

**AMERICAN SOCIETY
of
PREVENTIVE ONCOLOGY**



1976-2011

35th ANNUAL MEETING

PROGRAM & ABSTRACTS

March 5-8, 2011

The Renaissance Hotel – Las Vegas, Nevada

American Society of Preventive Oncology

35th Annual Meeting

President: Electra D. Paskett, PhD

The Ohio State University

Program Co-Chairs:

Ellen R. Gritz, PhD

MD Anderson Cancer Center

Mary Beth Terry, PhD

Columbia University

The **American Society of Preventive Oncology** is an active and growing organization that is striving to: 1) promote the exchange and dissemination of information and ideas relating to cancer prevention and control; 2) identify and stimulate research areas in cancer prevention and control; and 3) foster the implementation of programs in cancer prevention and control.

Meetings of the **American Society of Preventive Oncology** are organized for professionals in clinical, educational or research disciplines who appreciate the challenges of a multidisciplinary scientific forum and who are committed to a comprehensive approach to cancer prevention and control.

Special Acknowledgements

The ASPO Executive Committee offers special thanks to Program Co-Chairs, **Drs. Ellen Gritz** and **Mary Beth Terry**, and **Heidi Sahel** for their extraordinary commitment in facilitating the development of the program for this meeting, and to the entire 2011 ASPO Program Committee for their hard work on the program.

2011 Program Committee

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Support Acknowledgements

The conference organizing committee wishes to express appreciation to the following organizations and companies for their commitment to continuing medical education by providing educational grants in support of this conference:

National Cancer Institute (conference grant R13 CA094927)
Prevent Cancer Foundation
American Cancer Society

EXHIBITORS

The conference organizing committee wishes to express appreciation to the following organizations:

Division of Cancer Control and Population Sciences (DCCPS)

National Cancer Institute (dccps.nci.nih.gov)

The DCCPS at the National Cancer Institute aims to reduce the risk, incidence, and deaths from cancer as well as enhance the quality of life for cancer survivors. The Division conducts and supports an integrated program of the highest quality genetic, epidemiologic, behavioral, social, and surveillance cancer research.

Cancer Prevention Fellowship Program, National Cancer Institute

The Cancer Prevention Fellowship Program provides postdoctoral training opportunities in cancer prevention and control. The purpose of the program is to train individuals from a multiplicity of health sciences disciplines in the field of cancer prevention and control.

The Division of Cancer Prevention, National Cancer Institute

The National Cancer Institute (NCI), NIH supports and conducts ground-breaking research in cancer prevention, detection, treatment, and survivorship in its effort to reduce the burden of cancer and improve the lives of cancer patients and their families. Visit <http://www.cancer.gov/prevention> for more information.

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ASPO – 2011

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GENERAL INFORMATION

Assistance to Participants

The American Society of Preventive Oncology meeting staff is available to provide assistance or information at any time during the meeting. Questions should be addressed to the staff members and volunteers at the Registration Desk.

Poster Sessions

This year there will be 2 poster sessions: The first one will be Saturday, March 5 from 6 – 8 pm in conjunction with the NCI Mult-Level Interventions meeting at the Hilton Hotel. Saturday poster presenters can begin displaying their posters at 3pm in Pavilion 6 at the Hilton Hotel.

Posters can be displayed beginning at noon on Monday (and must be taken down immediately after the poster reception). The Monday Poster Session and Reception will precede the ASPO gala dinner. Distinguished panels of senior faculty will select an outstanding poster at this session. Awards will be announced and presented at the close of each session, along with a brief discussion of the winners' merits. *Presenters should be positioned near their posters during the poster session for discussion and judging. All posters not taken down by 10:00pm Monday evening will be taken down and put in the registration area.*

PLEASE HELP US PLAN FOR THE FUTURE

Please respond to the on-line survey that will be sent soon after the meeting. This will help future Program Committees and conference staff to better meet your professional and logistical needs.

NEXT YEAR . . .

The 36th Annual Meeting of the American Society of Preventive Oncology will be held: **March 3-6, 2012, at the Georgetown Hotel and Conference Center, Washington, DC**

ASPO 2011 - Program Details

Saturday, March 5, 2011

8:00-12:30	NCI K07/R25 Workshop (separate registration through NCI- this meeting located next door to hotel in Las Vegas Convention Center)
10am-5pm	ASPO registration (in the ballroom foyer)
10:30-12:00 Chairman	Meeting of R25T Principal Investigators
11:00-1:00 pm Summit	ASPO Executive Committee Working Lunch Meeting (Open to ASPO Executive Committee members)
1:00 – 5:00pm Five Spot Room	Meeting of the Associate Directors/Program Leaders for Cancer Prevention & Control (Part 1)
5:00 -6:00pm Renaissance I	ASPO General Session Begins – at the Renaissance Hotel <i>Distinguished Achievement Award Address:</i> “Cancer Prevention in Patients and Survivors” Patricia A. Ganz, MD , UCLA Schools of Medicine and Public Health <i>Distinguished Achievement Award is sponsored by the American Cancer Society</i> <i>Joe Cullen Award Address:</i> “Tobacco Control in Youth: the Essential Ingredients” Alexander Prokhorov,MD, PhD , MD Anderson Cancer Ctr
6:00 - 8:00pm Pavilion 6**	Joint Poster Presentations with: NCI Multilevel Interventions across The Cancer Care Continuum Conference Attendees

(*off-site location at Hilton Hotel – one bus will circle between Renaissance and Hilton Hotel from 4:30pm – 8:30pm. Hilton is a short walk to 3000 Paradise Road. Monorail also available for a small fee)

Sunday, March 6, 2011

7am—5pm
(ballroom foyer)

Registration

8 – 9:30am
Renaissance II

Concurrent Breakfast Roundtable Sessions

1) Survivorship Special Interest Group Breakfast

“Cancer Prevention After Cancer: Changing the Paradigm”

Co-Chairs: **Julia Rowland, PhD**, National Cancer Institute, and
Anita Kinney, PhD, University of Utah

Speakers:

Ellen R. Gritz, PhD, MD Anderson Cancer Center,

“Smoking Cessation Among Cancer Survivors”

Melinda Irwin, PhD, MPH, Yale University,

“Energy-Balance: Its Role in Cancer Survivors' Health”

Paul Nathan, MD, MSc, FRCPC, The Hospital for Sick Children,

“Surveillance for Second Malignant Neoplasms in Adult
Survivors of Childhood Cancer”

Copa Room

2) Diet and Nutrition Special Interest Group Breakfast

“Transdisciplinary Cancer Prevention Research: Linking Animal
and Human Research”

Co-Chairs: **Stephen Hursting, PhD**, UT – Austin, and
Michele Forman, PhD, MD Anderson Cancer Center

9:30 – 10:00am

Break

10:00 – 11:45am
Renaissance I

Symposium 1: Personalizing Tobacco Treatment: From Genes to the Community

Chair: **Ellen R. Gritz, PhD**, MD Anderson Cancer Center

Peter Shields, MD, Georgetown University,

“Where Do We Stand on Genetic Predictors of Smoking
Behaviors?”

Paul Cinciripini, PhD, MD Anderson Cancer Center,

“Investigating Neural and Genetic Predictors of Smoking
Cessation

Jennifer McClure, PhD, Group Health Research Institute,

“Personally Tailored Behavioral Treatment Programs”

Taneisha Buchanan, PhD, University of Minnesota,

“Perceived Treatment Assignment and Smoking Cessation in a
Clinical Trial of Bupropion”

Sunday, March 6, 2011 (cont.)

11:45–1:15pm

Lunch on your own

Noon-3:30pm

Five Spot Room

**Meeting of the Associate Directors/Program Leaders for
Cancer Prevention & Control (Part 2)**

Noon-3:30pm

Summit

New Investigators Workshop (open to accepted applicants)

Organizer: **Judith Jacobson, DrPH**

Columbia University Mailman School of Public Health

Workshop Faculty:

Li Li, MD, PhD, Case Western Reserve University

Shawna Hudson, PhD, Cancer Institute of New Jersey

Jeffrey Weitzel, MD, City of Hope

Workshop Participants:

Jessica Gorman, PhD, UC – San Diego

Gillian Hooker, PhD, Georgetown University

Samira Kamrudin, MPH, MD Anderson Cancer Center

Shaneda Warren Andersen, MS, UW - Madison

Meghan Work, MPH, Columbia University

Michelle Janelins, PhD, University of Rochester

Salina Torres, PhD, University of New Mexico

1:15 – 3pm

Renaissance I

Concurrent Sessions:

1) ASPO Junior Members Career Panel:

“The Business of Research: Budgets, Personnel, Planning and Pitfalls” (open to all attendees)

Chair: **Cheryl Thompson, PhD**, Case Western Reserve University

This seminar will focus on a practical discussion of scientific management including managing staff and projects.

Panelists:

Peter Kanetsky, PhD, MPH, University of Pennsylvania

Larry Kushi, ScD, Kaiser Permanente

Patricia Ganz, MD, Professor, UCLA

Linda Nebeling, PhD, MPH, RD, FADA, National Cancer Institute

Sunday, March 6, 2011 (cont.)

1:15 – 3pm

Renaissance 2

2) Midcareer Networking Event: “International Opportunities for Cancer Epidemiology and Control: Trials and Tribulations” (open to all attendees)

Chairs: **Frank Meyskens, MD**, UC- Irvine, and

Dejana Braithwaite, PhD, UCSF

Joe Harford, PhD, National Cancer Institute), “Cancer and Global Health: The NCI Perspective and Working through Institutional and Cultural Differences”

Stanton Glantz, PhD, UCSF, “The Tobacco Epidemic in Emerging Economies: Does It Look like California?”

Charnita Zeigler-Johnson, PhD, University of Pennsylvania, “Prostate Cancer Epidemiology: Building Research Initiatives in Africa”

3:00-3:30pm

Break

3:30 – 5pm

Renaissance I

Symposium 2: When Cancer Risk Begins: Early Life Factors and Cancer Risk - the Role of Epigenetics and Environment

Chair: **Michele Forman, PhD**, MD Anderson Cancer Center

Lars Vatten, MD, PhD, Norwegian University of Science & Technology, Trondheim, Norway, “Perinatal Factors and Cancer Risk in Adulthood”

Frank Biro, MD, Cincinnati Children’s Hospital Medical Center, “Pathways and Perils Through Puberty”

Julie Brody, PhD, Silent Spring Institute, “Science and Communications about Environmental Pollution and Breast Cancer”

Jennifer Ferris, MPH, Columbia University, “The Effects of Prenatal Age at Birth on Risk of Ovarian Cancer in Female Offspring in the Breast Cancer Family Registry”

Mary Perrin, DrPH, MPH, New York University, “The Effects of Parental Age at Birth on Global Methylation and the Risk of Breast Cancer in Female Offspring in the NY BCFR”

Sunday, March 6, 2011 (cont.)

5:00– 6:30 pm
Renaissance I

ASPO Presidential Address

“The Promise of a Cancer Free World: Where are We?”

Electra D. Paskett, PhD, The Ohio State University

Panel :

"A Cancer-Free World: Collaboration in Science to Get There"

Panelists:

Michael Caligiuri, MD, OSUCCC, President AACI

Karen Emmons, PhD, Harvard/Dana-Farber CI, President, SBM

Robert Croyle, PhD, National Cancer Institute

Judy Garber, MD, Harvard/Dana Farber Cancer Institute,
President-Elect, AACR

Susan Gapstur, PhD, American Cancer Society

Ernest Hawk, MD, MPH, MD Anderson Cancer Center, ASCO

Peter Shields, MD, Georgetown, President-Elect, ASPO

Electra Paskett, PhD, OSU, Moderator

6:30 pm

Free time to explore Las Vegas on your own

ASPO 2011 - Program Details

Monday, March 7, 2011

7:30am—5pm

Registration

8:00– 9:30am

Renaissance I

Concurrent Paper Sessions:

Proffered Paper Session 1 – Epidemiology/Breast Cancer

Chair: **Melissa Bondy, PhD**, MD Anderson Cancer Center

Meghan Work, MPH, Columbia University, “Oral Contraceptive Use and Parity Associations with Uncommon Breast Cancer Histologies in the Breast Cancer Family Registry: the Role of Family History”

Luke Peppone, PhD, University of Rochester, “The Association between Prognostic Demographic and Tumor Characteristics of Breast Carcinomas with Serum 25-OH Vitamin D levels”

Brian Sprague, PhD, University of Vermont, “The Association of Serum Phthalates and Parabens with Mammographic Breast Density”

Amy Trentham-Dietz, PhD, University of Wisconsin-Madison, “The Impact of Detection and Treatment of Carcinoma In Situ on Breast Cancer Mortality”

Gertraud Maskarinec, MD, PhD, University of Hawaii, “Dual Energy X-ray Absorptiometry (DXA) Imaging as a Research Tool to Investigate Breast Development in Adolescent Girls”

Monday, March 7, 2011 (cont.)

8:00-9:30am

Renaissance II

Proffered Paper Session 2 – Behavioral Science

Chair: **Isaac Lipkus, PhD**, Duke University

Anuli Njoku, MPH, Thomas Jefferson University,

“Change in Colorectal Cancer (CRC) Screening Decision Stage”

Kathrin Milbury, PhD, MD Anderson Cancer Center,

“The Cancer Stroop Task as an Implicit Measure of Cognitive Interference in Head and Neck Cancer Patients’

Mira Katz, PhD, The Ohio State University,

“Patient activation increases colorectal cancer (CRC) screening rates among low-income minority patients”

Theresa Hastert, MPP, University of Washington, “Adherence to WCRF Cancer Prevention Recommendations and Subsequent Cancer Risk in the VITamins And Lifestyle Study Cohort”

Carla Berg, PhD, Emory University, “Use of and Interest in Smoking Cessation Strategies Among Daily and Nondaily College Student Smokers”

Grace Clarke Hillyer, EdD, MPH, Columbia University,

“High Rates of Colorectal Cancer Screening Among Uninsured Latinas in Upper Manhattan: A Model for Prevention”

9:30-10am

Break

10:00–11:45am

Renaissance I

Symposium 3: Fun in the Sun vs. Safe in the Shade:

The Role of Sun Exposure Across the Lifecourse

Chair: **Kathleen Egan, ScD**, Moffitt Cancer Center

Mary Tripp, PhD, MPH, and Ellen R. Gritz, PhD, MD Anderson Cancer Center, “Sun Protection Interventions for Children: Research in Communities and Populations at Risk”

Deann Lazovich, PhD, University of Minnesota, “Artificial Ultraviolet Radiation and Melanoma in Young to Middle Aged Adults”

Marianne Berwick, PHD, MPH, University of New Mexico, “Solar Radiation and Vitamin D: A Two-edged Sword?”

Justin Miyamoto, BS, Centers for Disease Control, “Impact of Minors’ Access Laws on Adolescent Use of Indoor Tanning Facilities – United States, 2009

Monday, March 7, 2011 (cont.)

11:45– 1:15pm
Renaissance I

Best of Cancer Epidemiology, Biomarkers & Prevention (CEBP)
(Lunch provided)

Parisa Tehranifar, PhD, Columbia University, “Medical Advances and Racial/ethnic Disparities in Cancer Survival”

Hazel Nichols, MS, Johns Hopkins University, “Body Mass Index Before and After Breast Cancer Diagnosis: Associations with All-cause, Breast Cancer, and Cardiovascular Disease Mortality”

Leslie Robison, PhD, St. Jude Children’s Research Hospital, “Cardiovascular Risk Factors in Adult Survivors of Pediatric Cancer - a report from the Childhood Cancer Survivor Study”

Julia Rowland, PhD, National Cancer Institute, “Cancer Prevalence: Today and Tomorrow”

1:15– 3:00pm.
Renaissance I

Symposium 4: Effects of Social Networks in Cancer Prevention and Control

Chair: **Jean Ford, MD**, Johns Hopkins University

Amy Leader, DrPH, MPH, Thomas Jefferson University, “Neighborhood-Level Factors and Adherence to Cancer Screening Guidelines”

Erin Kobetz, PhD, MPH, University of Miami, “Cancer Prevention in Little Haiti: CBPR in Action”

Craig Pollack, MD, MHS, Johns Hopkins University, “Physician Networks and Variation in Cancer Care”

Elizabeth Thompson, MA, UCLA, “Project Connect Online: A Randomized Trial to Promote Social Network Communication during Breast Cancer”

Nancy J. Burke, PhD, UC-San Francisco, “Theorizing Social Context in Cancer Prevention and Control Research”

3:00 – 3:30pm

Break

Monday, March 7, 2011 (cont.)

3:30 – 5:00pm
Renaissance I

**Symposium 5: Cancer Screening through the Lifecourse:
When and How Often – the Example of Colon Cancer**

Co-Chairs: **Deborah Glueck, PhD**, and **Polly Newcomb, PhD**

Speakers:

Wendy Atkin, MPH, PhD, Imperial College London,
“Flexible Sigmoidoscopy Screening for Colorectal Cancer –
Results of the UK Randomised Controlled Trial”

Christine Berg, MD, National Cancer Institute, “Colorectal
Cancer Screening: The PLCO and a Brief Discussion on Virtual
Colonography and Radiation Risk”

Al Neugut, MD, PhD, Columbia University,
“Colonoscopy vs. Sigmoidoscopy: Getting it Right”

5:00– 5:15pm

ASPO/Cancer Prevention Foundation/Komen for the Cure
Fellowship Awardee Address: “Lifestyle Factors and Disease-
Free Survival after a Ductal Carcinoma In Situ Diagnosis”
Brian Sprague, PhD, University of Vermont

5:15 – 6:00pm
Renaissance I

ASPO Business Meeting (open to all ASPO members)

6:00 – 7:30pm
foyer

Poster Session II & Reception (at Renaissance Hotel)

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7:30 pm – 10:00 pm ASPO 35th Anniversary Gala and Celebration!

Renaissance II and III (A few tickets remain: inquire at the registration table)

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ASPO 2011 - Program Details

Tuesday, March 8, 2011

7:30am—1pm	Registration
8:00 – 9:30am	Concurrent Breakfast Sessions
Copa A & B	1) Behavioral Oncology & Cancer Communications Special Interest Group: "Aging and Decision-Making: Implications for Cancer Prevention, Detection and Control" Chair: Isaac Lipkus, PhD , Duke University Speakers: Mary Steps, PhD , Case Western Reserve. Corrina Loeckenhoff, PhD , Cornell University
8:00 -9:30am	2) Molecular Epidemiology Special Interest Group
Renaissance II	"Using Molecular and/or Genetic Markers to Impact Personalized Medicine and Prevention" Chair: Peter Kanetsky, PhD, MPH , University of Pennsylvania Speakers: David Alberts, MD , Arizona Cancer Center, "Cellular and Molecular Biology Leading to Personalized Chemoprevention in the Skin" Ellen Goode, PhD, MPH , Mayo Clinic, "Common Inherited Variation in Ovarian Cancer: Ready to Get Personal?"
8:00-9:30am	3) Screening Interest Group Breakfast
Renaissance III	Chair: Deborah Glueck, PhD , University of Colorado-Denver Christine Berg, MD , National Cancer Institute, "The National Lung Screening Trial: Initial Results and What Next?" Erin Kobetz, PhD, MPH , University of Miami, "Disparities in Breast Cancer Screening: One Size Does Not Fit All" Andrea Burnett-Hartman, PhD, MPH , Fred Hutchinson Cancer Research Center, "Sigmoidoscopy and Colonoscopy are Inversely Associated with Both Left- and Right-sided Advanced Adenomas"
9:30–10:00am	Break

Tuesday, March 8, 2011 (cont.)

10:00–11:30am

Renaissance II

Concurrent Paper Sessions

Proffered Paper Session 3: Epigenetics/Genetics

Chair: **Peter Kanetsky, PhD**, University of Pennsylvania

Benjamin Rybicki, PhD, Henry Ford Hospital, “Methylation of Retinoic Acid Receptor, Beta (RARβ) Gene Increases Risk for Prostate Cancer in African-American Men “

Chandrika Piyathilake, PhD, University of Alabama-Birmingham, “Predictors and Health Consequences of Epigenetic Changes Associated with Excess Body Weight in Women of Child-bearing Age”

Xia Pu, MS, MD Anderson Cancer Center, “MicroRNA-Related Genetic Variants as Predictors of Early Stage Non-Small Cell Lung Cancer Clinical Outcomes”

Julie Flom, MPH, Columbia University, “Prenatal Tobacco Smoke Exposure and Genome-wide Methylation in Adulthood”

Hui-Chen Wu, DrPH, Columbia University, “Genomic Methylation Levels in White Blood Cell DNA from Sisters Discordant for Breast Cancer from the New York Site of the BCFR”

Sam Oh, PhD, UC – San Francisco, “Correlates of Lung Cancer Survival: Inflammatory Single-Nucleotide Polymorphisms and Tumor Biomarker Expression”

Tuesday, March 8, 2011 (cont.)

10:00-11:30am

Renaissance III

Proffered Paper Session 4: Cancer Prevention

Chair: **Stephen Hursting, PhD**, University of Texas

Aruna Kamineni, PhD, MPH, Group Health Research Institute,
“Cervical Cancer Screening Efficacy in Older Women”

Jeanine Genkinger, PhD, MHS, Columbia University,
“Beverages and Pancreatic Cancer Risk: A Pooled Analysis of 14
Cohort Studies”

Hazel Nichols, MS, Johns Hopkins University,
“Bilateral Oophorectomy and Ductal Carcinoma in situ”

Lina Mu, MD, PhD, University at Buffalo,
“Indoor Air Pollution and the Risk of Lung Cancer Among
Chinese Female Non-smokers”

Amanda Phipps, PhD, Fred Hutchinson Cancer Research Center,
“Long-term Use of Continuous-Combined Estrogen-Progestin
Hormone Therapy and Risk of Endometrial Cancer”

Malcolm Pike, PhD, Memorial Sloan-Kettering Cancer Center,
“Oral Contraceptive Progestin Dose and Breast Epithelial-Cell
Proliferation”

11:30 – 1:15pm

Renaissance III

Concurrent Lunch Sessions:

1) Junior Members: “How to Succeed in Your First Job: Tips for
Time Management and Research Collaborations”

Chair: **Joanne Wilkinson, MD, MS**, Boston University

Panelists:

John C. Ruckdeschel, MD, Nevada Cancer Institute

Linda J. Patrick-Miller, PhD, University of Chicago

11:30 – 1:15pm

Renaissance II

2) Senior Members Lunch: “Keeping Careers and Program Alive
in Difficult Periods of Funding”

Organizers: **Dee West, PhD**, Northern California Cancer Center;

Michele Forman, PhD, MD Anderson Cancer Center; **Polly**

Newcomb, PhD, Fred Hutchinson Cancer Research Center

Speakers: **Ellen R. Gritz, PhD**, MD Anderson Cancer Center;

Deborah Winn, PhD, National Cancer Institute

1:15pm

ASPO conference concludes

PROFERRED PAPER SESSION ABSTRACTS

Monday, March 7, 2011

Session 1: Epidemiology/Breast Cancer

Meghan Work, MPH	Luke Peppone, PhD
<p>Oral contraceptive use and parity associations with uncommon breast cancer histologies in the Breast Cancer Family Registry: the role of family history Work, ME; John, EM; Andrulis, IL; Hopper, JL; Liao, Y; Hibshoosh, H; Terry, MB</p> <p>. Purpose: The effect of parity and oral contraceptive (OC) use on breast cancer risk differs by cancer subtype as defined by histology. Family history of breast cancer impacts decisions regarding both parity and oral contraceptive use; it is unknown whether reproductive risk factors are related to uncommon histologies in women with and without a strong family history. Methods: Using population-based data from the Breast Cancer Family Registry, we conducted analyses using unordered polytomous regression to determine the role of family history in associations between parity, OC use and breast cancer histologic subtype, among 3260 cases and 2997 controls. Histologic types examined included ductal and lobular as well as the uncommon histologies of mucinous, tubular, and medullary cancer. Results: Twenty-eight percent of cases and 9% of controls had a family history (defined as at least 1 first-degree relative with breast cancer). Cases with and without family history were similar in regards to oral contraceptive use (75% and 73%, respectively were ever-users) and parity (2.08 children in cases with family history, 2.10 in cases without). In a multivariable model, when compared with controls, OC use was inversely associated with tumors of mucinous histology (OR=0.43, 95%CI 0.23-0.79 for use \geq5 years vs. never use). There was a stronger inverse association with OC use and the mucinous subtype among those without a family history (OR=0.27, 95%CI 0.13-0.57), and a non-significant positive association in those with family history (OR=2.19, 95%CI 0.40-11.84). High parity (\geq3 children) was positively associated with medullary histology (OR=2.62, 95%CI 1.16-5.91, compared with nulliparity); the association was stronger among women without a family history (OR=4.31, 95%CI 1.67-11.12), and was not significantly associated among those with a family history (OR=0.36, 95%CI 0.06-2.29). Parity was inversely associated with the mucinous type (OR=0.45, 95%CI 0.21-0.96, compared with nulliparity), and this effect remained stable in women with and without family history. Conclusion: This study suggests that selected reproductive risk factors may only be related to uncommon breast cancer histologies among women without a family history of breast cancer.</p>	<p>The Association between Prognostic Demographic and Tumor Characteristics of Breast Carcinomas with Serum 25-OH Vitamin D levels Peppone L, Rickles A, Huston A, Sprod L, Hicks D, Mustian K, Skinner K</p> <p>Epidemiologic studies show that women with low 25-OH vitamin D levels have an increased risk of breast cancer incidence and mortality. However, there is a lack of research examining vitamin D levels and prognostic variables in breast cancer patients. The aim of this study is to identify the associations between 25-OH vitamin D levels, demographic variables, and prognostic pathological and genetic characteristics of breast cancers.</p> <p>This study cohort consists of 155 women who underwent breast cancer surgery at the University of Rochester between 1/2009 - 9/2010. Vitamin D levels were obtained in the 1-year period prior to and after surgery (74% of vitamin D levels within 6 months). Prognostic variables included age, race, menopausal status, Oncotype DX score, TNM staging, ER/PR status, and HER2 expression. ANCOVA, linear regression, and logistic regression were used to determine the association between prognostic variables and 25-OH vitamin D levels, while controlling for relevant covariates (age, race, and month of blood draw).</p> <p>Non-Caucasian (OR=3.8; $p<0.01$) and premenopausal (OR=3.5; $p<0.01$) breast cancer patients were significantly more likely to have sub-optimal 25-OH vitamin D levels than Caucasian and postmenopausal patients, respectively. Women with invasive breast tumors were more likely to have sub-optimal vitamin D levels (Invasive OR=2.4; $p=0.10$) and lower mean 25-OH vitamin D levels (invasive: 30.5 ng/ml vs. in-situ: 36.9 ng/ml; $p=0.04$). A significant correlation ($r=-0.42$; $p=0.04$) between decreasing vitamin D levels and increasing Oncotype score was noted. Breast cancer patients who had ER- and triple-negative breast tumors were more likely to have sub-optimal levels of 25-OH vitamin D (ER- OR=2.4; $p=0.07$) (triple-negative OR=2.6; $p=0.09$).</p> <p>Breast cancer patients with sub-optimal vitamin D levels were more likely to have tumors with more aggressive tumor profiles, worse prognostic markers (ER- and triple-negative tumors), and higher recurrence risk (Oncotype scores), lending support to previous research that found decreased breast cancer survival among vitamin D deficient individuals. Further research is needed to elucidate the biological relationship between vitamin D and prognostic breast cancer markers.</p>

