to increase the number of interviews in a given period of time and reduce recruitment costs. Cohort staff recently began to recruit and enroll participants in the Spring Branch and 290 areas of Houston, where the 2010 census has indicated an increase of Hispanics. Staff continue to follow-up with all participant households every six months for the first three years and then decrease follow-up to one year for those who are consistently reached. Cohort leadership met several times with the Mexican-American Cohort Community Advisory Board to provide updates and solicit input to better serve the community.

Several research studies targeted to understanding and reducing cancer risk in Mexican Americans were supported by the Mexican-American Cohort. Highlights are summarized here:

- **Latinos Contra El Cancer**
  (Principal Investigators: David Wetter, Ph.D., Chair and Professor, Department of Health Disparities Research and colleagues from MD Anderson and the UT School of Public Health, NIH U54, $4 million)

  The Mexican-American Cohort is an integral component of the research infrastructure for the recently funded NIH U54 Community Networks Program Center "Latinos Contra El Cancer". This center program is targeted towards studying innovative approaches to address the three leading modifiable risk factors for cancer: smoking, poor diet and physical inactivity.

- **Biobehavioral-Smoking Profiles of Mexican Origin Youth**
  (Anna Wilkinson, Ph.D., Assistant Professor, UT Health School of Public Health – Austin Campus, Supplement to NCI K07 CA126988, ~$750 thousand)

  Last year we reported on Dr. Wilkinson's studies to advance the understanding of the influences that increase Mexican-American youths' susceptibility and likelihood of becoming smokers. In this follow-on project, Dr. Wilkinson will re-interview the original study participants to learn about their smoking behaviors, including initiation and susceptibility. These findings will be used to inform larger, longer-term studies on how to develop more effective, culturally appropriate school- and community-based interventions to promote healthier lifestyles in this population.

Goals for the next year include:

- Continue the accrual of participants, targeting those in the 40 plus age group to reflect the demographics of the Mexican-American population in the Houston area;

- Contact Cohort participants who have been lost to follow-up to invite them back into the study;

- Obtain cancer incidence and mortality data on Cohort participants by matching the Cohort database with the Texas Cancer Registry and the CDC National Death Index databases;

- Develop new research initiatives and continue/expand intra- and inter-institutional collaborations. The Department of Epidemiology will recruit a junior faculty member to support the planning, design, and implementation of research projects that could leverage the Cohort infrastructure;

- Provide structure to build long-term research and educational collaborations with institutions such as the UT School of Public Health and the University of Houston; and

- Work with the Mexican-American community to develop health awareness programs for cancer and other relevant diseases.

**Publications – Study Results for Research Supported by the Mexican-American Cohort**

Jean RT, Wilkinson AV, Spitz MR, Prokhorov A, Bondy M, Forman MR. Psychosocial risk and correlates of early menarche in Mexican-American girls. Am J Epidemiol e-Pub 3, 2011.

Koehly LM, Ashida S, Geoergen AF, Skapinsky KF, Hadley DW, Wilkinson AV. Willingness of Mexican-american adults to share family health history with healthcare providers. Am J Prev Med 40:633-6, 2011.

Miranda PY, Wilkinson AV, Etzel CJ, Zhou R, Jones LA, Thompson P, Bondy ML. Policy implications of early onset breast cancer among Mexican-origin women. Cancer 117(2):390-7, 2011.

Ryder AB, Wilkinson AV, McHugh MK, Saunders K, Kachroo S, D'Amelio A Jr, Bondy M, Etzel CJ. The advantage of imputation of missing income data to evaluate the association between income and self-reported health status (SRH) in a Mexican American cohort study. J Immigr Minor Health 13(6): 1099-109, 2011.

Sexton KR, Brewster A, Day RS, Vernon SW, Franzini L, Bondy ML. Association between obesity over the lifetime, adult weight gain, and breast cancer risk in Mexican-American women. Am Assoc for Cancer Res Frontiers in Cancer Prevention Research Conference, November 7-10, 2010.

Sexton KR, Franzini L, Day RS, Brewster A, Vernon SW, Bondy ML. A review of body size and breast cancer risk in Hispanic and African American women. Cancer 117(23): 5271-81, 2011.

Spelman AR, Spitz MR, Kelder SH, Prokorov AV, Bondy ML, Frankowski RF, Wilkinson AV. Cognitive susceptibility to smoking: Two paths to experimenting among Mexican origin youth. Cancer Epidemiol Biomarkers Prev 18:3459-67, 2010.

Strong LL, Anderson CB, Miranda PY, Bondy ML, Zhou R, Etzel CJ, Spitz MR, Wilkinson AV. Gender differences in sociodemographic and behavioral influences of physical activity in Mexican-origin adolescents. J Phys Act Health [Epub ahead of print], 2011.

Wilkinson AV, Shete S, Bondy ML, Prokhorov AV, Spitz, MR, Sargent JD. Exposure to smoking imagery in the movies and experimenting with cigarettes among Mexican origin youth. Cancer Epidemiol Biomarkers Prev 18:3435-43, 2010.

Wilkinson AV, Shete S, Spitz MR, Swann AC. Sensation seeking, risk behaviors, and alcohol consumption among Mexican origin youth. J Adolesc Health 48(1):65-72, 2011.

**Doctoral Dissertations and Masters Theses Supported by the Mexican-American Cohort**

McQuinn, Lacey. Cross-sectional study examining the role of acculturation in self-reported hypertension among Mexican Americans in Harris county. Texas Master's Thesis, 2011.

Oluyomi, Abiodun. Objective assessment of the built environment and its relationship to physical activity and obesity. Doctoral Dissertation, 2011.

Sexton, Krystal. Lifetime changes in body mass index and risk of breast cancer in minority women. Doctoral Dissertation, 2011.

***Center for Community, Implementation, and Dissemination Research***
*Co-directors: David Wetter, Ph.D., Professor and Chair, Department of Health Disparities Research*
*Lorna McNeill, Ph.D., Assistant Professor, Department of Health Disparities Research*

**"Research with Real World Impact"**

The Center for Community, Implementation, and Dissemination Research (CCIDR) serves as an institutional resource to support research targeted to identify, develop and refine methods, strategies, and models to disseminate and implement evidence-based health behavior change, screening and early detection, diagnostic, treatment, and quality of life improvement services into public health and clinical-practice settings. Its staff is directly engaged to further the adaptation, adoption, implementation, and maintenance of innovative cancer prevention interventions in real-world public health and clinical service systems. To translate MD Anderson's scientific discoveries into real-world applications, CCIDR collaborates with different departments, programs, and research entities and the Duncan Family Institute programs. CCIDR also collaborates with other institutional entities and activities that provide service to communities.

CCIDR is comprised of a research infrastructure as well as a service component for both researchers and communities. Successful community-based implementation and dissemination research requires that projects and activities benefit both the community and the researchers. CCIDR serves both the research community and the community at large with an explicit goal of integrating research and service into existing community infrastructure and social norms.

CCIDR's efforts during the reporting year have focused on building a community research infrastructure by strengthening ties and collaboration with well-established community partners, including the Harris County Hospital District (HCHD), Windsor Village United Methodist Church, Kelsey-Seybold Clinic, and Federally Qualified Health Centers (Figure 12). CCIDR's impact is measured through the success its supported work has in changing cancer control outcomes through advances in public health. Project Quitline, described below, stands out as a notable example in this regard.

**Figure 12** Harris County Hospital District's Casa de Amigos Health Center is an example of a setting in which investigators conduct implementation and dissemination research.

A secondary impact measure is the number and quality of grants and publications supported. CCIDR has achieved significant results in both areas. In the past year, CIDDR investigators and staff have authored and/or provided support for 23 funded grants, totaling more than $36 million. Additionally, 11 grants totaling $25 million are pending review. Multiple research projects have benefitted from this research infrastructure, including MD Anderson's collaboration with the UT Health Science Center on the Clinical and Translational Science Award (CTSA) and a CPRIT grant with the Harris County Hospital District on weight control.

Highlights of CCIDR-supported research include:

- **Dissemination of a Smoking Quitline to the Underserved (Project Quitline)** (Jennifer Irvin Vidrine, Ph.D., Assistant Professor, Health Disparities Research, NIH – National Center for Chronic Disease Prevention and Health Promotion, ~$1.8 million)

  Using an enhanced dissemination approach (Ask-Advice-Connect), researchers aim to increase dissemination and use of the state smoking quitline among medically underserved and racially/ethnically diverse smokers, a population with limited access to smoking cessation resources. With support from the Duncan Family Institute, CCIDR researchers partnered with the Harris County Hospital District (HCHD) to compare an enhanced dissemination approach (Ask-Advise-Connect) to the current approach. The HCHD serves a largely minority and low-income population. Since June 2010, Project Quitline (PI: Irvin-Vidrine), has reached 67,390 patients through intake nurses at Harris County Hospital District Community Health Centers (Figure 13). Nationally, smoking quitlines reach only 1% of smokers. Smokers from intervention clinics were twenty-four times more likely to receive cessation treatment than smokers from control clinics (14.6% vs. 0.6% public health impact). In less than one year, Project Quitline has shown that an enhanced dissemination approach can significantly increase access to and use of cessation services, especially among minority and medically underserved populations (Figure 14). Investigators have partnered with other health service organizations and health care systems including Kelsey-Seybold Clinic, Good Neighbor Clinic (a Federally Qualified Health Center), and Texas United Way's 211 Helpline to replicate and expand the program.

**Figure 13** Jennifer Irvin Vidrine, Ph.D. (left), assistant professor, and Sheryl Nelson (center), senior research coordinator, both in MD Anderson's Department of Health Disparities Research, discuss the progress of the Ask-Advise-Connect initiative among community patients with Carmen Mitchell-Bibbs, a licensed professional nurse at Harris County Hospital District's Martin Luther King Jr. Health Center.

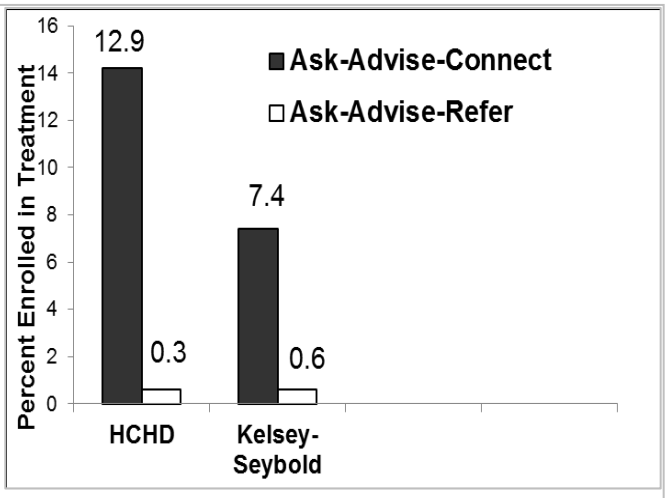



**Figure 14** Bar graph depicting results from Project Quitline. Using the Ask-Advise-Connect behavioral intervention in smokers resulted in significantly higher rates of enrollment in smoking cessation treatment in both the HCHD and Kelsey-Seybold clinics as compared to the standard Ask-Advise-Refer intervention.

- **Reducing Tobacco Related Health Disparities** (David Wetter, Ph.D., Chair and Professor, Health Disparities Research, NCI R01 ~$1.5 million)

  In this study, investigators are evaluating the efficacy and cost-effectiveness of a theoretically- and empirically-based "**M**otivation **A**nd **P**roblem **S**olving" (MAPS) intervention and proactive provision of nicotine replacement therapy (NRT) for promoting and facilitating smoking cessation among low-income smokers who are not ready

to quit. Investigators are recruiting 900 cigarette smokers attending community health clinics operated by the Harris County Hospital District (HCHD) to participate in this study. CCIDR's existing relationships established with the Harris County Hospital District during other studies facilitated the development and implementation of this study. CCIDR staff assist with recruitment from the clinics and with the design of the recruitment materials. This study provides future opportunities for new researchers, including junior faculty and postdoctoral fellows, to conduct community-based research. Researchers interested in developing interventions with underserved communities will be able to work with CCIDR to include HCHD clinics as recruitment locations.

- **African-American Cancer Prevention Project and Project CHURCH** (Lorna McNeill, Ph.D., Assistant Professor, Health Disparities Research)

This ongoing project is a prospective, longitudinal, community-based cohort study designed to investigate the role of behavioral, social, environmental, and genetic factors in health and cancer-related disparities among African Americans in Houston. Windsor Village United Methodist Church is a key partner, along with the community advisory board and 1,500 participants in the study. The project is in the middle of the third year of follow-up and has begun a new study, Healthy Habits, funded by the Houston Endowment, Inc. This new cancer prevention study focuses on increasing fruit and vegetable intake and physical activity and reducing dietary fat among overweight or obese adults. The CCIDR co-director is the principal investigator of the study. CCIDR staff members assist with various research tasks, communicate with the community advisory board, and help coordinate cancer prevention programs for church members (Figure 15).
Of note, Dr. McNeill was also recently awarded the Rogers Award for Excellence in Prevention (Figure 16).


**Figure 15** Dr. Lorna McNeill's research team in the field recruiting study participants for the "Healthy Habits" study as part of the Project CHURCH partnership with Windsor Village United Methodist Church.

Additional research activities of the CCIDR during this past year include:

- **Supporting Clinical Trials**

In addition to supporting research that addresses cancer-related health disparities, CCIDR also focuses on inequities in clinical trial participation. This is a concern, as clinical trials can provide access to the latest preventive and treatment breakthroughs that are newly translated to the clinical setting. To increase researchers' awareness of barriers to participation and strategies for improving participation and retention, CCIDR provides patient demographic profiles, cultural competency training, and assistance with grant planning and writing, as well as recruitment planning and implementation. Importantly, CCIDR provides guidance to help researchers set attainable recruitment goals, and assists departments' quality improvement efforts to increase participation. Externally, CCIDR staff provides grant writing support, cancer program planning and development, and clinical trial education to community partners, survivors, advocates, and support groups. This year, staff successfully pilot tested an interactive educational tool in 20 diverse communities to increase understanding of and interest in clinical trials. The Bingo game was a big hit with audiences; between 90% - 98% agreed that the game was a good way to learn about clinical trials, that they had a better understanding of the risks and benefits of clinical trials, and that clinical trials can be a treatment option. Subsequently, the Leukemia & Lymphoma Society and Novartis have approached CCIDR to sponsor production of game pieces and to tailor the game to specific cancers.

CCIDR monitors MD Anderson patients' participation in preventive and therapeutic clinical trials, to identify trends and opportunities for improvement. Institutionally, there has been a slight downward trend in clinical trial participation overall (FY05-09), reflective of the national downward trend in participation. Participation declined for all race/ethnicities, although it was greatest for white patients and patients of "other" race. This has resulted in a narrowing of the participation disparity among all patients, with the exception of "other" race. MD Anderson's patients of "other" race are often international patients, for whom ancillary costs of participating in a trial are much higher. In FY05, excluding patients in the "other" race category, there was a difference of 6.4% between the group with the highest participation (white patients, 21.9% participation rate) and the group with the lowest participation (Hispanic patients, 15.5% participation rate). By FY09, the participation gap had narrowed to 1.4% between White (17.6%) and Hispanic patients (16.2%). Black patients had participation rate of 16.6% in FY09. To disseminate evidence-based efforts that enhance participation and recruitment, CCIDR staff co-chairs the Community Clinical Oncology Program's (CCOP) Minority Participation Committee (MPC). The MPC hosts a quarterly webinar that highlights successful and innovative recruitment strategies, featuring both MD Anderson and external researchers. Webinar participants include more than 35 CCOP community oncology partners and researchers from cancer centers throughout the U.S.


**Figure 16** Upon accepting the Rogers Award for Excellence in Prevention from MD Anderson's president, Dr. Ronald DePinho and Ms. Regina Rogers, Dr. Lorna McNeill, co-director of the CCIDR, described how she considers her work both her career and her calling.

*"When you look at the high rates of late-stage breast cancer, the high number of black men with prostate cancer, the high rates of diabetes and heart disease, and the list goes on, you realize that there's work to do. I firmly believe that I'm here, working on cancer-related research, as my ministry or calling in life," she says. "I'm motivated every day by God to work harder, do more, experience more and feel more so that I can be of help to others."*

- **Building Community Partnerships**

CCIDR sustains and fosters long-term, equitable, and mutually beneficial community partnerships to facilitate the development, implementation, and dissemination of innovative interventions that reduce the burden of cancer for high risk and medically underserved populations. By building and maintaining long-term relationships with community partners, CCIDR staff are able to help them understand and fully participate in research and minimize the time needed for new investigators to work in community research settings. Part of building trust within the community is providing resources and meaningful support to the community. A few examples of support we provide to partners include sharing cancer information and resources, networking partners together, grant writing, coalition building, and participation on boards and grant review committees.

Below are several examples of the range of community partners with whom CCIDR staff is engaged:

- *Public hospital system* - partner with Harris County Hospital District to develop research ideas, assist with grant writing, recruit to clinical studies, and support patient navigation initiatives; and

- *Faith-based* - partner with Windsor Village United Methodist Church on Project CHURCH and additional studies to support patient navigation; meeting coordination and communication with the community

advisory board; and offering educational programs for members on smoking cessation, diet and physical activity; partner with Brentwood Baptist, Wheeler Avenue, Crossroads Community, Missouri Baptist, Living God non-denominational, St. Luke's Baptist, and Greenspoint Baptist Churches to increase understanding and awareness of clinical trials. Partner with Harris County Faith-Based Health and Wellness Network to increase awareness of research opportunities with MD Anderson;

- *Community service organizations and community-based health centers, many of which are Federally Qualified Health Centers* – partners include HOPE Clinic (strategic planning), Good Neighbor Health Center (research collaboration), Harris County Healthcare Alliance (strategic planning), Partners 4 Community Health (research collaboration), Gateway to Care (grant writing, program development), Texas Medical Center Women's Health Network (strategic planning), Leukemia and Lymphoma Society (community education and outreach, program planning), Asian Cancer Council (community education and outreach), and Las Rosas Visas breast cancer support group (community education and outreach); and

- *Comprehensive Cancer Control* – support MD Anderson's Comprehensive Cancer Control initiative by participating in and facilitating participation from community organizations and advocates to the seven goal area workgroups.

Advances in research are accelerated by the sharing of new ideas, processes and methods. The CCIDR team has presented information about its resources, community-engaged research, and opportunities for research collaborations to faculty and research staff from all the departments within the Division of Cancer Prevention and Population Sciences, as well as to clinical departments including the departments of General Oncology, Pediatrics, Leukemia and Lymphoma, Lung, and Gynecology. Also, to promote the fields of community, implementation, and dissemination research, CCIDR disseminated relevant information and resources to division faculty and partners via e-mail and hosted group viewings of AcademyHealth and NCI webinars. General education and outreach to health professionals, researchers, and partners are provided via various social media platforms, including LinkedIn, Facebook, and Twitter. Two CCIDR staff led social media communications about cancer health disparities, minority clinical trial recruitment and participation, and community-campus partnerships.

- **Enhancing the Minority and Women Clinical Trials Recruitment Program**

In December 2010, staff from CCIDR and the Minority and Women Clinical Trials Recruitment Program (MWR) participated in a 4-hour strategic planning session. The discussions resulted in the integration of the MWR program into the CCIDR's vision, mission and goals, and clarified four Center goals:

1) Achieve real world impact;
2) Reduce health inequities;
3) Sustain long-term, equitable research partnerships; and
4) Advance the field of community, implementation, and dissemination research.

An operational barrier to advancing these goals is the need for a research scientist to provide guidance and support to physician researchers interested in population research but who lack appropriate research skills. CCIDR is currently recruiting for the position. A second barrier is the need to engage a broader group of researchers with an interest in conducting community research. The CCIDR Advisory Board recommended identifying, fostering, and targeting of specific individuals whose interests more closely align with a community research approach. CCIDR's recent presentation to the Department of General Oncology faculty and staff has generated much interest, and a request for follow-up assistance, suggesting that targeted outreach is likely to be effective as researchers with an interest in community research may not be aware of CCIDR's resources and ability to overcome barriers in conducting community-based research studies. Some of this is occurring through

direct engagement on specific projects, such as participant on a quality improvement project with a Gynecologic Oncology Department team and serving as chair of the Minority Participation Committee for the Community Clinical Oncology Program.

- **Determining How Best to Support Community Research**

  During the past year, CCIDR leadership and staff conducted a series of planning meetings to determine how best to support community-based research. The outcome of the sessions, facilitated by Bill Wooten, executive director of Organizational Development, was progress towards a vision statement, goals and strategies to help guide and prioritize the work of the resource. CCIDR also focused on dissemination activities, partnering with a communications specialist to create web pages, write press releases and prepare video podcasts for CCIDR and research partners. CCIDR directors and staff participated in various trainings and conferences on community, implementation, and dissemination research to enhance their expertise and grow the capabilities of the resource.

In the upcoming year, CCDIR will focus on several developing projects, including:

- Addressing tobacco cessation interventions to impact this major cancer risk factor. The idea for this study is to develop an intervention tailored to the clinical setting, targeted to providers and patients, and informed by a range of issues including genetic, addiction neuroscience and neighborhood factors; and

- Building a multi-level intervention (i.e., clinic, provider, and patient levels) in Federally Qualified Health Centers (FQHC) that incorporates state of the science measurement of organizational factors addressing adoption, implementation, and sustainability of evidence-based clinical services. CCIDR would contribute its expertise in working with FQHCs while at the same time expand its FQHC network, enhancing CCIDR's value to other researchers who would like to conduct studies in this setting.

Plans to strengthen CCIDR's capabilities during the upcoming year include:

- Promoting awareness and use of tools supporting implementation and dissemination research;

- Completing recruitment of a research scientist;

- Developing an overall communications and promotions strategy;

- Networking with leaders in community and dissemination research, such as the University of North Carolina's TraCS program, to learn and benefit from their experiences; and

- Gaining extramural funds to further support CCIDR's vision and goals, either directly or as part of a larger program such as the developing research studies described above and center programs such as the CCSG and CTSA.

**Publications – Study Results for Research Supported by the Center for Community, Implementation, and Dissemination Research**

Reitzel LR, Chilton J, Elting L, Gibbs HR, Hernandez-Valero MA, Jones LA, Mazas C, Wetter DW, McNeill LH, et al. Recruiting and retaining African-American church-based community participants in longitudinal research: Methodology from a 3-year pilot cohort study. Poster presentation at the American Academy of Health Behavior Meeting in Hilton Head, South Carolina, 2011.

Vidrine, DJ , Vidrine JI. Active versus passive recruitment to quitline studies: public health implications. J Natl Cancer Inst 103(12):909-10, 2011.

***Clinical Cancer Prevention Research Core***

*Co-directors:* *Powel Brown, M.D., Ph.D., Professor and Chair, Department of Clinical Cancer Prevention*
*Therese Bevers, M.D., Professor, Department of Clinical Cancer Prevention and Medical Director, Cancer Prevention Center*

The Clinical Cancer Prevention Research Core (CCPRC) has been established to support core clinical cancer prevention research activities to strengthen the quality and impact of our basic, translational, clinical and population-based research. The CCPRC will serve the dual purpose of supporting the chemoprevention protocols developed and ready for implementation by Clinical Cancer Prevention faculty and collaborators, as well as establishing a shared research resource for MD Anderson investigators in the form of a High Risk Breast Cancer Cohort and Biorepository (Figure 17). The immediate objective of the High Risk Breast Cancer Cohort and Biorepository is to collect longitudinal blood samples and questionnaire information about breast cancer risk factors and clinical outcomes from a subset of cancer-free patients who are participants of the Cancer Prevention Clinic (CPC) Biorepository and are at elevated risk of developing invasive breast cancer based on a finding of precancerous conditions such as ductal carcinoma in situ or a genetic risk. The High Risk Breast Cancer Cohort and Biorepository will provide a ready-access resource for researchers interested in developing breast cancer research protocols. During this first year of operations, under the leadership of co-principal investigators, Therese Bevers, M.D. and Abenaa Brewster, M.D., progress was made to hire personnel and complete a review of the 2,929 patient records for participants in the CPC Biorepository database (Figure 18). Of these, 605 women at elevated risk of developing an invasive

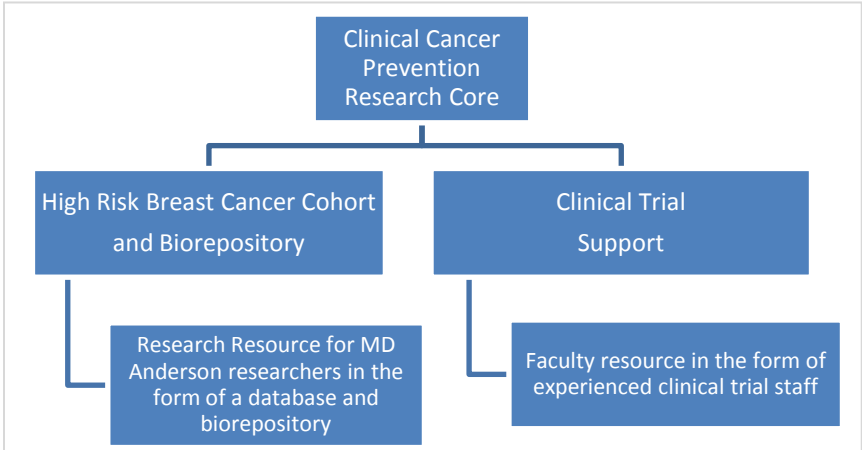



**Figure 17** The CCPRC is building resources and sharing expertise to advance studies to deliver preventive therapies to patients at high risk for cancer.