Brian Sprague, PhD	Amy Trentham-Dietz, PhD
<p>The Association of Serum Phthalates and Parabens with Mammographic Breast Density B Sprague, A Trentham-Dietz, C Hedman, J Hemming, J Hampton, D Buist, E Aiello Bowles, E Burnside, G Sisney</p> <p>Humans are exposed to a large number of environmental chemicals which have estrogenic activity, raising concern regarding potential effects on breast tissue and breast cancer risk. Phthalates are commonly found in personal care products, such as shampoos, lotions, and shaving products, and are present in many consumer plastics, adhesives, detergents, and pharmaceuticals. Parabens are also found in personal care products, and are additionally used as antimicrobials in foods. In vitro studies have demonstrated that many phthalates and parabens can bind to the estrogen receptor and initiate estrogenic cellular pathways, and a recent case-control study found that urinary concentrations of mono-ethyl-phthalate were positively associated with breast cancer risk. We examined the cross-sectional association of circulating serum levels of phthalates and parabens with mammographic breast density (a marker for breast cancer risk). A total of 261 postmenopausal women (ages 55-70, with no history of postmenopausal hormone use) were recruited from mammography clinics in Madison, Wisconsin. Subjects completed a questionnaire regarding known breast cancer risk factors and provided a blood sample that was analyzed for mono-ethyl-phthalate, mono-butyl-phthalate, mono-benzyl-phthalate, butyl paraben, and propyl paraben. Percent breast density was measured from subjects' mammograms as a continuous variable using a computer-assisted thresholding method (Cumulus software). After adjusting for age and body mass index, mono-ethyl-phthalate was positively associated with percent breast density. Women with detectable mono-ethyl-phthalate levels (>0.4 ng/mL; $N=36$) had higher percent breast density than women with no detectable mono-ethyl-phthalate ($N=225$) in their serum (16.8% vs. 12.8%; $P=0.03$). Serum levels of mono-butyl-phthalate and mono-benzyl-phthalate were generally below the limits of detection. Serum levels of butyl-paraben and propyl-paraben were higher (detectable in 55% and 67% of subjects, respectively), but neither was associated with breast density ($P>0.20$). These results suggest that further investigation into the potential influence of mono-ethyl-phthalate (and its parent compound diethyl-phthalate) on breast tissue is warranted.</p>	<p>The Impact of Detection and Treatment of Carcinoma In Situ on Breast Cancer Mortality Trentham-Dietz A, Sprague BL, Alagoz O, Reaidi P, Rosenberg M, Gangnon RE, Stout NK</p> <p>PURPOSE: Ductal carcinoma in situ (DCIS), a non-obligate precursor to invasive breast cancer, makes up 20% of new breast cancer diagnoses. DCIS is primarily detected by mammography and has excellent prognosis regardless of therapy choice. We aim to quantify the impact of detection and treatment of DCIS on breast cancer mortality using computer modeling.</p> <p>METHODS: We used a validated micro-simulation model to replicate U.S. trends in breast cancer incidence and mortality from 1975-2000. All breast cancer tumors began in the in situ stage and progressed through more advanced stages with increasing tumor size and lymph node involvement, with a fraction of tumors assumed as non-lethal. Age-adjusted breast cancer mortality was examined under historical U.S. screening and treatment patterns and 3 alternative scenarios: 1) only women 50 years and older received screening and all breast cancer cases received treatment according to historical patterns; 2) all women received screening according to historical patterns but DCIS was untreated unless later detected at an invasive stage; and 3) historical screening was used but DCIS was never treated.</p> <p>RESULTS: The model predicts breast cancer mortality rates declined during the 1990s to a low of 39.9 per 100,000 in 2000, which is consistent with observed mortality based on the SEER program (38.0 per 100,000 in 2000). Delaying mammography until age 50 or postponing treatment until DCIS progressed to invasive cancer increased mortality to 42.4 and 43.2 per 100,000, respectively, by 2000. If DCIS patients did not receive any treatment, mortality remained steady (~ 51.2 per 100,000) through 2000.</p> <p>CONCLUSION: Our model results suggested detection and treatment of DCIS in the U.S. reduced breast cancer deaths in the year 2000 by about 28%. Most of this benefit (92%-94%) could also be achieved if instead mammography began at age 50 or treatment was reserved for invasive breast cancers only.</p>

Gertraud Maskarinec, MD, PhD	
<p data-bbox="142 186 761 275">Dual Energy X-ray Absorptiometry (DXA) Imaging as a Research Tool to Investigate Breast Development in Adolescent Girls</p> <p data-bbox="142 281 761 342">Maskarinec G, Morimoto Y, Daida Y, Shepherd J, Novotny R</p> <p data-bbox="142 380 761 1795">Purpose. Increasing evidence suggests that breast cancer risk is determined early in life. Mammographic density, a biomarker for breast cancer risk, cannot be used in girls due to the high radiation of X-ray based mammograms. Thus, we explored DXA as a low radiation method to study breast development in adolescent girls. Methods. We recruited 101 mother-daughter pairs and 12 additional sisters through Kaiser Permanente Hawaii. The girls were 10-16 years old with breast development in Tanner stages 1-5. DXA scans of both breasts were taken in mothers and daughters using a clinical DXA system calibrated to measure breast density. The total projected breast area was manually delineated on each image and total breast area and volume, fibroglandular volume (FGV), and percent fibroglandular volume (%FGV) were computed. After digitizing the mothers' ammograms, total breast area, dense area, and percent density were estimated using computer-assisted density assessment. Results. Comparison of mothers' DXA breast images with mammography showed a strong correlation of percent density between the 2 methods ($r=0.76$, $p<0.0001$) and similar associations with common breast cancer risk factors, e.g., body mass index (BMI). The evaluation of DXA scans in girls indicated that breast area, breast volume, and absolute FGV were positively associated with Tanner breast stage ($p<0.001$), whereas %FGV increased until Tanner stage 4 but was lower in stage 5 ($p=0.03$). In addition, we observed a significant relation between breast area, breast volume, and absolute FGV with quartiles of BMI Z-score and %total body fat, while %FGV showed an inverse association with these measures. When DXA measures between mothers and daughters were compared, total breast area and volume, as well as FGV were higher in mothers than in daughters, while mean %FGV was higher in girls than in mothers. We observed statistically significant correlations between breast measures of mothers and daughters except for %FGV; the associations were stronger for girls who had reached Tanner breast stages 4&5. Conclusion. These results support the potential use of DXA as a low-radiation option in evaluating longitudinal changes in breast tissue composition to explore modifiable breast cancer risk factors among adolescents.</p>	

PROFERRED PAPER SESSION ABSTRACTS

Monday, March 7, 2011

Session 2 – Behavioral Science

Anuli Njoku, MPH	Kathrin Milbury, PhD
<p>Change in Colorectal Cancer (CRC) Screening Decision Stage</p> <p>Njoku, A., Cocroft, J., Daskalakis, C., Sifri, R., Bittner-Fagan, H., Myers, R.</p> <p>Introduction: CRC screening decision stage (SDS) is a measure of proximity to screening. Predictors of change in SDS have not been reported in the literature.</p> <p>Objective: To assess SDS change and predictors of SDS among primary care patients 50 to 74 years of age who are enrolled in a randomized, controlled trial of behavioral interventions designed to increase CRC screening.</p> <p>Methods: On a baseline survey, study participants reported on perceptions about CRC screening and SDS (i.e., decided to screen vs had not decided to screen). Participants were randomized to one of three study groups: Control Group (usual care), Standard Intervention (SI) Group (mailed screening materials (i.e., informational booklet, a stool blood test kit, instructions for scheduling a screening colonoscopy, and a reminder); and a Tailored Navigation Intervention (TNI) Group (mailed screening materials tailored to baseline SDS and a navigation telephone call). TNI Group participants were asked to report current SDS, including current screening status, at navigation. We assessed change in SDS from baseline to navigation and performed multivariable analyses to identify predictors of SDS change.</p> <p>Results: Of 248 TNI Group participants, 205 (83%) received a navigation call. Background characteristics of these participants were as follows: white (76%), female (64%), aged 50-59 (67%), > high school education (52%), and married (62%). At baseline, 43 (21%) participants reported that they had not decided to screen, and 162 (79%) reported that they had decided to screen. At navigation, 55 (27%) participants reported a positive change in SDS (26 moved forward in SDS but did not screen and 29 screened). Participants who had not decided to screen at baseline were more likely to exhibit positive change in SDS than those who had decided to screen at baseline (63% and 17%, respectively, $p < 0.0001$). Among participants who had not decided to screen at baseline, only one reported actual screening. Of those participants who had decided to screen, 28 actually screened.</p> <p>Discussion: More than a quarter of participants reported a positive change in SDS in response to the mailed tailored intervention materials sent prior to the navigation call. Baseline SDS was a strong predictor of SDS change.</p>	<p>The Cancer Stroop Task as an Implicit Measure of Cognitive Interference in Head and Neck Cancer Patients</p> <p>Milbury, K., Badr, H</p> <p>Given the stigmatizing and debilitating nature of head and neck cancer (HNC) and its treatment, patients are at risk of developing trauma symptoms such as cognitive interference (unwanted, disturbing thoughts) that can increase their risk for distress. Most measures of cognitive interference employ a self-report format making them susceptible to self-presentation and defensive biases. In order to address these limitations, we developed and implemented an implicit measure, a cancer Stroop task (CST), with the goal to establish a link between implicit intrusive cognitions and distress (BSI) and self-reported intrusive cognitions (Impact of Events Scale; IES). As part of an observational spousal support study, 70 patients (87% male) completed self-report measures and then engaged in problem-solving discussions with their spouses about cancer related concerns in the lab. Afterwards, the computerized CST was administered. Participants were instructed to color-name each stimulus word while ignoring word meaning. Slower responses to emotionally salient (cancer) vs. neutral words reflect their power to automatically capture attention and become intrusive. Results revealed a significant inverse association between response time to cancer words and distress ($p < .001$) and self-reported cognitive intrusion ($p < .01$) so that individuals who responded more slowly revealed greater distress and cognitive intrusion compared to individuals with faster responses. These findings suggest that the CST is a promising measure of cognitive interference as it is associated with self-report measures of distress and cognitive intrusion. Unlike self-report measures assessing intrusive cognitions over the past 7 days, this implicit measure allows to examine the effects of immediate environmental antecedents on cognitive interference. Thus, our next step in this ongoing study will be to behaviorally code the cancer discussion for supportiveness on the spouse as a predictor of cognitive interference as measured by the CST.</p>

Mira Katz, PhD	Theresa Hastert, MPP
<p>Patient activation increases colorectal cancer (CRC) screening rates among low-income minority patients Katz M, Fisher J, Murray L, Fleming K, Paskett E</p> <p>Purpose: To determine if CRC screening information plus activating patients to ask for a CRC screening test improves CRC screening rates compared to CRC screening information only using an individual-level randomized controlled trial at one federally qualified health center (FQHC).</p> <p>Methods: Patients in the intervention arm watched a video and received a brochure both focusing on CRC screening information plus communication skills training to activate them to ask for a CRC screening test. Patients in the information only arm watched a video about CRC screening. CRC screening completion was determined by medical record review (MRR) at 2 months post medical visit. Logistic regression was used to determine whether or not patients in the intervention arm were more likely to discuss CRC screening with their doctor, have a CRC screening test ordered, and complete CRC screening, after adjustment for confounding factors (e.g. demographic characteristics, co-morbidities, CRC knowledge, beliefs and attitudes).</p> <p>Results: Patients (n=269) randomized were predominantly African American (72%), female (64%), and had annual household incomes <\$20,000 (61%), less than a high school education (28%), no health insurance (57%), and limited health literacy skills (54%). In adjusted analyses, more patients randomized to the intervention arm completed a CRC screening test by MRR compared to patients in the CRC screening information only arm (19.6% vs. 9.9%; OR=2.26, 95%CI: 1.11, 4.61; p=0.02), were more likely to report discussing CRC screening with their provider (54.4% vs. 27.5%, OR=3.16, 95%CI: 1.89, 5.28; p<0.001) and had more CRC screening tests ordered (39.1% vs. 17.6%; OR=3.21, 95%CI: 1.80, 5.72; p<0.001).</p> <p>Conclusion: Providing screening information plus patient activation improves CRC screening rates compared to providing screening information only among low-income minority patients at a FQHC. Additional innovative strategies are needed however, to motivate the healthcare team to recommend tests to patients, as well as to assist patients to complete an ordered CRC screening test.</p>	<p>Adherence to WCRF Cancer Prevention Recommendations and Subsequent Cancer Risk in the VITamins And Lifestyle Study Cohort Hastert T, White E</p> <p>In 2007 the World Cancer Research Fund (WCRF) and the American Institute for Cancer Research (AICR) published eight recommendations related to body weight, physical activity and dietary behaviors aimed at reducing cancer incidence worldwide. These were based on a comprehensive review of the literature on these topics in relation to each of the common cancers. We operationalized five of those recommendations (maintaining normal body weight, participating in moderate physical activity for at least 30 minutes per day, eating at least 14 oz of non-starchy fruits and vegetables per day, limiting the consumption of red meat to no more than 18 oz per week, and limiting alcohol consumption to one drink per day for women and two drinks per day for men) and examined their association with total cancer incidence over eight years of follow-up in the VITamins And Lifestyle (VITAL) Study cohort. Participants included 49,408 men and women aged 50-76 years at baseline in 2000-2002 who had no history of cancer and who had complete data for the five recommendations evaluated. Incident cancers (n = 4,397) were tracked through the Western Washington Surveillance, Epidemiology and End Results (SEER) database. The median number of recommendations followed was 2 (0-5). After adjusting for age, sex, education, race/ethnicity, marital status, PSA in previous two years, mammogram in previous two years, sigmoidoscopy in past 10 years, pack-years of smoking and history of cancer in a first-degree relative, meeting only one or two recommendations did not significantly reduce cancer risk (HR 0.91, 95% CI 0.78-1.06 and HR 0.94, 95% CI 0.81, 1.09, respectively) compared with meeting none of the recommendations. However, compared with meeting none of the recommendations, adherence to three recommendations was associated with a 16% reduction in cancer risk (HR 0.84, 95% CI 0.72, 0.99); adherence to four recommendations was associated with a 24% reduction in cancer risk (HR 0.76, 95% CI 0.63, 0.91); and meeting all five recommendations was associated with a decrease in cancer risk of 31% (HR 0.69, 95% CI 0.52, 0.93). These results suggest that increasing adherence to the WCRF and AICR body weight, physical activity and dietary recommendations could substantially reduce cancer risk.</p>

Carla Berg, PhD	Grace Clarke Hillyer, EdD(c), MPH
<p data-bbox="139 184 761 275">Use of and Interest in Smoking Cessation Strategies Among Daily and Nondaily College Students Smokers Berg, C., Sutfin, E., Mendel, J., Ahluwalia, J.</p> <p data-bbox="139 310 761 1667">While daily smoking in the U.S. is declining, nondaily smoking (smoking some days but not every day) is increasing; yet, little is known regarding how to address cessation among nondaily smokers. We examined the use of and interest in cessation strategies among daily and nondaily college student smokers. An online survey was administered to 820 undergraduates aged 18-25 reporting smoking in the past 30 days at a two-year college and a four-year university. We examined sociodemographics, smoking-related factors (confidence/motivation to quit, readiness to quit, perceived harm of smoking, motives for smoking), depressive symptoms, and daily vs. nondaily smoking status as factors associated with use of and interest in cessation strategies - traditional behavioral interventions, technology-based behavioral interventions, and pharmacotherapy. Overall, 59.3% were nondaily smokers, with the average number of days of smoking in the past 30 days being 9.49 (SD=9.24). More daily (24.9%) than nondaily smokers (17.9%) have never tried to quit ($p=.01$). More nondaily (54.6%) than daily smokers (49.0%) have attempted to quit without assistance. Daily vs. nondaily smokers were more likely to have used behavioral interventions (20.7% vs 5.9%, $p<.001$) and pharmacotherapy (33.4% vs 9.1%, $p<.001$). Correlates of interest in traditional behavioral interventions included older age ($p=.02$), lower parental education ($p=.02$), lower confidence in ability to quit ($p=.004$), higher motivation to quit ($p=.002$), and having depressive symptoms ($p=.002$). Correlates of interest in technology-based interventions included lower confidence in quitting ($p=.004$), higher motivation to quit ($p=.001$), having depression ($p=.03$), and smoking for social reasons ($p=.04$). Correlates of interest in pharmacotherapy included being white ($p<.001$), lower confidence ($p<.001$), higher motivation ($p<.001$), having depressive symptoms ($p=.05$), and being a daily smoker ($p=.004$). Behavioral interventions may be appropriate for the broad range of college student smokers. The use of pharmacotherapy for nondaily smokers warrants further exploration, as these approaches were of most interest to both daily and nondaily smokers.</p>	<p data-bbox="781 184 1404 306">High rates of colorectal cancer screening among uninsured Latinas in Upper Manhattan: A model for prevention G. Clarke Hillyer, K. Schmitt, A. Neugut, C. Basch</p> <p data-bbox="781 342 1404 1701">Purpose: To demonstrate the effectiveness of an intervention to increase colorectal cancer (CRC) screening using fecal immunochemical test (FIT) among uninsured Latinas attending a community-based mammography screening program in Upper Manhattan and assess correlates of screening. Methods: Using a prospective study design, average risk Latinas aged 50-64 years who were not up-to-date with CRC screening and who presented for mammography screening were queried about sociodemographics, acculturation, history of cancer other than CRC, CRC knowledge, health behaviors, and psychosocial factors. CRC education was delivered by a bilingual health educator and included demonstration of the specimen collection procedure. All participants were given a free FIT kit to complete at home and were followed to determine screening outcome. Results: Ninety four percent ($n=197$) of eligible women were enrolled into the study. Of these, 90% completed CRC screening using FIT. Nearly two-thirds completed the FIT within 2 weeks of receiving the kit and 69% did so without a single reminder call. The mean age was 54.8 years, 97% were foreign-born, 61% had a high school education or less, 58.5% were employed and 30.5% were married. Most participants had moderate levels of knowledge of CRC risk factors and 98% believed that treatment is more effective if CRC is caught early. Eighty percent did not know the correct age at which to begin CRC screening and 41% stated they did not know what a fecal-based test for hidden blood was. Compared to non-screeners, screeners had lower levels of acculturation (0.7 vs. 1.9, $p = .007$) and disgust (6.9 vs. 9.5, $p = .008$), and less likelihood of having a family history of cancer (28.5% vs. 52.9%, $p = .037$). Screeners were also more likely to have higher levels of knowledge of certain CRC facts and risk factors (3.4 vs. 3.0, $p = .046$). Conclusions: The extraordinarily high of rate of CRC screening suggests a model of prevention that may be effective in promoting colorectal cancer screening among uninsured Latinas. The correlates of screening warrant further research in Latinas.</p>

PROFERRED PAPER SESSION ABSTRACTS

Tuesday, March 8, 2011

Session 3 – Epigenetics/Genetics

Benjamin Rybicki, PhD	Chandrika Piyathilake, PhD
<p>Methylation of Retinoic Acid Receptor, Beta (RARβ) Gene Increases Risk for Prostate Cancer in African-American Men B. Rybicki, N. Mitrache, K Do, M. Jankowski, D. Tang., A. Rundle, C. Bock, J. Beebe-Dimmer, S. Belinsky</p> <p>DNA methylation is an indicator of the initiation of prostate carcinogenesis and as such has utility as a marker of risk in pathologically negative prostate tissue samples. We conducted a matched case-control study nested in a historical cohort of over 6,000 men with pathologically benign prostate specimens identified between January 1991 and November 2002 with no previous history of prostate cancer. Eligible cases were diagnosed with prostate cancer at least one year after cohort entry. Controls were selected through incidence density sampling and matched to cases on date and age at cohort entry, race, and type of specimen. In 310 matched prostate cancer case-control pairs (65% white; 35% African American), we assayed the DNA of the benign prostate specimen for presence of methylation in a five-gene panel (APC, RARβ, CCND2, RASSF1, MGMT) and then estimated the risk of developing prostate cancer associated with methylation at each gene for the whole sample and stratified by race. Overall, methylation of RARβ had the strongest association with prostate cancer risk (Hazard Ratio (HR) = 1.94; 95% confidence interval (CI) = 1.30 – 2.91). In race-stratified analyses, the majority of the increased risk associated with RARβ was found in the African-American sample (HR=3.40; 95% CI = 1.68 – 6.88). In addition, APC was also associated with increased risk for prostate cancer in the African-American sample (HR=2.17; 95% CI = 1.09-4.29). In a model that included both genes, only RARβ remained statistically significantly associated with prostate cancer (HR=3.14; 95% CI = 1.54 – 6.44). In whites, methylation was not associated with prostate cancer for any of the five genes assayed. In summary, positive methylation status at RARβ and APC in pathologically benign prostate is associated with significant increased risk for subsequent prostate cancer, but primarily in African-American men. Whether this race-specific risk is due to racial differences in environmental stimuli and/or biology is unclear, but further study of DNA methylation in the earliest stages of prostate carcinogenesis may help explain the disproportionate burden of this disease among African-American men.</p>	<p>Predictors and health consequences of epigenetic changes associated with excess body weight in women of child-bearing age Piyathilake C, Badiga S, Johanning G, Alvarez R and Partridge E</p> <p>Background: Epigenetic alterations occurring during pregnancy have recently emerged as important factors for developmental programming of the fetus leading to obesity related diseases in children. However, the role of excess body weight (EBW) in the modification of epigenetic patterns or its health consequences during child-bearing age is largely unknown. Since a lower degree of DNA methylation of long interspersed nucleotide element-1 (LINE-1) in PBMCs was shown to be associated with a higher risk of developing obesity related diseases, e.g. cancer, the purpose of this study was to 1) evaluate the influence of indicators of obesity (BMI, WC and % body fat) on PBMC LINE-1 methylation, 2) determine the predictors of PBMC LINE-1 methylation 3) determine the influence of PBMC LINE-1 methylation on biomarkers of obesity related diseases.</p> <p>Methods: The study population consisted of 470 child-bearing age women. We quantified the degree of PBMC LINE-1 methylation by pyrosequencing. Folate concentrations were measured using a microbiological assay. The degree of LINE-1 methylation (> median vs ≤ median) was the dependent variable in logistic models that specified BMI (>25 vs ≤ 25), WC (>88 cm vs ≤ 88 cm) or % body fat (>33% vs ≤ 33%) separately as the independent predictors of primary interest, adjusting for other relevant variables. The predictors and determinants of lower LINE-1 methylation were evaluated among women with EBW.</p> <p>Results: Women with higher BMI, WC or % body fat were 2.0, 1.9 and 1.8 times more likely to have lower LINE-1 methylation, respectively (p= .003, .005 and .01). The predictors and determinants of lower LINE-1 methylation yielded similar patterns with all three indicators of obesity. The following results are based on models run with BMI as the indicator for EBW. Women with higher plasma folate concentrations were less likely to have lower LINE-1 methylation (OR=0.54, p=0.0009). Higher LINE-1 methylation was associated with lower insulin resistance as indicated by HOMA (OR=.50, p=.02).</p> <p>Conclusions: EBW-associated lower LINE-1 methylation in women of child-bearing age appears to have significant, and potentially transgenerational, health consequences. Higher folate status may exert beneficial effects on obesity-related health outcomes.</p>

Xia Pu, MS	Julie Flom, MPH
<p>MicroRNA-Related Genetic Variants as Predictors of Early Stage Non-Small Cell Lung Cancer Clinical Outcomes</p> <p>Xia Pu, Charles Lu, David J. Stewart, Jian Gu, Michelle A.T. Hildebrandt, Jie Lin, Scott M. Lippman, Xifeng Wu.</p> <p>PURPOSE: MicroRNAs (miRNA) can function as oncogenes or tumor suppressors. In this study, we test the hypothesis that genetic variation within miRNA processing genes or miRNA binding sites in cancer-related genes may alter clinical outcomes for non-small cell cancer (NSCLC) patients. METHODS: We genotyped 72 single nucleotide polymorphisms (SNPs) from eight miRNA processing genes and 168 SNPs from 133 predicted miRNA binding sites in 535 patients with early stage (stage I, IIA and IIB) NSCLC to determine the effect of these variations on progression risk and overall survival. We further conducted a subset analysis to exclude potential bias due to different treatment regimens. RESULTS: In the analysis of overall survival, a <i>FAS</i> SNP remained significant for decreased risk after multiple comparisons in all early patients (HR: 0.59, 95% CI: 0.44-0.77; GG: MST=58mos, GA+AA: MST=118mos) and surgery plus chemotherapy subgroup (HR: 0.19, 95% CI: 0.07-0.46, $p=1.84 \times 10^{-5}$; GG: MST=65mos, GA+AA: MST=137mos). In the surgery-only patients, a <i>FZD4</i> SNP (HR: 0.46, 95% CI: 0.32-0.65; GG: MST=59mos, GA+AA: MST=117mos) had a significant protective effect after multiple comparisons adjustment. For progression risk, following multiple comparison, a <i>SP1</i> SNP (HR: 2.19, 95% CI: 1.45-3.32; GG: MST>270mos, GA+AA: MST=45mos) and a <i>MBD1</i> SNP (HR: 2.41, 95% CI: 1.45-4.0; AA: MST>270mos, C+CC: MST=90mos) remained significant increased progression risk in the entire and surgery only population respectively. All the associations significant after adjusting for multiple comparisons were validated by Bootstrap re-sampling method. A strong cumulative effect of these variant genotypes to increase risk and dramatically decrease median event-free time was consistently observed. We also identified potential higher-order gene-gene interactions among these SNPs. CONCLUSIONS: We identified significant association between miRNA related genetic variants and early stage NSCLC patient clinical outcomes. With validation, our result can be used in the prognosis of clinical outcomes for early stage NSCLC patients.</p>	<p>Prenatal Tobacco Smoke Exposure and Genome-wide Methylation in Adulthood</p> <p>J Flom, J Ferris, K Gonzalez, R Santella, MB Terry</p> <p>Genomic DNA demethylation, including demethylation of repetitive elements (which comprise 45% of the human genome), has been linked to increased risk of breast and other cancers. Genomic DNA methylation can be altered prenatally and throughout life and may be a mechanism through which the environment alters disease risk. There is evidence that prenatal tobacco smoke exposure has a persistent impact on genomic DNA methylation; however, no study to date has assessed the association between prenatal smoke exposure and adult repetitive element methylation. We measured repetitive element methylation of Alu, LINE-1, and Sat2 using MethyLight in 92 members of the New York Women's Birth Cohort, a follow-up of former female participants of the New York site of the U.S. National Collaborative Perinatal Project (mean age at blood draw = 43.5, SD = 1.8). Prenatal smoke exposure was reported prospectively. We estimated associations using multivariable linear regression, and used the natural log of Alu, LINE-1, and Sat2 methylation level. Thirty one (36%) participants were exposed to prenatal smoke. These participants were more likely to smoke at the time of interview ($p<0.01$). Prenatal smoke exposure was inversely associated with genomic DNA methylation of Sat2 and Alu, adjusted for age, childhood environmental tobacco smoke exposure (ETS) and adult smoking status (exposed versus unexposed to prenatal smoke: Sat2: beta = -0.20, 95% CI = -0.39, -0.02; Alu: beta = -0.09, 95% CI = -0.26, 0.08). In multivariable models, childhood ETS had a positive, borderline significant association with Sat2 methylation (beta = 0.17, 95% CI = 0.02, 0.37). If replicated in larger studies, these results suggest that prenatal smoke exposure may have a persistent impact on genomic DNA demethylation of Sat2 and Alu in adulthood, and thus may be a pathway through which prenatal smoke exposure impacts adult disease. Results are strengthened by the fact that prenatal smoke exposure data were collected prospectively in the early 1960's, before there was a stigma associated with maternal smoking during pregnancy. These results are consistent with the one study assessing this relation in children. Further studies are needed to confirm this finding and to investigate the underlying biological mechanism.</p>