**Figure 18** Abenaa Brewster, M.D., Associate Professor in Clinical Cancer Prevention, is co-leading development of the High Risk Breast Cancer Cohort.

breast cancer have been identified. These individuals will be contacted and invited to take part in the longitudinal High Risk Breast Cancer Cohort and Biorepository.

There are two clinical trials in process that will use the services of the CCPRC. The first is "**Neoadjuvant Trial of Lapatinib for the Treatment of Women with DCIS Breast Cancer**" led by Powel Brown , M.D., Ph.D., Principal Investigator, Chair and Professor Clinical Cancer Prevention in collaboration with Henry Kuerer, M.D., Ph.D., co-Principal Investigator, Professor, Surgical Oncology. This multi-institution project, funded by the Breast Cancer Research Foundation, is a two-arm, randomized, double-blind, placebo-controlled biomarker modulation trial of lapatinib. In the proposed clinical trial, women who have newly-diagnosed ductal carcinoma in situ (DCIS) will be treated with lapatinib at the 1000 mg/day dose or with placebo for 2-6 weeks.

The second trial, "**A Multicenter Phase II Trial of PARP Inhibitor ABT-888 in Triple Negative Breast Cancer Survivors**" is led by Powel Brown, M.D., Ph.D., Principal Investigator, Chair and Professor Clinical Cancer Prevention in collaboration with Banu Arun, M.D., co-Principal Investigator, Professor, Breast Medical Oncology. This multi-center project, is expected to be funded by the National Cancer Institute Division of Cancer Prevention (NCI DCP) and will be administered through the MD Anderson Phase I/II Prevention Consortium, chaired by Dr. Powel Brown, is a Phase II, randomized, placebo-controlled, double-blinded clinical trial of PARP inhibitor ABT-888 (Veliparib) that will be administered for 8 weeks in 80 triple negative breast cancer survivors. In addition to Duncan Family Institute funding through the Clinical Cancer Prevention Research Core, support is provided by The University of Texas MD Anderson Phase I/II Prevention Consortium, N01-CN-35159.

The Clinical Cancer Prevention Research Core began operations in Fall 2010 and has made significant progress towards satisfying the main objectives of the CCPRC: building the research infrastructure supporting the immediate needs of the High Risk Breast Cancer Cohort and Biorepository. This infrastructure is largely a source for clinical research expertise and includes hiring a research nurse, data coordinators and a program analyst. This Core reflects the highly collaborative approach of its leaders to engage with colleagues across the MD Anderson campus to advance clinical prevention research.

Plans for the next year include completing hiring and training of Core staff, dissemination of information about the availability of the High Risk Breast Cancer Cohort and Biorepository to support collaborative research, and engagement with newly-hired clinical faculty to support establishing their research programs in MD Anderson's clinical settings.

# EDUCATION AND EXCELLENCE

The Duncan Family Institute Executive Committee committed 10% of the Institute's budget to activities to develop the next generations, support the current generation and assure quality of the Institute's programs through its governance and administrative management.

## *DEVELOPING THE NEXT GENERATIONS – DUNCAN FAMILY INSTITUTE MENTORED JUNIOR FACULTY FELLOWSHIP*

We have awarded three Duncan Family Institute Mentored Junior Faculty Fellowships to promising young investigators. These competitively awarded fellowships are designed to bridge the gap in funding between postdoctoral training and independent researcher status (Figure 19). They provide the mentoring and financial support for instructor-level faculty to focus on developing their research questions, generating preliminary data and enhancing their publication record to compete successfully for peer reviewed extramural grants - an early and critical milestone on the path to research independence.


**Figure 19** Fellowship recruitment at local and national meetings augments efforts to recruit new junior scientists to MD Anderson's cancer prevention research program.

We are pleased to report that our first two fellows, Drs. Francesco Versace and Larkin Strong, have successfully transitioned to tenure-track faculty positions at MD Anderson, testament to the value of this fellowship towards fostering the careers of those who will become the next generation of cancer prevention researchers. We appointed a third fellow in the past year, Jian Wang, Ph.D., Instructor in Epidemiology. Dr. Wang's research to identify the complex relationships among genetic variants, environmental risk factors (e.g., number of smokers in family and social context) and smoking cessation has the potential to inform development of personalized smoking cessation programs.

During the next year, we will actively seek to attract external candidates and modify application processes to facilitate this goal.

***Francesco Versace, Ph.D., Instructor, Department of Behavioral Science***
"**Putting Smoking Addiction in the Affective Context: Event-related Potentials to Emotional and Neutral Stimuli during a Smoking Cessation Intervention**"

We are pleased to report the first Duncan Family Institute fellow, Dr. Francesco Versace, has been appointed to a research tenure-track position in MD Anderson's department of Behavioral Science (Figure 20). In the approximately 18 months of this Duncan Fellowship, Dr. Versace was successful in establishing a trajectory towards a promising career as an independent scientist and competed successfully for his new position.

**Figure 20** Franceso Versace, Ph.D. is the Institute's first Mentored Junior Faculty Fellow.

Many studies show that difficulty in quitting smoking can be attributed to a smoker's altered emotional processes, but theories about how and why differ. The goal of Dr. Versace's research is to understand the role that these emotional processes play in smoking addiction and relapse in order to increase smoking cessation rates. The fellowship support allowed Dr. Versace to further strengthen his neuroimaging expertise and conduct new experiments that studied the role in smoking relapse of brain reward sensitivity. He received an NIH R01 grant award to support further research in this area. Dr. Versace is extending his expertise to the area of cancer survivorship. In May 2011 he received UT MD Anderson's Cancer Survivorship Research Seed Money Grant for a project entitled: "fMRI Assessment of Breast Cancer Survivors with Normal vs. Reduced Sexual Desire: The Impact of Past Chemotherapy," allowing him to extend his research beyond tobacco addiction.

**Publications**

Versace F, Bradley MM, Lang PJ. Memory and ERPs for rapidly presented emotional pictures. Experimental Brain Res 205(2):223-233, 2010.

Versace F, Minnix JA, Robinson JD, Lam CY, Brown VL, Cinciripini PM. Brain reactivity to emotional and neutral cues in smokers. Addict Biol 16(2):296-307, 2011.

Robinson JD, Lam CY, Carter BL, Minnix JA, Cui Y, Versace F, Wetter DW, Cinciripini PM. A multimodal approach to assessing the impact of nicotine dependence, nicotine abstinence, and craving on negative affect in smokers. Exp Clin Psychopharmacol 19(1):40-52, 2011.

### *Larkin Strong, Ph.D., Instructor, Department of Health Disparities Research*

### "Opportunities for Cancer Prevention: Identifying Multilevel Influences of Physical Activity and Obesity in Diverse Populations"

Dr. Strong is the second of our Duncan Family Institute Fellows (Figure 21). In just 9 months, she was able to work closely with her mentor, Dr. David Wetter, to focus her research and move towards research independence. She competed successfully for a tenure-track position at the assistant professor level in the department of Health Disparities Research. Dr. Strong investigates how physical, social and cultural contexts influence health behaviors and outcomes in diverse populations. For her fellowship, she developed a project to assess multi-level influences of physical activity in Mexican-American adolescents, looking at individual (e.g., sociodemographics), interpersonal (e.g., social support) and neighborhood (e.g., perceived and objective measures) factors using data from the MATCh (Mexican American Tobacco Use in Children) Study. She is also conducting a study to examine the associations of physical activity, walking and sedentary behaviors with perceptions of the neighborhood physical and social environments in an African-American church-based cohort. Dr. Strong is a co-investigator on the Community Networks Program "Por Nuestra Salud" and has submitted a proposal to the NHLBI Mentored Research Scientist Development Award (K01) program for a project entitled "*Pathways Linking Neighborhoods and Activity Behaviors in Diverse Population.*"

**Figure 21** Larkin Strong, Ph.D. is the Institute's second Mentored Junior Faculty Fellow. She is shown here (center) in discussion with her mentors, Drs. David Wetter and Lorna McNeill.

**Publications**

Strong LL, Anderson CB, Miranda PY, Bondy ML, Zhou R, Etzel CJ, Spitz MR, Wilkinson AV. Gender differences in sociodemographic and behavioral influences of physical activity in Mexican-origin adolescents. J Phys Act Health [Epub ahead of print].

***Jian Wang, Ph.D., Instructor, Department of Epidemiology***

**"Risk Modeling Using Mediation Analysis and Bayesian Network Recovery with Application to a Smoking Cessation Study"**

**Figure 22** Jian Wang, Ph.D., the Institute's third Mentored Junior Faculty Fellow.

Dr. Jian Wang is the third and newest Duncan Family Institute Fellow (Figure 22). Her research in novel statistical approaches for modeling smoking cessation will help to identify the complex relationships among genetic variants, environmental risk factors (e.g., number of smokers in family and social context) and smoking cessation based on two rigorous statistical approaches: mediation analysis and Bayesian network recovery approaches. Results of her studies have the potential to lead to the development of a risk model for smoking cessation that considers the interactions between genetic variants, negative affects and pharmacological treatments. Such a model could provide insights into the development and tailoring of both prevention strategies for individuals at risk for nicotine dependence and effective pharmacological interventions for current smokers who wish to quit. Dr. Wang's long-term career goal is to become an independent researcher in behavioral and statistical genetics. The Duncan Family Institute fellowship will provide her an opportunity to integrate her knowledge of theoretical statistics, epidemiology, behavioral science, and genetics through work with expert mentors on multidisciplinary projects, an important next step towards career independence.

## *INVESTING IN THE CURRENT GENERATIONS*

The Institute contributed to enhancing the intellectual environment by providing support to six speakers in collaboration with Leonard Zwelling, M.D., UT System Health Fellow and the Division of Cancer Prevention and Population Sciences' Cancer Prevention Research Training Program Grand Rounds lecture series (Figure 23). Topics were diverse, addressing a range of real world issues relevant to cancer prevention including:

- "Impending Primary Care Physician Shortages and Graduate Medical Education: Implications for Academic Medical Centers and Cancer Prevention" (Russ Robertson, M.D., Northwestern University);
- "An Ounce of Prevention" (Ken Shine, M.D., executive vice chancellor for health affairs, UT System);
- "Only 10 Seconds to Care: The Promise of Healthy Survivorship" (Wendy Harpham, M.D., Presbyterian Hospital, Dallas);
- "After the Election Deluge: Implementing Health Reform in 2011 and 2012" (Norman Ornstein, American Enterprise Institute);
- "The Opportunities for "Real" Individualized Preventive Care in "Direct Practices…" Battling Cancer ONE Patient at a Time" (Marcy Zwelling, M.D.); and

**Figure 23** Duncan Family Institute-sponsored lectures are publicized throughout MD Anderson, drawing faculty from diverse fields to learn how people are thinking about cancer prevention and risk reduction.

- "Uncle Sam MD: Federal Regulation and the Practice of Medicine" (Scott Gottlieb, M.D., columnist, Forbes.com, and resident fellow at the American Enterprise Institute).

The Institute's science is disseminated through newsletters, blog posts and via video, posted on the Institute's website and YouTube (Figure 24).

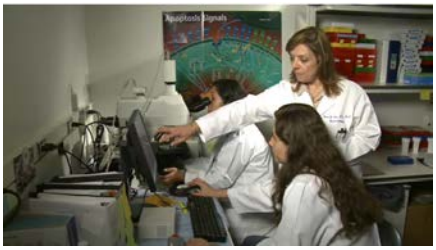


**Figure 24** Videos highlighting the work of Duncan Family Institute scientists are featured on MD Anderson's YouTube website.

## *PLANNING FOR EXCELLENCE AND BUILDING FOR THE FUTURE*

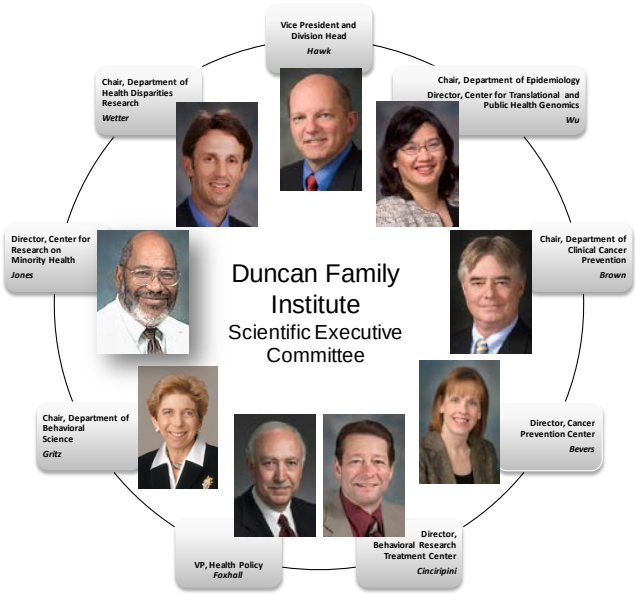



**Figure 25** Cancer Prevention research and clinical department chairs and center directors meet regularly to guide Institute investments and evaluate productivity.

The Duncan Family Institute had a full and productive year developing its programs and resources. The Executive Committee, whose members include the VP for Cancer Prevention; the chairs of the departments of Behavioral Science, Clinical Cancer Prevention, Epidemiology, and Health Disparities Research; and the directors for the Behavioral Research and Treatment Center, the Cancer Prevention Center, and the Center for Research on Minority Health; and the Vice President for Health Policy, meet biweekly to set research priorities in areas of greatest promise (Figure 25). The Executive Committee monitors and evaluates the Institute's investments to assure they remain aligned with the intentions of those whose gifts made the Institute possible and that the productivity of these investments continues to be realized, ultimately in the form of real-world impact. Members actively promote the Institute's initiatives to colleagues across the campus and, through their leadership roles, regionally and nationally to broaden the reach and collaborative opportunities provided through the Institute. Staff members affiliated with the Division of Cancer Prevention and Population Sciences were engaged in establishing, managing, facilitating, and promoting the Institute's initiatives, measuring and reporting on scientific progress, and disseminating information on Institute research resources and funding opportunities.

Over the next year, the Scientific Executive Committee has defined potential new directions for development in areas that include cancer survivorship research, image-based screening and early detection, and global cancer prevention programs. Further development of the energy balance, integrative health, and tobacco research initiatives are planned, as is investment in research resources and cohorts, which are critical research infrastructure components for population and community-based studies.

What follows are summaries of the background and scientific accomplishments of Duncan Family Institute leadership and awardees, providing a snapshot of the breadth of research interests, national and international engagement, and contributions of those who are joined together to advance the science and practice of cancer prevention.

# DUNCAN FAMILY INSTITUTE SCIENTIFIC LEADERS AND RESEARCHERS

**Ernest T. Hawk, M.D., M.P.H.**, is vice president and division head for Cancer Prevention and Population Sciences at The University of Texas MD Anderson Cancer Center and holds the Boone Pickens Distinguished Chair for Early Prevention of Cancer.

Prior to his appointment at MD Anderson in December 2007, Dr. Hawk held several positions at the National Cancer Institute (NCI) in Bethesda, MD, since 1996. He most recently served as director of the Office of Centers, Training and Resources. His other NCI posts included chief and medical officer in the Gastrointestinal and Other Cancers Research Group, medical officer in the Chemoprevention Branch and chair of the Translational Research Working Group.

Dr. Hawk has been involved in preclinical, translational, and clinical prevention research focused on nonsteroidal anti-inflammatory drugs and COX-2 inhibitors, and has earned numerous awards, including the prestigious NCI Research Award for Distinguished Achievement in Cancer Prevention. Dr. Hawk currently serves as deputy editor for Cancer Prevention Research and is a member of the External Advisory Boards of five NCI-designated cancer centers.

Dr. Hawk earned his M.D. from Wayne State University School of Medicine in Detroit, MI and his M.P.H. from Johns Hopkins University, Baltimore, MD. He completed a clinical internship in Internal Medicine from Emory University Affiliated Hospitals, Atlanta, GA; a clinical fellowship in Medical Oncology at the University Of California, San Francisco, San Francisco, CA and a research fellowship in cancer prevention at the National Cancer Institute, Bethesda, MD.

**Selected publications:**


1. Steinbach G, Lynch PM, Phillips R, Wallace M, **Hawk E**, Gordon G, Sherman J, et al: The effect of celecoxib, a cyclooxygenase-2 inhibitor, in familial adenomatous polyposis. N Engl J Med 342:1946-1952, 2000
2. Solomon SD, McMurray JJV, Pfeffer MA, Wittes J, Fowler R, Finn P, Anderson WF, Zauber A, **Hawk E**, Bertagnolli M, for the Adenoma Prevention with Celecoxib (APC) Study Investigators: Cardiovascular risk associated with celecoxib in a clinical trial for colorectal adenoma prevention. N Engl J Med 352:1071-1080, 2005
3. Bertagnolli MM, Eagle CJ, Zauber AG, Redston M, Solomon SD, Kim K-M, Tang J, Rosenstein RB, Wittes J, Corle D, Hess TM, Woloj GM, Boisserie F, Anderson WF, Viner JL, Bagheri D, Burn J, Chung DC, Dewar T, Foley TR, Hoffman N, Macrae F, Pruitt RE, Saltzman JR, Salzberg B, Sylwestrowicz T, Gordon GB, **Hawk ET** for the APC Study Investigators: Celecoxib for the prevention of sporadic colorectal adenomas. N Engl J Med 355:873-884, 2006
4. Solomon SD, Pfeffer MA, McMurray JJV, Fowler R, Finn P, Levin B, Eagle C, **Hawk E**, Lechuga M, Zauber AG, Bertagnolli MM, Arber N, Wittes J for the APC and PreSAP Trial Investigators: Effect of celecoxib on cardiovascular events and blood pressure in two trials for the prevention of colorectal adenomas. Circulation 114:1028-1035, 2006
5. Meyskens, Jr. FL, McLaren CE, Pelot D, Fujikawa-Brooks S, Carpenter PM, **Hawk E**, Kelloff G, Lawson MJ, Kidao J, McCracken J, Aibers CG, Ahnen DJ, Turgeon DK, Goldschmid S, Lance P, Hagedorn CH, Gillen DL, Gerner EW: Difluoromethylornithine plus Sulindac for the prevention of sporadic colorectal adenomas: A randomized placebo-controlled, double-blind trial. Cancer Prev Res 1:32-38, 2008
6. Bertagnolli MM, Eagle CJ, Zauber AG, Redston M, Breazna A, Kim K, Tang J, Rosenstein RB, Umar A, Bagheri D, Collins NT, Burn J, Chung DC, Dewar T, Foley TR, Hoffman N, Macrae F, Pruitt RE, Saltzman JR, Salzberg B, Sylwestrowicz T, **Hawk ET**: Adenoma Prevention with Celecoxib Study Investigators. Five-year efficacy and safety analysis of the Adenoma Prevention with Celecoxib Trial. Cancer Prev Res 2:310-321, 2009
7. Lynch PM, Ayers GD, **Hawk E**, Richmond E, Eagle C, Woloj M, Church J, Hasson H, Patterson S, Half E, Burke CA: The safety and efficacy of celecoxib in children with familial adenomatous polyposis. Am J Gastroenterol 105:1437-1443, 2010
8. Gu J, Ajani JA, **Hawk ET**, Ye Y, Lee JH, Bhutani MS, Hofstetter WL, Swisher SG, Wang KK, Wu X. Chromosomal Aberrations Predict Malignant Progression of Esophageal Adenocarcinoma: a Genome-wide High-Density SNP Array Analysis. Cancer Prev Res (Phila Pa) 3(9):1176-86, 2010

**Christopher I. Amos, Ph.D.**, is a professor in the Department of Genetics. He also directs the Human Pedigree Analysis Resource, a core facility of the Cancer Center Support Grant which supports research on individuals at increased familial risk for developing cancer.

Dr. Amos' research has ranged from investigating familial factors for prostate, head and neck, lung, and colon cancers to the study of Peutz-Jeghers Syndrome, a rare syndrome predisposing to polyps and multiple cancers. He is currently leading a study to identify genetic risk factors for lung cancer using a genome-wide association approach. By this method, his team identified novel loci influencing lung cancer susceptibility in a region of chromosome 15q containing acetyl-cholinergic acid receptors and additional loci on chromosome 5p near the hTERT gene and in the HLA region of chromosome 6p. His team has also recently completed the first genome-wide scan in the U.S. to identify genetic risk factors for melanoma.

Dr. Amos has directed the statistical genetics core for the North American Rheumatoid Arthritis Consortium and the Genetic Epidemiology of Lung Cancer Consortium. He also directs the informatics core of Dr. Louise Strong's NIH-funded program project grant (P01) entitled "Mutational model for childhood cancer" and of a grant from Genome Ontario. Dr. Amos serves as the Secretary/Treasurer for the International Genetic Epidemiology Society and has served as its President.

Dr. Amos earned an M.S. and Ph.D. in Biometry from LSU Medical Center in New Orleans, LA. He has appointments in the Departments of Bioinformatics and Computational Biology at MD Anderson, the Department of Epidemiology at the UT School of Public Health, the Graduate School of Biomedical Science at UT Health Science Center and Rice University.

**Selected Publications:**


1. **Amos CI**, Wu X, Broderick P, Gorlov IP, Gu J, Eisen T, Dong Q, Zhang Q, Gu X, Vijayakrishnan J, Sullivan K, Matakidou A, Wang Y, Mills G, Doheny K, Tsai YY, Chen WV, Shete S, Spitz MR, Houlston RS. Genome-wide association scan of tag SNPs identifies a susceptibility locus for lung cancer at 15q25.1. Nat Genet 40(5):616-22, 5/2008. e-Pub 4/2/2008. PMID: 18385676.
2. Wei C, **Amos CI**, Zhang N, Wang X, Rashid A, Walker CL, Behringer RR, Frazier ML. Suppression of peutz-jeghers polyposis by targeting Mammalian target of rapamycin signaling. Clin Cancer Res 14(4):1167-71, 2008.
3. Pande M, Spitz MR, Wu X, Gorlov IP, Chen W, **Amos CI.** Novel genetic variants in the chromosome 5p15.33 region associate with lung cancer risk. Carcinogenesis. e-Pub 7/2011.
4. Peng B, **Amos CI**. Forward-time simulation of realistic samples for genome-wide association studies. BMC Bioinformatics 11(1):442, 2010. e-Pub 9/2010. PMCID: PMC2939614.
5. Fang S, Krahe R, Lozano G, Han Y, Chen W, Post SM, Zhang B, Wilson CD, Bachinski LL, Strong LC, **Amos CI.** Effects of MDM2, MDM4 and TP53 codon 72 polymorphisms on cancer risk in a cohort study of carriers of TP53 germline mutations. PLoS One 5(5):e10813, 2010. PMCID: PMC2877078.
6. Xu Y, Peng B, Fu Y, **Amos CI.** Genome-wide algorithm for detecting CNV associations with diseases. BMC Bioinformatics 12(1):331.

**Karen Basen-Engquist, Ph.D., M.P.H**., is a professor of Behavioral Science. Her research focuses on cancer survivors and the role of health behavior interventions in decreasing the severity of late effects, improving physical functioning, optimizing quality of life, and reducing risk of chronic diseases. In addition, she studies intervention methods for behavioral change and innovative real-time methods for assessing symptoms and behavior in cancer patients and survivors. She has had an R01 study funded by the NCI to investigate the mechanisms of exercise adoption and maintenance in endometrial cancer survivors, using a social cognitive theory model that tests the social, physiological, and behavioral predictors of exercise adherence. In addition, she directs the Patient-Reported Outcomes, Survey, and Population Shared Resource (PROSPR), which provides technical assistance and support for investigators who conduct clinical, behavioral, and survivorship research that uses participant-reported outcomes. Dr. Basen-Engquist chairs MD Anderson's working group for cancer survivorship research, and is in charge of organizing the development of a survivorship research center which will provide seed money funding to researchers and provide research symposia on cancer survivorship.

Dr. Basen-Engquist received her Ph.D. in Community Psychology from the University of Texas at Austin in 1989, and her Masters in Public Health (M.P.H.) from The University of Texas- Houston Health Science Center in 1991. She previously served on the faculty of the University of Texas School of Public Health from 1991 to 1996.

**Selected Publications:**


1. Hughes DC, Lenihan DJ, Harrison CA, **Basen-Engquist KM**. Exercise Intervention for Cancer Survivors with Heart Failure: Two Case Reports. J Exerc Sci Fit 9(1):65-73, 2011. PMCID: PMC3121107.
2. Patrick K, Wolszon L, **Basen-Engquist KM**, Demark-Wahnefried W, Prokhorov AV, Barrera S, Baru C, Farcas E, Krueger I, Palmer D, Raab F, Rios P, Ziftci C, Peterson S. CYberinfrastructure for COmparative effectiveness REsearch (CYCORE): improving data from cancer clinical trials. Transl Behav Med 1(1):83-88, 3/2011. e-Pub 12/2010. PMCID: PMC3065645.
3. **Basen-Engquist K**, Carmack CL, Perkins H, Hughes D, Serice S, Scruggs S, Pinto B, Waters A. Design of the steps to health study of physical activity in survivors of endometrial cancer: testing a social cognitive theory model. Psychol Sport Exerc 12(1):27-35, 1/2011. PMCID: PMC3014624.
4. Jovanovic JL, Hughes DC, Baum GP, Carmack C, Greisinger AJ, **Basen-Engquist K**. Accelerometry and self-report in sedentary populations. Am J Health Behav 35(1):71-80, Jan-Feb, 1/2011.
5. Hughes D, Baum G, Jovanovic J, Carmack C, Greisinger A, **Basen-Engquist K**. An acute exercise session increases self-efficacy in sedentary endometrial cancer survivors and controls. J Phys Act Health 7(6):784-793, 11/2010.
6. Shinn EH, Swartz RJ, Thornton BB, Spiess PE, Pisters LL, **Basen-Engquist KM.** Testis cancer survivors' health behaviors: comparison with age-matched relative demographically-matched population controls. J Clin Oncol 28(13):2274-2279, 5/2010. e-Pub 4/2010. PMCID: PMC2860440.
7. **Basen-Engquist K**, Scruggs S, Jhingran A, Bodurka DC, Lu K, Ramondetta L, Hughes D, Carmack Taylor C. Physical activity and obesity in endometrial cancer survivors: associations with pain, fatigue, and physical functioning. Am J Obstet Gynecol 200(3):288.e1-8, 3/2009. e-Pub 12/2008. PMCID: PMC2666540.
8. Perkins HY, Baum GP, Taylor CL, **Basen-Engquist KM**. Effects of treatment factors, comorbidities and health-related quality of life on self-efficacy for physical activity in cancer survivors. Psychooncology 18(4):405-411, 4/2009.
9. **Basen-Engquist K**, Hughes D, Perkins H, Shinn E, Taylor CC. Dimensions of physical activity and their relationship to physical and emotional symptoms. J Cancer Surviv 2(4):253-261, 12/2008. e-Pub 10/2008.

**Therese B. Bevers, M.D.,** is professor of Clinical Cancer Prevention and the medical director of the Cancer Prevention Center and prevention outreach programs at MD Anderson Cancer Center.

In her role as medical director, Dr. Bevers has overseen the growth and program development of the Cancer Prevention Center - the first comprehensive clinical cancer prevention service program in the country - since its opening in 1996.

Her clinical and research interests are in the area of breast cancer prevention, screening and diagnosis. She was the MD Anderson principal investigator (PI) on the groundbreaking Breast Cancer Prevention Trial which demonstrated that tamoxifen reduced the risk of developing breast cancer by one half and the STAR trial which showed that raloxifene had similar benefits but fewer risks. She is currently the institutional PI of a cancer prevention study of polyphenon E, an active substance of green tea, in women at increased risk for breast cancer. Dr. Bevers chairs the National Comprehensive Cancer Network's guideline panels on Breast Cancer Screening and Diagnosis and Breast Cancer Risk Reduction.

She is the recipient of many awards including the Julie and Ben Rogers Award for Excellence in Prevention in 2006, the Kathryn S. Stream Award for Excellence in Women's Health in 2011 and the Faculty Achievement Award in Prevention in 2011.

**Selected Publications:**


1. Shen Y, Dong W, Esteva FJ, Kau SW, Theriault RL, **Bevers TB**. Are there racial differences in breast cancer treatments and clinical outcomes for women treated at MD Anderson Cancer Center? Breast Cancer Res Treat 102:347-56, 9/2006.
2. Vogel VG, Costantino JP, Wickerham DL, Cronin WM, Cecchini RS, Atkins JN, **Bevers TB**, Fehrenbacher L, Pajon ER, Wade JL, Robidoux A, Margolese RG, James J, Lippman SM, Runowicz CD, Ganz PA, Reis SE, McCaskill-Stevens W, Ford LG, Jordan VC, Wolmark N, Wolmark N. Effects of tamoxifen vs raloxifene on the risk of developing invasive breast cancer and other disease outcomes: The NSABP Study of Tamoxifen and Raloxifene (STAR) P-2 Trial. JAMA 295(23):2727-41, 2006.
3. Dong W, Berry DA, **Bevers TB**, Kau SW, Hsu L, Theriault RL, Shen Y. Prognostic role of detection method and its relationship with tumor biomarkers in breast cancer: The University of Texas MD Anderson Cancer Center experience. Cancer Epidemiol Biomarkers Prev 17(5):1096-103, 5/2008.
4. Legault C, Maki PM, Resnick SM, Coker L, Hogan P, **Bevers TB,** Shumaker SA. Effects of Tamoxifen and Raloxifene on Memory and Other Cognitive Abilities: Cognition in the Study of Tamoxifen and Raloxifene. J Clin Oncol 27(31):5144-52, 2009. PMCID: PMC2773473.
5. Cyrus-David M, King J, **Bevers T**, Robinson E. Validity assessment of the Breast Cancer Risk Reduction Health Belief scale. Cancer 115(21):4907-16, 2009
6. Vogel VG, Costantino JP, Wickerham DL, Cronin WM, Cecchini RS, Atkins JN, **Bevers TB**, Fehrenbacher L, Pajon ER, Wade JL, Robidoux A, Margolese RG, James J, Runowicz CD, Ganz PA, Reis SE, McCaskill-Stevens W, Ford LG, Jordan VC, Wolmark N. Update of the NSABP Study of Tamoxifen and Raloxifene (STAR). Cancer Prev Res (Phila Pa) 3(6):696-706, 6/2010.
7. Mazouni C, Sneige N, Rouzier R, Balleyguier C, **Bevers T**, André F, Vielh P, Delaloge S. A nomogram to predict for malignant diagnosis of BI-RADS Category 4 breast lesions. J Surg Oncol 102(3):220-4, 9/2010.
8. Espeland MA, Shumaker SA, Limacher M, Rapp SR, **Bevers TB**, Barad DH, Coker LH, Gaussoin SA, Stefanick ML, Lane DS, Maki PM, Resnick SM for the WHIMS and CoSTAR Study Groups. Relative Effects of Tamoxifen, Raloxifene, and Conjugated Equine Estrogens on Cognition. Journal of Women's Health 19(3):371-9, 2010.

**Powel H. Brown, M.D., Ph.D.**, is a professor of Medicine and breast medical oncologist and Chairman in the Department of Clinical Cancer Prevention at The University of Texas MD Anderson Cancer Center.

Prior to his appointment at MD Anderson in September 2009, Dr. Brown was the Associate Director for Cancer Prevention at the Dan L. Duncan Cancer Center at Baylor College of Medicine. He has been caring for women with breast cancer for over 25 years and has focused his research on identifying critical signaling pathways in breast cancers that might be targeted for prevention and treatment.

Dr. Brown has demonstrated that drugs related to vitamin A prevent ER-negative breast cancer in animal models and has conducted a human clinical trial testing the synthetic Vitamin A analog bexarotene for its ability to prevent cancer in women at high risk of breast cancer. He has also demonstrated that signal transduction inhibitors suppress the progression of non-invasive breast cancer in animal models and has developed a clinical trial to determine the ability of a receptor tyrosine kinase inhibitor to inhibit the growth and progression of ductal carcinoma in situ (DCIS) breast cancer. He is now focused on using genomics and proteomics to identify safe and effective targeted drugs for breast cancer prevention and treatment, particularly for the aggressive and difficult to treat "triple-negative" breast cancer.

A native of Van Nuys, California, Dr. Brown earned his bachelor's degree at the University of North Carolina and his medical degree and Ph.D. from New York University. He completed an internal medicine internship and residency at Duke University, a medical oncology clinical fellowship at the National Cancer Institute (NCI) and a research fellowship at the Navy Medical Oncology Branch, National Cancer Institute.

**Selected publications:**


1. DeNardo DG, Kim HT, Hilsenbeck S, Cuba V, Tsimelzon A, **Brown PH**. Global gene expression analysis of estrogen receptor transcription factor cross talk in breast cancer: identification of estrogen-induced/activator protein-1-dependent genes. Mol Endocrinol 19(2):362-78, 2005.
2. **Brown PH**, Subbaramaiah K, Salmon AP, Baker R, Newman RA, Yang P, Zhou XK, Bissonnette RP, Dannenberg AJ, Howe LR. Combination chemoprevention of HER2/neu-induced breast cancer using a cyclooxygenase-2 inhibitor and a retinoid X receptor-selective retinoid. Cancer Prev Res (Phila Pa) 1(3):208-14, 2008.
3. Shen Q, Uray IP, Li Y, Zhang Y, Hill J, Xu XC, Young MR, Gunther EJ, Hilsenbeck SG, Colburn NH, Chodosh LA, **Brown PH**. Targeting the activator protein 1 transcription factor for the prevention of estrogen receptor-negative mammary tumors. Cancer Prev Res (Phila Pa) 1(1):45-55, 2008.
4. Medina D, Kittrell F, Hill J, Zhang Y, Hilsenbeck SG, Bissonette R, **Brown PH**. Prevention of tumorigenesis in p53-null mammary epithelium by rexinoid bexarotene, tyrosine kinase inhibitor gefitinib, and celecoxib. Cancer Prev Res (Phila Pa) 2(2):168-74, 2009.
5. Chen L, Krisko TI, Speers CW, Reif D, **Brown PH**. Inhibition of the p38 kinase suppresses the proliferation of p53 mutated and ER-negative human breast cancer cells. Cancer Research 1:69(23):8853-61, 2009.
6. Creighton CJ, Fu X, Hennessy BT, Casa AJ, Zhang Y, Gonzalez-Angulo AM, Lluch A, Gray JW, **Brown PH**, Hilsenbeck SG, Osborne CK, Mills GB, Lee AV, Schiff R. Proteomic and transcriptomic profiling reveals a link between the PI3K pathway and lower estrogen receptor (ER) levels and activity in ER+ breast cancer. Breast Cancer Res 12(3):R40. 2010.
7. Li Y, Shen Q, Kim HT, Bissonnette RP, Lamph WW, Yan B, **Brown PH**. The rexinoid bexarotene represses cyclin D1 transcription by inducing the DEC2 transcriptional repressor. Breast Cancer Res Treat 128(3):667-77, 8/2011.
8. Wang C, Mayer JA, Mazumdar A, Fertuck K, Kim H, Brown M, **Brown PH**. Estrogen Induces c-myc Gene Expression via an Upstream Enhancer Activated by the Estrogen Receptor and the AP-1 Transcription Factor. Mol Endocrinol 25(9):1527-38, 9/2011.
9. Uray IP, **Brown PH**. Chemoprevention of Hormone Receptor-negative Breast Cancer: New Approaches Needed. Recent Results Cancer Res(188):147-62, 2011.
10. Zhang G, Brewster A, Guan B, Fan Z, **Brown PH**, Xu XC. Tumor-Suppressor Activity of RRIG1 in Breast Cancer. BMC Cancer 11:32, 2011.

**Paul M. Cinciripini, Ph.D.,** is professor and deputy chair of the Department of Behavioral Science, and director of the Tobacco Treatment Program, at the University of Texas MD Anderson Cancer Center. He has over 25 years experience conducting basic and clinical research in the area of smoking cessation and nicotine psychopharmacology.

Dr. Cinciripini's research includes studies on developing novel behavioral and pharmacological treatments for nicotine dependence, studies of nicotine titration and compensation, psychophysiological effects of nicotine during stress, individual differences in the effects of nicotine on EEG and cardiovascular activity, genetic factors of treatment outcome, pharmacogenetic effects of antidepressants during smoking cessation, and recent studies using startle probe and EEG/ERP methodology to examine the relations between genetics, emotional reactivity, nicotine exposure, and nicotine withdrawal. He has also studied the effects of depression, coping behavior and self-efficacy as well as genetic factors related to nicotine dependence in response to both behavioral and pharmacological interventions.

In addition to his sponsored research, Dr. Cinciripini also serves as the Director of a large clinical service —the Tobacco Treatment Program, which offers in-person behavioral counseling and tobacco-cessation pharmacological treatment to all MD Anderson patients and employees.

Dr. Cinciripini has been the recipient of several NIH, extramural and industry-sponsored research grants and is the author of over 100 articles and book chapters. Dr. Cinciripini is the PI/site PI on four NIH sponsored clinical trials and three subcontracts evaluating smoking cessation medications, treatment of psychiatric co-morbid disorders, pharmacogenetics, and differences between smokers and nonsmokers in specific brain areas associated with reward sensitivity, neural modulation of craving, and attentional bias. Over the last 10 years, Dr. Cinciripini has served as the PI for 18 clinical trials, both NIH and industry-sponsored, and he has participated in an additional 13 clinical trials for smoking cessation as a co-investigator. In addition, he has served as PI on numerous studies of the behavioral and neuropsychopharmacology of nicotine.

**Selected Publications:**


1. Waters AJ, Carter BL, Robinson JD, Wetter DW, Lam CY, Kerst W, **Cinciripini PM**. Attentional Bias is Associated with Incentive-Related Physiological and Subjective Measures. Exp Clin Psychopharmacol 17(4):247-57, 2009.
2. Zevallos JP, Mallen MJ, Lam CY, Karam-Hage M, Blalock J, Wetter DW, Garden AS, Sturgis EM, **Cinciripini PM**. Complications of Radiotherapy in Laryngopharyngeal Cancer: Effects of a Prospective Smoking Cessation Program. Cancer 115(19):4336-4344, 2009.
3. **Cinciripini PM**, Blalock JA, Minnix JA, et al. Effects of an intensive depression-focused intervention for smoking cessation in pregnancy. J Consult Clin Psychol 78(1):44-54, 2010. PMCID: PMC2881321.
4. Carter BL, Paris MM, Lam CY, Robinson JD, Traylor AC, Waters AJ, Wetter DW, **Cinciripini PM**. Real-Time Craving Differences Between Black and White Smokers. Am J Addict 19(2):136-40, 2010.
5. C. Y. Lam, J. D. Robinson, F. Versace, J. A. Minnix, Y. Cui, B. L. Carter, D. W. Wetter, and **P.M. Cinciripini**. Affective reactivity during smoking cessation for never-quitters compared with that of abstainers, relapsers, and continuing smokers. Exp Clin Psychopharmacol 2011, Oct 31, 20(2): 139-50, 2012.
6. J. D. Robinson, C. Y. Lam, B. L. Carter, D. W. Wetter, and **P. M. Cinciripini**. Negative reinforcement smoking outcome expectancies are associated with affective response to acute nicotine administration and abstinence. Drug Alcohol Depend 120(1-3):196-201, 2011.
7. F. Versace, J. A. Minnix, J. D. Robinson, C. Y. Lam, V. L. Brown, and **P. M. Cinciripini**. Brain reactivity to emotional, neutral and cigarette-related stimuli in smokers. Addiction Biology 16 (2):296-307, 2011.
8. F. Versace, Lam C.Y., J. M. Engelmann, J. D. Robinson, J. A. Minnix, V. L. Brown, and **P. M. Cinciripini**. Beyond cue reactivity: Blunted brain responses to intrinsically pleasant stimuli predict long-term smoking abstinence. Addiction Biology 2011, Oct 4, Epub ahead of print.

**Ludmila Cofta-Woerpel**, **Ph.D.,** is an assistant professor in the Department of Behavioral Science and co-director of the e-Health Technology Program of the Duncan Family Institute for Cancer Prevention and Risk Assessment in the Division of Cancer Prevention and Population Sciences, The University of Texas MD Anderson Cancer Center.

Prior to her appointment at MD Anderson in 2000, Dr. Cofta-Woerpel held post-doctoral fellowship and junior faculty positions at the Center for Health Studies, Group Health Cooperative in Seattle, WA; the Behavioral Medicine Research Center, Duke University Medical Center in Durham, NC; and the Institute of Psychology, Polish Academy of Sciences, Warsaw, Poland. In 2005-2010, Dr. Cofta-Woerpel co-directed a nation-wide research program of the National Cancer Institute's Cancer Information Service. She earned her master degree in Psychology from the University of Warsaw and her Ph.D. in Experimental Psychology from the Polish Academy of Sciences in Warsaw.

Dr. Cofta-Woerpel has been involved in nicotine and tobacco, and health communication research. Her nicotine and tobacco research focuses on the study of smoking cessation and relapse prevention using electronic devices to assess smoking-related phenomena in real time and in real-life settings. In the area of health communication, she is interested in helping to bridge the gap between research and public health service by developing collaborative cancer communication studies conducted in real-life service environments, particularly among the underserved.

**Selected publications:**


1. **Cofta-Woerpel L**, Wright KL, & Wetter DW. Smoking Cessation 1: Pharmacological Treatments. *Behavioral Medicine*, 32(2):47-56., 2006.
2. Vidrine JI, **Cofta-Woerpel L**, Daza P, Wright KL, & Wetter DW. Smoking Cessation 2: Behavioral Treatments. *Behavioral Medicine*, 32(3):99-109, 2006.
3. **Cofta-Woerpel L**, Wright KL, & Wetter DW. Smoking Cessation 3: Multicomponent Interventions. *Behavioral Medicine*, 32(4):135-49, 2007.
4. Squiers L, Bush N, Vanderpool R, **Cofta-Woerpel L**, & Fabrizio C. Bridging the critical chasm between service and research. *Journal of Cancer Education*, 22(2):91-98, 2007.
5. Rowan PJ, **Cofta-Woerpel L**, Mazas C, Vidrine JI, Reitzel LR, Cinciripini PM, & Wetter DW. Evaluating reactivity to ecological momentary assessment during smoking cessation. *Experimental and Clinical Psychopharmacology*, 15:382-389, 2007.
6. Shaw BR, DuBenske L, Yeob Han J, **Cofta-Woerpel L**, Bush N, Gustafson DH, & McTavish F. Antecedent characteristics of online cancer information seeking among rural breast cancer patients: An application of the Cognitive-Social Health Information Processing (C-SHIP) Model. *Journal of Health Communication*, 3:389-408, 2008.
7. **Cofta-Woerpel L**, Randhawa V, McFadden HG, Fought A, Bullard E, & Spring B. ACCISS study rationale and design: Activating Collaborative Cancer Information Service Support for cervical cancer screening. *BMC Public Health, 9,* 444-454, 2009.
8. Simon MA, **Cofta-Woerpel L**, Randhawa V, John P, Makoul G, Spring B. Using the word 'cancer' in communication about an abnormal pap test: Finding common ground with Patient-Provider Communication. *Patient Education and Counseling*, *81,* 106-112, 2010.
9. **Cofta-Woerpel L,** McClure JB, Li Y, Urbauer D, Cinciripini PM, Wetter DW. Early cessation success or failure among women attempting to quit smoking: Trajectories and volatility of urge and negative mood during the first post-cessation week. *Journal of Abnormal Psychology,* 120(3):596-606, 2011.
10. Reitzel LR, McClure JB, **Cofta-Woerpel L**, Mazas CA, Cao, Y, Cinciripini PM, Vidrine JI, Li Y, Wetter DW. The efficacy of computer-delivered treatment for smoking cessation. *Cancer Epidemiology, Biomarkers, & Prevention*, 20:1555-1557, 2011.

**Randa El-Zein, M.D., Ph.D.,** is an associate professor in the Department of Epidemiology. Dr. El-Zein's research is translational in approach bridging both the clinical and research fields. The focus of her research is on understanding the role of gene-environment interactions in the risk for development of adverse health effects. She has extensive expertise in conducting epidemiological studies to identify susceptibility risk factors associated with the development of cancer as well as risk factors associated with development of secondary cancers after successful treatment of the primary disease.

The focus of her research is on understanding the role of gene-environment interactions in the risk for development of adverse health effects. Studies conducted in her laboratory integrate several endpoints that specifically measure levels of genetic instability induced by such interactions. These endpoints are carefully selected in a manner to allow a better understanding of the different mechanisms involved in the resulting genetic instability, and whether this genetic instability is due to accumulated DNA damage, inhibition of apoptosis, specific mutations or cell cycle arrests. The overall goal of such research is to be able to develop in the near future, approaches to identify susceptible individuals at high risk of developing adverse health effects from environmental insults. Such susceptible subgroups may be specifically targeted for screening or chemoprevention interventions. New knowledge generated from these research endeavors is geared to fulfill the institution's need for rapid and efficient translation of emerging new technologies and approaches to improved patient management, early detection and prevention.

**Selected Publications**


1. **El-Zein RA**, Fenech M, Lopez MS, Spitz MR, Etzel CJ. Cytokinesis-blocked micronucleus cytome assay biomarkers identify lung cancer cases amongst smokers. Cancer Epidemiol Biomarkers Prev 17(5):1111-9, 5/2008. PMCID: PMC2854407.
2. Kinslow CJ, **El-Zein RA**, Hill CE, Wickliffe JK, Abdel-Rahman SZ. Single nucleotide polymorphisms 5' upstream the coding region of the NEIL2 gene influence gene transcription levels and alter levels of genetic damage. Gene Chromosome Cancer 47(11):923-32, 11/2008. PMID: 18651651.
3. Katz RL, He W, Khanna A, Fernandez RL, Zaidi TM, Krebs M, Caraway NP, Zhang HZ, Jiang F, Spitz MR, Blowers DP, Jimenez CA, Mehran RJ, Swisher SG, Roth JA, Morris JS, Etzel CJ, **El-Zein RA**. Genetically abnormal circulating cells in lung cancer patients an antigen independent fluorescence in-situ hybridization-based case-control study. Clin Cancer Res 16(15):3976-87, 8/2010. e-Pub 7/2010. PMCID: PMC2949278.
4. **El-Zein RA**, Monroy CM, Cortes A, Spitz MR, Greisinger A, Etzel CJ. Rapid method for determination of DNA repair capacity in human peripheral blood lymphocytes amongst smokers. BMC Cancer 10:439, 2010. e-Pub 8/2010. PMCID: PMC2933626.
5. Monroy CM, Cortes AC, Lopez MS, D'Amelio AM, Etzel CJ, Younes A, Strom SS, **El-Zein RA**. Hodgkin disease risk: role of genetic polymorphisms and gene-gene interactions in inflammation pathway genes. Mol Carcinog 50(1):36-46, 1/2011. e-Pub 11/2010. PMID: 21061265.
6. Bonassi S, **El-Zein RA**, Bolognesi C, Fenech M. Micronuclei frequency in peripheral blood lymphocytes and cancer risk: evidence from human studies. Mutagenesis 26(1):93-100, 1/2011. PMID: 21164188.
7. **El-Zein RA**, Vral A, Etzel CJ. Cytokinesis-blocked micronucleus assay and cancer risk assessment. Mutagenesis 26(1):101-6, 1/2011.
8. Monroy CM, Cortes AC, Lopez M, Rourke E, Etzel CJ, Younes A, Strom SS, **El-Zein RA**. Hodgkin lymphoma risk: role of genetic polymorphisms and gene-gene interactions in DNA repair pathways. Mol Carcinog. 2011 50(1):36-46.
9. Kamdar KY, Krull KR, **El-Zein RA**, Brouwers P, Potter B, Harris LL, Holm S, Dreyer Z, Scaglia F, Etzel CJ, Bondy M, Okcu MF. Folate pathway polymorphisms predict deficits in attention and processing speed after childhood leukemia therapy. Pediatr Blood Cancer. 2011;57(3):454-60.
10. Abdel-Rahman SZ, **El-Zein RA**. Evaluating the effects of genetic variants of DNA repair genes using cytogenetic mutagen sensitivity approaches. Biomarkers. Biomarkers. 2011;16(5):393-404.