Hui-Chan Wu, DrPH	Sam Oh, PhD
<p>Genomic methylation levels in white blood cell DNA from sisters discordant for breast cancer from the New York site of the BCFR</p> <p>Wu, HC; Delgado-Cruzata, L; Flom, JD; Kappil, M; Perrin, M; Liao, YY; Ferris, J; Santella, RM;Terry, BT</p> <p>Genomic demethylation, one type of epigenetic change, is associated with genomic instability and human cancer. Limited data is available on the association between breast cancer and genomic demethylation, measured across both the entire genome and specific repetitive elements. To test the hypothesis that white blood cell (WBC) DNA demethylation is associated with increased breast cancer risk, we measured genomic methylation level for three repetitive elements (LINE-1, Sat2 and Alu) by MethyLight, and by a [3H]-methyl acceptance assay in a total of 276 breast cancer cases and 344 unaffected sisters from the New York site of the Breast Cancer Family Registry (BCFR). We found that genomic methylation levels were correlated between sisters discordant for breast cancer (Spearman correlation coefficients ranged from 0.19 to 0.55). Genomic demethylation measured by more disintegrations per minute (DPM) by the [3H]-methyl acceptance assay, and decreased Sat2 methylation was significantly associated with increased breast cancer risk (With each 1 unit increase in DPM, the OR of breast cancer increased by 1.49 (95%CI=1.03-2.16); With each 1 unit decrease in Sat2 methylation level, the OR increased by 2.09 (95%CI=1.09-4.03). These associations were only observed in total WBC DNA but not granulocytes. There was no association between breast cancer and LINE-1 and Alu methylation. These data suggest that selected markers of genomic DNA demethylation levels in WBC were associated with breast cancer risk within families. These findings need to be replicated in prospective studies, however they support that epigenetic changes measured in WBC may be a potential biomarker of breast cancer risk.</p>	<p>Correlates of lung cancer survival: inflammatory single-nucleotide polymorphisms and tumor biomarker expression</p> <p>S. Oh, C. Thompson, Y. Jin, S. Chang, S. Greenland, L. Kheifets, Y. Lee, J. Mao, H. Morgenstern, S. Park, J. Rao, D. Tashkin, N. You, Z. Zhang.</p> <p>Tobacco smoke carcinogens are known to cause altered expression of DNA repair, cell cycle control, and tumor suppressor proteins—hallmarks of multistage carcinogenesis. The role of these functional aberrations on lung cancer survival is poorly understood. We used a case series of 611 lung cancer patients from a population-based case-control study to (1) investigate whether 9 inflammatory single-nucleotide polymorphisms (SNPs) are related to all-cause mortality, and, in a subset of 188 cases, to (2) examine how survival varied with altered expression of tumor biomarker proteins related to DNA repair, anti-growth insensitivity and proliferation signaling. We used the Cox proportional hazards model to calculate a hazard ratio (HR) and its 95% confidence interval (CI) to test the hypothesis that all-cause mortality among lung cancer patients is negatively affected by carriage of inflammatory SNP risk alleles or by adverse protein expression. After adjusting for gender, ethnicity, education, age, and packyears, we found that the TNF rs1800629 A minor allele was more prevalent among deceased cases, (adjusted HR [aHR] = 1.36, 95% CI: 1.04-1.78). Stratified analysis suggested that carriership of at least one copy of the TNF rs1800629 minor A allele was associated with poor survival among women (aHR = 1.84, 95% CI: 1.24-2.72) but not among men (aHR = 1.09, 95% CI: 0.75-1.59). Protein expression analyses were hindered by small numbers but tobacco smoking appeared to be associated with adverse p53 expression (adjusted odds ratio = 1.91, 95% CI: 0.82-4.47). Adverse p16 expression was suggestive of poor survival given non-adverse p53 expression (aHR = 1.98, 95% CI: 0.85-4.62), but not in the presence of adverse p53 expression (aHR = 0.82, 95% CI: 0.31-2.19). We investigated a series of inflammation-related SNPs and abnormal expression of four proteins involved in DNA repair and tumor suppression for association with all-cause mortality. In our study, TNF promoter polymorphism rs1800629 was associated with all-cause mortality among lung cancer cases.</p>

PROFERRED PAPER SESSION ABSTRACTS

Tuesday, March 8, 2011

Session 4 – Cancer Prevention

Aruna Kamineni, PhD, MPH	Jeanine Genkinger, PhD, MHS
<p>Cervical Cancer Screening Efficacy in Older Women Kamineni A, Weinmann S, Shy KK, Mandelson MT, Glass AG, Weiss NS</p> <p>Although the effectiveness of cervical cancer screening, by means of the Pap smear, has been firmly established in reproductive-age women, the usefulness of cytologic screening in older women is unclear. We sought to assess the degree to which such screening in older women can reduce the incidence of cervical cancer. We conducted a case-control study to evaluate the efficacy of cervical cancer screening in older women enrolled in one of two large health maintenance organizations in the northwestern United States. Cases (n=69) consisted of those women, 55-79 years of age, who were diagnosed with invasive cervical cancer during 1980-1999 as enumerated by regional cancer registries. Controls (n=208) were women sampled from among enrollees who had not previously had a hysterectomy and were similar to cases in terms of age and length of enrollment in the health plan. We reviewed medical records to ascertain demographic, reproductive, and cervical screening history information during the 7 years prior to the reference date. Only tests which occurred during the presumed detectable pre-invasive phase (DPP) of the disease, when screening could be beneficial, were considered and we evaluated results for a series of plausible estimates of this interval. Compared to cases, controls were more likely to have had a Pap test during the DPP, regardless of the estimate used. After adjustment for age and current smoking status, screening was associated with a substantial reduction in the risk of invasive cervical cancer (DPP=72 months: OR, 0.23; 95% CI, 0.11-0.44). We observed only small differences in the odds ratio across the various estimates of the DPP that were employed. Analysis of the relative incidence of invasive cervical cancer in relation to the time following a negative screening test suggested a large reduction during the first year (OR, 0.09; 95% CI, 0.03-0.24). The incidence remained low for several years thereafter, returning to the incidence among unscreened women after 5-7 years. Cervical cancer screening is highly efficacious in older women. This needs to be explicitly considered in weighing the benefits and costs of such screening beyond the reproductive years.</p>	<p>Beverages and Pancreatic Cancer Risk: A Pooled Analysis of 14 Cohort Studies Genkinger J, Smith-Warner S for the Pooling Project of Prospective Studies of Diet and Cancer Investigators</p> <p>Sugar-sweetened beverage intake has been associated with higher insulin and IGF-1 levels, which may promote carcinogenesis. Few prospective studies have examined sugar-sweetened beverage intake and pancreatic cancer risk; results have been heterogeneous. Coffee has been hypothesized to have both pro- and anti-carcinogenic properties, while tea may contain anti-carcinogenic compounds (e.g., polyphenols). Studies assessing coffee intake and pancreatic cancer risk have yielded mixed results, while studies examining tea intake have mostly been null. PURPOSE: To systematically evaluate sugar-sweetened beverage, coffee, and tea intake in the Pooling Project of Prospective Studies of Diet and Cancer, an international consortium with a large number of incident pancreatic cancer cases and baseline dietary data. METHODS: In this pooled analysis of the primary data from 14 prospective cohort studies, 2,177 incident pancreatic cancer cases were identified among 849,830 individuals during follow-up (range: 7-20 years). Study-specific relative risks (RR) and 95% confidence intervals (CI) were calculated using Cox proportional hazards models and then pooled using a random effects model. Multivariate (MV) RRs were adjusted for smoking, diabetes, body mass index, alcohol intake and energy intake. RESULTS: No statistically significant associations were observed between pancreatic cancer risk and intakes of sugar-sweetened beverages (MV RR = 1.15, 95% CI=0.94-1.42 comparing >250 to 0g/day; 355 g ≈ 12 oz), tea (MV RR = 0.96, 95% CI=0.70-1.32 comparing >900 to 0g/day; 237 g ≈ 8 oz) or coffee (MV RR = 1.02, 95% CI=0.79-1.32 comparing >900 to <150g/day; 237 g ≈ 8 oz) (p-value, test for between-studies heterogeneity > 0.05). These associations were similar according to levels of sex, smoking status and body mass index, and when the case definition was limited to adenocarcinomas. CONCLUSION: Overall, no associations were observed for intakes of coffee or tea during adulthood and pancreatic cancer risk. Although we were only able to examine modest intake of sugar-sweetened beverages, there was a suggestive and slightly positive association for intakes of sugar-sweetened beverages.</p>

Hazel Nichols, MS	Lina Mu, MD, PhD
<p data-bbox="139 184 763 277">Bilateral Oophorectomy and Ductal Carcinoma In Situ H. Nichols, K. Visvanathan, P. Newcomb, J. Hampton, K. Egan, L. Titus-Ernstoff, A. Trentham-Dietz</p> <p data-bbox="139 310 763 1761">Premenopausal bilateral oophorectomy is generally recognized to reduce invasive breast cancer risk. However, it is not known whether a similar association exists between ovarian removal and in situ breast cancer, a common diagnosis among women who undergo mammography screening. We analyzed data from two population-based case-control studies of breast cancer conducted during 1997-2001 and 2002-2007 in WI, MA and NH. Incident cases of postmenopausal ductal carcinoma in situ (DCIS, N=1,315) and invasive (N=3,780) breast cancer among women ages 50-75 were identified from statewide tumor registries. Population controls (N=6,188) identified from lists of licensed drivers (age <65 years) and Medicare beneficiaries (65+ years) were frequency-matched to the age distribution of cases. Gynecologic surgery and other risk factor information were collected during structured telephone interviews. Odds ratios (OR) and 95% confidence intervals were calculated from polytomous logistic regression models adjusted for established risk factors. Bilateral oophorectomy with hysterectomy was the most frequently reported gynecologic surgery (19% DCIS and 17% invasive cases, 19% controls), followed by hysterectomy alone (10% DCIS and 10% invasive cases, 11% controls). Compared to women with an intact uterus and ovaries, bilateral oophorectomy with hysterectomy at ≤ 45 years was associated with a 34% reduction in odds of DCIS (OR=0.66; 95% CI: 0.51, 0.86). This association did not differ significantly ($p>0.5$) from the risk reduction estimate calculated for invasive breast cancer (OR=0.72; 95% CI: 0.61, 0.85) in polytomous models. We observed a negative trend ($p\leq 0.02$) between decreasing age at bilateral oophorectomy and breast cancer odds for both in situ and invasive disease. The inverse association between bilateral oophorectomy and DCIS persisted in strata of unopposed estrogen users (OR=0.54; 95% CI: 0.36, 0.83) and women undergoing regular mammography screening (OR=0.69; 95% CI: 0.53, 0.90). Hysterectomy alone was not associated with either type of breast lesion. Findings from this analysis demonstrate a similar benefit of bilateral oophorectomy with hysterectomy for DCIS and invasive breast cancer risk and provide additional evidence to support a common etiology.</p>	<p data-bbox="782 184 1404 306">Indoor air pollution and the risk of lung cancer among Chinese female non-smokers Lina Mu, Yanli Li, Li Liu, Jianping Shi, Ruigui Niu, Jia Su, Matthew Bonner, Shunzhang Yu, Zuo-feng Zhang</p> <p data-bbox="782 340 1404 1761">Aims: This study aims to investigate cooking, solid fuel use, secondhand smoke exposure and housing characteristics in the development of lung cancer in a Chinese population, focusing on female non-smokers. Methods: We conducted a population-base case-control study in Taiyuan, China, consisting of 399 lung cancer cases and 466 healthy controls. Among those, 164 cases and 218 controls were female non-smokers. Indoor Particulate Matter (PM) concentrations, including PM1, PM2.5, PM7, PM10 and TSP, were measured using a particle mass monitor. Unconditional logistic regression model was used to calculate the odds ratios (ORs) and 95% confidence intervals after adjusting for age, education level, annual personal income and pack-year of smoking. Results: A moderate increased risk was found in female non-smokers who were heavily exposed to secondhand smoke in the work place, but not in the home. Houses with less windows and a lower frequency of opening window were associated with higher risks of lung cancer, and adjusted ORs were 2.18, (95%CI: 1.30-3.66) and 2.50, (95%CI: 1.28-4.88), respectively. The risk of lung cancer was higher for those using a common room for cooking and sleeping when compared with separate rooms. The risk of lung cancer was also increased for those without an exhaust hood or those who cooked more frequently (adjusted OR=4.97, 95%CI: 2.75-8.98, cooking ≥ 2/day vs non-regular cooking). A four-fold increased risk was found among those who used solid cooking fuel in their entire life. Similar associations were observed among those women who used solids fuel for heating, including coal and coke, and had a heatable brick bed, with adjusted ORs of 2.0, 3.2 and 8.1 respectively. The measurement of air pollution showed that Indoor PM1 and PM2.5 levels were much higher than the levels of outdoor during both summer and winter. PM1 levels in cases' houses were higher than that in controls' houses. Conclusion: Cooking related activities, solid fuel use in cooking or heating and secondhand smoke exposure play important roles in the development of the lung cancer among female non-smokers. Modifying housing characteristics, such as opening windows regularly, that favor air exchange may improve the indoor air quality and decrease the risk of lung cancer.</p>

Amanda Phipps, PhD	Malcolm Pike, PhD
<p data-bbox="139 182 766 270">Long-term Use of Continuous-Combined Estrogen-Progestin Hormone Therapy and Risk of Endometrial Cancer</p> <p data-bbox="139 277 766 336">Phipps AI, Doherty JA, Voigt LF, Hill DA, Beresford SA, Rossing MA, Chen C, Weiss NS</p> <p data-bbox="139 375 766 1308">Background. The daily administered dose of progestin in continuous-combined estrogen-progestin therapy is provided to counteract the proliferative effect of estrogen on the postmenopausal endometrium. However, there remains some uncertainty as to whether use of such a combined regimen, over the long-term, is associated with an altered risk of endometrial cancer. Methods. We pooled data from four population-based case-control studies of endometrial cancer in western Washington State. Cases, ages 45-74, were diagnosed between 1985 and 2005. Using logistic regression, we compared women who had exclusively used continuous-combined estrogen-progestin therapy (90 endometrial cancer cases, 227 controls) to women who had never used any type of hormone therapy (774 cases, 1116 controls). We evaluated associations with duration and recency of use both overall and within strata defined by body mass index. Results. Long-term use of continuous-combined estrogen-progestin therapy (≥ 10 years) was associated with a reduced risk of endometrial cancer (OR=0.37, 95% CI: 0.21-0.66). This association was most pronounced in women with a body mass index ≥ 30 kg/m² (OR=0.19, 95% CI: 0.05-0.68), although there was a suggestion of a decreased risk with long-term use in leaner women as well. Associations did not differ according to recency of use. Conclusions. These results suggest that use of continuous-combined estrogen-progestin therapy, even for a long duration, is not associated with an increased risk of endometrial cancer.</p>	<p data-bbox="786 182 1404 233">Oral Contraceptive Progestin Dose and Breast Epithelial-Cell Proliferation</p> <p data-bbox="786 239 1404 298">L. Hovannessian-Larsen, D. Taylor, D. Hawes, D. V. Spicer, A. Wu, C. L. Pearce, M. C. Pike</p> <p data-bbox="786 331 1404 1684">Purpose: Oral contraceptives (OCs) provide long-lasting protection against endometrial and ovarian cancer, but increase breast cancer risk in the short-term without providing any long-term reduction in risk. Estrogens and progesterone play a crucial role in the development of breast cancer. Studies of menopausal estrogen-progestin therapy show that the dose of the progestin, medroxyprogesterone acetate, is strongly related to risk and that the mechanism is increased breast epithelial cell proliferation. We investigated whether an OC with 35 μg of the estrogen ethinyl estradiol (EE2) and 1.0 mg of the progestin norethindrone (NET), would be associated with a much greater rate of breast cell proliferation than an OC with the same dose of EE2 but a 60% lower dose of NET, i.e., 0.4 mg NET, both FDA approved, with the aim of eventually leading to a formulation of OC with a protective effect on the breast. Methods: 28 premenopausal women were randomly assigned to the two OCs. At the end of the active pill phase of the third OC cycle, a breast biopsy was carried out and the epithelial cells of the terminal duct lobular units were analyzed by immunohistochemistry (IMH; % of cells positive) for a marker of cell proliferation (Ki67), progesterone receptor A (PRA), progesterone receptor B (PRB) and estrogen receptor α (ERα). Results: Contrary to expectation, Ki67 was higher with the lower progestin dose (12.5% vs 7.8%, $p = 0.27$). PRA, PRB and ERα were also higher with the lower progestin dose (PRA: 16.7% vs 7.6%, $p = 0.041$; PRB: 23.7% vs 12.0%, $p = 0.030$; ERα: 18.2% vs 9.0%, $p = 0.056$). The Ki67 results are much higher than is seen in the normal menstrual cycle. The interpretation of this latter result is complicated - further analysis of IMH staining for different parts of the cell cycle demonstrate that Ki67 cannot necessarily be equated to cell proliferation. Conclusions: Lowering the NET dose by 60% did not lead to lower Ki67 expression, possibly due to much increased levels of PRA, PRB and ERα. This is likely to be a major factor in explaining why it has been so difficult to identify different effects of different OCs on risk of breast cancer. Reducing the EE2 dose while keeping the NET dose constant may accomplish a reduction in Ki67.</p>

Monday, March 7, 2011, Poster Directory

(please remove your poster from boards by 10pm March 7)

	Last Name	Keywords
1	Fleisher	
2	Glenn	melanoma, skin cancer prevention, sun protection, family history, health beliefs
3	Reiter	HPV, vaccine, adolescent health
4	Campo	
5	Jean-Pierre	Disparities in Cancer Care, Cancer Control, Patient Satisfaction
6	Sprod	Exercise, cancer, survivorship
7	Shuk	Melanoma first-degree relatives, sun protection behaviors, Ethnographic Decision Tree Modeling
8	Sterba	breast cancer, psychosocial functioning
9	Dignan	Appalachia, Cancer, Health Disparities, Energy Balance
10	Fenderson	survivorship
11	Basen-Engquist	exercise, endometrial, survivorship, EMA
12	Graves	genetic literacy, assessment
13	Joseph	Hereditary Breast Cancer; genetics; risk assessment
14	Meade	Biobanking; Biospecimen donation; Community perceptions; CBPR
15	Ornelas	
16	Mullen	treatment decision making, prostate cancer, concept mapping
17	Cueva	
18	Wilkinson	disabilities, qualitative research, screening
19	Wilkinson	Disabilities, screening
20	Janelins	cognitive function, cytokines, breast cancer, survivorship, chemotherapy
21	Nock	endometrial cancer, BMI, depression, quality of life, structural equation modeling
22	Ojo	Head and neck cancer, radiotherapy, distress, blame, smoking, HPV
23	Diaz	colorectal cancer screening, Latino, disparities
24	Arber	Cancer, prevention, early detection, screening, genetic polymorphisms
25	Otiniano	colon cancer screening, knowledge, attitude, behavior, colonoscopy, FOBT, age
26	Soto-Salgado	prostate cancer, PSA, DRE, screening, Puerto Rico
27	Olsen	rosacea, rhinophyma, sarcoma
28	Ippolito	
29	Anderson	
30	Yee	
31	Stendell-Hollis	
32	Ryan	colon cancer, rice bran, beans, microbial metabolism
33	Reimers	
34	Thompson	obesity, colorectal adenomas, race
35	Azrad	
36	Passarelli	adenomas, hyperplastic polyps, colorectal cancer, cholesterol
37	Steck	Prostate cancer, physical activity, racial disparities
38	Chang	Bladder cancer, survival, one-carbon metabolism
39	Lazovich	
40	Thelus Jean	
41	Park	malignant melanoma caffeine
42	Holman	thyroid neoplasm; epidemiology; young adult; female
43	Pocobelli	ovarian cancer, oophorectomy
44	Delgado-Cruzata	646 709 2882
45	Badiga	Folate, DHFR, CIN
46	Goode	
47	cannon albright	melanoma, long-term survival, familiality
48	Cloud	
49	Clague	Breast Cancer, BRCA mutation, Hispanic Families
50	Wallar	
51	Tarleton	8q24, single nucleotide polymorphism, family history, smoking-related cancers
52	Tarleton	BMI change, lung cancer, UADT cancer, pack-years, cessation
53	Woloszynska-	vitamin D, prostate cancer, racial disparities

	Read	
54	Wilson-Frederick	African American seniors, cancer, nutrition, smoking
55	Devine	mothers; childhood cancers; problems; distress
56	Lee	navigation, cancer screening
57	Silva	
58	Jones	colorectal cancer screening, physical disability
59	Jones	colorectal cancer screening, barriers, racial differences
60	Wassira	Survival Disparities, Colorectal Cancer, Cox Proportional Hazard Regression
61	Colon-Lopez	anal cancer, HPV-related cancer, men's health, Puerto Rico, epidemiology, SEER
62	Hashibe	lung cancer, Nepal, disparities
63	Hashibe	testicular cancer, Utah, descriptive epidemiology
64	Oh	
65	Adams	colorectal cancer, inflammatory bowel disease, ulcerative colitis, crohn's
66	Villasenor	breast cancer, survivorship, sarcopenia, obesity, prognosis
67	Palmer	health goals, cancer survivorship, health promotion
68	Castellino	childhood cancer survivor; cardiovascular; biomarker
69	Stolley	recruitment, retention, survivors, African-American, Hispanic
70	Leach	
71	Floyd	cancer survivorship, sexual functioning, relationship strength, psychological distress
72	Sharp	
73	Dotson	Prostate cancer, intervention, screening, health seeking behavior, PSA test, DRE, health belief model
74	Bowles	breast cancer, tamoxifen, aromatase inhibitors, comparative effectiveness, survivorship
75	Amirian	
76	Kaufman	Lung Cancer; Risk; Cigarette Smoking; Bias
77	Carpenter	smoking cessation
78	Li	colorectal polyps, hyperplastic polyp, adenomatous polyp, smoking, tobacco, gender, race
79	Weaver	Smoking cessation, provider counseling, outpatient oncology, survivors
80	Kowalkowski	nonmuscle-invasive bladder cancer, treatment adherence, smoking

<p>#1</p> <p>Patterns of use and patient perceptions of a decision support software tool for men with early stage prostate cancer Fleisher L and Kandadai V</p> <p>Computer Assisted Patient Decision Aids (CAPtDA) are important tools to address informed decision making. This parallel mixed methods study described patterns of use of a CAPtDA among men with early stage prostate cancer and explored their perceptions of a CAPtDA and its role in their decision-making process. Men (N=56) with early stage prostate cancer, seeking consultations for surgery and/or radiation therapy at Fox Chase Cancer Center, were recruited by telephone. Those who consented completed a background questionnaire prior to their initial treatment consult. Variables included demographics, decisional factors (such as decision-making style, treatment preference, stage of decision making, Ottawa decisional conflict) and health communication factors (health literacy and computer facility). The CAPtDA had embedded web log tracking capabilities. Men were also asked to participate in an in-depth qualitative interview within 2-4 weeks of their consult visit to explore their perceptions of the software. Twenty five men participated (14 surgical consult patients and 11 radiation consult patients).</p> <p>Specific CAPtDA components were more highly utilized while other components were rarely used. The Men's Stories, with actual men's' stories about their diagnosis, treatment decision and challenges, was viewed by 77% of the men and they spent almost half of their time (46%) here. In contrast, the Notebook, which is the values clarification tool, was viewed by only 4 men and they spent about one minute in this section. Men with lower levels of health literacy spent more time in the Men's Stories than men with higher levels of literacy. However, literacy level was not associated with multiple uses and men reported that the content was easy to understand regardless of health literacy level. Those with higher decisional conflict spent more time overall and those who were less confident in their treatment choice were less likely to use it again. Fifteen percent of the sample was minority, but the drop-off rate in participation in the in-depth interviews among minorities and those with limited literacy was dramatic. Opening this "black box" showed different patterns of use and confirmed that not everyone uses it in the same way, or as we intend.</p>	<p>#2</p> <p>Sun Protection Practices among Children with a Family History of Melanoma: A Pilot Study in Los Angeles County Glenn B.A., Bastani R., Chang C., Khanna R., Chen K.</p> <p>The goal of this pilot study was to assess sun protection practices and identify correlates among children with a family history of melanoma, a high risk and understudied group, to inform future intervention efforts. Due to the complexity of collecting data directly from children, information was collected from parents who had been diagnosed with melanoma. Melanoma cases, identified through the LA County Cancer Surveillance Program, who had children (<18 yrs) were invited to participate by mail or phone in a survey soliciting information about their children's sun protection practices and correlates of sun protection (e.g., demographics, family history, sun sensitivity, psychosocial factors). Sixty-three respondents provided data on 102 children. We restricted the present analytic sample to each respondent's youngest child (n = 63, mean age = 7.9 years, 53% male). Parents were knowledgeable about melanoma (correctly answering 69% of knowledge items) and uniformly perceived melanoma as a serious disease (avg. rating of 9.4 on 10 point severity scale). Somewhat surprisingly, only 50% of parents perceived their children to be at higher than average risk for developing melanoma. Although most children "often/always" used sunscreen (81%) and wore a shirt with sleeves (76%) when outside on a sunny day, close to half of the children in our sample (47%) had experienced a sunburn in the past year. Fewer parents reported that children routinely sought shade (37%), used a hat (24%) or wore sunglasses (30%). Responses to sun protection items were summed to create a composite scale. The mean sun protection composite value for the sample was 2.32 (range = 1-4), similar to levels observed among average risk children. Higher levels of sun protection were associated with younger age and greater sun sensitivity of the child, fewer barriers to sun protection, greater parental worry about child's risk, and higher perceived efficacy of sun protection. Despite the fact that parents in our sample were knowledgeable about melanoma and perceived it as very serious, sun protection levels among their children were suboptimal, similar to the population at large. Efforts to reduce sunburn frequency and improve sun protection among these vulnerable children appear warranted.</p>
<p>#3</p> <p>HPV Vaccine Uptake and Acceptability for Adolescent Males Reiter P, McRee A, Kadis J, Brewer N</p> <p>Background: In 2009, the United States approved quadrivalent HPV vaccine for use in males ages 9-26 years, but data on uptake do not exist. We determined HPV vaccine uptake among adolescent males and its acceptability to parents and their sons. Methods: A national sample of parents of adolescent males ages 11-17 years (n=547) and their sons (n=421) completed our online surveys during summer 2010. A majority of parents were less than 45 years of age (61%), non-Hispanic white (67%), female (54%), and had some college education (56%). Sons' mean age was 14 years old. Analyses used multivariate logistic regression. Results: Few parents (2%) indicated their sons had received any doses of HPV vaccine. Among parents of unvaccinated sons, 43% were willing to get their sons free HPV vaccine, while only 7% were willing to get their sons vaccinated if it cost \$400 out of pocket. Parents were more willing to get their sons free HPV vaccine if they reported higher levels of perceived HPV vaccine effectiveness (OR= 1.70, 95% CI: 1.36–2.12) or anticipated regret if they didn't get their sons vaccinated and they later developed an HPV infection (OR=2.02, 95% CI: 1.60–2.56). Vaccine acceptability was also modest among unvaccinated sons, with only 29% willing to get vaccinated. Sons were more willing to get vaccinated if they reported higher perceived likelihood of getting HPV-related disease (OR= 1.99, 95% CI: 1.37–2.87). Sons were less willing if they anticipated more embarrassment about getting vaccinated and having their friends find out (OR= 0.70, 95% CI: 0.56–0.87). Conclusions: Despite permissive national recommendations for vaccinating adolescent males against HPV, vaccine uptake nearly a year later was nonexistent. Furthermore, vaccine acceptability was modest among both parents and sons. Our results highlight factors that may affect the HPV vaccination decisions of parents and their sons.</p>	<p>#4</p> <p>Communication Preferences & Challenges Regarding BRCA1 and BRCA2 Risk Assessment & Genetic Counseling Campo, R., Rothwell, E., Knoth, A., Gammon, A., Schwartz, M., Buys, S., & Kinney, A.</p> <p>Background/Purpose: Genetic cancer risk assessments provide complex risk information that has critical implications for health decisions for both individuals and families. Informed health decisions depend on the individual's ability to understand this complex information. Three focus groups were conducted to assess preferences and challenges regarding genetic risk communication for individuals considering BRCA1 and BRCA2 testing. Methods: Participants were 25 women who had received genetic counseling from Huntsman Cancer Institute's Family Cancer Assessment Clinic (FCAC) and had been tested for BRCA1 and BRCA2 mutations. A licensed genetic counselor delivered an educational presentation on cancer genetics, lifetime cancer risk estimates, and management recommendations, using educational aids. After the presentation, focus group moderators invited participants to share their suggestions for improving the educational aids and to discuss additional information that would have been helpful in making a decision about BRCA1 and BRCA2 testing. Results: A qualitative content analysis was conducted on the transcripts and two reviewers independently coded the focus group transcripts. Five dominant themes emerged: 1) challenges to processing the information, including issues of health literacy, numeracy, information overload, and emotional responses; 2) preferences for methods of communication that reduce difficulty processing information about risk; 3) barriers to accessing healthcare services; 4) the need for informed healthcare decisions; and 5) importance of genetic risk information and risk estimates for family members, and optimal strategies for intra-familial communication. Summary: Our findings suggest that there are challenges to risk communication. However, participants were able to offer suggestions about effective communication strategies and discussed the implications of this information for family members. These recommendations can be incorporated into interventions for improved informed decision making.</p>

<p>#5</p> <p>Psychometric Validation and Reliability of a Spanish Version of the Patient Satisfaction with Cancer-Related Care Measure</p> <p>Jean-Pierre P, Fiscella K, Paskett E, Dudley D, Winters P, Rosen S, Freund K, Patierno S, Raich P, Roetzheim, for the PNRP</p> <p>Background: Patient satisfaction (PS), a key measure of quality of cancer care, is a core study outcome of the multi-site National Cancer Institute (NCI) Patient Navigation Research Program (PNRP). Despite large numbers of underserved monolingual Spanish speakers (MSS) in the United States, there is no validated Spanish measure of PS that spans the spectrum of cancer-related care. Objective: To cross-validate the Patient Satisfaction with Cancer Care (PSCC) measure for Spanish (PSCC-Sp) speakers receiving diagnostic and therapeutic cancer-related care. Methods: Original PSCC items were professionally translated and back translated to ensure cultural appropriateness, meaningfulness and equivalence. The resulting 18-item PSCC-Sp measure was administered to 185 MSS. We evaluated latent structure and internal consistency of the PSCC-Sp using principal components analysis (PCA) and Cronbach coefficient alpha (α), respectively. We used correlation analyses to demonstrate divergence and convergence of the PSCC-Sp with Spanish versions of the Patient Satisfaction with Interpersonal Relationship with Navigator (PSN-I-Sp) measure and patients' demographics. Results: The PCA revealed a coherent set of items that explicates 60% of the variance in PS for Spanish speakers. Reliability assessment revealed a high internal consistency ($\alpha = .92$). The PSCC-Sp demonstrated good face validity, as well as appropriate convergent and divergent validities as indicated by moderate correlations with the PSN-I-Sp ($p < 0.003$) and non-significant correlations with primary language, marital status, and household income (all $ps > 0.05$) of participants. Conclusion: The PSCC-Sp is a valid and reliable measure of patient satisfaction with cancer-related care for Spanish speakers. Supported by grants from the National Cancer Institute (3U01CA116924-03S1, U01CA116924-01, U01CA116892, U01CA 117281, U01CA116903, U01CA116937, U01CA116885, U01CA116875, and U01CA116925) and the American Cancer Society (SIRSG-05-253-01).</p>	<p>#6</p> <p>Providing Information on Exercise During Cancer Treatment to Increase Exercise Behavior</p> <p>Sprod L, Peppone L, Janelins M, Wharton M, Webb J, Atkins J, Kuebler J, Morrow G, Mustian M</p> <p>Exercise may help reduce many side effects of cancer treatment. The purpose of this study was to determine the ideal time to provide cancer patients with information to promote exercise during treatment. METHODS: A nationwide sample of newly diagnosed cancer patients who received chemotherapy and/or radiation completed an Information Needs Assessment (INA) within 2 weeks of beginning treatment (T1) and within 2 weeks after treatment completion (T2). The INA included questions concerning the availability of information about using exercise during treatment and, if available, whether that information was used. At T2, patients reported use of exercise since cancer diagnosis. Logistic regression was used to obtain odds ratios with 95% CI. RESULTS: 748 patients were accrued (64% female, mean age=61 years, 47% breast cancer). At T1, 8 patients (1.5%) reported not being able to find information about exercise and 513 (98.5%) reported information was available. Of the 513, 375 (72%) reported using the information. At T2, 12 patients (2.5%) reported not being able to find information about exercise and 474 (97.5%) reported information was available. Of the 474, 345 (72.8%) reported using the information. Controlling for age, gender, cancer, and treatment type, patients who were able to find information about exercise at T1 were more likely to exercise during treatment (OR=1.52; 95% CI=1.12-2.07; $p=.007$), and if patients were able to find information about exercise and use the information, they were even more likely to exercise during treatment (OR=4.31; 95% CI=2.64-7.04; $p<.001$). Controlling for age, gender, cancer, and treatment type, patients who were able to find information about exercise during their treatment, assessed at T2, were more likely to exercise during treatment (OR=2.55; 95% CI=1.84-3.52; $p<.001$), and if patients were able to find information about exercise and use the information, they were even more likely to exercise during treatment (OR=5.92; 95% CI=3.74-9.35; $p<.001$). CONCLUSION: Cancer patients provided with useful exercise information during treatment rather than within the 2 weeks prior to treatment were more likely to participate in exercise during treatment.</p>
<p>#7</p> <p>Factors governing inconsistent sun protection in melanoma first-degree relatives</p> <p>Shuk, E., Burkhalter, J., Bague, C., Holland, S., Pinkhasik, A., & Hay, J.</p> <p>Purpose of study</p> <p>Inconsistent sun protection is common in melanoma first-degree relatives (FDRs), but factors dictating consistent vs. inconsistent use have not been identified. Our goal was to understand decision-making processes governing diverse sun protection choices across varied contexts in melanoma FDRs, which is a critical step in developing interventions to increase the consistency with which sun protection is practiced in this population. Methods: Using Ethnographic Decision Tree Modeling (EDTM), we interviewed 25 melanoma FDRs (ages 19-78) to assess their recalled sun protection decision-making during two recent periods of sun exposure. Driven by theoretical sampling goals, we stratified FDRs equally across gender and attitudes towards sunbathing (positive vs. negative). We examined sun protection decision-making for use of sunscreen, protective clothing, hats, and shade-seeking. We developed one decision tree model for each behavior per participant (100 total trees), and identified predominant facilitators and barriers across the sample as dictated by EDTM using collaborative coding.. Summary of results: Sun protection decision-making involved consideration of weather, environment, social cues and convenience. Most prevalent facilitators included: anticipating spending a longer time in the sun (sunscreen); cooler weather (protective clothing); sunny weather (hats); and feeling hot (shade-seeking). Most prevalent barriers included: availability of shade as sun protection (sunscreen, clothing, hats); and whether shade-seeking impeded one's activity (shade-seeking). Some factors both facilitated and inhibited sun protection. For example, being physically active discouraged many from using sunscreen, but encouraged hat usage. Conclusions: Our work helps explain the inconsistency with which melanoma FDRs use sun protection, the diversity through which different sun protection behaviors are used, and stresses the importance of a multi-level approach to developing sun protection interventions. Our use of EDTM has strong potential and applicability to assess decision-making in the cancer context. Our findings will be tested in an ecological momentary assessment study to examine twice-daily sun protection in melanoma FDRs in the summer of 2011.</p>	<p>#8</p> <p>Psychosocial Functioning in Newly Diagnosed Breast Cancer Patients – A Pilot Study.</p> <p>Sterba KR, Madan A, Borckardt JJ, Andrijauskaitis K, Baker M, Zapka J, Ford, ME, Armeson K</p> <p>In line with growing efforts to address cancer patients' psychosocial needs, we examined clinical and demographic risk factors associated with psychosocial functioning in newly diagnosed breast cancer patients. As part of a pilot program to screen psychosocial functioning in breast cancer patients and triage high-risk patients to specialized services, we examined data from 39 patients (54% European American (EA), mean age=61). We assessed psychosocial functioning (depression, anxiety, pain, personality dysfunction) using self-administered questionnaires. We extracted demographic (age, race, marital status), clinical (cancer stage, co-morbid conditions, body mass index), and medical care (insurance, nursing contacts) variables from medical records. Using Fisher's exact tests and Pearson correlations, we examined associations between these factors and psychosocial functioning. The majority of participants (69%) had stage I-II cancers, multiple co-morbid health conditions (mean=2), and were overweight or obese (77%). Non-EA patients were more likely to have later staged cancers ($p<.01$) and be obese (56% versus 19%, $p=.02$), and less likely to have private insurance ($p=.04$). The majority of participants (90%) met at least one of the program's criteria for referral to specialized services (49% for depression and 74% for anxiety). Psychosocial functioning variables were not associated with age, race, marital status, or insurance. Pain was associated with higher body mass index ($p=.02$), personality dysfunction was associated with co-morbid conditions ($p=.002$), and depression was associated with more nurse contacts over 6 months ($p=.04$). Our exploratory findings emphasize the value of screening psychosocial functioning in breast cancer patients. The majority of participants reported significant levels of depression and anxiety highlighting the potential benefit of specialized services. While sociodemographic variables were not associated with psychosocial functioning at diagnosis, it may be important to track these outcomes over time. In particular, because non-EA patients had clinical challenges such as later staged cancers and obesity, this group may need additional support. Addressing psychosocial needs may lead to better clinical and coping outcomes</p>

#9

CBPR in Action: The Appalachia Community Cancer Network (ACCN)
Dignan M, Schoenberg N, Paskett E, Lengerich E, Brown P, Roberto K
The Appalachian region has long been considered an area with pronounced cancer health disparities. A transdisciplinary team of community partners and academic collaborators from Kentucky, Ohio, Pennsylvania, Virginia, and West Virginia are building on the strong foundation of community based participatory research (CBPR) from previous engagements and implementing cancer disparities reduction efforts for the low income, medically underserved population of Appalachia. Plans for the ACCN have been developed in collaboration with community partners and with guidance from the principles of CBPR as described by Israel and Wallerstein. Accordingly, ACCN community partners have identified obesity as a high priority target for research, it has been shown to be a cancer risk factor, and it is present in epidemic proportions in Appalachia. The ACCN will conduct a research project that will develop, implement and evaluate a faith based intervention designed to improve energy balance by reducing obesity and increasing physical activity. The project will be implemented in each of the 5 states in the ACCN. The intervention will be based on a previously piloted faith-based CBPR intervention that focused on environmental and individual level changes to improve dietary intake and increase physical activity. The project will be conducted using a group-randomized design in 10 intervention and 10 control churches. Each ACCN state has partnerships with 4 faith-based partners and will recruit and enroll 40 individuals in each institution. The project will utilize outcome and process evaluation strategies to assess change in physical activity levels and BMI and to assess effectiveness of the different components of the intervention, including an ehealth computer program that will track the number of steps per day and provide tailored message and letters to intervention participants.

#10

Preventing Functional Disability: Is There A Need to Focus on Older African American Breast Cancer Survivors?
D. Fenderson; K.H. Schmitz
PURPOSE: To identify whether there is a functional status discrepancy between older African American breast cancer survivors and age-matched African American women with no cancer history, and to determine what content should be included in cancer exercise rehabilitation interventions for African American breast cancer survivors. METHODS: Breast cancer survivors (n=22) were recruited from the Pennsylvania State Cancer Registry, and women with no cancer history (n=18) living in the same zip codes as the participating breast cancer survivors were recruited via print media ads. Both groups completed measurements, including the Short Physical Performance Battery (SPPB), the 6-minute walk (6MWT), and the Physical Performance Test (PPT) during 3 hour sessions at the West Philadelphia YMCA. RESULTS: African American survivors aged 60-80 self-report 23% worse physical function, on average, compared to women with no cancer history. Results from some of the assessments are as follows: Bench Press Max was an average of 32.5 lbs for survivors, and 35.9 lbs for the comparison group (10.4% difference); Functional Reach Dominant Arm was an average of 77.0 cm for survivors, and 86.5 cm for the comparison group (12.4% difference); Sit & Reach was an average of 13.75 cm for survivors, and 16.19 cm for the comparison group (17.8% difference); SF-36 Physical Functioning score was an average of 63.4 for survivors, and 78.6 for the comparison group (23% difference). CONCLUSIONS: Some of the differences between survivors and the comparison women are clinically meaningful and predictive of long term disability, but the results are not significant due to lack of statistical power. However, the results do support the need for the development of an exercise program to reverse the decline of functional mobility and upper extremity function for older African American survivors. The results indicate that there is a clear need for strength and flexibility to be included in programming, in addition to aerobic capacity. Next steps are to identify how to effectively integrate an individual component (in-home exercise on their own) and a social component (group exercise sessions) in an exercise rehabilitation program, as a major obstacle for this population of women is transportation.

#11

Relationship between exercise and quality of life in endometrial cancer survivors participating in an exercise intervention
Basen-Engquist K, Perkins H, Hughes DC, Brown J, Baum G, Scruggs S, Carmack CL
Purpose: We aimed to evaluate the relationship between amount of exercise and quality of life (QOL) in endometrial cancer survivors participating in a longitudinal study of exercise adoption and maintenance.
Methods: Post-treatment endometrial cancer survivors were given an aerobic exercise recommendation with telephone counseling and print materials to encourage exercise adoption. They completed assessments of exercise behavior at baseline and every 2 months for a 6 month period, and assessments of quality of life at baseline and 6 months. Exercise was recorded by accelerometer and electronic diary for a 10 day period at each assessment timepoint. We analyzed the relationship between exercise minutes measured at post-baseline time points and changes in quality of life. QOL was measured by the SF-36, Quality of Life in Cancer Survivors scale (QLACS), Pittsburgh Sleep Quality Index (PSQI), Perceived Stress Scale (PSS) and Brief Symptom Inventory-18 (BSI-18).
Results: Seventy-one survivors completed baseline and the 6 month assessments. Mean exercise minutes per day at each time point was 17.9 (baseline), 20.8 (2 month), 20.1 (4 month), and 17.9 (6 month). To analyze the relationship between exercise and QOL we summed the minutes of exercise done during the 10 day post-baseline assessment periods. When controlling for baseline QOL variables, total exercise minutes reported during the assessment periods was related to less bodily pain (0.004) and fewer role limitations due to physical health problems (p=0.0098) as measured by the SF-36; the relationship with physical functioning neared significance (p=0.0902). For the QLACS there was a significant relationship with the energy/fatigue subscale only (p=0.0149), and for the BSI-18 exercise minutes were related to somatization only (p=0.0003). For all other scales/subscales, the relationship with minutes of exercise was not significant.
Conclusions: A higher volume of exercise during the study period was associated with improvements in physical aspects of QOL in endometrial cancer survivors. However, more exercise did not appear to be related to changes in emotional well-being. The results highlight the importance of exercise in helping cancer survivors recover physically from cancer and its treatment.

#12

Genetic Literacy and Personalized Genomics: Preliminary Predictors and Implications
Graves KD, Hooker G, Leventhal KG, Salehizadeh Y, Peshkin B, Tuong W, Schwartz M.
Ability to understand health information is related to health knowledge and health outcomes, including treatment adherence and involvement with health care decisions. The complexity of genomic information and the growing availability of genetic tests increase the burden on the public to understand information about genes and disease risk. To effectively deliver complex genomic information, we need to be able to assess understanding of this information. The purpose of this study was to examine initial psychometric properties of a written measure of genetic literacy and identify variables associated with genetic literacy. We administered a 16-item written genetic literacy scale adapted from the REAL-G (Rapid Estimate of Adult Literacy in Genetics) to 184 primary care patients. We also assessed demographics, knowledge of genetics, numeracy, personal and family cancer history, perceived risk of cancer, information delivery preferences, and attitudes about genetic testing for a single nucleotide polymorphism (SNP) related to colorectal cancer risk. The genetic literacy scale demonstrated sound internal consistency (Cronbach's alpha= 0.88). In a linear multiple regression model, lower genetic literacy was associated with less family history of cancer ($\beta^2=.20$, $p<.01$), lower genetics knowledge ($\beta^2=.14$, $p=.04$), and African-American race ($\beta^2=.17$, $p=.02$), with a trend evident for older age ($\beta^2=.12$, $p=.09$). In the final model, genetic literacy was unrelated to education, numeracy, perceived risk of cancer, preference for health information delivery method, perceived value of SNP testing, or overall interest in SNP testing for a SNP related to colorectal cancer risk. Attention to the public's ability to understand genetic information will involve evaluation of best communication practices to convey complex ideas about genomics to diverse audiences. These efforts will be critical to educate the public and promote informed decision making about the use of personalized medicine if advances in genomics are to impact public health.

#13

Identifying Low-Income Women at High Risk for Hereditary Breast Cancer: An Efficient Strategy

Joseph G, Kaplan C, Luce J, Lee R, Stewart S, Guerra C, Pasick R

Purpose: It is estimated that nearly one million Americans carry deleterious BRCA1/2 mutations; however 95% of these carriers are unaware of their status. The methods typically used to enroll women in risk assessment—including self-referral or referral by a physician—are less likely to occur among medically underserved women who are known to have lower levels of knowledge and awareness of genetic counseling and testing. Our study aims to demonstrate the effectiveness of adaptation of an existing health communication channel to identify diverse low-income women at high-risk of hereditary breast and ovarian cancer for referral to free genetic counseling. The California Department of Health Services Every Woman Counts program (EWC) is a toll-free phone service offering referral to free mammograms and pap tests throughout the state. **Methods:** In a prospective randomized trial (with delayed intervention control group) of consenting EWC callers, we are testing the effectiveness of screening EWC callers for risk based on family history, and referring those identified as high risk to free genetic counseling. Our main outcome is the proportion of women in the immediate compared with the delayed intervention group who contact a genetic counseling program. A phone survey is conducted immediately after study enrollment and again two months later. Qualitative interviews with a subset of participants assess participants' subjective experiences of the recruitment, intervention, and counseling and explain why and how the intervention worked or did not work. In preparation for the trial, we developed a short, easy-to-administer family history screener to identify high risk women, and pilot-tested the intervention. **Results:** In the pilot test, 38 women were identified as high risk, and of these 47% (18) were counseled, 10% (4) could not be contacted, and 13% did not keep their scheduled counseling appointment. The trial is currently underway, with 25 of 144 high risk women enrolled to date. **Conclusion:** If successful, this highly efficient approach will avoid creation of an entirely new apparatus to equalize opportunities for low-income high-risk women to obtain services for this rare but serious condition.

#14

What is a biobank and do they have a drive-through?

Quinn G, Gwede C, Noel-Thomas S, Arevalo M, Bynum S, Montiel-Ishino F, Luque J, Meade C.

Introduction: The concept of biobanks is thought to be a promising way to identify links between genetic and environmental factors in relation to disease, particularly cancer. The purpose of this study was to identify community knowledge, attitudes, and intentions toward cancer-related biospecimen donation, and to identify culturally and literacy relevant communication channels and health messages about biobanking. **Methods:** 12 focus groups were held (n=95) with community members recruited through existing community networks in Tampa Bay. The groups were divided by age, race, and language (English/Spanish). Data were analyzed using the constant comparative method with a priori codes from the interview guide and emergent codes were identified based on key themes. **Results:** There were few differences between group discussions on the basis of the racial composition or language in which the groups were conducted. The most noteworthy differences occurred across the age groups. All groups had low awareness of biospecimens, biobanks, and the need for healthy control populations for cancer health research. Participants in the youngest age group had the strongest skeptical attitudes about participation in biobanking, with concerns about privacy, confidentiality, and mistrust of the use for biospecimens. Similar to the younger age groups, the middle and older groups had some mistrust in medical research, the validity of consent forms, and the ability to withdraw consent; however, the desire to see new treatments developed for cancer outweighed the initial mistrust mentioned by the middle and older age groups. The majority of participants in the middle and older groups said they would willingly donate buccal cells or urine, but would only give blood if they were already undergoing a blood-draw. Across all groups, those who had a family member diagnosed with cancer were more willing to consider participation and to donate to help others. The majority of participants wanted to learn about biospecimen donation from a credible source, and in an easy-to-understand, entertaining, and engaging manner. **Conclusions:** Communities desire more education about biospecimen donation and this information should be customized to their learning preferences, expectations, and literacy level.

#15

The Impact of Perceived Discrimination on Health Behaviors among Latinos: Results from Qualitative and Cognitive Interviews

Ornelas, I., Martinez, J., Mariscal, M., Thompson, B.

Racial/ethnic discrimination is associated with unhealthy behaviors among racial/ethnic minorities. Existing measures of perceived racial/ethnic discrimination have been developed and tested primarily among African-American populations. In order to develop a more valid and reliable measure of perceived discrimination for Latino populations, we conducted a qualitative study of perceived discrimination, stress and health behaviors among Latinos in both rural and urban settings in Washington state. A diverse sample of Latinos was recruited for the study through community based organizations serving Latinos. Qualitative in-depth interviews were conducted with 46 participants in their preferred language (Spanish or English). Interviews were transcribed, entered into Atlas.ti, and coded for analysis. Analysis was conducted using a coding scheme based on theory and previous literature. Based on our initial findings, we adapted an existing measure of discrimination to include additional relevant domains. We then conducted cognitive interviews to assess the comprehension and validity of an adapted measure. Results indicated that the majority of the participants had experienced discrimination in their lifetime, most often related to their race/ethnicity, Spanish language use, and/or perceived legal status. Experiences with discrimination ranged from daily stressors to traumatic life events. Avoidant coping responses to discrimination were common, including efforts to avoid it, ignore it, and forget about it. Active coping responses included talking with someone about it, praying about it, walking and learning English. Respondents also reported that discrimination and other stressors influenced their diet, physical activity, sleep quality, tobacco, and alcohol use. Existing measures of perceived discrimination may not be easily comprehended by some Latinos or capture the most salient types of discrimination, including experiences related to language and legal status.

#16

Concept Mapping to Elicit Men's & Partners' Views of Active Surveillance vs Active Treatment for Early Stage Prostate Cancer

McFall S, Mullen P, Byrd T, Cantor S, Le Y, Hill L, Haddad R, Chavaz B, Torres-Vigil I, Pettaway C, Volk R

Background: There is no consensus on the best option for men facing a diagnosis of early stage prostate cancer; active treatment often causes side effects, e.g., incontinence, and does not extend life. active surveillance is an option that is not currently included in decision aids. **Methods:** Using concept mapping, a qualitative, participatory method, we produced a framework for viewing active surveillance and active treatment: 54 statements about what men need to make a decision were derived from focus groups with African American, Latino, and white men and partners in Houston and El Paso who had screened negative (n=80) and from journal articles; 86 similar participants (55 from the focus groups and 31 new participants) sorted the statements and rated their importance. **Results:** Multidimensional scaling and cluster analysis yielded an 8 cluster map based on the data for the 3 ethnicities. Clusters were labelled Doctor-patient information exchange, Finding out about active surveillance and active treatment, Weighing the options, Seeking and using information, Spirituality and inner strength, Access to active treatment, Side effects of active treatment, and Family considerations. There is a major cluster, rated somewhat more important overall, concerned with obtaining information and weighing options in decisions. The other major grouping concerns family, faith, and considering the side effects of active treatment. Average cluster importance ratings varied in Finding out about active treatment and active surveillance (less important by Hispanics), Access to active treatment and Spirituality (more important for African Americans). Women saw weighing options and seeking information from physicians active surveillance more important than men. There were no differences by gender in clusters about family considerations or spirituality. **Conclusions:** Our next step is interpretation by participants and advisers. The results are contributing to the development of educational messages that include active surveillance.

#17

'WHAT'S THE BIG DEAL?' THEATRE TO INFORM, INSPIRE, IGNITE ACTION

Cueva, M. Dignan, M

Colorectal cancer is the second leading cause of cancer mortality for Alaska Native and American Indian people. 'What's The Big Deal?' a 25-minute theatre script was developed to share colonoscopy information, encourage cancer prevention and risk reduction conversations, and support wellness choices. Readers' Theatre integrates oral tradition, language and culture in the reading aloud of a conversation that has been scripted. Methods Stories from colorectal cancer survivors, medical experts, community health workers, and other interested people inspired content. Using humor and story, a playwright brought life to six characters who address common concerns related to colon cancer screening. During six months of script development, numerous individuals and three focus groups reviewed drafts and offered guiding insight. Two versions of the play were developed: one for Community Health Representatives and people living in the contiguous US and one for Alaska's community health workers. Results During April 2010-November 2010, the readers' theatre script was evaluated during eight cancer education offerings. A total of 126 (93%) participants completed a written evaluation and 122(97%) reported they liked the play and would recommend it to others. The majority (87%) of respondents were female. By ethnicity 66 (52%) were Alaska Native, 34 (27%) American Indian, 13 (10%) Caucasian, and 1 Hispanic. As a result of this play, 112(89%) people reported feeling more comfortable talking about colorectal cancer. We need to talk about various health topics with family members and to educate one another. The entire play was informational...It's not embarrassing any more. -a fun way to learn. 83 (66%) of respondents wrote healthy changes they wanted to make which included: getting screened 28(22%), being more physically active 34(27%), eating healthier 26(21%), supporting others to get screened 37(29%), and sharing cancer information 24(19%).Conclusions [Theatre] gave us a new way to talk with patients and family. -a great way to lighten the mood on such a serious topic. Readers' Theatre connected with people both affectively and cognitively to share cancer information, broaden perspectives, inspire conversations, and serve as a catalyst for action.