**Linda Elting, Dr.P.H.,** is a professor of Biostatistics and Section Chief of Health Services Research at MD Anderson Cancer Center. Dr. Elting received her Master's and Doctoral degrees from The University of Texas School of Public Health. Her research is centered on the clinical and economic outcomes of toxicities of cancer therapy and efficient allocation of supportive cancer care resources. She has extensive experience in designing and conducting prospective and retrospective outcomes and cost studies as reflected in more than 140 papers in peer reviewed literature that has been sited more than 5,000 times.

Dr. Elting served as a vice-chair of MD Andeson's Institutional Review Board (IRB) and, in 2005, was appointed as the first chair of IRB 4, devoted to behavioral, psychosocial and health services research studies. She chaired the American Cancer Society's (ACS) Health Services and Health Policy study section from 2006-2009 and currently represents health services research on the National Research Council for the ACS.

In addition, Dr. Elting's leadership in supportive care outcomes has been recognized by election to the Board of Directors of Multinational Association of Supportive Care in Cancer (MASCC) and election to Secretary, the only non-physician to hold that role on the executive leadership team. She served on the NCCN guidelines panel for infection management and prevention and for mucositis, ASCO's panel for management of thrombocytopenia, and MASCC's guideline panel for treatment-induced gastrointestinal mucosal damage. Results from her outcomes research is a prominent feature in each of these guidelines. Recently, her contributions to the field of supportive care were recognized by MASCC's 2011 Distinguished Achievement Award.

**Selected Publications:**


1. **Elting LS**, Cooksley C, Bekele BN, Frumovitz M, Avritscher EB, Sun C, Bodurak DC. Generalizability of cancer clinical trial results: prognostic differences between participants and nonparticipants. Cancer 106(11):2452-8, 2006.
2. Shih YC, Zhao L, **Elting LS**, Does Medicare coverage of colonoscopy reduce racial/ethnic disparities in cancer screening among the elderly? Health Aff (Millwood) 25(4): 1153-62, 2006.
3. **Elting LS**, Shih YC, Stiff PJ, Bensinger W, Cantor SB, Cooksley C, Spielberger R, Emmanoulides C. Economic Impact of Palifermin on the Costs of Hospitalization for Autologous Hematopoietic Stem-Cell Transplant: Analysis of Phase 3 Trial Results. Biol Blood Marrow Transplant: Analysis of Phase 3 Trial Results. Biol Blood Transplant 13(7): 806-13, 2007.
4. **Elting LS**, Cooksley CD, Chambers MS, Garden AS. Risk, outcomes, and costs of radiation-induced Oral mucositis among patients with head-and-neck malignancies. Int J Radiat Oncol Biol Phys 68(4): 1110-20, 2007.
5. **Elting LS**, Lu C, Escalante CP, Giordano SH, Trent JC, Cooksley C, Avritscher EB, Shih YC, Ensor J, Bekele BN, Gralla RJ, Talcott JA, Rolston K. Outcomes and cost of outpatient or inpatient management of 712 patients with febrile neutropenia. J Clin Oncol 26(4):606-11, 2008.
6. **Elting LS**, Keefe DM, Sonis ST, Garden AS, Spijkervet FK, Barasch A, Tischler RB, Canty TP, Kudrimoti MK, Vera-Llonch M. Patient-reported measurements of oral mucositis in head and neck cancer patients treated with radiotherapy with or without chemotherapy: demonstration of increased frequency, severity, resistance to palliation, impact on quality of life. Cancer 113(10):2704-13, 2008.
7. Shih YC, Xu Y, Cormier JN, Giordano S, Ridner SH, Buchholz TA, Perkins GH, **Elting LS**. Incidence, Treatment Costs, and Complications of Lymphedema After Breast Cancer Among Women of Working Age: A 2-Year Follow-Up Study. J Clin Oncol 27(12):2007-14, 2009.
8. **Elting LS**, Cooksley CD, Bekele BN, Giordano SH, Shih YC, Lovell KK, Avirtscher EB, Theriault R. Mammography Capacity: Impact on Screening Rates and Breast Cancer State at Diagnosis, Am J Prev Med 37(2):102-8, 2009.
9. Shih YCT, **Elting LS**, Halpern MT. Factors associated with immunotherapy use among newly diagnosed cancer patients. Medical Care 47(9):948-58, 2010.
10. Shih YC, **Elting LS**, Pavluck AL, Stewart A, Halpern MT. Immunotherapy in the initial treatment of newly diagnosed cancer patients: utilization trend and cost projections for non-Hodgkin's lymphoma, metastatic breast cancer, and metastatic colorectal cancer. Cancer Invest 28(1):46-53, 2010.

**Carol J. Etzel, Ph.D.**, is an associate professor in the Department of Epidemiology at The University of Texas MD Anderson Cancer Center. She is a biostatistician who has expertise in risk model development and validation as well as data mining and data reduction techniques. Dr. Etzel's research is directed at understanding the genetic risks of cancer with a strong focus on constructing risk models incorporating epidemiologic and genetic data to characterize risk of disease and to identify subgroups of individuals at highest risk who can be targeted for intensive intervention programs. She received Masters of Science degrees in both Mathematics and Statistical Science. She received her Ph.D. in Statistical Science from Southern Methodist University.

Current studies in Dr. Etzel's research group focus on cancer risk model development, evaluation of risk model performance (discriminatory power, calibration and accuracy) and development and assessment of methods to evaluate the role of genetic markers (genotypes and biomarkers of risk) in cancer risk**.** Dr. Etzel has completed an NCI-funded K07 Career Development Fellowship in Cancer Prevention and is the PI of two NCI-sponsored R01 grants. She is also a co-investigator on several NIH-funded grants where she lends her expertise in model development and validation.

Dr. Etzel received the Robert M. Chamberlain Distinguished Mentor Award in 2008, and was named as Faculty Educator of the Month in both 2008 and 2011. She received a Faculty Scholar Award in 2011. Dr. Etzel currently serves on the Executive Committee of the Faculty Senate and the Institutional Review Board.

**Selected Publications**


1. **Etzel CJ**, Guerra R. Meta-analysis of genetic-linkage analysis of quantitative-trait loci. Am J Hum Genet 71(1):56-65, 7/2002. e-Pub 5/2002. PMCID: PMC384993.
2. **Etzel CJ**, Lu M, Merriman K, Liu M, Vaporciyan A, Spitz MR. An epidemiologic study of early onset lung cancer. Lung Cancer 52(2):129-34, 5/2006. e-Pub 3/2006. PMID: 16564601.
3. El-Zein RA, Schabath MB, **Etzel CJ**, Lopez MS, Franklin JD, Spitz MR. Cytokinesis-blocked micronucleus assay as a novel biomarker for lung cancer risk. Cancer Res 66(12):6449-56, 6/2006. PMID: 16778224.
4. Spitz MR, Hong WK, Amos CI, Wu X, Schabath MB, Dong Q, Shete S, **Etzel CJ**. A risk model for prediction of lung cancer. J Natl Cancer Inst 99(9):715-26, 5/2007. PMID: 17470739.
5. El-Zein RA, Fenech M, Lopez MS, Spitz MR, **Etzel CJ**. Cytokinesis-blocked micronucleus cytome assay biomarkers identify lung cancer cases amongst smokers. Cancer Epidemiol Biomarkers Prev 17(55):1111-9, 5/2008. PMID: 18483333.
6. Spitz MR, **Etzel CJ**, Dong Q, Amos CI, Wei Q, Wu X, Hong WK. An Expanded Risk Prediction Model of Lung Cancer. Cancer Prev Res (Phila Pa) 1(4):250-254, 9/2008. PMID: 19138968.
7. **Etzel CJ**, Kachroo S, Liu M, D'Amelio A, Dong Q, Cote ML, Wenzlaff AS, Hong WK, Greisinger AJ, Schwartz AG, Spitz MR. Development and Validation of a lung cancer risk prediction model for African Americans. Cancer Prev Res (Phila Pa) 1(4):255-265, 9/2008. PMID: 19138969.
8. Spitz MR, Amos CI, D'Amelio A, Dong Q, **Etzel C**. Discriminatory accuracy from single-nucleotide polymorphisms in models to predict breast cancer risk. J Natl Cancer Inst 101(24). e-Pub 11/2009. PMCID: PMC2794300.
9. D'Amelio AM, Cassidy A, Asomaning K, Raji OY, Duffy SW, Field JK, Spitz MR, Christiani D, **Etzel CJ**. Comparison of Discriminatory Power and Accuracy of Three Lung Cancer Risk Models. Br J Cancer 103(3):423-9, 7/2010. e-Pub 6/2010. PMCID: PMC2920015.
10. McHugh MK, Kachroo S, Liu M, D'Amelio AM, Dong Q, Hong WK, Greisinger AJ, Spitz MR, **Etzel CJ**. Assessing environmental and occupational risk factors for lung cancer in Mexican-Americans. Cancer Causes Control 21(12):2157-64, 12/2010. e-Pub 8/2010.
11. Liu M, Kapadia AS, **Etzel CJ**. Evaluating a New Risk Marker's Predictive Contribution in Survival Models. J Statistical Theory and Practice 4(4):845-855, 2010.
12. El-Zein R, Vral A, **Etzel CJ**. Cytokinesis-blocked micronucleus assay and cancer risk assessment. Mutagenesis 26(1):101-6, 1/2011.

**Michelle Cororve Fingeret, Ph.D.,** is an assistant professor in the Department of Behavioral Science at MD Anderson Cancer Center and holds dual joint appointments in the Departments of Head and Neck Surgery and Plastic Surgery. She is a licensed psychologist and has developed an innovative line of research centering on body image issues for oncology patients. She is currently conducting a series of studies to evaluate the nature and extent of body image concerns in different patient populations, to identify risk factors associated with poor adjustment to alterations in body image, and to develop pilot interventions to alleviate distress arising from body image concerns. Her work has received funding from the American Cancer Society and National Cancer Institute.

Dr. Fingeret completed her doctoral training at Texas A&M University and her clinical psychology internship at the University of Texas Houston Health Science Center. Her postdoctoral training was conducted at MD Anderson where she was awarded a NCI R25 cancer prevention training fellowship. In 2010, she received the New Investigator Award from the American Psychosocial Oncology Society recognizing outstanding research contributions in psychosocial oncology.

In addition to her research activities, Dr. Fingeret provides clinical services to assist patients with psychosocial concerns and body image difficulties. She launched a new counseling program at MD Anderson in the Center for Reconstructive Surgery and Head and Neck Center called the Body Image Therapy Service. This program provides counseling to patients with head and neck and breast cancer who are having difficulty adjusting to appearance-related changes resulting from their disease and treatment.

Dr. Fingeret actively supports survivorship research and psychosocial services throughout MD Anderson and across the country. At MD Anderson she serves as a member of the Survivorship Research Advisory Committee, the Psychosocial Council, and the Psychosocial and Behavioral Health Services Research Committee. She is also a current board member of the American Psychosocial Oncology Society.

**Selected Publications:**.


1. **Fingeret, M.C**., Gleaves, D.H,. & Pearson, C.A. (2004). On the methodology of body image assessment: The use of figural rating scales to evaluate body dissatisfaction and the ideal body standards of women. *Body Image: An International Journal of Research, 1*, 207-212.
2. **Fingeret, M.C**., & Gleaves, D.H. (2004). Sociocultural, feminist, and psychological influences on women's body satisfaction: A structural modeling analysis. *Psychology of Women Quarterly, 28, 370-380*.
3. **Fingeret, M.C**., Arduino, R., Vidrine, D.J., & Gritz, E.R. (2007) The association between body image and smoking cessation among individuals living with HIV/AIDS. *Body Image: An International Journal of Research, 4*, 201-206.
4. Gritz, E.R., Vidrine, D.J., & **Fingeret, M.C.**, (2007). Smoking cessation; A critical component of medical management in chronic disease populations. *American Journal of Preventive Medicine, 33,* S414-422.
5. Warren, C.S., Cepeda-Benito, A., Gleaves, D.H., Rodriguez, S., Moreno, S., Fernandez, M.C**., Fingeret, M.C.,** & Pearson, C.A. (2008). English and Spanish versions of the Body Shape Questionnaire: Measurement equivalence across ethnicity and clinical status. *International Journal of Eating Disorders*, 41: 265-272.
6. **Fingeret, M.C.**, Vidrine D.J., Reece G.P., Gillenwater A.G., Gritz E.R.. A Multidimensional Analysis of Body Image Concerns Among Newly Diagnosed Patients with Oral Cavity Cancer. Head and Neck, 32(3): 301-309.,
7. Bonnano, A., Esmaeli, B., **Fingeret, M.C.,** Nelson, D., Weber, R. Social challenges of cancer patients with orbitofacial disfigurement. Opthalmic Plastic and Reconstuctive Surgery, 26(1), 18-22.,
8. Lee, K., Kawale, M., Merchant, F.A., Weston, J., **Fingeret, M.C**., Ladewig, D., Reece, G.P., Crosby, M.A., Beahm, E.K., Markey, M.K. Validation of stereophotgrammetry of the human torso. Breast Cancer: Basic and Clinical Practice Research, 5:15-25, 2011.
9. **Fingeret, M.C**., Yuan, Y., Urbauer, D., Weston, J., Weber, R.S. The nature and extent of body image concerns among surgically treated patients with head and neck cancer. Psycho-Oncology, June 27 [Epub ahead of print].

**Lewis E. Foxhall, M.D.,** is MD Anderson's vice president for health policy and professor in the Department of Clinical Cancer Prevention. His work focuses on community-based cancer prevention and early detection, access and quality of care for low-income populations. He received his medical degree from Baylor College of Medicine and his clinical background is in family medicine.

Dr. Foxhall is responsible for coordination of MD Anderson's charity care program through leadership of the Uncompensated Care Advisory Committee as well as administrative coordination of the MD Anderson/Harris County Hospital District oncology program. He is the immediate past chair of the Harris County Healthcare Alliance, an umbrella organization for safety-net medical provider organizations in Houston and Harris County.

Dr. Foxhall currently leads efforts to advance comprehensive cancer control at MD Anderson. He directs the institution's cancer survivorship efforts in policy outreach and education. He is engaged in a statewide effort to update the Texas Cancer Plan and served as chair of the Texas Comprehensive Cancer Control Coalition. He is director of the Texas Cancer Information website project and chairs the Texas Medical Association's Physician Oncology Education Program. He serves on the Texas Department of State Health Services Advisory Council and previously chaired the Texas Health Care Information Council.

Dr. Foxhall supports policy development and outreach programs in collaboration with government agencies, voluntary health organizations and organized medical groups. He serves as liaison to community physicians and is medical director of the Office of Physician Relations. He is past-president of the Harris County Medical Society, member of the Board of Trustees of the Texas Medical Association, an officer of the American Cancer Society High Plains Division Board of Directors and an officer of the National American Cancer Society Cancer Action Network.

**Selected Publications:**


1. Neiman L, **Foxhall L**, Groff J, Cheng L. Applying Practical Preventive Skills in a Preclinical Preceptorship. Academic Medicine 76(5):478-483, 2001.
2. Hawley ST, **Foxhall L**, Vernon SW, Levin B, Young JE. Colorectal cancer screening by primary care physicians in Texas: a rural-urban comparison. J Cancer Education 16(4):199-204, 2001.
3. **Foxhall L**, Cook E. The Selenium and Vitamin E. Prostate Cancer Prevention Trial. Texas Medicine:24, 2001.
4. Tilley BJ, **Foxhall L**, Chen L, Goddrich TJ, Nieman LZ. Barriers to student preventive practices during preclinical preceptorship. Texas Medicine 8(6):13-14, 2002.
5. **Foxhall L**, Von Eschenbach AC. Counseling Patients About Prostate Cancer Screening. American Family Physician 65(9), 2002.
6. Nieman L, **Foxhall L**E, Velasquez MM, Groff JY. Preparing Preclinical Medical Students for Brief Smoking Cessation Interventions. Association for Medical Education in Europe, Relevance in Medical Education Conference. Bern, Switzerland, 9/2003.
7. Nieman LZ, **Foxhall L**E, Chuang AZ, Prager TC. Evaluating the Texas Statewide Family Practice Preceptorship Program. Academy Medicine 79(1):62-68, 2004.
8. Nieman LZ, Cheng L, **Foxhall** LE. Teaching first-year medical students to apply evidence-based practices to patient care. Fam Med 41(5):332-6, 5/2009.
9. Prokhorov A, Hudmon KS, Marani S, **Foxhall** LE, Ford K, Stantcic Luca N, Wetter D, Cantor S, Vitale f, Gritz E. Engaging Physicians and Pharmacists in Providing Smoking Cessation Counseling. Archives of Internal Medicine, 3/2010.
10. **Foxhall** LE, Garcia R, Torges K. Cancer Screening: Controversies and Opportunities. Texas Medicine, 9/2010.
11. Risser, DR, Miller EA, Williams, MA, **Foxhall**, LE. County-Level Socioeconomic Status and Cancer Rates in Texas, 2001-2005. Texas Medicine, 10/2010.
12. Wyatt, S.W., Maynard, W.R., Miller, E.A., Garcia, R., **Foxhall**, L.E. Cancer Incidence and Mortality in Texas and the United States: An Overview. Texas Medicine, 107(10):e1, 2011.

**Marsha L. Frazier, Ph.D.,** is a professor in the Department of Epidemiology at the University of Texas MD Anderson Cancer Center and an Adjunct Professor at The University of Texas Health Science Center, Graduate School of Biomedical Science.

She has been a faculty member at MD Anderson for over 25 years and has had continuous federal grant support since she joined the MD Anderson faculty. Prior to her appointment at MD Anderson, she was a Research Assistant Professor at Baylor College of Medicine. She has directly mentored over 100 undergraduate students, graduate students and postdoctoral fellows in her laboratory.

Much of Dr. Frazier's research has focused on cancers of the gastrointestinal tract, with most of her studies focusing on colorectal and pancreatic cancer. She has a particular interest in families with Lynch syndrome (also known as hereditary nonpolyposis colorectal cancer) which is a genetic disorder resulting in a predisposition to cancer, with colorectal cancer being the most common cancer seen in these families.

Dr. Frazier grew up in Flint, Michigan, earned a bachelor's degree at Michigan State University and a Ph.D. at Pennsylvania State University. Her postdoctoral training was done at MD Anderson.

**Selected publications:**


1. **Frazier ML**, Xi L, Zong J, Viscofsky N, Rashid A, Wu EF, Lynch PM, Amos CI, Issa JP. Association of the CpG island methylator phenotype with family history of cancer in patients with colorectal cancer. Cancer Res 63(16):4805-8, 8/2003. PMID: 12941799.
2. Chen LL, Trent JC, Wu EF, Fuller GN, Ramdas L, Zhang W, Raymond AK, Prieto VG, Oyedeji CO, Hunt KK, Pollock RE, Feig BW, Hayes KJ, Choi H, Macapinlac HA, Hittelman W, Velasco MA, Patel S, Burgess MA, Benjamin RS, **Frazier ML**. A missense mutation in KIT kinase domain 1 correlates with imatinib resistance in gastrointestinal stromal tumors. Cancer Res 64(17):5913-9, 9/2004. PMID: 15342366.
3. Wei C, Amos CI, Stephens LC, Campos I, Deng JM, Behringer RR, Rashid A, **Frazier ML**. Mutation of Lkb1 and p53 genes exert a cooperative effect on tumorigenesis. Cancer Res 65(24):11297-303, 12/2005. PMID: 16357136.
4. Zecevic M, Amos CI, Gu X, Campos IM, Jones JS, Lynch PM, Rodriguez-Bigas MA, **Frazier ML**. IGF1 gene polymorphism and risk for hereditary nonpolyposis colorectal cancer. J Natl Cancer Inst 98(2):139-43, 1/2006. PMID: 16418517.
5. Chen J, Li D, Wei C, Sen S, Killary AM, Amos CI, Evans DB, Abbruzzese JL, **Frazier ML**. Aurora-A and p16 polymorphisms contribute to an earlier age at diagnosis of pancreatic cancer in Caucasians. Clin Cancer Res 13(10):3100-4, 5/2007. PMID: 17505013.
6. Pande M, Chen J, Amos CI, Lynch PM, Broaddus R, **Frazier ML**. Influence of methylenetetrahydrofolate reductase gene polymorphisms C677T and A1298C on age-associated risk for colorectal cancer in a Caucasian Lynch syndrome population. Cancer Epidemiol Biomarkers Prev 16(9):1753-9, 9/2007. PMID: 17855693.
7. Wei C, Amos CI, Zhang N, Wang X, Rashid A, Walker CL, Behringer RR, **Frazier ML**. Suppression of Peutz-Jeghers polyposis by targeting mammalian target of rapamycin signaling. Clin Cancer Res 14(4):1167-71, 2/2008. PMID: 18281551.
8. Pande M, Amos CI, Osterwisch DR, Chen J, Lynch PM, Broaddus R, **Frazier ML**. Genetic variation in genes for the xenobiotic-metabolizing enzymes CYP1A1, EPHX1, GSTM1, GSTT1, and GSTP1 and susceptibility to colorectal cancer in Lynch syndrome. Cancer Epidemiol Biomarkers Prev 17(9):2393-401, 9/2008. PMID: 18768509.
9. Coolbaugh-Murphy MI, Xu JP, Ramagli LS, Ramagli BC, Brown BW, Lynch PM, Hamilton SR, **Frazier ML**, Siciliano MJ. Microsatellite instability in the peripheral blood leukocytes of HNPCC patients. Hum Mutat 31(3):317-24, 3/2010 e-Pub 1/2010.
10. Liu Q, Chen J, Mai B, Amos C, Killary AM, Sen S, Wei C, **Frazier ML**. A single nucleotide polymorphism in tumor suppressor gene SEL1L as a predictive and prognostic marker for pancreatic ductal adenocarcinoma in Caucasians. Mol Carcinog. e-Pub 6/2011.

**Ellen R. Gritz, Ph.D.,** is professor and chair of the Department of Behavioral Science and holds the Olla S. Stribling Distinguished Chair for Cancer Research at MD Anderson. She is an established leader in cancer prevention and control research and internationally-known investigator. Dr. Gritz has published extensively on cigarette smoking behavior: prevention, cessation, pharmacologic mechanisms, and special issues of concern to women and high risk groups, including ethnic minorities, youth, cancer patients and persons living with HIV/AIDS. Dr. Gritz is currently PI of an NCI-funded R01 grant to evaluate an innovative, cell phone-based smoking cessation intervention in an HIV-positive, low income, tri-ethnic population. This is a medically high risk, underserved population with elevated smoking prevalence (50 percent or higher).

Other research includes skin cancer prevention in children and high risk individuals, genetic testing and counseling for hereditary cancers, and cancer survivorship. Dr. Gritz has served on several cancer center and other advisory boards. She is a member of the Institute of Medicine (IOM). From 2002-2008, Dr. Gritz served on the Board of Directors of the American Legacy Foundation, the large, non-profit public health foundation established in 1998 as part of the Master Settlement Agreement, and was vice-chair of the board (2005-2008). Dr. Gritz was president of the Society for Research on Nicotine and Tobacco (2006-2007), and president of the American Society of Preventive Oncology (ASPO) (1993-1995).

Dr. Gritz has received numerous honors, including the American Society of Preventive Oncology's (ASPO) Joseph W. Cullen Memorial Award for outstanding research in smoking, ASPO's Distinguished Achievement Award, and MD Anderson's Margaret and James A. Elkins, Jr. Faculty Achievement Award in Cancer Prevention. Dr. Gritz was the 2008 recipient of both the Alma Dea Morani Renaissance Woman Award, which honors an outstanding physician or scientist, and the Society of Behavioral Medicine, Cancer Special Interest Group's Outstanding Biobehavioral Oncology Award. She was the 2009 recipient of the Distinguished Professional Woman's Award, presented by UT Health Science Center at Houston. Dr. Gritz is a fellow of the Society of Behavioral Medicine and the American Psychological Association, and is senior editor for Behavioral Sciences of the journal, *Cancer Epidemiology, Biomarkers, and Prevention.* She has more than 266 publications to her credit, including numerous journal articles, as well as books, book chapters and teaching aids. Dr. Gritz holds a Ph.D. in Psychology from the University of California at San Diego.

**Selected publications:**


1. **Gritz ER**, Dresler C, Sarna L. Smoking, the missing drug interaction in oncology clinical trials: Ignoring the obvious. Cancer Epidemiol Biomarkers Prev 14:2287-93, 2005.
2. **Gritz ER**, Vidrine DJ, Fingeret MC. Smoking cessation. A critical component of medical management in chronic disease populations. Special Issue on the State of the Science, Tobacco Control. American Journal of Preventive Medicine 33:S414-S422, 2007.
3. Vidrine DJ, Arduino RC, Lazev AB, **Gritz ER.** A randomized trial of a proactive cellular telephone intervention for smokers living with HIV/AIDS. AIDS 20:253-60, 2006.
4. Demark-Wahnefried W, Pinto BM, **Gritz ER.** Promoting health and physical function among cancer survivors: Potential for prevention and questions that remain. J Clin Oncol 24:5125-31, 2006.
5. Henningfield JE, Shiffman S, Ferguson SG, **Gritz ER.** Tobacco dependence and withdrawal: science base, challenges, and opportunities for pharmacotherapy. Pharmacol Ther 123(1):1-16, 2009.
6. Cole TR, Goodrich TJ, **Gritz ER.** Ed(s) Cole TR, Goodrich TJ, **Gritz ER.** Faculty Health in Academic Medicine: Physicians, Scientists and the Pressures of Success. Humana Press: Totowa, NJ, 2009.
7. Wefel JS, Vidrine DJ, Veramonti TL, Meyers CA, Marani SK, **Gritz ER.** Cognitive impairment in men with testicular cancer prior to adjuvant therapy. Cancer 17:190-196, 2011.
8. **Gritz ER**, Lam CY, Vidrine DJ, Fingeret MC. Cancer Prevention: Tobacco Dependence and Its Treatment. In: Cancer: Principles and Practice of Oncology. 2, Part 3, Chapter 51, 9th edition. (Eds) V DeVita, T Lawrence, S Rosenberg. Lippincott Williams & Wilkins: Philadelphia, PA, pp. 529-542, 2011.

**Michelle A.T. Hildebrandt, Ph.D.**, is an instructor in the Department of Epidemiology, Division of Cancer Prevention and Population Sciences, The University of Texas MD Anderson Cancer Center. She received her Ph.D. in Molecular Pharmacology and Experimental Therapeutics from the Mayo Clinic College of Medicine in 2007. She completed her postdoctoral training at MD Anderson in the Cancer Prevention Research Training Program.

Dr. Hildebrandt has strong cross-disciplinary training and expertise in pharmacology, genetics, functional genomics, molecular biology, and epidemiology. Her research identifies genetic factors modulating cancer risk, treatment response, and clinical outcomes. The goal is to bring these findings back into the laboratory for functional assessment to better understand the underlying biology responsible for the associations. In particular, her Duncan Family Institue project focuses on genetic factors influencing risk of developing colorectal cancer to better identify candidates for screening and potentially chemoprevention intervention.

Dr. Hildebrandt has been awarded a Susan G. Komen for the Cure Scholar-in-Training award and the Bayer HealthCare Pharmaceuticals, Inc. Award for Postgraduate Population/Patient-Oriented Research twice. She was also recognized as MD Anderson's Trainee of the Quarter for her achievements in research, leadership, and education, as well as receiving the MD Anderson Trainee Excellence Award. She currently represents the Department of Epidemiology on the Faculty Senate and also serves on the Departmental CARE Team.

**Selected publications:**


1. **Hildebrandt MA**, Yang H, Hung MC, Izzo JG, Huang M, Lin J, Ajani JA, Wu X. Genetic variations in the PI3K/PTEN/AKT/mTOR pathway are associated with clinical outcomes in esophageal cancer patients treated with chemoradiotherapy. J Clin Oncol 27(6):857-71, 2/2009.
2. Chen M, **Hildebrandt MA (co-first author)**, Clague J, Kamat AM, Picornell A, Chang J, Zhang X, Izzo J, Yang H, Lin J, Gu J, Chanock S, Kogevinas M, Rothman N, Silverman DT, Garcia-Closas M, Grossman HB, Dinney CP, Malats N, Wu X. Genetic Variations in the Sonic Hedgehog Pathway Affect Clinical Outcomes in Non-Muscle-Invasive Bladder Cancer. Cancer Prev Res 3(10):1235-45, 10/2010.
3. **Hildebrandt MA**, Gu J, Lin J, Ye Y, Tan W, Tamboli P, Wood CG, Wu X. Hsa-miR-9 methylation status is associated with cancer development and metastatic recurrence in patients with clear cell renal cell carcinoma. Oncogene 29(42):5724-8, 10/2010.
4. Rothman N…**Hildebrandt MA (co-second author)**…Chanock SJ. A multi-stage genome-wide association study of bladder cancer identifies multiple susceptibility loci. Nat Genet 42(11):978-84, 11/2010.
5. **Hildebrandt MA**, Komaki R, Liao Z, Gu J, Chang JY, Ye Y, Lu C, Stewart DJ, Minna JD, Roth JA, Lippman SM, Cox JD, Hong WK, Spitz MR, Wu X. Genetic variants in inflammation-related genes are associated with radiation-induced toxicity following treatment for non-small cell lung cancer. PLoS One 5(8):e12402, 2010.
6. Pu X, **Hildebrandt MA (co-first author)**, Lu C, Lin J, Stewart DJ, Ye Y, Gu J, Spitz MR, Wu X. PI3K/PTEN/AKT/mTOR pathway genetic variation predicts toxicity and distant progression in lung cancer patients receiving platinum-based chemotherapy. Lung Cancer 71(1):82-8, 1/2011.
7. Lee JJ*, Wu X*, **Hildebrandt MA**, Yang H, Khuri FR, Kim E, Gu J, Ye Y, Lotan R, Spitz MR, Hong WK. Global assessment of genetic variation influencing response to retinoid chemoprevention in head and neck cancer patients. Cancer Prev Res (Phila) 4(2):185-93, 2/2011. ***co-first authors**
8. Tan W, **Hildebrandt MA**, Pu X, Huang M, Lin J, Matin SF, Tamboli P, Wood CG, Wu X. Role of inflammatory-related gene expression in clear cell renal cell carcinoma development and clinical outcomes. J Urol 186(5):2071-7, 2011.
9. Lin M, Gu J, Eng C, Ellis LM, **Hildebrandt MA**, Lin J, Huang M, Hamilton S, Calin GA, Wang D, DuBois R, Hawk E, Wu X. Genetic polymorphisms in microRNA-related genes as predictors of clinical outcomes in colorectal adenocarcinoma patients, Submitted.

**Dr. Ashraful Hoque, M.D., Ph.D.,** is an associate professor in the Departments of Clinical Cancer Prevention and Epidemiology, Division of Cancer Prevention and Population Sciences at the University of Texas MD Anderson Cancer Center.

Dr. Hoque's major research focus is molecular epidemiologic and translational biomarker studies in the area of hormonally-regulated cancer, particularly of the prostate and breast. The primary research focus is to define the molecular risks for prostate and breast cancer to discover effective ways of preventing these diseases in high risk men and women.

Dr. Hoque has major team-science collaborations in prostate and breast cancer prevention research involving investigators at both MD Anderson Cancer Center and the Southwest Oncology Group (SWOG). Currently, Dr. Hoque is leading an investigation that utilizes the biospecimens and clinical and epidemiologic data collected in the Prostate Cancer Prevention trial of SWOG. He is also investigating trace metals and their association with prostate cancer risk among African-American and white men. Additionally, Dr. Hoque is actively involved with MD Andeson's NCI-supported early drug development consortium for chemoprevention trials.

Dr. Hoque earned his medical degree from Bangladesh and his doctoral degree in Epidemiology from the School of Public Health at the University of Texas. Dr. Hoque currently serves on the editorial board of Cancer Epidemiology Biomarkers & Prevention.

**Selected publications:**


1. **Hoque A**, Lippman SM, Boiko IV, Atkinson EN, Sneige N, Sahin A, Weber DM, Risin S, Lagios MD, Schwarting R, Colburn WJ, Dhingra K, Follen M, Kelloff GJ, Boone CW, Hittelman WN. Quantitative nuclear morphometry by image analysis for prediction of recurrence of ductal carcinoma in situ of the breast. Cancer Epidemiol Biomarkers Prev 10:249-59, 2001.
2. **Hoque A**, Sneige N, Sahin AA, Menter DG, Bacus JW, Hortobagyi GN, Lippman SM. Her-2/neu gene amplification in ductal carcinoma in situ of the breast. Cancer Epidemiol Biomarkers Prev 11:587-90, 2002.
3. **Hoque A,** Carter J, Xia W, Hung MC, Sahin AA, Sen S, Lippman SM. Loss of aurora A/STK15/BTAK overexpression correlates with transition of in situ to invasive ductal carcinoma of the breast. Cancer Epidemiol Biomarkers Prev 12:1518-22, 2003.
4. Kristal AR, King IB, Albanes D, Pollak MN, Stanzyk FZ, Santella RM, **Hoque A**. Centralized blood processing for the selenium and vitamin E cancer prevention trial: effects of delayed processing on carotenoids, tocopherols, insulin-like growth factor-I, insulin-like growth factor binding protein 3, steroid hormones and lymphocyte viability. Cancer Epidemiol Biomarkers Prev 14:727-30, 2005.
5. De Marzo AM, Platz EA , Epstein JI , Ali T , Billis A, Chan TY, Cheng L, Datta M, Egevad L, Ertoy-Baydar D, Farre X , Fine SW , Iczkowski KA, Ittmann M, Knudsen BS, Loda M, Lopez-Beltran A, Magi-Galluzzi C, Mikuz G, Montironi R, Pikarsky E, Pizov G, Rubin MA, Samaratunga H, Sebo T, Sesterhenn IA, Shah RB, Signoretti S, Simko J ,Thomas G, Troncoso P, Tsuzuki T, van Leenders G JLH, Yang XJ, Zhou M, Figg WD, **Hoque A** and Lucia MS. A Working Group Classification of Focal Prostate Atrophy Lesions. Am J Surg Pathol 30:1281-91, 2006.
6. **Hoque A**, Goodman P, Ambrosone CB, Figg WD, Price DK, Kopp W, Wu X, Conroy J, Lehman TA, Santella RM. Extraction of DNA from Serum for High-throughput Genotyping: Findings from Pilot Studies within the Prostate Cancer Prevention Trial. Urology 71:967-70, 2008.
7. **Hoque A**, Chen H, Xu XC. Statin induces apoptosis and cell growth arrest in prostate cancer cells. Cancer Epidemiol Biomarkers Prev 17:88-94, 2008.
8. Yao S, Till C, Kristal AR, Goodman PJ, Hsing AW, Tangen CM, Platz EA, Stanczyk FZ, Reichardt JK, Tang L, Neuhouser ML, Santella RM, Figg WD, Price DK, Parnes HL, Lippman SM, Thompson IM, Ambrosone CB, **Hoque A**. Serum estrogen levels and prostate cancer risk in the Prostate Cancer Prevention Trial: a nested case-control study. Cancer Causes Control 22(8):1121-31, 8/2011. e-Pub 6/2011.

**Lovell Jones, Ph.D.,** is a professor in the Department of Health Disparities Research as well as the Department of Biochemistry & Molecular Biology at MD Anderson Cancer Center.

Dr. Jones has more than 35 years of experience in addressing minority health and the health of the underserved. As a scientist, he has also done extensive research into the relationship between hormones, diet and endocrine responsive tumors and has presented his work both nationally and internationally. He has edited one of the few comprehensive textbooks on this subject: *Minorities & Cancer*. Dr. Jones has either chaired or co-chaired numerous major events regarding the underserved and cancers, including the American Cancer Society South Central U.S. Regional Hearings on Cancer and the Poor and the 1st National African Cancer Education meeting in Abuja, Nigeria. Dr. Jones is co-author of the congressional resolution designating the third full week in April as "National Minority Cancer Awareness Week." For his work, the NIH/National Center on Minority Health and Health Disparities was awarded him its Director's Award for Excellence in Health Disparities. Dr. Jones was recently selected to receive the Ruth Kirschstein Diversity in Science Award.

Dr. Jones' research work also involves determining the mechanism by which natural and environmental estrogenic agents may initiate cancers in hormonally responsive tissue. He has served as the PI on a number of NIH grants, including "The Women's Health Eating and Living Study," an NCI grant studying the role of diet on prevention recurrence of second primaries in breast cancer survivors. The other grant was awarded by the Centers of Excellence for Community Partnership, Outreach, Research & Training from the National Center on Minority Health & Health Disparities and the Centers for Medicare and Medicaid Cancer Prevention and Treatment Demonstration grant titled: "Facilitated Assistance, Research, & Outreach Services".

In January 2000, Dr. Jones was named the first director of the congressionally-mandated Center for Research on Minority Health (CRMH), a multidisciplinary center which aims to a) foster research that addresses the causes of health disparities and translates scientific results back to the communities affected by those disparities; b) encourage minority students to pursue careers in the biomedical sciences; and c) increase recruitment and retention of minority and medically underserved populations into clinical trials. Dr. Jones received his Ph.D. from the University of California, Berkeley.

**Selected Publications:**


1. King DW, Hurd TC, Hajek RA, **Jones LA**. Using a Biopsychosocial Approach to Addressing Helath Disparities - One Person's Vision. Journal of Cancer Education 24 Suppl 2:s26-36, 2009.
2. King D, Miranda P, Gor B, Fuchs-Young R, Chilton J, Hajek R, Torres-Vigil I, Hern_ndez-Valero MA, Snipes SA, **Jones L**. Addressing Cancer Health Disparities Using a Global Biopsychosocial Approach. Cancer 116(2):264-9, 1/2010.
3. King DW, Duello TM, Miranda PY, Hodges KP, Shelton AJ, Chukelu P, **Jones LA**. Strategies for Recruitment of Healthy Premenopausal Women into the African American Nutrition for Life (A NULIFE) Study. J Womens Health (Larchmt) 19(5):855-62, 5/2010. PMCID: PMC2940542.
4. Correa NP, Murray NG, Mei CA, Baun WB, Gor BJ, Hare NB, Banerjee D, Sindha TF, **Jones LA**. CAN DO Houston: a community-based approach to preventing childhood obesity. Prev Chronic Dis 7(4):A88, 7/2010. e-Pub 6/2010. PMCID: PMC2901586.
5. Miranda PY, Wilkinson AV, Etzel CJ, Zhou R**, Jones LA**, Thompson P, Bondy ML. Policy implications of early onset breast cancer among Mexican-origin women. Cancer 117(2):390-7, 1/2011. PMCID: PMC3071526.
6. Natale-Pereira A, Enard KR, Nevarez L, **Jones LA**. The role of patient navigators in eliminating health disparities. Cancer 117(15 Suppl):3541-50, 8/2011.
7. Paxton RJ, **Jones LA**, Chang S, Hernandez M, Hajek RA, Flatt SW, Natarajan L, Pierce JP. Was race a factor in the outcomes of the women's health eating and living study? Cancer 117(16):3805-13, 8/2011. e-Pub 2/2011. PMCID: PMC3135701.

**Yanhong Liu, M.S., Ph.D.,** was an instructor in the Department of Epidemiology, MD Anderson Cancer Center and is now with Baylor College of Medicine. She earned her master degree from Shanghai Fisheries University in 2004 and her doctorate from Fudan University in 2007.

Dr. Liu's research mainly focuses on genetic and molecular epidemiology studies to identify genetic biomarkers for cancer risk assessment and for clinical outcome prediction of brain tumors (Glioma) and breast cancer. Dr. Liu is also interested in glioma susceptibility in minority populations such as African Americans and Hispanic Americans, and in investigating the molecular and racial/ethnic similarities and differences in the genetic etiology of glioma. She has built the first genetic variation profile and risk-assessment model for long-term or short-term survivorship of glioblastoma. Additionally, some of her work has been widely reproduced, confirmed and utilized by other researchers in different populations and with other cancers.

Dr. Liu has more than 36 peer-reviewed publications (11 first-authored). These papers have been published in top journals and have been widely cited in the field. Dr. Liu was previously a recipient of one of the Institution's Postdoctoral Outstanding Trainee in Cancer Prevention Awards in 2009. Nationally and internationally, her prominence is evidenced by invitations to present her original discoveries at scientific conferences and to review over 30 papers for eight leading international journals in her field. She has also served as a reviewer for the National Cancer Institute–2011 Cancer Education Grants Program.

**Selected Publications:**


1. **Liu Y**, Zhang H, Zhou K, Chen L, Xu Z, Zhong Y, Liu H, Li R, Shugart YY, Wei Q, Jin L, Huang F, Lu D, Zhou L. Tagging SNPs in non-homologous end-joining pathway genes and risk of glioma. Carcinogenesis 28(9):1906-13, 2007.
2. **Liu Y**, Zhou K, Zhang H, Shugart YY, Chen L, Xu Z, Zhong Y, Liu H, Jin L, Wei Q, Huang F, Lu D, Zhou L. Polymorphisms of LIG4 and XRCC4 involved in the NHEJ pathway interact to modify risk of glioma. Human Mutation 29(3):381-9, 2008.
3. **Liu Y**, Scheurer ME, El-Zein R, Cao Y, Do KA, Gilbert M, Aldape KD, Wei Q, Etzel C, Bondy ML. Association and interactions between DNA repair gene polymorphisms and adult glioma. Cancer Epidemiology & Biomarkers Prevention 18(1):204-14, 2009.
4. Zhou K, **Liu Y**, Zhang H, Liu H, Fan W, Zhong Y, Xu Z, Jin L, Wei Q, Huang F, Lu D, Zhou L. XRCC3 haplotypes and risk of gliomas in a Chinese population: a hospital-based case-control study. International Journal of Cancer 124(12):2948-53, 2009.
5. **Liu Y**, Shete S, Etzel CJ, Scheurer M, Alexiou G, Armstrong G, Tsavachidis S, Liang FW, Gilbert M, Aldape K, Armstrong T, Houlston R, Hosking F, Robertson L, Xiao Y, Wiencke J, Wrensch M, Andersson U, Melin BS, Bondy M. Polymorphisms of LIG4, BTBD2, HMGA2, and RTEL1 genes involved in the double-strand break repair pathway predict glioblastoma survival. Journal of Clinical Oncology 28(14):2467-74, 2010.
6. **Liu Y**, Shete S, Wang LE, El-Zein R, Etzel CJ, Liang FW, Armstrong G, Tsavachidis S, Gilbert M, Aldape K, Xing J, Wu X, Wei Q, Bondy ML. Gamma-Radiation Sensitivity and Polymorphisms in RAD51L1 Modulate Glioma Risk. Carcinogenesis 31(10):1762-9. 2010.
7. **Liu Y**, Shete S, Hosking F, Robertson L, Houlston R, Bondy M. Genetic advances in glioma: susceptibility genes and networks. Current Opinion in Genetics and Development 20(3):239-44, 2010.
8. Amirian E, **Liu Y**, Scheurer ME, El-Zein R, Gilbert MR, Bondy ML. Genetic variants in inflammation pathway genes and asthma in glioma susceptibility. Neuro Oncology 12(5):444-52, 2010.
9. Sjöström S, Andersson U, **Liu Y**, Brännström T, Broholm H, Johansen C, Collatz-Laier H, Henriksson R, Bondy M, Melin B. Genetic variations in EGF and EGFR and glioblastoma outcome. Neuro Oncology.12(8):815-21. 2010.

**Lorna Haughton McNeill, Ph.D., M.P.H.,** is an assistant professor of the Department of Health Disparities Research at MD Anderson Cancer Center and adjunct assistant professor at the University of Texas School of Public Health. Dr. McNeill joined Health Disparities Research in 2006.

Her research is on the elimination of cancer-related health disparities in minority populations. Her research has particular emphasis on understanding the influence of social and environmental determinants of cancer in minorities, with a special focus on the role of physical activity as a key preventive behavior. Her work involves the development and evaluation of ecological theoretically-based physical activity interventions with the goal of understanding potential mechanisms to behavior change.

Dr. McNeill co-directs the Center for Community, Implementation, and Dissemination Research (CCIDR) at MD Anderson. CCIDR strives to change real-world public health and clinical practice through community-based research, implementation research, and dissemination research.

She earned her Ph.D. in Public Health from Saint Louis University and her master's in Health Behavior and Health Education from the University of North Carolina at Chapel Hill. Prior to her appointment at MD Anderson she was a postdoctoral fellow at the Harvard School of Public Health.

**Selected publications:**


1. **McNeill LH**, Wyrwich KW, Brownson RC, Clark EM, Kreuter MW. Individual, social environmental and physical environmental influences on physical activity among black and white adults: a structural equation analysis. Ann Behav Med 31(1)(1):36-44, 2006.
2. Kreuter M, **Haughton LT**. Integrating culture into health information for African-American Women. American Behavioral Scientist 49(6):1-18, 2006.
3. Rehkopf DH, **Haughton LT**, Chen JT, Waterman PD, Subramanian SV, Krieger N. Monitoring socioeconomic disparities in death: comparing individual-level education and area-based socioeconomic measures. Am J Public Health 96(12):2135-2138, 2006.
4. **McNeill LH**, Kreuter M, Subramanian SV. Social environment and physical activity: a review of concepts and evidence. Soc Sci Med 63(4)(4):1011-1022, 2006.
5. Shelton RC, Puleo E, Bennett GG, **McNeill LH**, Goldman RE, Emmons KM. Racial discrimination and physical activity among low-income-housing residents. Am J Prev Med 37(6):541-5, 12/2009.
6. **McNeill LH**, Coeling M, Puleo E, Suarez EG, Bennett GG, Emmons KM. Colorectal cancer prevention for low-income, sociodemographically-diverse adults in public housing: baseline findings of a randomized controlled trial. BMC Public Health 9:353, 2009.
7. De Jesus M, Puleo E, Shelton RC, **McNeill LH**, Emmons KM. Factors Associated with Colorectal Cancer Screening among a Low-Income, Multiethnic, Highly Insured Population: Does Provider's Understanding of the Patient's Social Context Matter? J Urban Health 87(2):236-43, 3/2010.

**Bo Peng, Ph.D.,** is an instructor at the Department of Epidemiology, The University of Texas MD Anderson Cancer Center. With a background in applied mathematics, biostatistics and bioinformatics, he is interested in numerical analysis, parallel computation, bioinformatics and population genetics. During his research on the evolution of genetic diseases, Dr. Peng has developed unique skills in the design and implementation of large-scale individual-based population genetics simulations and is actively applying such simulation techniques to research topics in genetic epidemiology and public health genomics.

Dr. Peng earned a master's degree in Applied Mathematics from the Department of Mathematics, University of Houston and then a Ph.D. degree in Biostatistics from the Department of Statistics, Rice University. Dr. Peng earned his bachelor's degree from the Department of Mathematics, Shanghai Jiao Tong Unviersity. After graduation, he worked as a lecturer in this department and pioneered the application of computer software in mathematics education.

Dr. Peng joined the Department of Epidemiology, MD Anderson as a postdoctoral fellow. He was awarded a predoctoral Fellowship from the W.M. Keck Center for Interdisciplinary Bioscience Training, and a donor-funded postdoctoral fellowship in Cancer Prevention for his study in the evolution of genetic diseases. With support from the Duncan Family Institute, he has been studying the utility of individual genetic profiles in the prevention of lung cancer. He was recently awarded the Richard C. Devereaux Outstanding Young Investigator Award in Lung Cancer Prevention and a grant from the Prevent Cancer Foundation for his study in this area.

**Selected publications:**


1. **Peng B**, Kimmel M. simuPOP: a forward-time population genetics simulation environment. Bioinformatics 21(18):3686-7, 9/2005. PMID: 16020469.
2. **Peng B**, Kimmel M. Simulations provide support for the common disease-common variant hypothesis. Genetics 175(2):763-76, 2/2007. PMCID: PMC1800600.
3. **Peng B**, Amos CI, Kimmel M. Forward-time simulations of human populations with complex diseases. PLoS Genet 3(3):e47, 3/2007. e-Pub 2/2007. PMCID: PMC1829403.
4. **Peng B**, Amos CI. Forward-time simulations of non-random mating populations using simuPOP. Bioinformatics 24(11):1408-9, 6/2008. e-Pub 4/2008. PMCID: PMC2691961.
5. **Peng B**. Simulating gene-environment interactions in complex human diseases. Genome Med 2(3). e-Pub 3/2010. PMID: 20346093.
6. **Peng B**, Li B, Han Y, Amos CI. Power analysis for case-control association studies of samples with known family histories. Hum Genet. e-Pub 4/2010. PMID: 20383776.
7. **Peng B**, Amos CI Forward-time simulation of realistic samples for genome-wide association studies, BMC Bioinformatics, 2010. 11:442
8. **Peng B**, Liu X Simulating sequences of the human genome with rare variants, Human Heredity, 2010, 70:287-291.
9. **Peng B**, Kimmel M, Amos CI, Forward-time population genetics simulations, Methods, Implementation and Applications. 2011 Wiley & Sons. ISBN 9780470503485

**Alexander V. Prokhorov, M.D., Ph.D.,** has spent most of his research career in Texas and is currently a professor in the Department of Behavioral Science, Director of the Tobacco Outreach Education Program (TOEP) and Co-Director of the Duncan Family Institute e-Health Technology Program.