#19

Factors associated with mammography for women with intellectual disabilities

Wilkinson J, Lauer E, Freund K, Rosen A

Purpose: Determine factors associated with mammography in a population of women with intellectual disabilities (ID) in Massachusetts.
Methods: Secondary data analysis using the health record in the Massachusetts Department of Developmental Services (DDS) database. The deidentified data of women age 40 and up on 1-1-07 were analyzed to compare those who had a mammogram 1-1-07 to 1-1-09 versus those who did not. Variables corresponding with domains of the ecological model were compared using chi-square. Next, logistic regression was performed using stepwise selection to determine factors independently associated with mammography.

Results: Higher levels of residential/employment support, higher ADL functionality, care coordination by a nurse, and having received other screenings were all associated with mammography ($p<.05$). Down syndrome status and guardianship were negatively associated with mammography ($p<.05$).
Conclusion: Care coordination and residential setting were associated with higher likelihood of mammography in women with ID.

#18

Barriers to mammography for women with intellectual disabilities

Wilkinson J, Deis C, Bowen D, Bokhour B

Purpose: Less than 50% of women with intellectual disabilities (ID) currently receive mammography screening. Very little is known about the reasons for this disparity, but it appears that women with better functional status who live independently are most likely not to have a mammogram.

Methods: We conducted qualitative interviews of women with ID, most of whom lived independently, to explore potential barriers and facilitators to mammography. 27 subjects (all women >40) were recruited from a variety of community and self-advocacy groups. One-on-one, semi-structured interviews included prompts on independence, communication with physician, feelings about tests, and experience of mammography.

Results: Barriers to mammography were described as lack of knowledge, lack of preparation and anxiety about unfamiliar situations, lack of trust, and perceived discrimination or ridicule.

Conclusions: Women with ID are particularly vulnerable to anxiety and perceived discrimination when considering mammography. Further studies focusing on increasing knowledge and preparation are proposed

#20

Correlations of Cytokines with Cognitive Function Among Breast Cancer (BC) Patients Receiving Different Chemotherapies

M. Janelins, K. Mustian, O. Palesh, S. Mohile, L. Peppone, L. Sprod, C. Heckler, J. Roscoe, A. Katz, J. Williams, G. Morrow

Purpose: Abnormal levels of MCP-1, IL-8 and IL-6 are associated with mild cognitive impairment, defined as forgetfulness, difficulties with attention and/or difficulties with language—a condition with similar to that reported by cancer patients experiencing “chemobrain”. Dysregulation of these molecules may compromise neuronal integrity leading to cognitive impairment. We previously found that levels of IL-6, IL-8 and MCP-1 increased in BC patients receiving AC/CAF but not in patients receiving CMF. Methods: We assessed whether changes in the levels of these cytokines correlated with changes in cognitive function as measured by questions from the Fatigue Symptom Checklist in 54 BC patients. The five cognitive questions were: “At the moment I feel heavy-headed, forgetful, my thoughts are muddled, and I have difficulty thinking, and I am unable to concentrate,” and were each assessed on a five point scale. Results: The proportion of patients with complaints of heavy-headed feeling, muddled thoughts, and forgetfulness was higher in the AC/CAF group at on-study cycle 2; difficulty thinking and difficulty with concentration were higher in subjects receiving CMF. At on-study cycle 4, heavy-headedness, difficulty thinking, and difficulty with concentration were all higher in the AC/CAF group; muddled thoughts were higher in the CMF group, and forgetfulness was the same in both groups. In those who received AC/CAF, changes in MCP-1 were significantly negatively correlated with changes in heavy-headedness, difficulty thinking ($r=-.464$, $p<0.02$), difficulty with concentration ($r=-.575$, $p<0.01$), and forgetfulness ($r=-.521$, $p<0.01$). Conclusions: Our preliminary work suggests that decreases in MCP-1 levels over two cycles of chemotherapy are associated with cognitive decline in the areas of memory and concentration. Larger studies with cognitive assessments and cytokine measurements are needed to confirm these results. Funding: NCI R25CA10618.

#21

Physical Well-Being Mediates the Relation Between BMI & Depression in Endometrial Cancer Survivors: A Structural Equation Model

Nock NL, Frasure H, Berger N, von Gruenigen V

Obesity has been associated with a reduced quality of life (QoL) in breast cancer survivors but only a few studies have examined the effect of body mass index (BMI) on QoL in endometrial cancer (EC) survivors, who have the highest risk of obesity-associated death among all obesity-related cancers. Further, prior studies have used summary scores, which weigh all items equally, to represent this complex, multi-dimensional concept that may be more reliably and efficiently modeled using latent variable structural equation modeling (LVSEM). Therefore, we evaluated associations between BMI, QoL and depression with the Functional Assessment of Cancer Therapy (FACT-G) and Beck Depression Inventory-II scales in 75 early-stage, overweight EC survivors enrolled in a lifestyle intervention at baseline using summary score and LVSEM methods. When using summary scores, we found that higher BMI was marginally associated with poorer physical well-being ($r^2=0.51$; s.e.=0.28; $p=0.08$) and increased depression ($r^2=0.18$; s.e.=0.10; $p=0.09$) but was not associated with overall QoL or the other FACT-G dimensions (social, emotional, functional well-being). LVSEM revealed that the scale reliability could be substantially improved by removing non-significant items. For example, the reliability of the physical well-being construct was improved (Cronbach's α : 0.67 vs. 0.78) after removing two items (nausea; treatment side effects), which is not surprising since the women were enrolled, on average, two years after diagnosis. Using LVSEM and the mediation testing approach of Baron and Kenny (1986), we found that the association between BMI and depression was almost totally mediated by physical well-being (Total Effects: β std=0.19; s.e.=0.09; $p=0.04$; Indirect Effects: β std=0.18; s.e.=0.08; $p=0.02$; Direct Effects: β std=0.01; s.e.=0.07; $p=0.89$; Effect Ratio=0.95). Standard errors obtained using resampling methods (5,000 bootstrap samples) were similar. Our results suggest that improving physical well-being may help eradicate depression in early-stage, overweight EC survivors and that LVSEM may help improve our understanding of psychosocial concepts in cancer survivors; however, further evaluation in prospective lifestyle interventions is needed to support these preliminary findings.

#22

Adjustment to the Diagnosis of Head and Neck Cancer: Blame, Distress, and Symptoms

Ojo, B., Badr, H., Milbury, K., Genden, E.M.

INTRODUCTION: Head and Neck Cancer (HNC) patients report higher rates of psychiatric morbidity than other cancer patients, suggesting that psychological adjustment is an important component of their quality of life. One factor contributing to patients' distress is the degree to which they experience physical symptoms. Given that HNC is often attributed to unhealthy lifestyle factors (i.e., tobacco, alcohol, and risky sexual behaviors resulting in HPV), another possible contributor, that has not been studied, is patients' attributions of self-blame regarding their disease cause. The objective of this study was to explore the associations between lifestyle factors, symptoms, self-blame, and distress in this population. Understanding these potential interactions may provide targets for future psychosocial interventions.

METHODS: Data for this exploratory study was collected from a cross-sectional survey of 70 HNC patients (87 % male; 63% oropharyngeal) prior to the initiation of radiotherapy.

RESULTS: In terms of lifestyle factors, 70% of patients had a tobacco history and 7% had screening scores indicative of alcohol dependence as measured by the AUDIT; 61 % of the oropharyngeal patients were HPV positive. Behavioral self-blame was significantly greater among patients with a history of tobacco use ($t(66) = 2.52$, $p = 0.01$) and characterological self-blame was highest among patients with HPV positive tumors ($t(66) = 2.28$, $p = 0.03$). Although patient distress (BSI-18) was significantly associated with higher levels of cancer symptom severity ($p = 0.0001$) and interference ($p = 0.0001$), as measured by the MDASI-HN, the association of distress with blame also approached significance ($p < 0.10$).

CONCLUSION: Results suggest that blame is prevalent in head and neck cancer patients and is related to lifestyle factors that may have caused the disease. The finding that patient distress was associated with symptom severity and self-blame is interesting and suggests that psychosocial interventions should not only address patients' current level of symptoms but also their attributions of blame regarding the cause of their disease. Our future work will prospectively examine whether changes in symptoms and blame affect the course of distress in this vulnerable population.

#23

Association between Language, Gender and Colorectal Cancer Screening

J Diaz, M Roberts, R Goldman, W Rakowski

Introduction: Although overall rates of CRC screening have increased, screening disparities between non-Latino Whites and Latinos have also increased. Limited-English proficiency has been identified as a factor that may help explain some of the disparities as previous studies have demonstrated a negative association between limited-English proficiency and CRC screening. The purpose of this study is to examine the association between Latino race/ethnicity, gender, and English-proficiency on CRC screening rates. Based on prior quantitative and qualitative work, we hypothesized that limited-English proficient Latino men would have the lowest CRC screening uptake.

Methods: Cross-sectional analysis of the 2008 BRFSS survey. Analyses included adults > 50 years of age, who completed the BRFSS in a state that used the English and Spanish survey versions. Analyses calculated crude and adjusted (age, gender, partner status, SES, smoking status, perceived health, region, presence of PCP, and medical insurance) odds ratios of respondents' reported test receipt, stratified by self-reported Latino/non-Latino ethnicity, language, and gender.

Results: Of 76,209 respondents included in this analysis, 67.6% of non-Latino Whites reported receiving CRC screening tests, compared to 54.4% of Latinos responding in English, and 38.6% of Latinos responding in Spanish. In multivariable analysis, Spanish-speaking Latino men had the lowest odds of receiving CRC screening tests. Compared to non-Latino White men, Latino men responding in Spanish had 0.43 the odds of CRC testing (OR=0.43, 95% CI, 0.32-0.58). While still lower than non-Latino White men, odds of receiving CRC screening tests for Latino men responding in English (OR=0.73, 95% CI, 0.59-0.93), Latina women responding in English (OR=0.70, 95% CI, 0.59-0.83), and Latina women responding in Spanish (OR=0.73, 95% CI, 0.58-0.91), were considerably higher than those for Latino men responding in Spanish.

Conclusion: In this national sample, among Latino men and women, Latino men responding to the BRFSS in Spanish had the lowest odds of receiving CRC screening tests. Efforts targeting this group of Latino men may have a large impact on reducing overall disparities in CRC screening among non-Latino Whites and Latinos.

#24

Screening an Asymptomatic Population for Cancer - The Yield of an Integrated Cancer Prevention Center

Sella T, Boursi B, Guzman-Gur H, Mashiahi Y, Miller U et al.

Background: Cancer is a leading cause of mortality worldwide. The most effective way to combat cancer is by prevention and early detection.

Objectives: To evaluate the outcome of screening an asymptomatic population for the presence of benign and malignant neoplastic lesions.

Methods: Routine screening tests for prevention and/or early detection of 11 common cancers (Colon, breast, skin, ovarian, uterine, cervix, prostate, testicles, oral cavity, thyroid and lung) were conducted in 1000 consecutive asymptomatic apparently healthy adults aged 20-80 years.

Other tests were performed as indicated according to the individual's risk factors and findings in physical examination. Participants who signed informed consent underwent genetic counseling and were tested for genetic polymorphisms in the CD24 and APC genes.

Results: Malignant and benign lesions were found in 2.4% and 7.8% of the screenees, respectively. The most common lesions were in the gastrointestinal tract (52%) followed by skin (17%), urogenital tract (20%) and breast (10%). Advanced age (>50 yo) and a family history of a malignancy were associated with an increased risk for cancer with an odds ratio of 6.38 and 1.7 respectively (95% confidence interval 2.2-24.9 and 1.0-5.2, respectively). Moreover, polymorphisms in the APC and CD24 genes indicated high cancer risk. Thus, malignant and benign lesions were found in 4.5% and 8.7% of Subjects with any genetic polymorphism, respectively. Of note, 7.5% of APC 11307K variant carriers and 6% of CD24 A57V homozygotes were diagnosed with a malignancy.

Conclusions: Screening asymptomatic subjects identifies a significant number of neoplastic lesions at an early stage. Incorporating data on genetic polymorphisms in the APC and CD24 genes can further identify individuals who are at increased risk for cancer. Cancer can be prevented and/or diagnosed at an early stage using the screening facilities of a multidisciplinary outpatient clinic.

#25

Correlation of Knowledge, Attitudes, and Behaviors for Colon Cancer Screening on Hispanic patients from a Family Medicine Clinic

Otiniano ME, Wood RC, Poursani RS, Katerndahl DA, Siddiqui S, Nadeau MT

Purpose: The purpose of this study was to examine the correlations of knowledge, attitudes and behaviors toward colon cancer screening among Hispanic patients from an Urban Family Medicine Clinic.

Methods: From 402 subjects, 137 Hispanic patients meet the eligibility criteria for colon cancer screening (>50 years old). A 10-pages self-administered questionnaire was performed in a waiting room of an urban Family medicine Clinic either in Spanish or English. Sociodemographic characteristics, health status, Knowledge, Attitudes, and Behaviors were analyzed toward colon cancer screening as indicated by either the Fecal Occult Blood test (FOBT) or Colonoscopy.

Results: From 137 subjects, 67% reported having been tested for FOBT or colonoscopy. Older Hispanics (age mean=59 \bar{i} , \pm 6.1) are more likely to have FOBT or colonoscopy than younger Hispanics (age mean=54 \bar{i} , \pm 4.1) (p >0.001). Despite the evidence that majority of Hispanics know that family history is a risk for the disease they are less likely to be tested with an FOBT or colonoscopy. However, those who report a screening are more likely to encourage family members or friends to be screened (p >0.001). Multiple Logistic regression analysis showed that age, discussing the risk factors with their doctor, and encouraging family members or friends were significant predictors for FOBT or colonoscopy testing in Hispanics. Conclusions: Reporting for FOBT and colonoscopies differs by age. Interventions programs that increase FOBT and colonoscopy screenings need to concentrate on Hispanics between ages 50 to 60. Better patient education for Knowledge, positive Attitude, and Behaviors should be addressed to improve colon cancer screening.

#26

Prevalence and Correlates of Prostate-Specific Antigen Testing and Digital Rectal Examinations in Puerto Rico

Soto-Salgado M, Suárez E, Pérez CM, Serrano R, Ortiz AP

Introduction: Prostate cancer is the most common cancer type and cause of cancer death among men in Puerto Rico (PR). Despite the lower prostate cancer incidence rates in PR, death rates are higher than in non-Hispanic Whites and Hispanics in the US. No previous studies have determined the prevalence and correlates of prostate cancer screening in PR. Thus, this study aimed to determine the prevalence and examine correlates of prostate-specific antigen (PSA) testing and digital rectal examination (DRE) among men aged \geq 40 years. Methods: We included in our analysis 1,167 men aged \geq 40 years with no history of prostate cancer, who participated in the 2008 Behavioral Risk Factor Surveillance Survey in PR. Logistic regression analyses were used to estimate the weighted prevalence of recent PSA testing only, DRE only and both procedures combined and to examine correlates of both PSA testing and DRE.

Results: 87.5% (95% CI= 85.2%-89.7%) of men aged \geq 40 years reported having a PSA test only in the past 2 years, 74.4% (95% CI= 71.1%-77.7%) reported having a DRE only in the past 2 years, and 38.0% (95% CI= 35.2%-40.8%) reported having PSA test and DRE in the past 2 years. The multivariate logistic regression model showed that increasing age (POR 50-64yrs vs 40-49yrs: 2.29, 95% CI= 1.57-3.34; POR \geq 65yrs vs 40-49 yrs: 3.84, 95% CI= 2.24-6.59), higher annual family income (POR 15-25K vs <15K : 1.54, 95% CI= 1.05-2.26; POR 25-35K vs <15K: 1.78, 95% CI= 1.06-2.98; POR >35K vs <15K: 1.22, 95 % CI=0.74-2.01), having a health insurance coverage (POR: 2.20, 95% CI=1.06-4.55), and routine check up in the past year (POR: 2.39, 95% CI= 1.56-3.69) were significantly associated with having had both PSA testing and DRE. Conclusion: Although disagreement exists about the use of PSA testing for cancer-risk stratification in young men in the US, the prevalence of PSA testing and DRE among men aged \geq 40 years in PR (87.5% and 74.4%, respectively) is higher than in the US (49.0% and 53.1%, respectively). Correlates of both PSA testing and DRE identified population sub-groups that are under-screened and who might benefit from targeted interventions to enhance prostate cancer screening in PR.

#27

Mid-face lymphangiosarcoma in patients with pre-existing rosacea

Fosko S, Hurley M, Odell M, Armbrrecht E, Johnson F

Background: We describe a patient with rosacea and rhinophyma who developed a nasal lymphangiosarcoma and discuss previous reports of concurrent angiosarcoma and rosacea or rhinophyma. Recent evidence suggests that rosacea may be caused by qualitatively and / or quantitatively abnormal cathelicidins, which are pro-inflammatory and vasoactive antimicrobial peptides generated as part of the innate immune response. They contribute to excessive inflammation, angiogenesis and lymphangiogenesis that are features of rosacea. We hypothesize that these processes may have caused our patient's lymphangiosarcoma.

Methods: We performed a PUBMED search using the terms "rosacea" and "sarcoma". We found 14 citations and reviewed them. Results: Three reports described patients with pre-existing rosacea and / or rhinophyma who later developed a nasal angiosarcoma. In two, it was felt that chronic lymphedema resulting from repeated inflammatory episodes of rosacea in their patients could have played a role in the development of the angiosarcomas. Our patient, a 77-year old Caucasian male with longstanding rosacea and rhinophyma, presented with a several month history of painful areas on his nose. Physical examination revealed rosacea with a phymatous nose, a prominent left ala and partial alar necrosis. There were no other significant physical findings. A biopsy was positive for CD31 (stains blood-vascular and lymph-vascular endothelium) and D2-40 (stains lymph-vascular endothelium only) establishing the diagnosis of lymphangiosarcoma. The patient died of an intestinal perforation during preoperative induction chemotherapy. Conclusions: We propose that the inflammatory processes and lymphedema which characterize rosacea and rhinophyma promote the genesis of sarcomas in affected tissue. We are currently conducting a retrospective case-control study to determine if rosacea is a risk factor for facial sarcoma; we will present the results, if available, at the meeting. If causality is established, prophylactic excision of phymatous tissue, which is currently done for cosmesis, may be useful for cancer prevention. Increased screening for cancer in rosacea patients might also be warranted.

#28

Quality of life in a chemoprevention trial of an oral green tea extract

among women with hormone receptor-negative breast cancer

Crew KD, Ippolito P, Brown P, Greenlee H, Bevers T, Arun B, Hudis C, McArthur HL, Vornik L, Cornelison TL, Lippman SM, Hershman D

Early phase breast cancer (BC) chemoprevention trials often ask healthy women to commit to multiple visits, frequent blood draws and tissue biopsies. Due to limited data on quality of life (QOL) among these participants, this was evaluated using a validated questionnaire in women enrolled in a chemoprevention trial of an oral green tea extract.

We assessed the safety and biologic effects of Polyphenon E (Poly E) for the secondary prevention of hormone receptor (HR)-negative BC. Forty women with stage I-III HR-negative BC who completed adjuvant treatment were randomized to oral Poly E 400mg, 600mg, or 800mg (2-4 capsules) bid or matching placebo for 6 months (mo). Toxicity was assessed during monthly visits. At baseline and 6 mo, a mammogram and random core biopsy of the contralateral breast and serial blood/urine collections were obtained for biomarker analyses. Attitudes toward complementary and alternative medicine and QOL with the Medical Outcomes Study Short Form-36 (SF-36) were assessed at baseline and 6 mo. In addition to 8 specific subscales, the SF-36 has 2 summary scales, the Physical Component Summary (PCS) and Mental Component Summary (MCS). Baseline characteristics include median age: 55 (39-65); pre/postmenopausal: 10/30; White/Hispanic/Black/Asian: 23/9/7/1; 55% college degree; median BMI: 28.6 kg/m² (21.1-40.7); BC stage I/II/III: 16/15/9; median time since diagnosis: 33 months (10-170). Mean scores (SD) on the General Health subscale improved from baseline, 73.4 (16.9), to 6 months, 78.9 (15.5) (p =0.03). There were nonsignificant increases in other PCS subscales, Physical Functioning and Bodily Pain. No significant changes were seen in the MCS subscales. At 6 months, 67% were at least moderately interested in continuing Poly E, 75% were willing to pay out-of-pocket and 93% would recommend it to a friend/relative. Participation in a clinical study of an oral green tea extract led to improvement in General Health, as well as other PCS subscales. Despite frequent study visits and biospecimen collections, women generally had a positive experience participating in this chemoprevention trial. Future studies should address improved QOL through secondary prevention strategies among long-term BC survivors.

#29

Study transition from local in-person follow-up to centralized follow-up by mail
Anderson K, Hartline J, Harris-Talley J

Purpose: To describe the process for communicating the transition from local follow-up of participants by study sites to centralized follow-up by mail. The Selenium and Vitamin E Cancer Prevention Trial (SELECT) opened for accrual in August 2001. Over 35,500 men were accrued in over 400 study sites in the U.S., Canada and Puerto Rico. The study intervention was stopped in 2008 due to lack of benefit of the study supplements on prostate cancer incidence. In 2009, transition began from in-person visits to centralized follow-up (CFU) up by mailed questionnaire from the Coordinating Center.

Methods: Investigators and staff were informed by email in May 2009 of the decision to transition to CFU. In August 2009 sites were provided materials for submission to their Institutional Review Boards (IRBs). In October 2009, staff attended a workshop on conducting the transition. The workshop included a discussion of IRB issues, the timeline for completing a final visit, content of the visit as shown in a video presentation, data submission, and preparing for site closure.

Study participants were informed of the transition through Information Sheets mailed by study staff to participants just prior to the final visit. Sites held group sessions to inform their participants of the study transition. A toll free phone number was provided to participants to contact the Coordinating Center.

Results: As of October 25, 2010, 14,000+ participants consented to CFU. Forty-seven study sites completed transition activities and are closed; 29 are pending closure. A secure website is being created to allow data submission by participants. Study site transition and closure activities required approximately 16 months.

Conclusions: IRB issues at the 400+ sites proved to be more complex than anticipated. Three different consent plans were needed to meet varying IRB issues, requiring increased Coordinating Center staff time to track the consent process. Providing a training video for staff to access anytime on-line assisted with staff turnover during the transition. Management of multi-site, long-term trials should expect study closure activities to require extra time on the part of site staff, and should build in funds for increased support by the Coordinating Center.

#30

The Consent Process for Transitioning a Large Trial to Centralized Follow-Up

Yee M, Hartline J, Anderson K, Darke A

Purpose: To describe the consent process for 400+ sites in transitioning participants from in-person follow-up to centralized follow-up (CFU) by mail. Over 35500 men were accrued in 427 study sites in the U.S., Canada and Puerto Rico. The Selenium and Vitamin E Cancer Prevention Trial (SELECT) opened for accrual in August 2001. The study intervention was stopped in 2008 due to lack of benefit of the study supplements on prostate cancer incidence. In 2009, the 384 sites still participating in the trial were provided with three options to inform and consent their participants to CFU.

Methods: Due to a variety of sites participating in SELECT, i.e., academic, HMOs, Veterans Affairs and small clinics, 3 plans were developed. Plan A was the optimal plan allowing the site staff to inform the participant of centralized follow-up and obtain consent. Plan B was for sites whose Institutional Review Boards (IRBs) would only allow participants to release their contact information so the SELECT Coordinating Center (SCC) could contact the participant for consent. Sites using Plan C were only allowed to provide an Information Sheet with the SCC's contact information requiring participants to contact the SCC. Consent packets were prepared and mailed to participants from Plan B and C sites. The SCC required a copy of signed and dated consent signature pages.

Results: As of November 16, 2010, 317 sites had IRB approval for Plan A, 47 for Plan B, and 13 for Plan C. Six sites had no IRB approval for any plan and their participants were not informed of the option to continue. Eight sites did not obtain IRB approval. A total of 13745 (76.46%) of 17976 approached at Plan A sites agreed to CFU [3256 (85.75%)/3797 Plan B, 38 (2.60%)/1459 Plan C].

Conclusions: IRB issues at the 384 sites were more complex than anticipated. Site-specific IRB concerns required the SCC to develop multiple consent plans. It took significant SCC staff time to track site IRB approval and receipt of participant consents and to act on consent problems. Allow more time in a multi-site trial for the IRB consent process to transition to major changes in follow-up. Monitor sites closely and assist staff to convey the importance of the transition to participants.

#31

Adherence to a Mediterranean-style Diet and Anthropometric Change in Lactating Women

Stendell-Hollis N, West J, Thompson P, Thomson C

Adult weight gain is associated with increased breast cancer risk. Parity has also been shown to increase weight in adult females suggesting the postpartum period may be an opportune time to promote weight control and thus reduce breast cancer risk. We hypothesize that lactating women adhering to a Mediterranean (MED) diet as compared to women randomized to the USDA's MyPyramid diet for Pregnancy and Breastfeeding (control diet) will demonstrate significantly greater change in body weight and body fat over a 4 month intervention period. A randomized, controlled dietary intervention trial in lactating women was initiated to evaluate differential change in body weight and body composition in relation to adoption of a MED diet with daily walnut intake as compared to control diet.

Weight and height was measured at baseline, 2 months, and 4 months; and body fat, waist, and hip circumference was assessed at baseline and 4 months.

Adherence to the MED diet was evaluated via calculation of the MED diet score from validated food frequency questionnaires (FFQs) administered pre and post the diet intervention, and analysis of change in plasma fatty acid profiles. To date, 94 women (92.2% of sample), a mean 17.5 weeks postpartum at baseline, have completed the 4 month diet intervention. Participants in both diet intervention groups have demonstrated significant ($p < 0.01$) reductions in all anthropometric measurements assessed; excluding waist-to-hip ratio. Analysis of FFQs ($n = 59$ pre and post pairs; 57.8% of total sample to be evaluated) demonstrated no statistically significant differences in total MED diet score between groups; however, participants in the MED diet group self-reported increased daily intake of 1 oz walnuts, 1 – 2 T. olive oil, and > 7 servings of fruits and vegetables daily.

Plasma fatty acid profiles will be analyzed to determine if differences in the n6:n3 fatty acid ratio were demonstrated in relation to weight loss and/or diet assignment. Lactating women randomized to either a MED diet or the USDA's MyPyramid diet for Pregnancy and Breastfeeding demonstrated significant reductions in body weight and body fat in response to a 4 month diet intervention. This supports either diet for promotion of weight loss postpartum to modify breast cancer risk.

#32

Dietary changes in Microbial Metabolism for Colon Cancer Control and Prevention

Ryan, E., Weir T., Brown R., Barnett B., and Boreson E.