During his tenure at MD Anderson, Dr. Prokhorov has established a strong record of obtaining state and federally-funded research grants and has authored numerous peer-reviewed publications and book chapters. His work focuses primarily on creating and testing innovative tobacco prevention and cessation programs for high risk teens and young adults. His interactive multimedia website ASPIRE (A Smoking Prevention Interactive Experience) has reached thousands of young users in Texas, across the nation and the world. He also develops programs aimed at increasing awareness of the tobacco risks among the general public and enhancing smoking cessation counseling skills among health care providers in Texas and beyond.

Dr. Prokhorov is a much sought after speaker for national and international conferences and seminars aimed at facilitating tobacco control and cancer prevention. He currently serves as a member of the Julius Richmond Center of Excellence with the mission to protect children from exposure to secondhand smoke. His honors include the World Health Organization (WHO) Medal and Certificate (1990), George and Barbara Bush Endowment for Innovative Cancer Research (2003), MD Anderson Educator of the Month (September 2003), an invitation to testify on smoking and adolescents before the President's Cancer Panel (2007), and the Robert M. Chamberlain Distinguished Mentor Award Nominee (2009). Most recently, Dr. Prokhorov was awarded the 2011 Joseph Cullen Award for Excellence in Tobacco Research from the American Society of Preventive Oncology. He was also a 2011 Julie and Ben Rodgers Award for Excellence in Cancer Prevention nominee.

Dr. Prokhorov received his M.D. from the 1st Moscow Sechenov School and his Ph.D. from The USSR Cardiology Research Center.

**Selected Publications:**


1. **Prokhorov AV**, Ford KH, Mullin Jones M. Smoking Cessation among College Students: Challenges and Outcomes. In: Smoking Cessation: Theory, Interventions and Prevention. Ed(s) JE Landow. Nova Science Publishers, Inc: Hauppauge, New York, 2008.
2. **Prokhorov AV**, Ford KH, Hudmon KS. Smoking Cessation. In: Lung Cancer, Third Edition. Ed(s) J Roth, JD Cox & WK Hong. Blackwell Publishing: United Kingdom, 2008.
3. Wilkinson AV, Shete S, Vasudevan V, **Prokhorov AV**, Bondy ML, Spitz MR. Influence of subjective social status on the relationship between positive outcome expectations and experimentation with cigarettes. J Adolesc Health 44(4):342-8, 4/2009. e-Pub 10/2008. PMCID: PMC2705959.
4. Spelman AR, Spitz MR, Kelder SH, **Prokhorov AV**, Bondy ML, Frankowski RF, Wilkinson AV. Cognitive susceptibility to smoking: two paths to experimenting among Mexican origin youth. Cancer Epidemiol Biomarkers Prev 18(12):3459-3467, 12/2009.
5. Wilkinson AV, Spitz MR, **Prokhorov AV**, Bondy ML, Shete S, Sargent JD. Exposure to smoking imagery in the movies and experimenting with cigarettes among Mexican heritage youth. Cancer Epidemiol Biomarkers Prev 18(12):3435-3443, 12/2009. PMCID: PMC2791895.
6. Hudmon KS, Corelli RL, **Prokhorov AV**. Current approaches to pharmacotherapy for smoking cessation. Therapeutic Advances in Respiratory Disease 4(1):35-47, 2/2010.
7. **Prokhorov AV**, Kelder SH, Shegog R, Conroy JL, Murray N, Peters R, Cinciripini PM, De Moor C, Hudmon KS, Ford KH. Project ASPIRE: An interactive multimedia smoking prevention and cessation curriculum for culturally diverse high school students. Subst Use Misuse 45(6):983-1006, 5/2010.
8. **Prokhorov AV**, Hudmon KS, Marani S, Foxhall L, Ford KH, Luca NS, Wetter DW, Cantor SB, Vitale F, Gritz ER. Engaging physicians and pharmacists in providing smoking cessation counseling. Archives of Internal Medicine 170(18):1640-1646, 10/2010. e-Pub 10/2010.

**Jason D. Robinson, Ph.D.** is an assistant professor in the Department of Behavioral Science at the University of Texas MD Anderson Cancer Center, and a member of its Tobacco Research and Treatment Program. His research interests include identifying the neurobiological mechanisms underlying nicotine dependence and withdrawal and translating this knowledge to assist those wishing to quit smoking, particularly those resistant to treatment and prone to smoking, such as the chronically depressed.

Dr. Robinson is a clinical psychologist with extensive experience as a psychophysiologist, and is proficient in the use of electroencephalography (EEG), event-related potentials (ERP), impedance cardiography, skin conductance, and electromyography (EMG) methodology to study addiction in humans. He is currently completing a NIDA K23 Mentored Patient-Oriented Research Career Development Award (1K23DA024697-01; PI: Robinson), a grant designed to assist him to become an independent researcher with a focus on understanding how the attentional biases of smokers to drug and affective cues help to maintain neural sensitization to nicotine, using ERP techniques. He is currently co-investigator on a NIDA R01 grant titled "Pharmacogenetics, Emotional Reactivity and Smoking" (1R01DA017073, PI: Cinciripini), which is designed to assess the effects of the drugs varenicline and bupropion on changes in emotional reactivity during cessation, and to determine if these effects are moderated by genotype. This grant also uses EEG and acoustic startle eyeblink methodology to directly measure the affects of these drugs on the central nervous system. Dr. Robinson is also co-investigator on another NIDA R01 grant (3R01DA017073-02S1; PI: Cinciripini) that supplements the pharmacogenetics grant by allowing us to examine neurological adaptation to brain structures not accessible by EEG techniques.

**Selected Publications:**


1. Blalock JA, **Robinson JD**, Wetter DW, Cinciripini PM. Relationship of DSM-IV-based depressive disorders to smoking cessation and smoking reduction in pregnant smokers. Am J Addict 15(4):268-277, Jul-Aug, 2006. PMID: 16867921.
2. **Robinson JD**, Cinciripini PM, Carter BL, Lam CY, Wetter DW. Facial EMG as an index of affective response to nicotine. Exp Clin Psychopharmacol 15(4):390-399, 2007.
3. **Robinson JD**, Cinciripini PM, Tiffany ST, Carter BL, Lam CY, Wetter DW. Gender differences in affective response to acute nicotine administration and deprivation. Addict Behav 32(3):543-561, 2007.
4. **Robinson JD**, Lam CY, Minnix JA, Wetter DW, Tomlinson GE, Minna JD, Chen TT, Cinciripini PM. The DRD2 TaqI-B polymorphism and its relationship to smoking abstinence and withdrawal symptoms. Pharmacogenomics J 7(4):266-274, 2007.
5. Versace F, **Robinson JD**, Lam CY, Minnix JA, Brown VL, Carter BL, Wetter DW, Cinciripini PM. Cigarette cues capture smokers' attention: Evidence from event-related potentials. Psychophysiology 47(3):435-441, 5/2010. e-Pub 1/2010.
6. **Robinson JD**, Lam CY, Carter BL, Minnix JA, Cui Y, Versace F, Wetter DW, Cinciripini PM. A multimodal approach to assessing the impact of nicotine dependence, nicotine abstinence, and craving on negative affect in smokers. Exp Clin Psychopharmacol 19(1):40-52, 2/2011.
7. Versace F, Minnix JA, **Robinson JD**, Lam CY, Brown VL, Cinciripini PM. Brain reactivity to emotional, neutral, and cigarette-related stimuli in smokers. Addict Biol 16(2):296-307, 4/2011. e-Pub 12/2010. PMCID: PMC3058803.
8. Blalock JA, Minnix JA, Karam-Hage M, Gritz ER, **Robinson JD**, Cinciripini PM. The effect of mood, anxiety and alcohol use disorders on smoking cessation in cancer patients. J Cogn Psychother 25(1):82-96, 2011.
9. Lam CY, **Robinson JD**,Versace F, Minnix JA, Cui Y, Carter BL, Wetter DW, Cinciripini, PM. Affective reactivity during smoking cessation of never-quitters compared with that of abstainers, relapsers, and continuing smokers. Exp Clin Psychopharmacol. In Press.
10. **Robinson JD**, Lam CY, Carter BL, Wetter DW, Cinciripini PM. Negative reinforcement smoking outcome expectancies are associated with affective response to acute nicotine administration and abstinence. Drug Alcohol Depend. In Press.

**Imad Shureiqi, M.D., M.S.,** is an associate professor in the Department of GI Medical Oncology and Clinical Cancer Prevention at The University of Texas MD Anderson Cancer Center. Dr. Shureiqi's research efforts have been focused on the identification of molecular cellular events that can be targeted to develop new drugs for the prevention and treatment of colon cancer. His research has lead to the identification of 15-lipoxygenase-1, an enzyme involved in lipid metabolism and lost in cancer cells, as a potential drug target to reactivate programmed cell death in cancer cells.

Additionally, the research effort from his group has contributed to the identification of another related gene involved in lipid metabolism, Peroxisome proliferator–activated receptor-delta, as another potential drug target for the treatment and prevention of colon cancer.

A native of Syria, Dr. Shureiqi earned his medical degree at Damascus University and his master's degree in Clinical Trial Design and Statistical Analysis at the University of Michigan. He completed an internal medicine internship and residency at New York State University at Buffalo, and a medical oncology fellowship at the University of Michigan. He joined the University of Texas MD Anderson Cancer Center in 1999 and he has been a recipient of the University of Texas MD Anderson Cancer Center Physician Scientist Award.

**Selected publications:**


1. **Shureiqi I,** Wojno KJ, Poore JA, Reddy RG, Moussalli MJ, Spindler SA, Greenson JK, Normolle D, Hasan AA, Lawrence TS, Brenner DE. Decreased 13-S-hydroxyoctadecadienoic acid levels and 15-lipoxygenase-1 expression in human colon cancers. Carcinogenesis 20:1985-1995, 1999.
2. **Shureiqi I,** Chen D, Lee JJ, Yang P, Newman RA, Brenner DE, Lotan R, Fischer SM, Lippman SM. 15-LOX-1: a novel molecular target of nonsteroidal anti-inflammatory drug-induced apoptosis in colorectal cancer cells. J Natl Cancer Inst 92:1136-1142, 2000.
3. **Shureiqi I,** Chen D, Lotan R, Yang P, Newman RA, Fischer SM, Lippman SM. 15-Lipoxygenase-1 mediates nonsteroidal anti-inflammatory drug-induced apoptosis independently of cyclooxygenase-2 in colon cancer cells. Cancer Res 60:6846-6850, 2000.
4. **Shureiqi I,** Lippman SM. Lipoxygenase modulation to reverse carcinogenesis. Cancer Res 61:6307-6312, 2001.
5. **Shureiqi I,** Jiang W, Zuo X, Wu Y, Stimmel JB, Leesnitzer LM, Morris JS, Fan HZ, Fischer SM, Lippman SM. The 15-lipoxygenase-1 product 13-S-hydroxyoctadecadienoic acid down-regulates PPAR-delta to induce apoptosis in colorectal cancer cells. Proc Natl Acad Sci U S A 100:9968-9973, 2003.
6. Zuo X, Shen L, Issa JP, Moy O, Morris JS, Lippman SM, **Shureiqi I.** 15-Lipoxygenase-1 transcriptional silencing by DNA methyltransferase-1 independently of DNA methylation. FASEB J 22:1981-92, 2008.
7. Wu Y, Fang B, Yang XQ, Wang L, Chen D, Krasnykh V, Carter BZ, Morris JS, **Shureiqi I.** Therapeutic Molecular Targeting of 15-Lipoxygenase-1 in Colon Cancer. Mol Ther 16:886-892, 2008.
8. Zuo X, Peng Z, Moussalli MJ, Morris JS, Broaddus RR, Fischer SM, **Shureiqi I.** Targeted genetic disruption of peroxisome proliferator-activated receptor-delta and colonic tumorigenesis. J Natl Cancer Inst 101:762-767, 2009.
9. **Shureiqi I,** Chen D, Day RS, Zuo X, Hochman FL, Ross WA, Cole RA, Moy O, Morris JS, Xiao L, Newman RA, Yang P, Lippman SM. Profiling lipoxygenase metabolism in specific steps of colorectal tumorigenesis. Cancer Prev Res. 3:829-838 2010.

**Sara Souto Strom, Ph.D.,** is an associate professor in the Department of Epidemiology at MD Anderson Cancer Center and Adjunct Professor at the University of Puerto Rico, San Juan. She is the current director of the Mexican-American Cohort. A native from Argentina, Dr. Sara Strom holds a Dr.B.S. in Biology from the University of Buenos Aires, Argentina and a Ph.D. in Public Health from the University of Texas School of Public Health.

Dr. Strom has a multi-faceted, expansive research program in collaboration with national and international collaborators. Her research focuses on the molecular epidemiology of cancer risk and prognosis. Her current studies focus on analyzing genetic, epidemiological and clinical factors associated with the risk of developing prostate cancer, leukemia and myelodysplatic syndromes and their role in disease progression. Dr. Strom's unique perspective as a cancer patient has strengthened her interest in survivorship research to include treatment-related outcomes. Dr. Strom has had a long-term interest in health disparities research reflected in her studies of cancer in Mexican-American and African-American populations.

**Selected publications:**


1. **Strom SS**, Wang X, Pettaway CA, Logothetis CJ, Yamamura Y, Do KA, Babaian RJ, Troncoso P. Obesity, weight gain, and risk of biochemical failure among prostate cancer patients following prostatectomy. Clin Cancer Res 11:6889-94, 10/2005.
2. Hernández-Valero MA, Wilkinson AV, Forman MR, Etzel CJ, Cao Y, Barcenas CH, **Strom SS**, Spitz MR, Bondy ML. Maternal BMI and country of birth as Indicators of childhood obesity in children of Mexican origin. Obesity (Silver Spring) 15:2512-19, 10/2007.
3. **Strom SS**, Vélez-Bravo V, Estey EH. Epidemiology of myelodysplastic syndromes. Semin Hematol 45(1):8-13, 1/2008.
4. **Strom SS**, Yamamura Y, Flores-Sandoval FN, Pettaway CA, Lopez DS. Prostate cancer in Mexican-Americans: identification of risk factors. Prostate 68:563-70, 4/2008.
5. **Strom SS**, Yamamura Y, Forman MR, Pettaway CA, Barrera SL, DiGiovanni J. Saturated fat intake predicts biochemical failure after prostatectomy. Int J Can 122:2581-5, 6/2008.
6. **Strom SS**, Yamamura Y, Kantarijian HM, Cortes-Franco JE. Obesity, weight gain, and risk of chronic myeloid leukemia. Cancer Epidemiol Biomarkers Prev 18(5):1501-6, 5/2009. PMCID: PMC2918285.
7. **Strom SS**, Estey E, Outschoorn UM, Garcia-Manero G. Acute myeloid leukemia outcome: role of nucleotide excision repair polymorphisms in intermediate risk patients. Leuk Lymphoma 51(4):598-605, 4/2010. e-Pub 2/2010. PMCID: PMC2918264.

**Larkin L. Strong, Ph.D., M.P.H.,** is an instructor in the Department of Health Disparities Research and a recipient of the second Duncan Family Institute Mentored Junior Faculty Fellowship. Dr. Strong's research interests focus on investigating and addressing cancer-related health disparities, with an emphasis on understanding how social, cultural, and environmental factors influence cancer preventive behaviors such as physical activity in minority populations.

A theme common throughout Dr. Strong's work is the recognition that health and health behaviors are embedded within social, physical, economic, and cultural contexts. Understanding how these contexts influence behavior is integral to the development of effective prevention strategies that aim to decrease adverse behaviors and promote healthy lifestyles. Prior to joining MD Anderson in 2008, Dr. Strong's research investigated the importance of the occupational and home environments, cultural beliefs, and family characteristics to the adoption of behaviors to reduce pesticide exposure among farmworkers and their families, and she also worked with community and academic partners to design, implement, and evaluate a pilot intervention of neighborhood walking groups to promote healthy lifestyles among low-income residents. Since joining MD Anderson in 2008, Dr. Strong's research has focused increasingly on improving understanding of activity patterns in minority populations, and the ways in which social, cultural, and environmental influences help to shape engagement in physical activity and sedentary behaviors. Dr. Strong is currently examining how neighborhood social and physical environments influence activity behaviors in diverse samples of adults and adolescents in Houston, TX, including the pathways through which they affect behavior.

Dr. Strong was selected as an Environmental Health Promotion Student Fellow by the Society for Public Health Education and was the recipient of a doctoral dissertation grant through the Fahs-Beck Fund for Research and Experimentation. She has also received awards to attend the 2011 Cancer Health Disparities Program Meeting sponsored by the National Cancer Institute and was competitively selected to participate in the 2011 Physical Activity and Public Health Course offered by the University of South Carolina.

Dr. Strong completed her graduate work at the University of Washington School of Public Health, earning her doctorate in Health Services in 2006 and a Master of Public Health (M.P.H.) in Social and Behavioral Sciences in 2002. Prior to joining MD Anderson, Dr. Strong completed a highly competitive postdoctoral fellowship at the University of Michigan with the Kellogg Health Scholars Program, a program that emphasizes skills in community-academic partnering as a meaningful approach for reducing racial, ethnic, and socioeconomic disparities in health.

**Selected publications:**

1. **Strong LL**, Zimmerman FJ. Occupational injury and absence from work among African American, Hispanic, and non-Hispanic White workers in the national longitudinal survey of youth. Am J Public Health 95(7):1226-32, 7/2005. PMCID: PMC1449344.
2. **Strong LL**, Thompson B, Koepsell TD, Meischke H. Factors associated with pesticide safety practices in farmworkers. Am J Ind Med 51(1):69-81, 1/2008.
3. **Strong LL**, Thompson B, Koepsell TD, Meischke H, Coronado GD. Reducing the take-home pathway of pesticide exposure: behavioral outcomes from the para niños saludables study. J Occup Environ Med 51(8):922-33, 8/2009.
4. **Strong LL**, Starks HE, Meischke H, Thompson B. Perspectives of Mothers in Farmworker Households on Reducing the Take-Home Pathway of Pesticide Exposure. Health Educ Behav 36(5):915-29, 10/2009. e-Pub 1/2009.
5. **Strong LL**, Israel BA, Schulz AJ, Reyes A, Rowe Z, Weir SS, Poe C. Piloting interventions within a community-based participatory research framework: lessons learned from the healthy environments partnership. Prog Community Health Partnersh 3(4):327-34, 2009. PMCID: PMC2820110.
6. **Strong LL**, Anderson CB, Miranda PY, Bondy ML, Zhou R, Etzel CJ, Spitz MR, Wilkinson AV. Gender differences in sociodemographic and behavioral influences of physical activity in Mexican-origin adolescents. Journal of Physical Activity and Health, Aug 2 [Epub ahead of print], 2011.

**Kenneth Y. Tsai, M.D. Ph.D.** is an assistant professor in the Departments of Dermatology and Immunology at MD Anderson Cancer Center. His work focuses on skin cancer immunology and mechanisms of targeted therapy. He received his medical degree from Harvard Medical School and Ph.D. from the Massachusetts Institute of Technology working the laboratory of Tyler Jacks, Ph.D. He trained in dermatology and dermatopathology at Harvard Medical School prior to joining the faculty at MD Anderson.

Dr. Tsai is using a combination of mouse models and human tissue to explore the interactions of tumor cells and immune cell subsets relevant for tumor progression and tumor killing in cutaneous squamous cell carcinoma. He is also employing a cross-species genomic approach to identify genetic events that dictate the progression from actinic keratosis to squamous cell carcinoma. Recently his group has identified clinically relevant off-target effects of the BRAF inhibitors used for melanoma and is exploring these pathways in melanoma resistance. Dr. Tsai is also engaged in research exploring the identification and use of skin biomarkers to monitor and predict responses to targeted cancer therapies.

**Selected Publications:**


1. **Tsai KY**, Hu Y, Macleod KF, Crowley D, Yamasaki L, Jacks T. Mutation of E2f-1 suppresses apoptosis and inappropriate S phase entry and extends survival of Rb-deficient mouse embryos. Mol Cell 2(3):293-304, 9/1998.
2. Alenghat FJ, Fabry B, **Tsai KY,** Goldmann WH, Ingber DE. Analysis of cell mechanics in single vinculin-deficient cells using a magnetic tweezer. Biochem Biophys Res Commun 277(1):93-9, 10/2000.
3. Irwin M, Marin MC, Phillips AC, Seelan RS, Smith DI, Liu W, Flores ER, **Tsai KY**, Jacks T, Vousden KH, Kaelin WG. Role for the p53 homologue p73 in E2F-1-induced apoptosis. Nature 407(6804):645-8, 10/2000.
4. Boyd SD, **Tsai KY**, Jacks T. An intact HDM2 RING-finger domain is required for nuclear exclusion of p53. Nat Cell Biol 2(9):563-8, 9/2000.
5. Geng Y, Yu Q, Whoriskey W, Dick F, **Tsai KY**, Ford HL, Biswas DK, Pardee AB, Amati B, Jacks T, Richardson A, Dyson N, Sicinski P. Expression of cyclins E1 and E2 during mouse development and in neoplasia. Proc Natl Acad Sci U S A 98(23):13138-43, 11/2001.
6. **Tsai KY**, MacPherson D, Rubinson DA, Crowley D, Jacks T. ARF is not required for apoptosis in Rb mutant mouse embryos. Curr Biol 12(2):159-63, 1/2002.
7. Flores ER, **Tsai KY**, Crowley D, Sengupta S, Yang A, McKeon F, Jacks T. p63 and p73 are required for p53-dependent apoptosis in response to DNA damage. Nature 416(6880):560-4, 4/2002.
8. **Tsai KY**, MacPherson D, Rubinson DA, Nikitin AY, Bronson R, Mercer KL, Crowley D, Jacks T. ARF mutation accelerates pituitary tumor development in Rb+/- mice. Proc Natl Acad Sci U S A 99(26):16865-70,12/2002.
9. **Tsai KY**, Tsao H. The genetics of skin cancer. Am J Med Genet C Semin Med Genet 131C(1):82-92, 11/2004.
10. Niendorf KB, Goggins W, Yang G, Tsai KY, Shennan M, Bell DW, Sober AJ, Hogg D, Tsao H. MELPREDICT: a logistic regression model to estimate CDKN2A carrier probability. J Med Genet 43(6):501-6, 6/2006.
11. **Tsai KY**, Tsao H. Primer on the human genome. J Am Acad Dermatol 56(5):719-35, 5/2007.
12. **Tsai KY**. Systemic adjuvant therapy for patients with high-risk melanoma. Arch Dermatol 143(6):779-82, 6/2007.
13. Su X, Paris M, Gi YJ, **Tsai KY**, Cho MS, Lin YL, Biernaskie JA, Sinha S, Prives C, Pevny LH, Miller FD, Flores ER. TAp63 prevents premature aging by promoting adult stem cell maintenance. Cell Stem Cell 5(1):64-75, 7/2009.
14. Yang G, Thieu K, **Tsai KY**, Piris A, Udayakumar D, Njauw C-NJ, Ramoni M, Tsao H. Dynamic Gene Expression Analysis Links Melanocyte Growth Arrest with Nevogenesis. Cancer Res 69(23):9029-37, 12/2009. e-Pub 11/2009.
15. Rangwala S, **Tsai KY**. Roles of the Immune System in Skin Cancer. Br J Dermatol. e-Pub 7/2011.

**Ivan P. Uray, M.D., Ph.D.** is assistant professor in the Department of Clinical Cancer Prevention since early 2010. His work focuses on understanding the mechanisms by which chemopreventive agents work and the development of novel pharmacological approaches to prevent cancer. Dr. Uray is currently conducting basic scientific research in the field of cancer prevention and he has been responsible for the design, installation and operation of the high throughput imaging facility in the Department of Clinical Cancer Prevention.

Dr. Uray received his medical and Ph.D. degrees from The University Medical School of Debrecen in Hungary and continued as a postdoctoral fellow at the University of Texas at Houston in the laboratory of Dr. Peter Davies, where he studied the molecular underpinnings of the recovery of myocardial function by mechanical unloading. Dr. Uray also trained in the field of cancer prevention joining the work group of Dr. Powel Brown at the Breast Cancer Center at the Baylor College of Medicine in 2004. Subsequently, Dr. Uray has built his expertise in both microscopic imaging and high throughput technologies as a junior faculty at the Department of Molecular and Cellular Biology at Baylor working with Dr. Michael Mancini.

Through the operation of the high throughput imaging facility Dr. Uray supports the efforts of multiple basic science research projects aimed at discovering critical molecular targets of cancer preventive agents. These efforts aim at the utilization of these discovery research findings for secondary translational research projects focused on the development of targeted therapies to prevent cancer in animal models. These studies will lead the way to subsequent clinical research projects comprised of human subjects at risk of cancer.

As co-PI with Dr. Mancini, Dr. Uray completed an NIH funded study identifying multiparametric phenotypic changes of mammary epithelial cells to be used as novel markers in the search for new and improved chemopreventive agents. Most recently the Duncan Family Institute Seed Funding Program has generously awarded funding to Dr. Uray to identify synergistic combinations of known and so far unknown cancer preventive compounds in a series of high throughput *in vitro* and subsequent preclinical *in vivo* studies.

**Selected Publications:**


1. **Uray IP**, Davies PJ, Fésüs L. Pharmacological Separation of the Expression of Tissue Transglutaminase and Apoptosis after Chemotherapeutic Treatment of HepG2 Cells. Mol Pharmacol 59(6):1988-1394, 6/2001. PMID: 11353797.
2. **Uray IP**, Connelly JH, Thomázy V, Shipley GL, Vaughn WK, Frazier OH, Taegtmeyer H, Davies PJ. Left Ventricular Unloading Alters Receptor Tyrosine Kinase Expression in the Failing Human Heart. J.Heart and Lung Transplantation. J Heart Lung Transplant 21(7):771-782, 7/2002. PMID: 12100903.
3. **Uray IP**, Connelly JH, Frazier OH, Taegtmeyer H, Davies PJ. Mechanical Unloading Increases Caveolin Expression in the Failing Human Heart. Cardiovasc Res 59(1):57-66, 7/2003. PMID: 12829176.
4. **Uray IP**, Liang Y, Hyder SM. Estradiol down-regulates CD36 expression in human breast cancer cells. Cancer Lett 15(1):101-107, 4/2004. PMID: 15050739.
5. **Uray IP**, Brown PH. Prevention of breast cancer: current state of the science and future opportunities. Expert Opin Investig Drugs 15(12):1583-600, 12/2006. PMID: 17107283.
6. Shen Q,**Uray IP**, Li Y, Krisko TI, Strecker TE, Kim HT, Brown PH. The AP-1 transcription factor regulates breast cancer cell growth via cyclins and E2F factors. Oncogene 27(3):366-77, 1/2008. e-Pub 7/2007. PMID: 17637753.
7. **Uray IP**, Shen Q, Seo HS, Kim H, Lamph WW, Bissonnette RP, Brown PH. Rexinoid-induced expression of IGFBP-6 requires RARbeta-dependent permissive cooperation of retinoid receptors and AP-1. J Biol Chem 284(1):345-353, 1/2009. e-Pub 10/2008. PMCID: PMC2610495.
8. Szafran AT, Hartig S, Sun H, **Uray IP,** Szwarc M, Shen Y, Mediwala SN, Bell J, McPhaul MJ, Mancini MA, Marcelli M. Androgen Receptor Mutations Associated with Androgen Insensitivity Syndrome: A High Content Analysis Approach leading to Personalized Medicine. PLoS One 4(12):e8179, 2009. e-Pub 12/2009. PMCID: PMC2785468.
9. **Uray IP**, Brown PH. Chemoprevention of Hormone Receptor-negative Breast Cancer:New Approaches Needed. Recent Results Cancer Res 188:147-62, 2011. PMID: 21253797.

**Javier O. Valenzuela, Ph.D.,** is an instructor in the Department of Symptom Research at MD Anderson Cancer Center. His work focuses on the study of the immunological mechanisms of clinical symptoms and toxicities that are related to cancer and cancer treatment. He received his M.S. degree in Biochemistry from the Catholic University of Chile in 1996 and his Ph.D. degree in Microbiology, Immunology and Cancer Biology from the University of Minnesota in 2003. He completed post-doctoral training at the H. Lee Moffitt Cancer Center before joining the faculty of MD Anderson Cancer Center in 2009. He is the recipient of the 2008 H Lee Moffitt Cancer Center's Best Research Poster Award, the 2009 European Organization for Research and Treatment of Cancer's EORTC/Pfizer travel award, and the 2009 Hawn Foundation research fellowship.

Dr. Valenzuela has broad training in basic biochemistry and immunology using murine models of cancer immunity and cancer treatment-related toxicities. His doctoral research in tumor immunology focused on the inflammatory mechanisms at work during the activation of naïve CD8 T cells against tumors cells. His post-doctoral research in transplantation immunology focused on the identification of intracellular CD8 T-cell signaling pathways that mediate graft-versus-host disease (GVHD) and other side-effects of allogeneic bone marrow transplantation.
Dr. Valenzuela's current projects focus on the translation of basic research knowledge into clinical studies in humans, with an emphasis on the role of inflammation in the generation of clinical symptoms during cancer therapy. His long term goal is to identify the best treatment strategies that minimize the symptoms and side-effects of cancer treatment while maximizing the effectiveness of the anti-tumor immune response.

**Selected Publications**


1. Gonzalez, B. Clement, P., Cespedes, R., **Valenzuela, J**., Matus, V., Maturana, A. and Ehrenfeld, N. (1995). Degradation of environmental pollutants by Alcaligenes eutrophus JMP134 (pJP4). Environmental Toxicology and Water Quality 32, 112.
2. **Valenzuela, J**., Bumann, U., Matus, V., Cespedes, R. and Gonzalez B. (1997). Degradation of chlorophenols by Alcaligenes eutrophus JMP134 (pJP4) in bleached Kraft mill effluents. Applied Environmental Microbiology 63, 77.
3. **Valenzuela, J.O**., Schmidt, C., and Mescher, M. (2002). The roles of IL-12 in providing a third signal for clonal expansion of naïve CD8+ T cells. *Journal of Immunology* 169(12), 6842-9.
4. **Valenzuela, J.O**., Hammerbeck, C. and Mescher, M.F. (2005). Cutting Edge: Bcl-3 upregulation by signal 3 cytokine (IL-12) prolongs survival of antigen-activated CD8 T cells. *Journal of Immunology* 174: 600.
5. **Valenzuela, J. O.,** Hammerbeck, C. D., & Mescher, M. F. (2005). Cutting edge: Bcl-3 up-regulation by signal 3 cytokine (IL-12) prolongs survival of antigen-activated CD8 T cells. Journal of Immunology, 174(2), 600-604.
6. Curtsinger, J. M., **Valenzuela, J. O.,** Agarwal, P., Lins, D., & Mescher, M. F. (2005). Type I IFNs provide a third signal to CD8 T cells to stimulate clonal expansion and differentiation. Journal of Immunology, 174(8), 4465-4469.
7. **Valenzuela, J. O.,** Iclozan, C., Hossain, M. S., Prlic, M., Hopewell, E., Bronk, C. C., et al. (2009). PKCtheta is required for alloreactivity and GVHD but not for immune responses toward leukemia and infection in mice. Journal of Clinical Investigation, 119(12), 3774-3786. PMCID: 2786796.
8. Papageorgiou, T.D., **Valenzuela, J.O**., and Jackson E. F. (2010) Functional Imaging of Symptoms. In C. Cleeland, M. Fisch and A. Dunn (Eds.) *Cancer Symptom Science: Measurement, Mechanisms, and Management*. Cambridge University Press, Cambridge, U.K.

**Francesco Versace, Ph.D.**, is an experimental psychologist that currently holds an instructor position in the Department of Behavioral Science at The University of Texas MD Anderson Cancer Center.

Before joining MD Anderson, Dr. Versace was a post doctoral student at the NIMH Center for the Study of Emotion at Attention at the University of Florida. There, he refined his expertise in affective neuroscience by conducting experiments aimed at studying the interactions between emotional and cognitive processes using functional MRI and high density event-related potentials (ERPs).

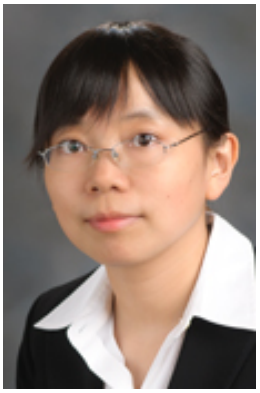
His current line of research focuses on the psychophysiology and psychopharmacology of nicotine addiction. In particular, he uses dense sensor array ERPs and fMRI to study the relationships between emotional processes and the maintenance of smoking behavior, cessation, and relapse.

Dr. Versace earned his Ph.D. at the University of Trieste (Italy) where his areas of interest were centered on cognitive psychophysiology, statistics, and research methods in psychology.

In April 2010, Dr. Versace received the first faculty fellowship from The University of Texas MD Anderson Cancer Center Duncan Family Institute for Cancer Prevention and Risk Assessment. Effective September 2011, Dr. Versace will be promoted to a Tenure-Track Assistant Professor position in the Department of Behavioral Science at The University of Texas MD Anderson Cancer Center.

**Selected Publications**


1. **Versace, F.**, Lam, C.Y., Engelmann, JM, Robinson, J.D., Minnix, J.A., Brown, V.L., Cinciripini, P.M. Beyond cue reactivity: Blunted brain responses to pleasant stimuli predict long-term smoking abstinence. *Addiction Biology, Oct 4 [Epub ahead of print].*
2. Lam, C.Y., Robinson, J.D., **Versace, F.**, Minnix, J.A., Cui, Y., Carter, B.L., Wetter, D.W., Cinciripini, P.M. Affective reactivity during smoking cessation for never-quitters compared with that of abstainers, relapsers, and continuing smokers. *Experimental and Clinical Psychopharmacology*, Oct 31 [Epub ahead of print].
3. **Versace, F.**, Minnix, J.A., Robinson, J.D., Lam, C.Y., Brown, V.L., & Cinciripini, P.M. (2011) Brain reactivity to emotional and neutral cues in smokers. *Addiction Biology, 16,* 296-307.
4. Robinson, J.D., Lam, C.Y., Carter, B.L., Minnix, J.A., Cui, Y., **Versace, F.**, Wetter, D.W., & Cinciripini, P.M. (2011). A multimodal approach to assessing the impact of nicotine dependence, nicotine abstinence, and craving on negative affect in smokers. *Experimental and Clinical Psychopharmacology,* 19(1): 40-52.
5. Lang, P.J, Wangelin, B.C., Bradley, M.M., **Versace, F.**, Davenport, P.W. & Costa V.D. Threat of suffocation and defensive reflex activation. *Psychophysiology*, 48(3):393-6.
6. Costa V.D, Lang, P.J., Sabatinelli, D., Bradley, M.M., & **Versace, F.** Emotional imagery: Assessing pleasure and arousal in the brain's reward circuitry. *Human Brain Mapping*, 31(9):1446-57.
7. **Versace, F.**, Bradley, M.M., & Lang, P.J. (2010). Memory and ERPs for rapidly presented emotional pictures. *Experimental Brain Research*, 205(2): 223-233..
8. **Versace, F.**, Robinson, J.D., Lam, C.Y., Minnix, J.A., Brown, V.L., Carter, B.L., Wetter, D.W., & Cinciripini, P.M. (2010) Cigarette cues capture smokers' attention: Evidence from event-related potentials. *Psychophysiology* 47, 435–441
9. Miccoli, L., **Versace, F.**, Koterle, S., & Cavallero, C. (2008) Comparing sleepiness and sleep inertia: lapses make the difference. *Chronobiology International*, 25:725-44.
10. **Versace, F.**, Codispoti, M., & Mazzetti, M. (2008) The temporal stability of the effects induced by the cued reaction time task. *Assessment*, 15, 145-152



**Jian Wang, Ph.D.,** is an instructor at the Department of Epidemiology, Division of Cancer Prevention and Population Sciences, The University of Texas MD Anderson Cancer Center.

With a background in statistics, mathematics and computer science, Dr. Wang primarily focuses on development and implementation of innovative statistical methods for cancer data analysis to identify disease-causal or disease-related risk factors (environmental and genetic factors) and discover potential interactions among these risk factors. She also has a research focus in developing risk models for nicotine addiction and smoking cessation with more sophisticated statistical approaches.

Dr. Wang has developed several innovative and powerful statistical methods for detecting risk factors associated with diseases in candidate gene case-control studies and genome-wide association studies since she joined MD Anderson in 2007. These approaches have been actively applied to the studies of different cancers and behavioral traits.

Dr. Wang graduated from University of Colorado at Boulder, Department of Applied Mathematics, with a Ph.D. in statistics in 2007 and a master's degree in Applied Mathematics in 2004. She also holds a master's degree in Management Sciences from Tianjin University, China. Dr. Wang completed her postdoctoral training in Statistical Genetics and Epidemiology in the Department of Epidemiology, MD Anderson Cancer Center.

In September 2011, Dr. Wang was awarded with the highly competitive faculty fellowship from The University of Texas MD Anderson Cancer Center Duncan Family Institute for Cancer Prevention and Risk Assessment.

**Selected Publications:**


1. **Wang J**, Shete S. A test for genetic association that incorporates information about deviation from Hardy-Weinberg proportions in cases. American Journal of Human Genetics 83(1):53-63, 7/2008. PMCID: PMC2443842.
2. **Wang J**, Shete S. Is the tail strength measure more powerful for genetic association test? And tail strength to combine two p-values: their correlation cannot be ignored: Authors reply. American Journal of Human Genetics 84(2):298-300, 2/2009. PMCID: PMC2443842.
3. **Wang J**, Shete S. Using both cases and controls for testing Hardy-Weinberg proportions in a genetic association study. Human Heredity 69(3):212-218, 3/2010. PMCID: PMC2918648.
4. **Wang J**, Spitz MR, Amos CI, Wilkinson AV, Wu X, Shete S. Mediating effects of smoking and chronic obstructive pulmonary disease on the relation between the CHRNA5-A3 genetic locus and lung cancer risk. Cancer 116(14):3458-3462, 7/2010. PMCID: PMC3073819.
5. **Wang J**, Shete S. A powerful hybrid approach to select top single-nucleotide polymorphisms for genome-wide association study. BMC Genetics 12(1):3, 1/2011. PMCID: PMC3024976.
6. **Wang J**, Shete S. Estimation of odds ratios of genetic variants for the secondary phenotypes associated with primary diseases. Genetic Epidemiology 35(3):190-200, 4/2011. PMCID: PMC3063504.
7. **Wang J**, Shete S. Power and type I error results for a bias-correction approach recently shown to provide accurate odds ratios of genetic variants for the secondary phenotypes associated with primary diseases. Genetic Epidemiology. e-Pub 7/2011.

**Jeffrey S. Wefel, Ph.D.** is a clinical neuropsychologist in the Department of Neuro-Oncology. He obtained his doctoral degree from the University of Houston, completed his internship at The University of Chicago Medical Center and his fellowship at the U.T. M.D. Anderson Cancer Center.

Dr. Wefel runs an active-consultation liaison service where he conducts comprehensive neuropsychological assessments, performs presurgical fMRI of higher order cognitive function for neurosurgical planning and offers interventions to cancer patients suffering from central nervous system effects of cancer, cancer treatment, or other illnesses. He provides clinical and research mentoring as a Program Supervisor within the Neuropsychology Postdoctoral Fellowship program and holds an appointment as an Adjunct Clinical Assistant Professor in the Clinical Psychology graduate program at the University of Houston where he is involved in the training of Neuropsychology graduate students.

Dr. Wefel's research activities seek to characterize the prevalence, pattern, course, risks, and mechanisms for the development of neurocognitive dysfunction associated with cancer and cancer therapies. Ultimately, this will lead to identification and testing of interventions to prevent and/or minimize cognitive dysfunction. He is a founding and steering committee member of the *International Cognition and Cancer Task Force*, which seeks to advance our understanding of the impact of cancer and cancer treatment on cognitive and behavioral functioning in adults with non-CNS cancers. He is also a member of the *Response Assessment in Neuro-Oncology* task force to define clinical trial endpoints in glioma. He has received grant funding and published peer reviewed articles and book chapters on cancer and cancer treatment related neurotoxicites including cognitive dysfunction, symptom burden, and quality of life. He is the Neurocognitive Chair of numerous Phase I-III cooperative group, consortia and sponsored trials and is an investigator on federally and industry funded trials that are studying the cognitive effects of anti-cancer therapies in patients with CNS and non-CNS cancer as well as interventions to treat these adverse effects.

**Selected Publications:**


1. **Wefel JS**, Lenzi R, Theriault R, Davis RN, Meyers CA. The cognitive sequelae of standard dose adjuvant chemotherapy in women with breast cancer: Results of a prospective, randomized, longitudinal trial. *Cancer* 100(11): 2292-2299, 2004.
2. **Wefel JS**, Lenzi R, Theriault R, Buzdar AU, Cruickshank S, Meyers CA. "Chemobrain" in breast carcinoma? A prologue. *Cancer* 101(3): 466-475, 2004.
3. Chang EL, Wefel JS, Maor MH, Hassenbusch SJ, Mahajan A, Lang FL, Woo SY, Mathews L, Allen P, Shiu AS, Meyers C. Neurocognitive function in patients with 1 to 3 new brain metastases initially treated with stereotactic radiosurgery alone. *Neurosurgery* 60(2): 277-283; discussion 283-284, 2007.
4. **Wefel JS**, Saleeba AK, Buzdar AU, Meyers CA. Acute and late onset cognitive dysfunction associated with chemotherapy in women with breast cancer. *Cancer,* 116(14):3348-3356, 2010.
5. Levin VA, Bidaut L, Hou P, Kumar AJ, **Wefel JS**, Bekele BN, et al.. Randomized double-blind placebo-controlled trial of bevacizumab therapy for radiation necrosis of the CNS. *International Journal of Radiation Oncology, Biology, Physics*, 79(5):1487-1495, 2011.
6. **Wefel JS**, Vidrine D, Gritz E, Marani S, Veramonti TL, Meyers CA. Cognitive Impairment in Men with Testicular Cancer Prior to Adjuvant Therapy. *Cancer*, 117(1):190-196, 2011.
7. Reardon DA, Galanis E, Degroot JF, Cloughesy TF, **Wefel JS**, Lamborn KR, et al.. Clinical trial end points for high-grade glioma: the evolving landscape. *Neuro Oncol*., 13(3):353-361, 2011.
8. **Wefel JS**, Vardy J, Ahles T, Schagen SB. International Cognition and Cancer Task Force recommendations to harmonise studies of cognitive function in patients with cancer. *Lancet Oncol*, 12(7):703-708, 2011.
9. van den Bent, M, **Wefel J**, Schiff D, Taphoorn M, Jaeckle K, Junck L, et al.. Response assessment in neuro-oncology (a report of the RANO group): assessment of outcome in trials of diffuse low-grade gliomas. *Lancet Oncol,* 12(6):583-593, 2011.
10. **Wefel JS**, Cloughesy T, Zazzali JL, Zheng M, Prados M, Wen PY, et al. Neurocognitive function in patients with recurrent glioblastoma treated with bevacizumab. *Neuro Oncol.*, 13(6):660-668, 2011.

**Chongjuan Wei, Ph.D.,** is an assistant professor in the department of Epidemiology, Division of Cancer Prevention and Population Sciences at The University of Texas MD Anderson Cancer Center.

Dr. Wei's research involves Peutz-Jeghers syndrome (PJS) which is an autosomal dominant disorder characterized by gastrointestinal hamartomatous polyps. Patients with PJS have a dramatically increased risk for a variety of cancers. During the past, Dr. Wei developed a mouse model for PJS. Developing such a mouse model provides an important tool to elucidate the mechanism of PJS and PJS-associated cancers and to interrogate novel experimental therapeutics.

Hyperactivation of mTOR has been associated with PJS. Dr. Wei's previous work demonstrated for the first time that rapamycin, an mTOR inhibitory drug, effectively suppresses PJS polyposis. These preclinical studies on a mouse model represent a new targeted therapy for prevention and treatment of PJS and PJS-associated cancer. Currently, Dr. Wei's project involved evaluating a novel mTOR inhibitor- niclosamide, a FDA-approved drug for anti-parasite on PJS mouse model, which is supported by the Duncan Famly Institute Seed Funding Program. Dr. Wei has successfully obtained extramural funding to expand her pilot project. The long term goal of her research is to establish the PJS mouse model as an intervention model for the identification of effective agents for common cancers with dysregulated mTOR signaling in addition to PJS and PJS-associated cancer.

Dr. Wei received her Ph.D. in Biochemistry and Molecular Biology from the Institute of Microbiology, Chinese Academy of Science in 1999. She was awarded with the "Janis Gordon Memorial Postdoctoral Fellowship" and "AACR-AFLAC Scholar-in-Training award" during her post-doctor training at MD Anderson. Since she was promoted to faculty in 2005, Dr. Wei has been awarded three NIH R03 grants, a Lung SPORE New Investigator Award, a Pilot Project from Center for Research of Environment Diseases (CRED), and a Duncan Family Institute Seed Funding Project. In addition to her research activities, Dr. Wei serves as co-director for one of the CCSG core facilities - the Biospecimen Extraction Resource - to assist other investigators in their research activities.

**Selected publications:**


1. **Wei C**, Amos CI, Rashid A, Sabripour M, Nations L, McGarrity TJ, Frazier ML. Correlation of staining for LKB1 and COX-2 in hamartomatous polyps and carcinomas from patients with Peutz-Jeghers syndrome. J Histochem Cytochem 51(12):1665-1672, 12/2003. PMID: 14623934.
2. Amos CI, Keitheri-Cheteri MB, Sabripour M, **Wei C**, McGarrity TJ, Seldin MF, Nations L, Lynch PM, Fidder HH, Friedman E, Frazier ML. Genotype-phenotype correlations in Peutz-Jeghers syndrome. J Med Genet 41(5):327-333, 2004. PMID: 15121768.
3. **Wei C**, Frazier ML. LKB1: a critical mediator in suppressing initiation, differentiation and metastasis in lung cancer. Cell Science Reviews 4(2):40-47, 2007.
4. **Wei C**, Amos CI, Zhang N, Wang X, Rashid A, Walker CL, Behringer RR, Frazier ML. Suppression of Peutz-Jeghers polyposis by targeting mammalian target of rapamycin signaling. Clin Cancer Res 14(4):1167-71, 2/2008. PMID: 18281551.
5. **Wei C**, Amos CI, Zhang N, Zhu J, Wang X, Frazier ML. Chemopreventive efficacy of rapamycin on Peutz-Jeghers syndrome in a mouse model. Cancer Lett 277(2):149-54, 5/2009. e-Pub 1/2009. PMID: 19147279.
6. Zhu J, Sen S, **Wei C**, Frazier ML. Cyclin D1b represses breast cancer cell growth by antagonizing the action of cyclin D1a on estrogen receptor alpha-mediated transcription. Int J Oncol 36(1):39-48, 1/2010.
7. Amos CI, Frazier ML, **Wei C**, McGarrity TJ. Peutz-Jeghers Syndrome. GeneReviews, 2/2011.
8. Liu Q, Chen J, Mai B, Amos C, Killary AM, Sen S, **Wei C**, Frazier ML. A single-nucleotide polymorphism in tumor suppressor gene SEL1L as a predictive and prognostic marker for pancreatic ductal adenocarcinoma in caucasians. Mol Carcinog. e-Pub 6/2011.

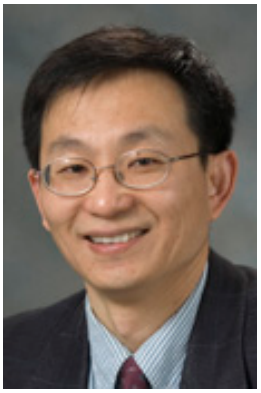
**David W. Wetter, Ph.D.,** is the professor and Cullen Trust for Health Care chair in the Department of Health Disparities Research at the University of Texas MD Anderson Cancer Center. Dr. Wetter's work is targeted at eliminating disparities in health-related behavior through translational research. Specific research foci include: theoretical models of addictive and cancer risk behaviors; the epidemiology and public health impact of those behaviors; and the development and evaluation of theoretically-based interventions. He is a passionate advocate for students and education. In the last 5 years alone, Dr. Wetter has mentored 10 postdoctoral fellows, eight of whom are now faculty members, contributing to his recognition with the award of MD Anderson's Leading Mentor in Cancer Prevention.

Dr. Wetter has a wide variety of leadership responsibilities at MD Anderson including serving the Cancer Center Support Grant Executive Committee and his professional service has included serving as chair of the Community Level Health Promotion study section at the National Institutes of Health, as well as holding numerous other leadship positions.

Dr. Wetter has an extensive NIH-funded grant portfolio and over 100 peer-reviewed publications. Dr. Wetter earned his Ph.D. in Clinical Psychology and a M.S. in Epidemiology from the University of Wisconsin – Madison. He has a joint appointment in the Department of Behavioral Science at MD Anderson and an adjunct appointment at The University of Texas School of Public Health.