Colorectal cancer has the second highest mortality rate of all cancers. A growing body of evidence supports that dietary rice bran and dietary bean intake demonstrate colon cancer protective activity in laboratory animal models and human colon cancer cell lines. The NCI sponsored Polyp Prevention Study has revealed that people who significantly increase their consumption of dry beans, such as pinto and navy beans, have the largest risk reduction of developing pre-cancerous polyps in the colon. Little is known regarding diet-induced changes in colonic microbial communities and the resulting microbial metabolites that influence inflammatory pathways for colon cancer development and progression. A pilot human dietary intervention study with rice bran and beans is ongoing to address a significant gap in our knowledge regarding the role of microbial metabolism for colon cancer control and prevention. This study, titled BENEFIT (Beans/Bran Enriching Nutritional Eating For Intestinal health Trial) enrolls both healthy adults and colon cancer survivors in northern Colorado. Compelling preliminary data shows that fecal microbial communities, the fecal metabolome and short chain fatty acids were modifiable after 2 and 4 weeks of daily dietary rice bran or bean intake. A decrease in plasma C-reactive protein levels was also detected in individuals consuming the beans or rice bran over baseline. These findings merit further investigation of microbial metabolism to improve colonic health by reducing inflammation. Our findings of cooked rice phytochemical diversity, metabolism by probiotics, and microbiome and metabolome changes following human dietary rice bran or bean intake warrants continued investigation in human clinical trials for colon cancer control and prevention. Only a small fraction of the rice bran produced is used for human consumption and dietary bean consumption remains quite low in the U.S. Promoting increased rice bran or beans consumption, as functional foods, represents a novel and feasible public health intervention strategy for widespread colorectal cancer control and prevention.

#33

Uptake of SERMs and participation rate in a breast cancer chemoprevention trial of vitamin D among high-risk women

Reimers LL, Hershman DL, Maurer M, Kalinsky K, Feldman S, Campbell J, Brafman L, Refice SF, Kranwinkel G, Crew KD

Purpose: Selective estrogen receptor modulators (SERMs), tamoxifen and raloxifene, are FDA-approved for breast cancer (BC) risk reduction, but uptake has been poor in the prevention setting. We screened high-risk women for participation in an early phase trial of vitamin D and assessed factors that influenced women's decisions about BC chemoprevention. Methods: High-risk women were referred to Medical Oncology for a formal BC risk assessment and discussion of chemoprevention, including participation in a vitamin D intervention trial. Eligibility criteria included women with a 5-yr Gail risk $\geq 1.67\%$, lobular or ductal carcinoma in situ (LCIS/DCIS), BRCA mutation carriers, or long-term survivors of stage I-II BC that completed adjuvant therapy. Participants were assigned to a 1-yr intervention of high-dose vitamin D3 with study visits every 3 months and serial measurements of breast density, serum and tissue-based biomarkers. Demographic and clinical factors were collected from medical chart review. Results: From Sept 2007-Oct 2010, 222 consecutive women were screened. Median age: 53 (26-84); pre/postmenopausal(%): 36/64; white/Hispanic/black/Asian(%): 46/40/9/5; Gail $\geq 1.67\%$ /LCIS/DCIS/BRCA/stage I-II BC(%): 28/19/38/3/12. Among SERM candidates for primary prevention or DCIS, 45% (82/184) agreed to a SERM (67 tamoxifen/15 raloxifene). SERM uptake was higher for DCIS (63%) compared to LCIS/BRCA (31%) or Gail $\geq 1.67\%$ (34%). SERM uptake was nearly 3-fold higher for Hispanics vs. whites ($p=0.01$). Among women eligible for the vitamin D trial, 23% (34/147) enrolled. Participation rates among moderate-risk women (Gail $\geq 1.67\%$) was 40% compared to 24% for high-risk women (LCIS/BRCA) and 11% for stage I-II BC patients ($p<0.01$). Participation was 3-fold higher in premenopausal compared to postmenopausal women ($p=0.05$). Conclusions: Among high-risk women screened in Medical Oncology, SERM uptake was higher for DCIS and moderate-risk women were more likely to participate in a trial of an investigative agent with fewer side effects. SERM uptake was higher among Hispanics than whites, perhaps due to higher perceived BC risk or less preconceived ideas about SERMs. Future research should focus on effectively communicating BC risk and risk management strategies for BC prevention.

#35

In vitro prostate cancer cell growth is modified by human serum from men on a low-fat diet supplemented with flaxseed

Azrad M, Busby JE, Grizzle WE, Snyder D, Vollmer R, Ruffin M, Polascik T, Demark-Wahnefried W

Our previous phase II randomized controlled trial testing the comparative effects of flaxseed supplementation (30 g/day) and/or dietary fat restriction ($<20\%$ of energy from fat) among 161 men scheduled for prostatectomy over a mean duration of 30.5 days found significantly lower prostate cancer proliferation rates (Ki-67) among men assigned to the flaxseed arms; men on the low fat diet had lower Ki-67 rates, though results were not significant. The purpose of this study was to investigate the effects of culturing three well-characterized prostate cancer cell lines, LNCaP, DU145 and PC3, with sera from a subset of men in the previous study who were randomized to the usual diet control ($n=16$), flaxseed supplementation alone (FS, $n=18$), low-fat alone (LF, $n=15$), or FS+LF ($n=19$). Pre- and post-intervention sera [10% concentration] was used to culture cells. Following 48 hours of growth, differences in proliferation were assessed using the MTT assay and paired t-tests were used to detect statistical differences between baseline and follow-up proliferation rates among the four groups separately. Analyses showed that in the LNCaP cells there was no difference in the proliferation rates for cells cultured in sera from the baseline to follow-up for the control, FS or LF groups but cells cultured in sera from FS+LF group did have significantly reduced cellular proliferation rates ($p=0.027$). No differences were detected in proliferation rates for DU145 and PC3 cells. DU145 and PC3 cell lines are not sensitive to androgens whereas LNCaP cells express the androgen-receptor and are androgen-sensitive suggesting that the sera from the FS+LF follow-up period may have mediated proliferation-reducing effects through reduced androgen signaling. Laboratory experiments are currently underway to explore the mechanisms associated with reduced in vitro cellular proliferation by sera from men consuming a low fat diet and flax seed supplementation. Further study is needed to compare in vivo serum and tumor tissue biomarkers (Ki-67) with in vitro correlates.

#34

Racial Differences in the Association of Obesity Measurements with Colorectal Adenomas

Thompson CL, Kaur A, Shaikhouni S, Lynn A, Berger NA, Li L

Obesity has been consistently associated with an increased risk of colorectal neoplasia, but potential racial differences in the association have not been fully explored, particularly with respect to colorectal adenoma. Waist-to-height ratio (WHtR) has been recently proposed as a better measurement of central obesity than body mass index (BMI) or waist-to-hip ratio (WHR), but its association with colorectal neoplasia has not yet been investigated. We recruited 1,370 patients undergoing screening colonoscopies at University Hospitals Case Medical Center for an incident case-control study of colorectal adenomas. Participants were surveyed for risk factors over the phone before their colonoscopy. Weight, height, waist and hip measurements were taken, along with a fasting blood draw, by a trained nurse at the time of colonoscopic exam. Of the 1,370 participants, 369 (26.9%) were diagnosed with colorectal adenomas at their colonoscopy. African Americans (AA) made up approximately 1/3 of the study population, and the rest of the sample was predominantly white. Overall, BMI was significantly higher in cases compared to controls (mean=29.5 kg/m², SD=6.1 in cases; mean=28.7, SD=6.6 in controls; $p=0.045$). A higher WHR was associated with colorectal adenomas (mean=0.93 kg/m², SD=0.091 in cases; mean=0.90, SD=0.089 in controls; $p=0.0060$) as was WHtR (mean=0.59 kg/m², SD=0.10 in cases; mean=0.57, SD=0.098 in controls; $p=0.0033$). These associations remained statistically significant in logistic regressions accounting for age, race and gender. Multivariable logistic regression analyses stratified by race showed that WHR was much more strongly associated with adenomas in AA ($p=0.0071$) compared to whites ($p=0.56$) but BMI was more strongly associated with adenomas in whites ($p=0.0014$) compared to AA ($p=0.89$) as was WHtR ($p=0.0070$ in whites and $p=0.60$ in AAs). These results suggest racial differences in the measure of obesity most correlated with early colorectal neoplasia.

#36

Hypercholesterolemia is associated with an increased risk of adenomas but not hyperplastic polyps in a colonoscopy sample

Passarelli MN, Burnett-Hartman AN, Adams SV, Mandelson MT, Zhu LC, Upton MP, Newcomb PA

Purpose: We conducted a case-control study to assess the association between hypercholesterolemia and the risk of colorectal adenomas and hyperplastic polyps (HPs). Adenomas are established precursors for colorectal cancer (CRC) and HPs may have some malignant potential. Methods: Participants were enrollees of Group Health, a large health care system in Washington State, ages 24 to 79, who participated in colonoscopy studies for any indication between 1998 and 2007. Those with a history of CRC, inflammatory bowel disease, or familial adenomatous polyposis were ineligible. We evaluated 1,489 cases, including 640 with adenomas, 576 with HPs, and 273 with both types of lesions, as well as 1,036 controls with normal colorectal pathology. Participants completed a questionnaire that ascertained information on health history, including self-reported medical diagnosis of hypercholesterolemia and other CRC risk factors. All adenomas and HPs received a standardized pathology review. Polytomous logistic regression was used to estimate odds ratios (ORs) and 95% confidence intervals (CIs) adjusted for sex, age, race, body mass index (BMI), family history of CRC, previous endoscopy, NSAID use, smoking status, alcohol consumption, diabetes, fruit and vegetable intake, and physical activity. Results: We observed an increased risk of colorectal adenomas for those diagnosed with hypercholesterolemia relative to those with normal cholesterol levels (OR = 1.36; 95% CI: 1.08-1.71). No altered risk was noted for HPs (OR = 1.03; 95% CI: 0.82-1.31). The results were consistent by sex, location of lesion, across categories of BMI, and persisted for those who reported ever having taken medication to control high cholesterol. Conclusions: These results support an association between hypercholesterolemia and adenomas. In contrast, hypercholesterolemia was not associated with HPs. Further investigation into the mechanisms by which hypercholesterolemia may promote formation of adenomas, but not HPs, will lead to new avenues for cancer prevention.

#37

Physical activity and prostate cancer aggressiveness by race
Steck, S., Su, L., Arab, L., Fontham, E., Bensen, J., Blackard, B., Mohler, J.

Racial disparities exist for prostate cancer (CaP), with African Americans (AAs) carrying an unequal burden of disease. Physical activity has been implicated in CaP etiology, specifically in relation to its effects on testosterone levels, and has been associated with a protective effect in some, but not all, studies. Inconsistent findings may be explained by the studies' inability to examine associations in the context of CaP aggressiveness, and very few studies have considered racial differences in physical activity and extent of CaP aggressiveness. In this study, associations among physical activity and CaP aggressiveness were examined among AAs and Caucasian Americans (CAs) in a population-based, case-only study (the North Carolina-Louisiana Prostate Cancer Project, PCaP). Total MET-hrs/wk of physical activity in the year prior to diagnosis were calculated from responses to an interviewer-administered physical activity questionnaire. Low aggressiveness cases (n=987) were defined as those with a Gleason sum of less than 7, a clinical stage of T1-T2, and PSA of less than 10 ng/ml, and all others were defined as high/intermediate aggressiveness cases (n=936). Logistic regression was used to calculate ORs and 95% confidence intervals (CIs) for risk of aggressive CaP by race with adjustment for potential confounders. Among CAs, engaging in vigorous physical activity at least once per week in the year prior to diagnosis was inversely related to CaP aggressiveness (OR, 0.72, 95% CI, 0.53, 0.98), while no association was observed for AAs (OR, 1.05, 95% CI, 0.76, 1.46). There were no associations between walking for exercise, weight-lifting, or total MET-hrs/wk of physical activity in the year prior to diagnosis and CaP aggressiveness for either race. In conclusion, physical activity only at the highest intensity level was inversely associated with CaP aggressiveness, and only for CAs, suggesting it may have a modest contribution to racial disparities in CaP aggressiveness. Despite this limited finding, there are clear advantages to even light intensity physical activity in other arenas of health, and thus, it should still be encouraged. Grant Sponsor: Department of Defense(DAMD 17-03-2-0052)

#39

Sunscreen use and patterns, other skin protection methods and melanoma
D. Lazovich, R. Isaksson Vogel, M. Berwick, M. Weinstock, K. Anderson, E. Warshaw
Although sunscreen is recommended to prevent skin cancer, meta-analyses have not found sunscreen to decrease melanoma. However, most studies were performed before availability of high SPF sunscreens, did not assess lifetime exposure or usage patterns, and did not adjust for melanoma risk factors. From 2004-2009, we conducted a population-based case-control study with 1167 melanoma cases and 1101 controls, ages 25-59. We collected frequency of sunscreen use during outdoor activities performed in each decade of a person's life. If sunscreen use was reported, we asked in that decade about sunscreen patterns--SPF 15+, thickness applied, skin coverage, reapplication, routine use when not planning to be in the sun--and use of other skin protection methods (e.g., clothing). Based on values reported in the two decades prior to study entry, individuals were classified as non-, inconsistent or optimal users across both decades. Odds ratios (OR) and 95% CI were adjusted for known melanoma risk factors. For any sunscreen use, 14% of controls were optimal users across both decades. Inconsistent users could follow optimal patterns when using sunscreen and vice versa. Among controls, 48% reported optimal use for SPF 15+ sunscreen use, 5% for thick application, 53% for covering most skin, 10% for frequent reapplication, and 4% for frequent routine use. About 25% of controls were optimal users of other skin protection methods. While ORs for optimal use of any sunscreen were null, optimal use of SPF 15+ sunscreen vs. non-users was associated with a modest reduced risk of melanoma (adj. OR=0.83, 95% CI 0.62-1.12) and the p-value for trend across non-, inconsistent and optimal users was 0.03. No associations were observed between melanoma risk and amount applied, amount of skin covered, or reapplication frequency. In contrast, melanoma risk was decreased among optimal users of routine sunscreen (adj. OR=0.44, 95% CI 0.23-0.86; p-trend=0.18) and of other skin protection methods (adj. OR=0.59, 95% CI 0.44-0.78; p-trend=0.0003) vs. non-users. Our mostly null results may be due to suboptimal sunscreen use and poor sunscreen practices. Use of sun protection strategies other than sunscreen should also be encouraged given its strong inverse association with melanoma risk.

#38

Single nucleotide polymorphisms in genes of one-carbon metabolism pathway and bladder cancer survival
Chang SC, Yang YC, Zhang ZF
One-carbon metabolism pathway plays an important role in carcinogenesis through its involvement in DNA methylation and biosynthesis. Epidemiologic studies have indicated the associations between genetic polymorphisms in this pathway and the susceptibility of various cancers, including bladder cancer. However, few studies have focused on their associations with bladder cancer prognosis. Using follow-up data from 249 bladder cancer patients who have been treated at the Memorial Sloan-Kettering Cancer Center from 1993 to 1997, we investigated the associations between survival time of bladder cancer patients and single nucleotide polymorphisms (SNPs) involved in the one-carbon metabolism pathway. Epidemiologic data was collected by trained interviewers. Genotyping of seven SNPs in methylenetetrahydrofolate reductase (MTHFR), methionine synthase (MTR), methionine synthase reductase (MTRR), DNA methyltransferase 1 (DNMT1), and aldehyde dehydrogenase 2 (ALDH2) genes was performed using SNPlex and Taqman assays (Applied Biosystems, Foster City, California) with DNA isolated from blood samples collected at time-of-interview. Survival curves were estimated using the Kaplan-Meier method, and differences in distributions were evaluated by log-rank tests and Cox proportional hazards models. Overall, no obvious associations were observed between the studied SNPs and all-cause mortality among bladder cancer patients after adjustment on age, gender, race/ethnicity, smoking status, and tumor stage. However, after stratification on smoking status, increased survival time was found among ever-smoked carriers of MTRR rs1532268 and rs1801394 variant allele, with adjusted hazard ratios (HRs) of 0.65 [95% confidence interval (CI) = 0.45-0.95] and 0.65 [95% CI = 0.43-0.98], respectively. Increased survival time was also observed among never smokers with ALDH2 rs2238151 C/T or T/T genotypes, compared to those with the C/C genotype [HR = 0.23, 95% CI = 0.06-0.90]. Our findings suggest that smoking may interact with one-carbon metabolism pathway related genetic polymorphisms on survival among bladder cancer patients. Future studies with larger sample sizes are needed to confirm the associations.

#40

Hormonal Profiles of Daughters of Preeclamptic and Normotensive Mothers: Implications for Breast Cancer Risk
Thelus Jean, R; Vatten, L; Ogland, B; Nilsen, ST; Dong, K; Forman, M
Purpose: The purpose of this study is to compare hormonal profiles in peripubertal daughters, aged 10.8 years of preeclamptic and normotensive mothers. Methods: In the follow-up of a population based nested case-control study of birth cohorts in Norway, we compared serum levels of androstenedione, dehydroepiandrosterone sulfate (DHEAS), luteinizing hormone (LH), testosterone and IGF-1 in daughters of normotensive (NT) (n=138) and preeclamptic (PE) mothers (n=58) at 10.8 years by Tanner pubertal stage. Puberty was classified as Tanner stage 1 for prepubertal (breast or pubic hair) and Tanner stage 2+ for pubertal girls. Results: Based on Student's t-test, we report that daughters of PE mothers had significantly (Pvalue<0.01) higher levels of DHEAS but lower levels of testosterone compared to daughters of NT mothers, respectively (mean DHEAS \pm SD: PE=37+ 32 vs. NT=17+ 20; and mean testosterone \pm SD: PE= 55 + 47 vs. NT= 61+ 46). Furthermore, these patterns remained consistent by pubertal status whereby daughters of PE mothers who were pre-pubertal for breast and/or pubic hair development as well as those who were pubertal for breast development had significantly higher levels of DHEAS than those who were of NT mothers. For testosterone, the pattern was significant only among the girls who were prepubertal for breast and/or pubic hair development. We found no difference in mean levels of androstenedione, LH and IGF-1 in daughters of PE compared to those of NT mothers. However, mean IGF-1 in pubertal daughters of PE and NT mothers were significantly (Pvalue<0.01) higher than levels in pre-pubertal girls for breast and/or pubic hair development. Conclusions: Our findings suggest that in young pubertal aged girls of PE and NT mothers, high DHEAS but low testosterone may reflect the in utero exposures of the PE offspring. As elevated levels of testosterone are implicated in risk of postmenopausal breast cancer, greater understanding of the hormonal profiles during developmental stages/windows of susceptibility across the life course may lead to identification of the mechanism by which the PE pregnancy is associated with lower risk of breast cancer.

#41

The Associations between Caffeinated Beverages and Malignant Melanoma: the Multiethnic Cohort Study

Park SL, Le Marchand L, Wilkens LR, Kolonel LN, Henderson B, Zhang ZF, Setiawan VW

Experimental studies have found that topical or oral administration of caffeine may inhibit UV-induced skin tumor formation and stimulate apoptosis of damaged skin cells. In epidemiological studies, findings for caffeinated beverages have been variable for malignant melanoma. We examined the associations of caffeine intake and coffee, tea and soda consumption with the risk of malignant melanoma among the 38,923 eligible White participants in the prospective Multiethnic Cohort Study. During an average of 10.1 years of follow-up, 329 cases of invasive malignant melanoma (IMM) and 258 malignant melanoma in situ (MIS) cases were identified. Cox proportional hazards models, with age as the time metric, adjusted for age at cohort entry, education, sex, study site, family history of melanoma, susceptibility to sunburn, sunburn history, history of non-melanoma skin cancer, alcohol drinking, smoking status, and energy intake, were used to estimate adjusted relative risks (RRs) and 95% confidence intervals (CIs) for malignant melanoma. An inverse association was found between the highest quartile of caffeine intake and IMM (RR=0.73; 95% CI: 0.54-0.99) and no clear association with MIS (RR=0.88; 95% CI: 0.71-1.09). By beverage type, when adjusting for age, education, sex and study site, an inverse association with IMM was found among those who consumed >1 cup of coffee/day (RR=0.75; 95% CI: 0.56-0.99). For the full regression model the association was attenuated (RR=0.80; 95% CI: 0.60-1.08). Conversely, no clear associations were detected for decaffeinated coffee drinkers (RR=1.21; 95% CI: 0.96-1.51) nor for tea or soda consumption. There was a suggestive protective effect for caffeine among those without a history of blistering sunburn (RR=0.70; 95% CI: 0.45-1.08); whereas, no evident association was found among those with such a history (RR=0.96; 95% CI: 0.74-1.25). Correlation between caffeine consumption and sunburn history was not observed ($r^2=0.032$). In conclusion, our findings support experimental data that caffeine may be protective against malignant melanoma, although we cannot rule out the possibility that screening and/or sun exposure behaviors may differ among those who consume more caffeinated beverages. Validation from other studies is needed.

#43

Prophylactic oophorectomy rates before and after a clinical guideline on the referral of high-risk women to genetic counseling

Pocobelli G, Chubak J, Buist D, Hanson N, Drescher C, Resta R, Urban N

Prophylactic removal of a woman's ovaries and fallopian tubes can prevent ovarian cancer and is recommended for women at high-risk of developing the disease. Genetic counseling is one method used to enhance a woman's understanding of her risk of developing ovarian cancer. In March 2008 Group Health, an integrated health care delivery system in Washington State, disseminated a revised clinical practice guideline for its providers that recommended women be referred to genetic counseling if their personal or family history suggested an inherited predisposition to breast or ovarian cancer. Before March 2008, there was no guideline in place on the systematic referral of these women to genetic counseling. The purpose of this study was to evaluate whether rates of prophylactic oophorectomy increased in these higher-risk women after the guideline was introduced. We studied women aged ≥ 35 years who were enrolled in Group Health for any period from January 2004-August 2009 and who had a personal or family history that suggested an inherited predisposition to breast or ovarian cancer. Women with a prior bilateral oophorectomy or diagnosis of a gynecologic cancer were excluded. We identified prophylactic oophorectomy from procedure and claims data and only included procedures that were not a treatment for gynecologic cancer. Before the guideline was in place (January 2004-February 2007) the age-adjusted prophylactic oophorectomy rate (per 1,000 woman-years) was 4.0 (95% confidence interval: 3.4-4.5; 198/50,397 woman-years) and after the guideline was in place (March 2008-August 2009) it was 2.2 (95% confidence interval: 1.5-2.8; 48/13,022 woman-years). Rates decreased in each age group (35-39, 40-49, 50-59, 60-69, 70-79, ≥ 80) in the latter period. Rates of prophylactic oophorectomy in higher-risk women did not increase after the guideline was introduced. Systematic referral to genetic counseling may have resulted in fewer prophylactic oophorectomies because it led to finer ovarian cancer risk stratification. Limitations of this study include a short period of follow-up after the guideline was introduced and the possibility that any secular decline in oophorectomy rates was related to Women's Health Initiative findings on risks associated with hormone therapy.

#42

Trends in Thyroid Cancer Incidence Rates and Disparities Among Young Females in the United States, 1999-2006

Holman D, Soman S, Watson M, Weir H, Trivers K, White M

Thyroid cancer is a leading cancer type among young women, and rates are consistently higher among women than men. This paper describes recent trends in thyroid cancer among females ages 20-39 in the United States by demographic and tumor characteristics. Data from the Centers for Disease Control and Prevention's National Program of Cancer Registries and the National Cancer Institute's Surveillance, Epidemiology, and End Results Program were used to examine incidence rates during 2002-2006 and average annual percent changes in rates during 1999-2006. Among young women, thyroid cancer incidence rates were 15.63 per 100,000 (95% Confidence Interval: 15.45, 15.82) and increased with age. Rates were significantly higher among Non-Hispanic whites than other racial/ethnic groups and significantly higher in the Northeast compared to other U.S. Census regions. Over 85% of new thyroid cancers were localized or regional papillary carcinomas. During 1999-2006, rates increased across age groups, racial/ethnic groups (except American Indians/Alaska Natives), and histologic types. SEER data for 1992-2007 were used to assess long term trends in thyroid cancer incidence rates by tumor size. The increase in rates across all tumor sizes suggests that the observed increases are attributable to more than simply changes in diagnostics or surveillance.

#44

Global DNA methylation by LUMA and breast cancer risk in the Metropolitan New York Breast Registry

Delgado-Cruzata L, Wu H, Perrin M, Liao Y, Flom JD, Santella RM, Terry MB

Purpose

To investigate the association between DNA methylation and breast cancer risk in the Metropolitan New York Breast Cancer Registry (MNYBCR) using the luminometric methylation analysis (LUMA) assay.

Methods

Genomic DNA methylation levels were determined by LUMA in blood DNA of 263 breast cancer cases and 321 unaffected sisters from the MNYBCR. Conditional logistic regression and generalized estimating equations (GEE) were used to determine the breast cancer risk odds ratio and corresponding confidence intervals for quartiles of DNA methylation levels. LUMA percentage DNA methylation was categorized on quartile-specific cutpoints where quartile4 (q4) had the highest level of global methylation and quartile1 (q1) had the lowest. Analyses were performed separately for white blood cell (WBC) and granulocyte (Gran) DNA. Models were adjusted for age at the time blood was drawn.

Results

DNA methylation levels determined by LUMA were not statistically significantly different between cases and controls participating in the MNYBCR. Measurements in Gran DNA showed a non-significant increased risk of breast cancer in all quartiles when compared to the highest DNA methylation level quartile (ORq1= 1.29 (95 % CI 0.49, 3.36); ORq2= 1.17 (95 % CI 0.42, 3.24); and ORq3= 1.99 (95 % CI 0.85, 4.64)). No significant associations were found for WBC DNA methylation and breast cancer risk.

Conclusion

Changes in global DNA methylation are relevant during breast carcinogenesis; however, we found no associations between global levels of DNA methylation measured by LUMA and breast cancer risk. LUMA targets DNA methylation at CCGG repeats throughout the genome, which accounts for 8% of total methylated sites. LUMA might not cover all sites relevant in breast carcinogenesis, which could explain the lack of an association found in our study. Accurate DNA methylation methodologies that can be applied to large epidemiological sample sets are currently needed, and further studies will have to assess LUMA's validity in measuring global DNA methylation levels.

#45

Higher folate and risk of cervical pre-cancer in the absence of DHFR 19 bp Del/Del genotype

Badiga S, Johanning G, Macaluso M, Azuero A, Kittles R, Partridge E, Piyathilake C

Background: Our previous research suggests that exposure to higher folate in the US post folic acid fortification era is not associated with higher risk of CIN2+. However, it is unknown whether this association is modified by the presence of polymorphic variants of genes in the folate metabolic pathway (FMP). The purpose of the study was to determine whether this association is modified by the presence of the DHFR 19 bp deletion, a common genetic variation of the DHFR enzyme which is directly involved in the uptake and utilization of synthetic folic acid.

Method: The study population consisted of 132 cases (CIN 2+) and 132 non-cases (CIN 1) matched based on age, racial admixture, current smoking status and BMI. Genotypes of the DHFR 19 bp deletion polymorphism (both alleles coding for 19bp (wild type, WT/WT), only one allele coding for 19bp (WT/Del) and neither allele coding for 19bp (Del/Del)) were determined using a modified PCR amplification of allele specific primers. Plasma folate (PF) concentrations were measured using a microbiological assay. Logistic regression models were used to test the associations between case status as the binary outcome (CIN2+ vs. CIN1) and DHFR 19bp deletion genotypes (WT/WT or WT/Del vs. Del/Del), and PF (high vs. low, with median cut off at 10.84 ng/mL) as the primary predictors of interest after adjusting for parity.