**Selected Publications:**


1. *Castro Y, Reitzel LR, Businelle MS, Kendzor DE, Mazas CA, Li Y, Cofta-Woerpel L, **Wetter DW**. Acculturation differentially predicts smoking cessation among Latino men and women. Cancer Epidemiol Biomarkers Prev 18(12):3468-75, 12/2009. PMCID: PMC2798575.
2. *Kendzor DE, Businelle MS, Costello TJ, Castro Y, Reitzel LR, Cofta-Woerpel LM, Li Y, Mazas CA, Vidrine JI, Cinciripini PM, Greisinger AJ, **Wetter DW**. Financial strain and smoking cessation among racially/ethnically diverse smokers. Am J Public Health 100(4):702-706, 4/2010. e-Pub 2/2010. PMCID: PMC2836332.
3. *Reitzel LR, Vidrine JI, Businelle MS, Kendzor DE, Costello TJ, Li Y, Daza P, Mullen PD, Velasquez MM, Cinciripini PM, Cofta-Woerpel L, **Wetter DW**. Preventing postpartum smoking relapse among diverse, low income women: A randomized clinical trial. Nicotine Tob Res 12(4):326-35, 4/2010. e-Pub 2/2010. PMCID: PMC2847071.
4. *Businelle MS, Kendzor DE, Reitzel LR, Costello TJ, Cofta-Woerpel L, Li Y, Mazas CA, Vidrine JI, Cinciripini PM, Greisinger AJ, **Wetter DW**. Mechanisms linking socioeconomic status to smoking cessation: A structural equation modeling approach. Health Psychol 29(3):262-273, 5/2010. PMCID: PMC2922845.
5. *Reitzel LR, Mazas CA, Cofta-Woerpel L, Li Y, Cao Y, Businelle MS, Cinciripini PM, **Wetter DW**. Subjective social status affects smoking abstinence during acute withdrawal through affective mediators. Addiction 105(5):928-36, 5/2010. e-Pub 3/2010. PMCID: PMC2857594.
6. *Reitzel LR, Cromley EK, Li Y, Cao Y, Dela Mater R, Mazas CA, Cofta-Woerpel L, Cinciripini PM, **Wetter DW**. The effect of tobacco outlet density and proximity on smoking cessation. Am J Public Health 101(2):315-320, 2/2011.
7. **Wetter DW**, McClure JB, Cofta-Woerpel L, Costello TJ, Reitzel LR, Businelle MS, Cinciripini PM. A randomized clinical trial of a palmtop computer-delivered treatment for smoking relapse prevention among women. Psychol Addict Behav. e-Pub 6/2011.
8. *Cofta-Woerpel L, McClure JB, Li Y, Urbauer D, Cinciripini PM, **Wetter DW**. Early cessation success or failure among women attempting to quit smoking: Trajectories and volatility of urge and negative mood during the first post-cessation week. J Abnorm Psychol 120(3):596-606, 2011. PMCID: PMC3153568.
9. *Castro Y, Costello TJ, Correa-Fernandez V, Heppner WL, Reitzel LR, Cofta-Woerpel L, Mazas CA, Cinciripini PM, **Wetter DW**. Differential effects of depression on smoking cessation in a diverse sample of smokers in treatment. Am J Prev Med 41(1):84-7, 2011.
10. *Heppner WL, Ji L, Reitzel LR, Castro Y, Correa-Fernandez V, Vidrine JI, Li Y, Mullen, PD, Velasquez MM, Cinciripini PM, Cofta-Woerpel L, Greisinger A, & **Wetter DW**. The role of prepartum motivation in the maintenance of postpartum smoking abstinence. Health Psychol 30(6):736-45, 2011.



**Xiangwei Wu, Ph.D.** is an associate professor in the Department of Clinical Cancer Prevention at MD Anderson Cancer Center. He received his Ph.D. degree in Biochemistry from Baylor College of Medicine and his post-doctoral training in Molecular Biology at Princeton University.

Dr. Wu has been studying mechanisms of apoptosis, specifically the death receptor pathways, for many years. He has made numerous important contributions in the area and his ccomplishments were highlighted by publications in high profile journals such as Cell, Genes and Development and Proceedings of the National Academy of Sciences. In the last few years, he started a translational research program to explore the application of death receptor pathways, such as TRAIL signaling, in cancer chemoprevention. He recently proposed a new approach, i.e., therapy-like chemoprevention, to improve efficacy and reduce toxicity in cancer chemoprevention. In a scientific proof-of-concept study, he demonstrated that a two-drug combination, TRAIL and retinoid, destroys precancerous colon polyps without harming normal tissue, opening a new avenue for chemoprevention of colon cancer. This combination can be given short-term and periodically to provide a long-term effect, addressing a major problem with conventional chemopreventive drugs - they must be taken continuously long term to be effective, exposing patients to possible side effects. This paradigm-shifting study was published in Nature in 2010.

Dr. Wu has served on various committees and study sections. He has trained graduate students and post-doctoral fellows. He served on editorial board of scientific journals and reviewed papers for various journals.

**Selected Publications:**


1. Relaix, F., Wei, X-J., **Wu, X**., and Sassoon, D. A. Peg3/Pw1 is an imprinted gene involved in the TNF-NFkB signal transduction pathway. Nature Genet 18:287-291, 1998.
2. Relaix, F., X. Wei, W. Li, J. Pan, Y. Lin, D.D. Bowtell, D.A. Sassoon, and **Wu, X**. Pw1/Peg3 is a potential cell death mediator and cooperates with Siah1a in p53-mediated apoptosis. Proc Natl Acad Sci U S A 97:2105-2110, 2000.
3. Xia, X., Qian, S., Soriano, S., Wu, Y., Fletcher, A.M., Wang, X.-J., Koo, E.H., **Wu, X**., and Zheng, H. Loss of presenilin 1 is associated with enhanced b-catenin signaling and skin tumorigenesis. Proc. Natl. Acad. Sci. 98:10863-10868, 2001.
4. Buschmann, T., Lin, Y., Aithmitti, N., Fuchs, S. Y., Lu, H., Resnick-Silverman, L., Manfredi, J. J., Ronai, Z., and **Wu, X**. Stabilization and activation of p53 by the coactivator protein TAFFII31. J. Biol. Chem 276:13852-13857, 2001.
5. **Wu, X**. and Bax, Y. Bax and BH3-Domain-Only Proteins in p53-mediated apoptosis. Frontiers in Bioscience 7:151-156, 2002.
6. Deng, Y, Ren, X, Lin, Y., Yang, L., and **Wu, X**., A JNK-dependent pathway is required for TNFa-induced apoptosis CELL 2004, 115:61-70.
7. Ren, X., Xu, Z., Myers, J.N., **Wu, X**. Bypass NFkappaB-Mediated Survival Pathways by TRAIL and Smac. Cancer Biol Ther. 2007, 6(7) : 1031-5.
8. Zhang L, Ren X, Alt E, Bai X, Huang S, Xu Z, Lynch PM, Moyer MP, Wen XF, **Wu, X**. Chemoprevention of Colorectal Cancer by Targeting APC-Deficient Cells for Apoptosis. Nature 464(7291):1058-61, 4/2010. e-Pub 3/2010. PMID: 20348907.
9. Huang S, Ren, X., Zhang, L., Wang, L. and **Wu, X**. Lung-cancer chemoprevention by induction of synthetic lethality in mutant-KRAS Premalignant Cells in vitro and in vivo. 2011. Cancer Prev Res. 4:666-73. (A featured article with commentary from leaders in the field).
10. **Wu, X.** and Lippman, S. M. A therapeutic approach for cancer chemoprevention 2011, (Perspectives) Nature Rev Cancer. Accepted.

**Xifeng Wu, MD, Ph.D.,** is a professor and chair of the Department of Epidemiology and Director of the Center of Translational and Public Health Genomics in MD Anderson Cancer Center. She holds the endowed Betty B. Marcus Chair in Cancer Prevention. She earned her medical degree from Shanghai Medical University in 1984 and her Ph.D. from The University of Texas School of Public Health in 1994.

Dr. Wu has created an integrative research program that is visionary in concept and revolutionary in approach. The centerpiece of her research is based on a multifaceted, highly interactive and multidisciplinary molecular epidemiology program that bridges field epidemiology, laboratory study and clinical research. Her laboratory has developed or adapted an array of phenotypic and genotypic assays to study inherited susceptibility markers for population studies. The medium-term objective of her research program is to identify and validate genetic biomarkers for cancer risk assessment and for clinical outcome prediction, with the long-term goal of incorporating epidemiological, clinical and genetic information to develop personalized risk prediction models for cancer etiology, prevention, treatment response and clinical outcomes. In her initial demonstration of success, she constructed the first bladder cancer risk prediction model and also showed that incorporating genetic factors may significantly improve prediction efficiency over epidemiologic and clinical variables only.

Dr. Wu is a highly productive cancer epidemiologist with more than 250 publications in highly acclaimed journals. She is the principal investigator of several NIH-funded large epidemiological studies and a major collaborator on many other projects. Dr. Wu supervises a 40-member research team and serves as mentor or advisor for several junior faculty, pre- and post-doctoral trainees, and clinical fellows, many of whom have been recognized with prestigious awards from inside the institution and from outside sources.

Dr. Wu was previously a recipient of one of the Institution's Faculty Scholar Awards. In 2006, she was awarded the Ashbel Smith Professorship by The University of Texas system. In 2008, she received the Margaret and James A. Elkins Jr. Faculty Achievement Award in Cancer Prevention and the Julie and Ben Rogers Award for Excellence in Research. She was the recipient of the 2011 Robert M. Chamberlain Distinguished Mentor Award. She is frequently invited to present at workshops, lectures, and seminars and to chair conference sessions. She serves on study sections for NCI, the American Cancer Society, and other organizations. She is the current Chair of the International Bladder Cancer Consortium.

**Selected Publications:**


1. **Wu X**, Lin J, Grossman HB, Huang M, Gu J, Etzel CJ, Amos CI, Dinney CP, Spitz MR. Projecting individualized probabilities of developing bladder cancer in white individuals. J Clin Oncol. 2007;25(31):4974-81.
2. **Wu X,** Ye Y, Kiemeney LA, Sulem P, Rafnar T, Matullo G, Seminara D, et al. Genetic variation in the prostate stem cell antigen gene PSCA confers susceptibility to urinary bladder cancer. Nat Genet 41(9):991-5, 2009.
3. Rothman N*, Garcia-Closas M*, Chatterjee N*, Malats N*, **Wu X* (Co-first author)** , et al. A multi-stage genome-wide association study of bladder cancer identifies multiple susceptibility loci. Nat Genet 2010; 42: 978-84.
4. Li Y, Sheu C, Ye Y, de Andrade M, Wang L, Aubry MC, Aakre JA, Allen MS, Chen F, Cunningham JM, Deschamps C, Jiang R, Lin J, Marks RS, Pankratz VS, Su L, Sun Z, Tang H, Vasmatzis G, Harris CC, Spitz M, Jen J, Christiani DC*, **Wu X*** (Co-last author), Yang P*. GPC5 genetic variants are associated with lung cancer risk in never smokers. Lancet Oncol. 2010;11(4):321-330.
5. **Wu X**, Ye Y, Rosell R, Amos CI, Stewart DJ, Hildebrandt MAT, Roth JA, Minna JD, Gu J, Lin J, Buch SC, Nukui T, Serrano JLR, Taron M, Cassidy A, Lu C, Chang JY, Lippman SM, Hong WK, Spitz MR, Romkes M, Yang P. Genome-wide association study of survival in non-small cell lung cancer patients receiving platinum-based chemotherapy. J Natl Cancer Inst. 2011;103(10):817-25.
6. Wen CP, Wai JP, Tsai MK, Yang YC, Cheng TY, Lee MC, Chan HT, Tsao CK, Tsai SP, **Wu X**. Minimum amount of physical activity for reduced mortality and extended life expectancy: a prospective cohort study. Lancet. 2011 Aug 14. [Epub ahead of print]

**Xiaochun Xu, M.D., Ph.D.,** is an associate professor working in the Department of Clinical Cancer Prevention at The University of Texas MD Anderson Cancer Center.

The research projects in Dr. Xu's laboratory are involved in cancer prevention. The objective of his research is to understand the molecular mechanisms responsible for esophageal carcinogenesis and to develop novel strategies in prevention or treatment of esophageal and breast cancers. His current research focuses primarily upon the investigation of: 1) the mechanisms responsible for role of retinoid receptor-induced gene-1, RRIG1 in suppressing growth and invasion of esophageal cancer cells; 2) tobacco carcinogens in esophageal carcinogenesis and biomarker discovery; 3) expression of microRNAs (miRNA) as biomarkers and their regulation of esophageal cancer cell growth and gene expression; and 4) discovery of tumor stem cells in esophageal cancer.

Dr. Xu received a medical training in 1982 and pathology training in 1985, both at Anhui Medical University, Hefei, China. After that, Dr. Xu worked as a Teaching Assistant, Lecturer, and Assistant professor in the Department of Pathology of Anhui Medical University between 1985 and 1988. He then went to West Germany and received his Ph.D. degree in 1991 from The University of Göttingen, Göttingen, Germany. From 1992 to 1995, he was a postdoctoral fellow in the Department of Tumor Biology at UT MD Anderson Cancer Center. Afterwards, he worked in the Department of Clinical Cancer Prevention at The University of Texas MD Anderson Cancer Center as an Assistant Professor in 1995 and promoted to an Associate Professor in 2001.

**Selected publications:**


1. Liang ZD, Lippman SM, Wu TT, Lotan R, **Xu X-C.** RRIG1 mediates effects of retinoic acid receptor-$\beta_2$ on tumor cell growth and gene expression through binding to and inhibiting RhoA. Cancer Res, 66: 7111-8, 2006.
2. Jiang Y, Liang ZD, Wu TT, Cao L, Zhang H, **Xu X-C.** ATM expression is associated with tobacco smoke exposure in esophageal cancer tissues and benzo[a]pyrene diol epoxide in cell lines. Int J Cancer, 120: 91-95, 2007.
3. Huang J, Liang ZD, Wu TT, Hoque, A., Chen, H., Jiang Y, Zhang H, and **Xu X-C.** Tumor-suppressive effect of retinoid receptor-induced gene-1 in esophageal cancer. Cancer Res, 67:1589–93, 2007.
4. Hoque A, Chen H, and **Xu X-C**. Statin induction of apoptosis and cell growth arrest through inactivation of RhoA. Cancer Epidemiol Biomark Preven, 17: 88-94, 2008.
5. Wu ZS, Wu Q, Yang JH, Wang HQ, Ding XD, Yang F, and **Xu X-C**. Prognostic significance of MMP-9 and TIMP-1 expression in breast cancer. Int J Cancer, 122: 2050-2056, 2008.
6. Kim HK, Zhang H, Li L, Wu TT, Swisher S, He D, Wu L, Xu J, Elmets CA, Athar M, **Xu X-C,** and Xu H. Slit2 inhibits growth and metastasis of fibrosarcoma and squamous cell carcinoma. Neoplasia, 10: 1411-1420, 2008. (co-corresponding author)
7. Song S, Guan B, Men T, Hoque A, Lotan R, and **Xu X-C**. Antitumor effect of retinoic acid receptor-□$_2$ associated with suppression of cyclooxygenase-2. Cancer Preven Res, 2: 274-280, 2009.
8. Guan B, Li H, Chen Y, Hoque A, **Xu X-C**. Characterization of retinoid receptor-induced gene-1 gene and its relationship to SH3 domain GRB2-like endophilin B2 gene. J Cancer Mol, 5: 15-19, 2009.
9. Wu Z, Wu Q, Wang C, Wang X, Wang Y, Zhao J, Mao S, Zhang G, Zhang N, and Xu X-C. miR-339-5p inhibits breast cancer cell migration and invasion in vitro and may be a potential biomarker for breast cancer prognosis. BMC Cancer, 10:542, 2010.
10. Ye F and **Xu X-C.** Benzo[*a*]pyrene diol epoxide suppresses retinoic acid receptor-$\beta_2$ expression by recruiting DNA (cytosine-5-)-methyltransferase 3A. Mol Cancer, 9:93, 2010.
11. Hu Y, Correa AM, Hoque A, Guan B, Ye F, Huang J, Swisher SG, Wu TT, Ajani JA, and **Xu X-C.** Prognostic significance of differentially expressed miRNAs in esophageal cancer. Int J Cancer, 128: 132–143, 2011.
12. Zhang G, Brewster A, Guan B, Fan Z, Brown PH, **Xu X-C**. Tumor-suppressor activity of RRIG1 in breast cancer. BMC Cancer, 11:32, 2011.
13. Ye F, Zhang G, Guan B, **Xu, X-C**. Suppression of esophageal cancer cell growth using curcumin, (-)-epigallocatechin-3-gallate, and lovastatin. World J Gastroenterol, 18(2):126-35.

**Yuanqing Ye, Ph.D.**, is an assistant professor in the Department of Epidemiology, Division of Cancer Prevention and Population Sciences, The University of Texas MD Anderson Cancer Center.

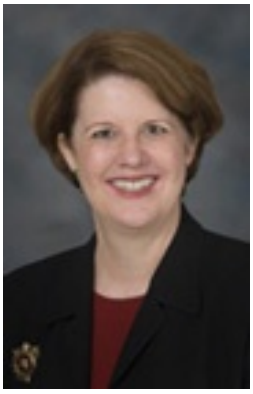
Dr. Ye has rich knowledge and experiences in multidisciplinary areas including mathematics, computer science, statistics, genetics, and epidemiology. Dr. Ye's research interests are developing and applying novel statistical methods for medical researches especially genetic association studies and recursive partitioning based methods to deal with high dimension data. Dr. Ye is the key statistician for several GWAS studies and collaborations.

Dr. Ye has earned numerous awards including the AACR-Aflac, Incorporated Scholar-in-Training Award and the Berlex Oncology Award in Patient-Oriented Research Poster Winner. He also gained the Janice David Gordon Memorial Fellowship through national competition for the proposed project to study the association of genetic variations and risk of renal cell carcinoma.

Dr. Ye graduated from North Carolina State University with Ph.D. in Mathematics in 2002. He completed post-doctoral training in Biostatistics at Yale University and in Genetics and Epidemiology at MD Anderson.

**Selected publications:**


1. **Ye Y**, Lippman SM, Lee JJ, Chen M, Frazier ML, Spitz MR, Wu X. Genetic variations in cell-cycle pathway and the risk of oral premalignant lesions. Cancer, 9/2008.
2. **Ye Y**, Yang H, Grossman HB, Dinney C, Wu X, Gu J. Genetic variants in cell cycle control pathway confer susceptibility to bladder cancer. Cancer 112(11):2467-74, 6/2008.
3. **Ye Y**, Wang KK,Gu J, Yang H,Lin J, Ajani JA and Wu X. Genetic Variations in MicroRNA-Related Genes Are Novel Susceptibility Loci for Esophageal Cancer Risk. Cancer Prev Res (Phila Pa) 1(6):460-9, 11/2008.
4. Chen M*, **Ye Y***, Yang H, Tamboli P, Matin S, Tannir NM, Wood CG, Gu J, Wu X. Genome-wide profiling of chromosomal alterations in renal cell carcinoma using high-density single nucleotide polymorphism arrays. Int J Cancer 125(10):2342-8, 11/2009. e-Pub 6/2009. ***co-first author**
5. Wu X, **Ye Y**, Kiemeney LA, Sulem P, Rafnar T, Matullo G, Seminara D, Yoshida T, Saeki N, Andrew AS, Dinney CP, Czerniak B, Zhang ZF, Kiltie AE, Bishop DT, Vineis P, Porru S, Buntinx F, Kellen E, Zeegers MP, Kumar R, Rudnai P, Gurzau E, Koppova K, Mayordomo JI, Sanchez M, Saez B, Lindblom A, de Verdier P, Steineck G, Mills GB, Schned A, Guarrera S, Polidoro S, Chang SC, Lin J, Chang DW, Hale KS, Majewski T, Grossman HB, Thorlacius S, Thorsteinsdottir U, Aben KK, Witjes JA, Stefansson K, Amos CI, Karagas MR, Gu J. Genetic variation in the prostate stem cell antigen gene PSCA confers susceptibility to urinary bladder cancer. Nat Genet 41(9):991-5, 9/2009. e-Pub 8/2009.
6. Li Y*, Sheu CC*, **Ye Y***, de Andrade M*, Wang L*, Chang SC*, Aubry MC, Aakre JA, Allen MS, Chen F, Cunningham JM, Deschamps C, Jiang R, Lin J, Marks RS, Pankratz VS, Su L, Li Y, Sun Z, Tang H, Vasmatzis G, Harris CC, Spitz MR, Jen J, Wang R, Zhang ZF, Christiani DC, Wu X, Yang P. Genetic variants and risk of lung cancer in never smokers: a genome-wide association study. Lancet Oncol 11(4):321-30, 4/2010. e-Pub 3/2010. ***co-first author**
7. Wu X, **Ye Y**, Rosell R, Amos CI, Stewart DJ, Hildebrandt MA, Roth JA, Minna JD, Gu J, Lin J, Buch SC, Nukui T, Ramirez Serrano JL, Taron M, Cassidy A, Lu C, Chang JY, Lippman SM, Hong WK, Spitz MR, Romkes M, Yang P. Genome-Wide Association Study of Survival in Non-Small Cell Lung Cancer Patients Receiving Platinum-Based Chemotherapy. J Natl Cancer Inst. e-Pub 4/2011.
8. Garcia-Closas M*, **Ye Y***, Rothman N*, Figueroa JD*, Malats N, Dinney CP, Chatterjee N, Prokunina-Olsson L, Wang Z, Lin J, Real FX, Jacobs KB, Baris D, Thun M, De Vivo I, Albanes D, Purdue MP, Kogevinas M, Kamat AM, Lerner SP, Grossman HB, Gu J, Pu X, Hutchinson A, Fu YP, Burdett L, Yeager M, Tang W, Tardón A, Serra C, Carrato A, García-Closas R, Lloreta J, Johnson A, Schwenn M, Karagas MR, Schned A, Andriole G Jr, Grubb R 3rd, Black A, Jacobs EJ, Diver WR, Gapstur SM, Weinstein SJ, Virtamo J, Hunter DJ, Caporaso N, Landi MT, Fraumeni JF Jr, Silverman DT, Chanock SJ, Wu X. A genome-wide association study of bladder cancer identifies a new susceptibility locus within SLC14A1, a urea transporter gene on chromosome 18q12.3. Hum Mol Genet. 2011 Aug 8. ***co-first author**



**Jennifer H. Tektiridis, M.S., C.P.A.,** is the executive director for research planning and development in the Division of Cancer Prevention and Population Sciences. She is responsible for developing and overseeing development and implementation of new divisional research initiatives, including the Duncan Family Institute for Cancer Prevention and Risk Assessment.

Prior to her current role, Ms. Tektiridis was the administrative leader for the Cancer Center Support Grant, which funds 19 research programs and 24 core laboratory resources at MD Anderson. This grant was recently renewed with a 15 percent increase, for a five-year total of more than $52.7 million, following an "Outstanding" peer review rating. She was recognized as a Rogers Award for Research nominee for her contributions.

Ms. Tektiridis joined MD Anderson in 2002 as the first executive director for the Gulf Coast Consortia, responsible for developing and administering this six-institution collaborative's interdisciplinary bioscience research and training programs.

Prior to joining MD Anderson, she held various executive leadership positions with responsibility for business operations, information technology and quality management functions in various organizations, including a laboratory supplies distributor and a retail energy start-up. She spent several years with a major consulting firm, providing process and IT planning and implementation expertise to companies in consumer and commercial service industries.

Ms. Tektiridis is a member of the Cancer Center Administrator's Forum and served on the Alliance for Dedicated Cancer Centers Research Committee. She has a bachelor's of science degree in Geology and Spanish from Dickinson College, a master's of science in Management from Rollins College and is a certified public accountant in the State of Texas. She is currently enrolled in the Ph.D. in Health Management program at the UT School of Public Health.

THE UNIVERSITY OF TEXAS

# MD Anderson Cancer Center

Making Cancer History®

The Duncan Family Institute for Cancer Prevention and Risk Assessment is located within the Division of Cancer Prevention and Population Sciences in the Dan L. Duncan Building, 1155 Herman P. Pressler, Houston, TX 77030-3721

If you would like more information on supporting the Duncan Family Institute, please contact Ernest Hawk, M.D., M.P.H., vice president and division head, Cancer Prevention & Population Sciences , 713-792-3900, or visit the Duncan Family Institute Internet site at www.mdanderson.org/duncanfamilyinstitute