Results: The percentage of women with WT/WT, WT/Del or Del/Del genotypes were 28%, 46% and 26% respectively. DHFR genotype or PF concentrations were not significantly associated with case status ($P=0.14$ and $P=0.81$). However, we observed a significant interaction between DHFR genotype and PF ($P=0.03$). The odds of being diagnosed with CIN2+ were higher in women with WT/Del or WT/WT DHFR genotype and PF ≥ 10.84 ng/mL compared to women with Del/Del genotype and PF concentrations < 10.84 ng/mL (OR=2.9, 95% CI 1.3-6.6, $P=0.01$). **Conclusions:** The study identifies a subgroup of women who are at higher risk for CIN2+ when exposed to higher folate. Recommendations for folate intake based on the genetic variations of enzymes in the FMP may be necessary to reduce the adverse effects on cancer in the post folic acid fortification era.

#46

Germline Epigenetic Analysis of Six Ovarian Cancer Susceptibility Loci
Goode E, Cicek M, Armasu S, Sellers T, Tsai Y, Kalli K, Fridley B, Cunningham J

Genome-wide association studies (GWAS) of ovarian cancer have recently identified common moderate-risk alleles at chromosomes 2q31, 3q25, 8q24, 9p22, 17q21, and 19p13. A possible mechanism for these associations is that single nucleotide polymorphism (SNP) variation modifies promoter methylation at nearby genes. Thus, we assayed bisulfite-converted germline DNA obtained from pre-treatment lymphocytes of genotyped ovarian cancer cases and individually-matched (by 1-year age group) controls using the Illumina Infinium HumanMethylation27K BeadChip. Early results are available on the first set of 84 cases, 90 controls, four duplicates, four positive controls, four negative controls, and five standard laboratory replicates. Performance was quite high with only one study participant (a control) excluded due to poor separation of converted and unconverted bisulfite control probes (difference in intensity $<2,000$). Within each locus, we correlated SNP genotypes with methylation values at relevant CpG sites. At 2q31, cases with TG or TT genotype at rs2072590 were hypomethylated at HOXD1 (a homeobox transcription factor) compared to cases with GG genotype (mean beta TG/TT=0.081, GG=0.090, $p=0.034$); and at 17q21, cases with AG or GG genotype at rs9303542 were hypomethylated at SKAP1 (a T-cell adaptor protein) compared to cases with AA genotype (mean beta AG/GG=0.139, AA=0.156, $p=0.045$). Similar trends were seen among controls at these two loci. We also used logistic regression adjusted for age and methylation chip to assess the association between SNP genotype and ovarian cancer risk, with and without inclusion of the relevant methylation value. At HOXD1 rs2072590 the per-allele ovarian cancer risk of 1.34 attenuated to 1.25 with inclusion of the HOXD1 methylation value as a covariate, suggesting that the disease association may be mediated in part through methylation. Though based on a small sample, results are consistent with a role for inherited variation on germline methylation at HOXD1 and SKAP1. Methylation analysis of additional genotyped cases and controls (300 each) is underway. Correlative molecular studies, such as this, will help to elucidate mechanisms underlying associations from GWAS and assist in development of future preventive measures.

#47

Heritable long-term survival after melanoma diagnosis

L. Cannon Albright

Purpose To determine whether there are heritable factors that explain those individuals who survive decades after diagnosis of melanoma.

Methods Using a unique resource consisting of genealogy data linked to a state-wide tumor registry we identified 496 individuals diagnosed with melanoma who survived 20+ years after diagnosis. We used the Genealogical Index of Familiarity (GIF) method to compare the relatedness of these 496 individuals with the expected relatedness in the Utah population. We also compared the relatedness of these 496 individuals to the expected relatedness of all 4404 melanoma cases in the resource. Using the genealogy data, we identified all clusters (pedigrees) of long-term melanoma survivors.

Results We found evidence for significant excess relatedness of the 496 long-term melanoma survivors over the expected relatedness in the population ($p < 0.001$). We also found evidence for significant excess relatedness of the 496 long-term melanoma survivors over the average relatedness of all melanoma cases ($p < 0.001$). This suggests that the subset of long-term melanoma survivors represent a set that has significantly more evidence for familial clustering than all melanoma cases (which are already known to cluster in pedigrees). We identified over 300 clusters (pedigrees) that included between 2 and 18 related long-term melanoma survivors descended from a common ancestor. It is of interest whether these pedigrees represent known melanoma predisposition genes. Six of the 23 identified clusters that include 5 or more long-term melanoma survivors include known p16+ individuals. One additional cluster has not been mutation screened, but shows linkage to the p16 region. We have previously noted longer median survival time among p16+ cases (Cannon-Albright et al., 1994).

Conclusions We have provided evidence that the subset of melanoma cases who survive for 20+ years represent cases with stronger evidence for clustering than all melanoma cases. We have identified that some of the clusters (pedigrees) of long-term surviving cases represent p16+ pedigrees. We hypothesize that some of the other identified clusters may represent as yet unidentified segregating variants associated with predisposition to a survivable melanoma.

#48

BRCA1 promoter methylation in white blood cells and breast cancer risk.

Cloud AJ, Liao Y, Wu HC, Ferris JS, Santella RM, Terry MB.

Epigenetic mechanisms play a role in the development of cancers, including breast cancer. DNA methylation is an epigenetic change that can take place at the global genome level or the local gene-specific level. In cancer cells, global hypomethylation results in genome instability and local hypermethylation of tumor suppressor genes results in functionally silencing the gene. Promoter hypermethylation at the BRCA1 gene is common in breast tumor tissue but the prevalence of promoter methylation at this gene has not yet been established in white blood cells. We selected sisters discordant for breast cancer ($n=720$ total, 323 affected sisters, 397 unaffected sisters) from the New York site of the Breast Cancer Family Registry to assess whether the level of BRCA1 promoter hypermethylation in white blood cells is higher in those sisters with breast cancer than in those without breast cancer. We evaluated BRCA1 promoter methylation in two groups: methylation less than 1% (91% of study sample, 41% affected, 50% unaffected) and methylation equal to or greater than 1% (9% of study sample, 4% affected, 5% unaffected). We did not find a significant association in the levels of BRCA1 promoter hypermethylation and breast cancer status, after multivariable conditional logistic regression analysis controlling for age, menopausal status and parity (OR:0.9; 95% CI: 0.5-1.8). Overall, these results suggest that BRCA1 methylation in white blood cells is not associated with breast cancer.

#49

Prevalence and Age of a Mexican BRCA mutation in High-Risk Hispanic Families
Clague J, Goldgar D, Feng B, Ogaz R, Herzog J, Port D, John EM, Neuhausen SL, Weitzel JN

Purpose: Mutations in BRCA1 and BRCA2 account for 3-5% of breast cancer cases, and 15% of deleterious mutations are large rearrangements, deletions or duplications, not detectable by standard sequencing analyses. We previously suggested that BRCA mutations account for a higher proportion of breast cancers in Hispanic women compared to non-Hispanic women. We estimated the prevalence and age of the BRCA1 del ex 9-12 mutation, previously demonstrated to be recurrent in a Mexican American population.

Methods: BRCA1 and BRCA2 testing was performed for 640 unrelated probands of Hispanic origin, with a personal or family history of breast and/or ovarian cancer, who presented for genetic cancer risk assessment and were enrolled in a multi-center registry. Additionally, 587 Hispanic breast cancer cases from the population-based Northern California Breast Cancer Family Registry were screened for BRCA1 del ex 9-12. A total of 20 carriers of BRCA1 del ex 9-12 were identified from both cohorts and genotyped at 12 short tandem repeat markers, in or adjacent to BRCA1. Mutational age of BRCA1 del ex 9-12 was estimated according to previously published criteria.

Results: Among the probands from the high-risk cohort, 146 (23%) had deleterious mutations (102 in BRCA1, 44 in BRCA2), 34 (5.3%) had one or more unclassified variants, and 460 (72%) had negative results. Specifically, 18 had a BRCA1 185delAG mutation (18% of BRCA1 mutation carriers) and 11 had a del ex 9-12 mutation (11% of BRCA1 carriers); together accounting for 28% of BRCA1 mutations and 20% of all detected mutations. Including the population-based carriers, mutational age analyses estimated the BRCA1 del ex 9-12 mutation to have arisen 74 generations ago; approximately 1,480 years ago (920-2260 years). Furthermore, all of the carriers of BRCA1 del ex 9-12 were of Mexican descent.

Conclusions: To date, this is the largest study of high-risk Hispanic families in the United States and the first to demonstrate the high prevalence and age of the BRCA1 del ex 9-12 mutation in this population. Never observed in Spain or South America, and originating almost 1,500 years ago, this mutation appears to be a Mexican founder mutation and is one of the most frequent large rearrangement mutations in the world.

#51

Family history-stratified analysis of associations between 8q24 SNPs and smoking-related cancers

Tarleton HP, Park SL, Chang SC, Greenland S, Hussain SK, Liu SM, Morgenstern H, Oh SS, Tashkin DP, Zhao JK, Zhang ZF

Single nucleotide polymorphisms (SNPs) in 8q24 have been identified by genome-wide association studies (GWAS) and associated with prostate, colorectal, breast and bladder cancers. Recent functional studies have identified a role for genetic variation in the 8q24 region in transcriptional regulation of the Myc oncogene, lending support to a mechanistic model for low-penetrance heritability of cancer risk. We investigated potential associations between three 8q24 SNPs (rs1447295, rs16901979, rs6983267) and cancers of the lung (n=609), upper-aero-digestive tract or UADT (n=599), bladder (n=231), liver (n=196), stomach (n=205), and esophagus (n=213), stratified by family history of cancer in a first-degree relative (FH-FDR). We used epidemiologic and genotyping data from three case-control studies. Liver, stomach and esophageal cases and controls were 100% Han Chinese. Bladder cancer cases and controls were predominantly U.S. Caucasian (92%). Lung and UADT cancer cases and controls were U.S. multiethnic (59% Caucasian, 12% African-American, 17% Hispanic and 12% Asian-American and other). Associations were stratified on self-reported FH of any cancer and on FH of site-specific cancer. ORs and 95% CIs were adjusted for potential confounders, including age, sex, education, and tobacco smoking as well as site-specific covariates. FH-FDR was associated with cancer of the liver (OR: 3.21, 95% CI 1.86-5.53), stomach (OR: 4.87, 95% CI 2.41-9.81) and lung (OR: 1.82, 95% CI 1.26-2.63). Positive associations between rs6983267 and liver cancer (GT vs TT OR: 2.90, 95% CI 1.19-7.04) and between rs1447295 and liver cancer (AC vs CC OR: 2.45, 95% CI 1.05-5.71) were observed with FH-FDR. We found an inverse association between rs6983267 and lung cancer with FH-FDR (GT vs TT OR: 0.62, 95% CI 0.42-0.97). Among those without FH-FDR, rs6983267 was associated with liver (GG vs TT OR: 2.14, 95% CI 1.00-4.58), lung (GG vs TT OR: 1.92, 95% CI 1.01-3.67) and UADT (GG vs TT OR: 2.71, 95% CI 1.46-5.04) cancers. Nonmultiplicative joint associations between FH-FDR and 8q24 SNPs with liver, lung and UADT cancers were observed. Our results are consistent with a role for 8q24 SNPs in genetic susceptibility to liver, lung and UADT cancer and familial clustering of cancers.

#50

Effect of family history of cancer on the association between inflammation SNPs and esophageal, stomach and liver cancers.
Tarleton HP, Idemundia FE, Wallar GM, Oh SS, Chang SC, Zhang, ZF
Chronic inflammation has been implicated in carcinogenesis. Stomach and liver cancers have infectious etiologies and often cluster in families, however, the potential for a joint role of genetic susceptibility to inflammation and a family history of cancer has not been investigated. We examined the effect of self-reported family history of cancer (FH-FDR) on the association between inflammation-related single nucleotide polymorphisms (SNPs) and esophageal, stomach and liver cancers. We used data from a Chinese population-based case-control study of 218 esophageal, 206 stomach, and 204 liver cancer cases and 415 controls. We genotyped 11 SNPs in 8 inflammation-related genes and investigated statistical associations using unconditional logistic regression. All odds ratios (ORs) and 95% confidence intervals (CIs) were adjusted for age, education, gender, tobacco smoking, alcohol consumption and BMI. Aflatoxin and hepatitis B were included in the adjusted model for liver cancer and Helicobacter pylori was included in the adjusted model for stomach cancer. TNF rs909253 was associated with liver cancer in those with FH-FDR (CT vs TT, OR 3.18; 95% CI 1.15-8.78). IFNG rs2069705 was associated with liver cancer (CT vs CC, OR 2.49; 95% CI 1.01-6.17) and with stomach cancer (CT vs CC, OR 3.04; 95% CI 1.23-7.50) in those with FH-FDR. P-values for tests of homogeneity for these associations were <0.05, consistent with differences in the associations across strata of FH-FDR. An association between IL10 rs1800871 and stomach cancer was suggested in those with FH-FDR (CT vs TT, OR 2.50; 95% CI 0.95-6.59). We were unable to detect associations in our FH-FDR-stratified analysis of inflammation-related SNPs and esophageal cancer. In liver cancer, the interaction OR for the dominant model of TNF rs909253 and FH-FDR was 3.50 (95% CI 1.20-10.2). We did not detect non-multiplicative joint association of IFNG rs2069705 and FH-FDR in liver or stomach cancers. Our observations are consistent with a model for heritable susceptibility to inflammation as a potential driving force behind familial clustering of infection-related cancers. Our findings suggest a pedigree analysis of these SNPs in first and second-degree relatives of stomach and liver cancer cases as an appropriate next step.

#52

Associations between BMI change and lung and upper aerodigestive tract cancers (UADT)

Tarleton HP, Park SL, Zhu WM, Lee YCA, Morgenstern H, Greenland S, Tashkin DP, Papp J, Sinsheimer J, Hashibe M, Mack T, Zhang ZF

Previous studies reported an inverse association between BMI and lung cancer, which may be due to lower BMI in smokers. Examining BMI change and smoking may clarify these findings. We used data from a population-based case-control study conducted in Los Angeles (611 lung and 604 UADT cancer cases, 1040 controls) to investigate the relationship between BMI change and lung and UADT cancers. BMI change was defined by the difference in self-reported BMI at age 21 and at one year prior to interview or diagnosis, over time elapsed. Odds ratio (ORs) and 95% confidence intervals (CIs) were adjusted for age, sex, race, education, smoking and energy intake. For UADT cancer, we additionally adjusted for drinking status. All ORs are for BMI increase (change>25%) compared to stable BMI (≥5% loss or ≤5% gain). Similar to previous reports, we found inverse associations between BMI at one year prior to interview or diagnosis and lung and UADT cancers. BMI increase was inversely associated with lung cancer in the total population (OR 0.58; 95% CI 0.39-0.87) as well as in current and former smokers. With UADT cancer, we observed an inverse association with BMI increase in the total population (OR 0.57; 95% CI 0.41-0.80) and in current smokers only. After stratifying on pack-years (py), among those who smoked >20 py, an inverse association was observed for BMI increase with lung cancer (OR 0.34; 95% CI 0.18-0.64) and with UADT cancer (OR 0.28; 95% CI 0.13-0.57). In order to investigate the influence of smoking cessation, we stratified former smokers on years since quitting. The inverse association between BMI increase and lung and UADT cancers remained in those with ≤3 quit years (qy) (OR 0.40; 95% CI 0.22-0.70 and OR 0.30; 95% CI 0.16-0.57, respectively). BMI was differentially distributed by smoking and disease status. Adjusting our models by current BMI reduced the magnitude of the association with lung cancer by 22%. However, we did not observe attenuation with UADT cancer, likely due to a higher proportion of never smoking cases with less variance in BMI change, compared to controls. Our findings suggest that the inverse associations between BMI change and lung and UADT cancers may be a result of the interrelationship between tobacco smoking and cessation on weight gain.

#53

The Role of Vitamin D in the Prognosis of Prostate Cancer.

A. Woloszynska-Read, L. Tian, J. Marshall, C. Johnson, D. Trump

In our study we hypothesize that vitamin D insufficiency is associated with aggressive phenotypes of prostate cancer. Low levels of vitamin D are associated with chronic illnesses including cancer. Many Americans are vitamin D deficient, which may contribute to development of chronic diseases such as prostate cancer. To test this we measured 25-hydroxy vitamin D in 409 men diagnosed with prostate cancer at Roswell Park Cancer Institute. Serum vitamin D levels were measured by Heartland Assays, Inc. using DiaSorin assay. Our initial analysis found that the mean value of vitamin D levels in the 409 subjects was 27.65 ng/ml (STD 11.997, minimum value 4.5, and maximum value 82.1), indicating vitamin D deficiency in a large portion of patients. Since vitamin D production in the skin is dependent on sun exposure, we found that there were significant seasonal variations in serum vitamin D levels, with higher summer and autumn values when compared to winter and spring measurements. We then used PSA at the time of diagnosis, Gleason score, and pathological staging to examine the relationship between these prognostic factors and vitamin D serum concentrations. We did not see significant correlations between serum concentrations of vitamin D and the analyzed parameters, but we noted a trend indicating that patients with lower levels of vitamin D at diagnosis had tumors with higher Gleason scores and higher systemic PSA levels. African American (AA) men are more likely to present with vitamin D deficiency than European American (EA) men due to differences in skin pigmentation, which may account for existing racial health disparities in men with prostate cancer. We have observed significant ($P < .0001$) differences in vitamin D serum levels between AA (24 patients, with mean value of 16.48 ng/ml) and EA (385 patients, with mean value of 28.38 ng/ml) diagnosed with prostate cancer. This result confirms that AA men with prostate cancer often suffer from vitamin D deficiency or severe deficiency. Thus, we intend to extend this study to a larger number of African American men diagnosed with prostate cancer, in order to examine the role of low vitamin D levels in disease aggressiveness.

#55

Comparison of the Problems Experienced by Hispanic and Non-Hispanic Mothers of Children Recently Diagnosed with Cancer

Devine, K.; Sahler, O.; Katz, E.; Dolgin, M.; Askins, M.; Butler, R.; Fairclough, D.; Noll, R.; Phipps, S.; & Sherman-Bien, S.

Purpose: The purpose of this study was to compare the prevalence and intensity of problems reported by Hispanic and non-Hispanic mothers of children who were newly diagnosed with cancer.

Method: Data were collected as part of a randomized clinical trial evaluating the effectiveness of a maternal problem-solving skills training (PSST) intervention program at four children's hospitals across the United States. Baseline data were collected from mothers ($n = 405$) regarding problems they had faced during the past week (Current Problems Inventory-Revised, an empirical listing of potential problems experienced by mothers of newly diagnosed childhood cancer patients), demographic information, and several measures of maternal distress (Beck Depression Inventory-II, Impact of Event Scale-Revised, Profile of Mood States). ANOVAs were used to examine differences between mothers of different ethnic backgrounds in the number and intensity of problems experienced. Pearson correlations were used to examine associations among current problems and maternal distress.

Summary of Results: Although Hispanic and Non-Hispanic mothers reported a similar total number of problems experienced in the past week (on average 28 out of 45 possible problems were endorsed), Hispanic mothers reported experiencing problems more intensely, $F(1, 397) = 6.08$, $p = .01$. Specific domains identified as more intense included managing the ill child's needs, $F(1, 311) = 25.50$, $p = .00$; managing the needs of other immediate family members, $F(1, 311) = 4.20$, $p = .04$; and managing daily activities, $F(1, 397) = 9.05$, $p = .00$. The number and intensity of problems experienced by mothers were positively and significantly correlated with all measures of maternal distress (r s ranging from .11 to .78, p s ranging from .00 to .03).

Conclusions: Mothers of children newly diagnosed with cancer report a similar number of current problems regardless of ethnic background, although the intensity of problems in certain areas varies by ethnic group. A greater number and intensity of problems experienced is associated with greater concurrent distress, and the Current Problems Inventory may be useful for identifying targets for intervention to reduce associated distress.

#54

Cancer preventive behaviors among older urban African American current vs. former smokers

Wilson-Frederick, S; Phelan, D; Bone, L; Shapiro, G; Wenzel, J; Pollack, C; Johnson, L; Garza, M; and, Ford, J

Objective: To determine the association between smoking status (current vs. former smokers) and nutritional behaviors, such as consumption of fruits and vegetables or use of multivitamins, among African American Medicare beneficiaries in Baltimore, MD. **Methods:** This analysis included 1,115 current and former smokers, who completed a baseline survey in the Cancer Prevention and Treatment Demonstration study in Baltimore, MD (CPTD). The CPTD is an ongoing, national demonstration project examining the effect of patient navigation on adherence to cancer screening among racial and ethnic minorities. Eligible participants were African American Baltimore residents who were current or former smokers, currently enrolled in Medicare Parts A and B, and not known to have cancer. This secondary data analysis focused on measures of tobacco use, nutritional behaviors, demographic characteristics, and cancer screening adherence. **Results:** Of the 1,115 study participants, 75.5% were former smokers and 24.5% were current smokers. Compared to former smokers, current smokers were significantly less likely to report Medigap coverage (20.7% vs. 79.3%, $p=0.002$) and to complete high school (20.8% vs. 79.2%, $p=0.022$). On average, current smokers had a lower body mass index ($27.7 \text{ kg/m}^2 \pm 6.0$ vs. $30.7 \text{ kg/m}^2 \pm 6.7$; mean, SD; $p<0.001$), consumed fewer fruits and vegetables per day (1.9 ± 1.6 vs. 2.4 ± 1.7 ; mean, SD; $p<0.001$), consumed more alcoholic beverages per day (1.2 ± 1.9 vs. 0.6 ± 1.2 ; mean, SD; $p<0.001$) compared to former smokers. A lower proportion of current smokers reported undergoing a colonoscopy or sigmoidoscopy in the last ten years (72.3% vs. 83.4%, $p < 0.001$). Using multivariate logistic regression and controlling for known confounders, current smoking status (versus former smoking status) lowered the adjusted of daily fruit and vegetable consumption (OR = 0.74; 95% CI 0.74-0.91). **Conclusion:** These findings suggest that among urban African American older adults, smoking cessation is associated with healthier cancer-related behavior profiles. The co-occurrence of multiple risk factors among current smokers requires multi-dimensional approaches to interventions to reduce cancer and non-cancer related morbidity and mortality.

#56 Navigation Intervention of the Cancer Prevention Demonstration Project in the Intermountain West

Lee Y-C.A., Burt R., Marsh S., Rupper R.W., Alder S.C

American Indians (AIs) have lower survival than any other racial/ethnic group in the nation for many types of cancer, and those residing in the rural Intermountain West have higher reported cancer rates than their US counterparts for colon, cervical, breast, lung, and prostate cancers. A 4-year demonstration project focused on patient navigation to facilitate cancer screening and appropriate care among rural AIs in the Intermountain West enrolled in Medicare Parts A and B. AIs were recruited from the Navajo Nation and from tribal lands in Montana, including the Blackfeet, Fort Peck, Rocky Boy, and Fort Belnap Reservations. Patient navigation was compared to standard education using a geographically-based cluster randomized design to assess whether it will improve cancer screening, cancer knowledge, and health care satisfaction. During September 2006-December 2010, the baseline, annual, and exit questionnaires were used to assess demographic characteristics, cancer screening history for cancer, barriers to adherence to screening guidelines, cancer knowledge, general health status, and access to care. Out of 1804 patients recruited, 1744 were eligible for the initial screening to collect baseline information. Annual follow-up data were collected from 593 of 815 participants in the navigation group and 635 of 929 in the education group. In the preliminary analysis, chi square tests were used to compare categorical data between the patient navigation and education groups. No improvement in cancer screening proportions between the navigation and education groups was observed by the first annual assessment, possibly due to the short time span. However, compared to the education group, a higher proportion of the patient navigation group reported being "happy with a personal doctor or nurse" (75.04 vs. 66.45%, $p=0.004$), or that "getting a referral to a specialist needed" (77.04 vs. 66.08%, $p<0.001$) or "getting the necessary care" (84.35 vs. 71.73%, $p<0.001$) was not a problem. The preliminary results suggest navigation demonstrated benefits over the first year of implementation. Further analyses will be performed to assess changes in cancer screening rates between these two groups over the entire project span once the exit data are completed in December 2010.

#57

Racial/Ethnic Disparities in Timely Female Breast Cancer Treatment Differs by Mode of Detection

Silva A, Rauscher GH

Purpose: Female breast cancer patients with delayed care are more likely to be diagnosed at a later stage and thus experience higher treatment morbidity, and possibly greater mortality. This study assesses the extent to which there is a racial/ethnic disparity in the time from first medical consultation to first treatment, and whether this disparity is modified by mode of detection (radiologic vs. symptomatic/clinical detection).

Methods: Data were obtained from a racially/ethnically diverse sample of 989 female patients living in Chicago, age 30 to 79 years, who were diagnosed with first primary in situ or invasive breast cancer in 2005-2008. Race/ethnicity, age, mode of detection, and medical and treatment dates were derived from interviews. Prolonged time to treatment was defined as a time from first medical consultation to first treatment that exceeded 90 days. Logistic regression using marginal standardization was employed to estimate age-adjusted risk differences (RDs), overall and stratified by mode of detection. Potential mediators of the disparity in prolonged time to treatment (e.g., health care access and SES factors) were not considered.

Results: Minority (Black and Hispanic) women were more likely to experience a prolonged time to treatment compared to non-Hispanic (nH) White women (31% vs. 15%, respectively; RD=0.16, 95% CI: 0.10, 0.21). The disparity was nearly twice as large among women with radiologically detected cancer (RD=0.21, 95% CI: 0.14, 0.28) than among those with symptomatically/clinically detected cancer (RD=0.11; 95% CI, 0.03, 0.19) (Difference in RDs=0.10, 95% CI: 0.003, 0.22).

Conclusion: Minority breast cancer patients face longer time to treatment than nH Whites. The disparity is less when the tumor is symptomatically/clinically detected versus radiologically detected. It may be that minority patients with symptomatically/clinically detected cancers present with tumors that are more progressed and thus are more likely to be triaged ahead of other patients.

#58

Colorectal Cancer Screening Among Adults with Physical Disabilities

Jones R, Wiseman K, Aggarwal A, Lafata J.

Purpose: We examined colorectal cancer screening (CRCS) prevalence among age-eligible adults and the extent to which a physical limitation requiring special equipment was associated with screening adherence using the 2008 Behavioral Risk Factor Surveillance System data. **Methods:** Respondents ages 50-85 years (n=246,138) answered CRCS, disability, and demographic questions. CRCS adherence was coded to reflect current guidelines (i.e., fecal occult blood test (FOBT) in last year, sigmoidoscopy in last 5 years, or colonoscopy in last 10 years). People with physical limitations requiring the use of special equipment (e.g., cane, wheelchair) were considered physically disabled. Descriptive statistics were calculated and multivariate logistic regression accounting for the probabilistic sampling scheme was used to assess the association of being physically disabled with CRCS adherence. Age, race, gender, education level, income, insurance status, marital status, and seeing a doctor in the last year were included in the model as covariates. **Results:** Approximately 39% of respondents were ≥65 years, 53% were female, and 82% were white. Overall, 10% required special equipment for a physical limitation and 62% of those had undergone CRCS screening per guidelines. In the multivariate model, the odds for being adherent to CRCS recommendations was higher for those with disabilities requiring special equipment (odds ratio [OR] = 1.21, 95% confidence interval [CI]: 1.14-1.29) than for those without such disabilities. Similar associations were observed for FOBT (OR = 1.18, CI: 1.10-1.27) and endoscopy (OR = 1.19, CI: 1.12-1.27). In addition, those with higher education levels, higher income, health insurance coverage, a routine check-up in the last year, and married/partnered individuals had greater odds (p<0.05) of being adherent than their counterparts. **Conclusions:** While previous evidence suggests that those with disabilities are less likely to have preventive services, our findings indicate that those with physical disabilities requiring special equipment are more likely to be screened for colorectal cancer per recommendations compared to those without such physical limitations.

#59

Racial Differences in Colorectal Cancer Screening Barriers

Jones R, Vernon S, Aggarwal A, Woolf S.

Purpose: We assessed racial differences in barriers to fecal occult blood testing (FOBT) and colonoscopy screening reported by patients at twelve Virginia family practice clinics. **Methods:** A total of 3,151 randomly selected African Americans and whites aged 50-75 years rated 19 and 21 barrier items, respectively, for each of two recommended tests. People aged 65-75 years and African Americans were oversampled. Responses were coded on a 5-point Likert-type scale where higher scores reflected greater barrier endorsement. The rank order of the barriers cited by African American and white patients were compared taking into consideration the probabilistic sampling scheme and barrier scores were adjusted for gender, age, education, income, insurance coverage, and screening adherence. **Results:** Approximately 40% of respondents were ≥65 years, 32% were African American, and 73% had undergone colorectal cancer (CRC) screening per guidelines. Three of the 6 most important barriers to FOBT were the same for African Americans and whites (i.e., no physician recommendation, not wanting to handle stools, and not knowing they should have FOBT); however, the rank-order differed. The other 3 barriers differed by race. African Americans did not want to keep the stool cards in the house or mail the kits back and were worried about what the FOBT might find whereas whites cited feeling fine, not having a family history of CRC, and insurance not covering the test as reasons for not having FOBT. The majority of FOBT barrier scores were higher for African Americans than whites (p<0.02). The 5 most important colonoscopy barriers were identical for African Americans and whites, but rank-order differed. Not wanting to do the bowel preparation and not wanting a tube inserted in the rectum were the top barriers to colonoscopy, regardless of race. Of the top 5 colonoscopy barriers, only the leading barrier score differed significantly by race with whites citing not wanting to do the preparation as a greater barrier than African Americans (2.79 versus 2.43, p<0.0001). **Conclusions:** Our findings suggest that interventions and promotional materials could help address disparities in CRC screening by targeting the modality-specific barriers that predominate by race.

#60

THE DETERMINANTS OF COLORECTAL CANCER SURVIVAL DISPARITIES

Pinheiro, P.; Symanowski, J.; Moonie, S.; Chino, M.; Alpert, P.

PURPOSE OF THE STUDY: Despite overall decreasing incidence and mortality rates for Colorectal Cancer (CRC), disparities in CRC survival are observed between racial/ethnic groups. This is in part due to lower CRC screening among ethnic minorities. The purpose of this study was to ascertain the determinants of CRC racial/ethnic survival disparities in Nevada. **METHODS:** We examined a cohort of men and women [n=11,459] who were diagnosed with CRC between 1995 through 2006 and registered in the Nevada Central Cancer Registry. Life-tables and Cox proportional hazard regressions were used to assess cause-specific survival rates as well as prognostic factors for survival. The five-year age-adjusted survival rates were compared for each racial/ethnic group for the diagnosis periods 1995 – 1998 and 1999 – 2001. **RESULTS:** It was found that 21.6% of Blacks were diagnosed with distant stage disease compared to 17.5% among Whites. Blacks had also a high proportion of proximal colon tumors (49.8%), which are associated with lower survival. Crude analyses yielded that Blacks had a 20.6% higher risk of CRC death compared to Whites [HR = 1.21, C.I.95% = 1.05 – 1.39]. When stage of diagnosis, gender, age, health insurance type, period of diagnosis, and tumor sub-location were added in a multivariate Cox proportional model, stage of diagnosis was the single most important prognostic factor [distant vs. localized stage HR = 11.03 (C.I.95% = 9.71 – 12.53)]. After adjustment for patient and tumor characteristics, Blacks and Hispanics had an overall increased risk of death in relation to Whites, HR=1.24 (C.I.95% = 1.07 – 1.43) and 1.16 (C.I.95% = 1.00 – 1.34) respectively. **CONCLUSIONS:** Race-ethnicity is a persistent determinant of survival disparities in Nevada even after adjusting for common demographic and tumor factors. Further determinants for these survival disparities, such as course of treatment should be investigated. Additionally, more public health intervention programs should tailor CRC screening awareness towards minorities as well as ensuring equal accessibility to health care and quality treatment.

#61

Incidence and Mortality Rates of Anal Cancer among Men in Puerto Rico and the United States

Colon-Lopez, V; Ortiz AP; Soto M; Suarez E

Background: Anal HPV infection with oncogenic HPV genotypes is a key causal precursor for anal cancer and its precursor lesion known as anal intraepithelial neoplasia (AIN). In an era of recent world-wide introduction of a prophylactic vaccine for HPV in men, characterizing the epidemiology of vaccine preventable diseases will further evaluate the impact of this vaccine in the reduction of anal cancer.

Objectives: To compare the age-adjusted incidence and mortality rates of anal cancer in Puerto Rico (PR) with that of non-Hispanic whites (NHW), non-Hispanic blacks (NHB) and Hispanics in the US.

Methods: Age-standardized rates [ASR(World)] were calculated based on cancer incidence and mortality data from the PR Cancer Central Registry and Surveillance, Epidemiology and End Results (SEER) program, using the direct method and the world population as the standard.

Results: Age-standardized incidence rates of anal cancer increased significantly ($p < 0.05$) in NHW (APC= 3.54%) and remained constant ($p > 0.05$) in all other racial/ethnic groups. For 2000-2004, the age-standardized incidence rates of anal cancer in these groups ranged from 0.6 per 100,000 in USH to 1.6 per 100,000 in NHB men. During this period, PR men had 23% higher risk of anal cancer as compared to Hispanic men, although this association was not statistically significant (SRR: 1.23, 95% CI= 0.90-1.68). Significant lower incidence of anal cancer was observed in men in PR men as compared to NHW (SRR:0.65, 95% CI= 0.51-0.81) and NHB (SRR: 0.48, 95% CI= 0.36-0.63). Meanwhile, mortality trends remained constant in all racial/ethnic groups ($p > 0.05$). For 2000-2004, the age-standardized mortality rates of anal cancer ranged from 0.06 per 100,000 in USH to 0.12 per 100,000 in NHW. Mortality rates were also slightly higher for men in PR as compared to Hispanics (SRR: 1.05, 95% CI = 0.90-1.68). Men in PR had significant lower risk of death than NHW (SRR:0.55, 95% CI=0.22-1.00) and NHB (SRR:0.41, 95% CI= 0.16-0.78).

Conclusions: Our results support racial/ethnic differences in anal cancer incidence and mortality. Given the increasing incidence trends in anal cancer, vaccination programs in men should be developed, particularly among high-risk groups.

#62

Disparities in lung cancer in the Nepalese population

Hashibe M, Siwakoti B, Wei M, Thakur BK, Pun CB, Shrestha BM, Burningham Z, Lee YA, Sapkota A

Lung cancer is the most common cancer among men and the third most common cancer among women in Nepal, where cancer patients remain among the most severely medically underserved. Purpose: The purpose of the study is to examine disparities in lung cancer by race/ethnicity, education, marital status, urban vs. rural residence and socioeconomic index in the Nepalese population. Methods: We conducted a case-control study of lung cancer in Nepal, including 157 lung cancer cases and 238 controls. The lung cancer cases were recruited from the main cancer hospital in Nepal, the B.P. Koirala Memorial Cancer Hospital (BPKMCH). Controls were frequency matched by age (+/- 5 years), sex, and residence area. The source of controls is visitors of other non-lung cancer patients. Results: We observed differences in lung cancer risk by ethnicity; the Rai, Limbu and Magar groups had a higher risk of lung cancer than Brahmin (Odds Ratios (OR)=2.78, 95% Confidence Interval (CI)=1.28-5.99 with adjustment for age, sex, education and packyears of tobacco smoking). We did not observe lung cancer risk differences by religion or urbanicity. An inverse association was observed between level of education and lung cancer risk (p for trend=0.0099). We observed greater lung cancer risk among individuals who were not married compared to those who were married (2.39, 95%CI=1.13-5.06), and individuals who lived in the hilly regions (OR=1.65, 95%CI=1.02-2.69) relative to individuals who lived in the plain region. We observed higher average packyears among controls with lower education, with lower socioeconomic index, and who lived in the hilly regions. Additionally, there were greater proportions of late stage cancers among women compared to men, in the Rai/Limbu/Magar ethnic groups, in individuals with lower education and in older age groups. Conclusion: In summary, within the medically underserved population of Nepal, disparities in lung cancer risk were observed by race/ethnicity, education, marital status, socioeconomic index and by geographic region of residence (hilly, plains and mountains). Further research on disparities in lung cancer in Nepal is warranted, in order to develop effective prevention efforts against lung cancer.

#63

Descriptive epidemiology of testicular cancer in the high risk population of Utah Hashibe M, Burningham Z, Stroup A, Bishoff J, Richiardi L, VanDerslice J
Introduction. The incidence rate for testicular cancer in Utah is the highest in the United States, compared to other SEER cancer registries (8.3 per 100,000). The highest incidence rates in the world are observed in Scandinavian countries such as Denmark (12.2 per 100,000) and Norway (11.3 per 100,000). The overall incidence in the US is 5.1 per 100,000, but more testicular cancer cases occur each year in the United States (8,090 cases) than in all of Northern Europe combined (3,442 cases).

Purpose of study. To investigate in the Utah population compared to other SEER cancer registry sites: a) the distribution of age, race, stage and histology, b) the incidence rate trends, and c) 5-year survival of testicular cancer.

Methods. We analyzed the SEER data on testicular cancer patients (1973-2007) with the using the SEER*stat software. Time trend analysis was conducted with the Joinpoint Statistical Regression program, which calculates annual percent change (APC) in incidence.

Results. From 1973 to 2007, a total of 1,826 testicular cancer cases were diagnosed in Utah. The 20-39 year age group accounted for the majority of testicular cancer cases in Utah (69.1%). Utah and Iowa had the largest proportion of testicular cancer patients who were white (98.4% and 98.6% respectively). Testicular cancer patients in Utah also had the largest proportion of localized stage (69.5%) and nonseminoma histology (45.6%). The highest incidence rate of nonseminomas was observed in Utah (6.2 per 100,000). The testicular cancer incidence has been increasing from 1975 to 2007 in all SEER cancer registry areas with a range of 0.6% to 2.4% APC, with an APC of 1.6% in Utah. Five-year survival was the lowest in Utah (93.1%) compared to other cancer registries, and in particular for nonseminoma patients in Utah (87.7%).

Conclusions. We observed unique characteristics of testicular cancer patients in Utah, including higher proportions of European ethnic origin, nonseminomas, and localized stage. Five-year survival was lower compared to patients from other SEER cancer registries. Further studies are needed to elucidate why there are such differences and whether there are any risk factors specific to the testicular cancer patient population in Utah.

#64

The association between atopy, cancer, and single-nucleotide polymorphisms of inflammation-related genes.

S. Oh, S. Chang, C. Cordon-Cardo, S. Greenland, L. Kheifets, Le A, Y. Lee, J. Mao, H. Morgenstern, L. Mu, A. Pantuck, S. Park, J. Rao, D. Tashkin, N. You, Z. Zhang.

The association between allergy and various cancers has been hypothesized to be mediated by the immune system's enhanced ability to detect and eliminate tumors. We used two case control studies to investigate the hypothesis that hay fever and asthma are inversely associated with cancers of the lung, upper aero-digestive tract (UADT), bladder, and prostate. We also incorporated 10 genetic susceptibility markers from 7 inflammation-related genes to test the hypothesis that inflammatory SNPs mediate and modify the inverse association between allergy and cancer. We included histologically confirmed incident lung (n = 611) and UADT (n = 601) cancer cases from a population-based case control study in Los Angeles plus age- and sex-matched controls (n = 1040) along with pathologically confirmed cases of bladder (n = 227) and prostate (n = 148) cancers and their controls (n = 211) from Memorial Sloan-Kettering Cancer Center. Compared to individuals with neither physician-diagnosed asthma nor hay fever, and after adjusting for age, gender, ethnicity, education, and smoking, cancer was less frequent among subjects with both asthma and hay fever for lung (odds ratio [OR] = 0.51, 95% confidence interval [CI]: 0.28-0.95), and UADT (OR = 0.38, 95% CI: 0.18-0.78) cancers. Individuals with both asthma and hay fever were less likely to have adenocarcinoma of the lung with (OR = 0.39, 95% CI: 0.17-0.88). A positive association was found among individuals with at least one allergic condition and bladder cancer (OR = 2.47, 95% CI: 1.01-6.05). Lung cancer was less common among individuals with at least one wild type IL10 rs1800871 allele (OR = 0.59, 95% CI: 0.30-1.18), but not among individuals homozygous for the variant allele (OR = 0.95, 95% CI: 0.08-11.58). In our combined sample of 1587 cases and 1251 controls, cancer was less common among individuals with both asthma and hay fever (OR = 0.61, 95% CI: 0.39-0.94), and the association strengthened after excluding bladder cancer cases (OR = 0.56, 95% CI: 0.36-0.88). In our study, we observed inverse associations between cancer and a history of asthma and hay fever, and specifically for cancers of the lung and UADT. The inverse association for lung cancer may potentially be modified by the IL10 rs1800871 polymorphism.

#65

Inflammatory Bowel Disease and Survival following Colorectal Cancer Diagnosis: Preliminary Results from the Seattle Colon Cancer

Adams S, Newcomb P, Coghill A, Passarelli M, Phipps A

Purpose: Inflammatory bowel disease (IBD), comprising ulcerative colitis (UC) and Crohn's disease (CD), substantially increases risk of colorectal cancer (CRC) incidence. This study investigated whether the survival of individuals with IBD who are diagnosed with CRC (IBD-associated CRC) differs from that of individuals diagnosed with sporadic CRC.

Methods: Epidemiological, clinical, and follow-up information on cases of sporadic and IBD-associated CRC was obtained from the Colon Cancer Family Registry (Colon CFR) Seattle site. IBD-associated cases were identified from self-report of earlier physician diagnosis of UC or CD obtained at Colon CFR enrollment. Ten sporadic CRC cases were randomly selected for each IBD-associated case.

Individuals with familial adenomatous polyposis or prior CRC diagnoses were excluded. Cox proportional hazards regression was applied to estimate hazard ratios (HRs) and 95% confidence intervals (CIs) of all-cause mortality, comparing IBD-associated to sporadic CRC, adjusted for age at CRC diagnosis and sex.

Results: 81 IBD-associated CRC cases and 779 sporadic cases from the Seattle Colon CFR were included in this analysis. Of these, 25 IBD-associated and 254 sporadic cases were known to be deceased after a median follow-up time of 5.7 and 6.0 years from CRC diagnosis, respectively. The distribution of stage at CRC diagnosis did not differ between sporadic and IBD-associated CRC cases (Chi-squared $P>0.1$). Hazard of death did not differ between IBD-associated and sporadic CRC cases (log-rank $P=0.8$; adjusted HR=1.05, 95% CI: 0.68-1.62), and this finding did not vary substantially between individuals with local or distant CRC at diagnosis.

Conclusions: These results suggest that patients with IBD who develop CRC have a similar survival experience as CRC patients without IBD. Future studies will expand these findings to include all Colon CFR sites, verify self-reported IBD from medical records, and investigate the relationship between CRC survival and CRC surveillance among patients with IBD.

#66

Associations of sarcopenia and obesity with prognosis in a cohort of breast cancer survivors: the HEAL Study. Villasenor, A., McTiernan, A., Ballard-Barbash, R., Ambros, A., Bernstein, L., Baumgartner, K.B., Baumgartner, R., Neuhauser, M.L.

Obesity is associated with poor breast cancer prognosis, but little is known about whether specific body composition phenotypes, such as sarcopenia (depleted lean muscle mass), influence breast cancer prognosis. We examined associations of sarcopenia (with and without excess body fat) among 472 women with incident breast cancer participating in the Health, Eating, Activity, and Lifestyle (HEAL) Study. Lean muscle mass and body fat were assessed using dual x-ray absorptiometry scans conducted 5 mo post-diagnosis. For lean muscle mass, we calculated appendicular lean muscle mass (kg) divided by stature squared (m^2) defining sarcopenia as $<5.45 \text{ kg}/m^2$. Body fat percentage was dichotomized as $>38\%$ (obese) or $<38\%$ (lean), per standard cutpoints. Measures yielded 4 phenotypes: sarcopenic obese (SO), sarcopenic lean (SL), non-sarcopenic obese (NSO) and referent, non-sarcopenic lean (NSL). Prognostic outcomes were ascertained from the Surveillance, Epidemiology and End Results registries (NM and Western WA) and medical records. Cox proportional hazards models tested associations between body composition phenotypes and breast cancer-related events (recurrence, new primary or death due to breast cancer) and total mortality. Women were a mean age 58 yrs, mean (SD) BMI was $26.1(5.4) \text{ kg}/m^2$, and 362 (76.9%) were stage II and 109 (23.1%) were stage IIIa. Mean follow-up was 6.3 yrs; 68 women had any breast cancer-related event and 85 women died from any cause. In models adjusted for age, menopause, stage and treatment, women with SO, SL and NSO had non-significant increased risks for breast cancer-related events (HR=1.53, 95%CI 0.58-4.60; HR=1.33, 95%CI 0.58-3.06; HR=1.18, 95%CI 0.68-2.06, respectively) vs. NSL women. We found an increased risk of death in SL women (HR=2.04; 95%CI 1.03-5.02) and a non-significant increased risk among SO women (HR=1.61; 95%CI 0.73-3.58) vs. NSL women, after adjustment for race, stage, waist size, treatment and recurrence/new primary. Women with any sarcopenia had an increased risk of a breast cancer-related event (HR=1.34, 95%CI 0.66-2.71) and death (HR=2.12; 95%CI 1.19-3.78). Sarcopenia, with or without excess body fat, is associated with 2-fold increased risk of mortality and may be associated with subsequent breast cancer-related events.

#67

An Internet-based Survey of Colorectal Cancer Survivors' Health Goals and Patient Characteristics

Palmer N, Bartholomew K, Basen-Engquist K, Vernon S, Naik A

Purpose: To explore associations between colorectal cancer (CRC) survivors' health goals and patient characteristics.

Methods: We conducted a cross-sectional descriptive study using an Internet-based survey of CRC survivors. We recruited participants through 12 cancer survivorship organizations and events. Participants had to have completed treatment for CRC and be disease-free. We assessed survivors' health goals and patient characteristics, including health-related quality of life, social support, and clinical and demographic characteristics. As appropriate, we used Fisher's exact tests and t-tests to evaluate associations between health goals and patient characteristics.

Results: A total of 125 people initiated the survey and 87 completed it. The majority of participants were White females with a mean age of 52 years. Participants were on average 1.3 years post-treatment and the majority received a combination of surgery and chemotherapy. Compared to younger CRC survivors, older survivors were significantly more likely to report goals pertaining to managing clinical issues, e.g., an ostomy ($p=0.014$), treatment side effects ($p=0.021$), follow-up care ($p=0.035$), mental limitations ($p=0.001$), and co-morbidities ($p=0.001$). Survivors who identified the goal to manage or get rid of pain had significantly more co-morbidities ($p=0.017$), lower social support ($p=0.036$), and lower quality of life ($p<0.001$). Similarly, survivors who identified the goal to manage other diseases or conditions also had more co-morbidities ($p<0.001$) and lower quality of life ($p<0.001$).

Conclusions: Many CRC survivors reported goals that were clinical in nature versus health-promoting, indicating patients are still dealing with many health issues post-treatment. Some survivors may also have problems achieving health-promoting goals due to competing clinical goals (e.g., being physically active versus managing pain) or lack of social support. These patients may require additional assistance and resources to overcome barriers to engaging in health-promoting behaviors. Future intervention studies could incorporate problem-solving strategies to help patients resolve clinical issues in order to move forward with health-promoting behaviors.

#69

Using web-based resources to address the limitations of recruiting through tumor registries

Stolley M, Arroyo C, Seltzer R, Davis R, Schmidt M, Dilley K, Henderson T, Sharp L

Purpose: Using tumor registries to recruit survivors to research studies is common practice. However, these data are limited for long-term survivors, those who are non-white and young adults who are more likely to be mobile. Strategies to secure accurate contact information are needed to meet study recruitment goals.

Methods: The Chicago Healthy Living Study is a cross-sectional observational study that aims to describe and compare the health behaviors of 450 African-American (AA), Latino and white adult childhood cancer survivors to each other and to a diverse non-cancer comparison group. Survivors are identified and initially contacted using registry data from four treating institutions in Chicago. The recruitment plan includes sending a letter to the address provided in the tumor registry and then, if the survivor has not responded, following up two weeks later with a phone call. Results: Only 418 of 1343 survivors (388 AA, 360 Latino, 430 white, 165 other/unknown) contacted were located and reached using the information contained in a hospital registry; these were predominantly whites (82 AA, 110 Latino, 226 white). Registry addresses and phone numbers were outdated for the majority of non-white survivors. To find updated information, paid web-based searches were initially used. These searches, however, were costly and produced no better results than an extensive web-based protocol developed by our research team. Since implementing this protocol we have successfully located and reached 201 survivors (87 AA, 64 Latino, 50 white), of which 116 were enrolled (50 AA, 40 Latino and 26 white). Recently we began to include social networking sites (SNS) in our searches for minority survivors and found that 58% of 366 survivors searched (204 AA, 162 Latino) had My Space or Facebook pages. Our recruitment plan, thus, now includes letters to found addresses, as well as private messages to survivors' SNS pages. A flow chart and details of the web-based protocol, content of SNS messages, as well as further descriptions of recruitment strategies once survivors or their relatives are located will be presented.

Conclusion: Web-based approaches are an important resource to integrate into cancer survivor recruitment and retention efforts.

#68

Evaluating an imaging biomarker of cardiovascular (CV) disease in childhood cancer survivors: A pilot study. Castellino S; Tooze, J; D'Agostino, Jr. R; Brown S; Lane K; Hamilton C; Geiger A; Hundley W. Lack of biomarkers limits strategies for primary or secondary cardiovascular (CV) disease prevention in childhood cancer survivors. We evaluated feasibility, reproducibility and obtained preliminary estimates of effect size of cardiovascular magnetic resonance (CMR) measures in childhood cancer survivors (S) and controls (C). Methods: A single institution study of non-contrast CMR (1.5T Siemens Avanto, Erlangen, Germany) was done in young adult S and C. Cancer center registry and pediatric oncology database were used to identify S ≥ 5 years from end of cancer therapy, and currently 18-45 yrs. age. Eligibility for the S group included: history of anthracycline chemotherapy and chest radiation; no CV symptoms; lack of abnormalities at last echocardiogram. Pearson correlation was applied to measures obtained at 2 visits; mixed model ANOVA (adjusted for age, gender and body mass index) was used to compare CMR measures in S to C. Results: Among 42 identified survivors 11 were enrolled over a 1 year period. Survivors (median age 23; range 18-33 y) were compared to 12 healthy age-matched controls at 2 visits separated by a median of 2.4 months. Cancer survivors were a median of 14 years from the completion of cancer therapy including anthracyclines (median dose 169 mg/m²; range 97-289) and thoracic irradiation (median dose 25.5 Gray; range 12 to 30.9). All participants tolerated the 30 min imaging procedure well. All C and 10 of 11 S returned for the second study evaluation. We found good within-patient correlation of CMR measures (range, $r=0.53$ to 0.95) in this young population. Significant differences in adjusted CMR indicators of CV function were noted between S and C: Pulse wave velocity (PWV) was higher ($p=0.03$) and stroke volume was lower in S ($p=0.03$). In this pilot evaluation trends were also noted in other functional measures: left ventricle ejection fraction ($p=0.10$); midwall circumferential strain ($p=0.15$) and left ventricle end diastolic volume ($p=0.12$). Conclusions: CMR is feasible and reproducible in young adult survivors treated with contemporary therapy. Preliminary effect sizes support further study of non-contrast CMR as a non-ionizing imaging biomarker of CV risk in childhood cancer survivors.

#70

Symptom burden among long-term cancer survivors by cancer site, age, and race/ethnicity

Leach C, Alfano C, Weaver K, Rowland J

Many cancer survivors continue to experience symptoms which may be due to the cancer or to other co-morbid conditions. Little is known about how symptom burden differs by cancer site, age, and race/ethnicity. Methods: In the population-based Follow-Up Care Use among Survivors (FOCUS) study, 1180 long-term cancer survivors reported on 26 symptoms which were analyzed by cancer site (breast, prostate, and colorectal), race/ethnicity (non-Hispanic white, African American, Hispanic, Asian), and age (under 65, 65+). The mean number of problems reported by breast (BCS), prostate (PCS), and colorectal (CRCS) cancer survivors was 6.8 (95% CI: 6.3, 7.2), 5.1 (95% CI: 4.7, 5.6), and 5.8 (95% CI: 5.3, 6.3), respectively. The most prevalent problems by cancer site were joint pains (BCS: 55.4%; PCS: 46.5%; CRCS 47%), leg/muscle cramps (BCS: 54.8%; PCS: 42.5%; CRCS: 46.8%), tiredness/fatigue (BCS: 41.8%; CRCS: 35.1%) and back/neck pain (PCS: 43.2%). Younger BCS more commonly reported memory/attention problems, numbness/tingling, lack of restful sleep, and night or cold sweats, with greater prevalence among non-Hispanic whites and African Americans; older BCS more commonly reported dry mouth and leg/muscle cramps. Younger PCS reported a slightly higher prevalence of all problems, with many younger African Americans reporting numbness/tingling (47.8%). Younger Asian PCS reported few problems; however, 65+ Asian PCS reported similar or greater numbers of problems than the other 65+ race/ethnic groups. Dental problems and lack of restful sleep were common among younger CRCS whereas leg/muscle cramps and dry skin/itching were more prevalent among older CRCS. Memory and attention problems were most commonly reported by younger Asian CRCS (40%). Patterns of commonly reported symptoms varied considerably by cancer site, age, and race or ethnicity in this large sample of long-term cancer survivors. Findings underscore the need to tailor follow-up care to the individual survivor, as well as assess the timing of symptom onset relative to cancer diagnosis. Future research should examine reasons for these differences, including the role of culture on the reporting of symptoms among cancer survivors.

#71

Associations among Relationship Strength, Sexual Functioning and Distress in Women Diagnosed with Cancer during Young Adulthood

Floyd, A. and Sykes, K.

Women diagnosed with cancer during young adulthood (i.e. 18-39 years of age) are an understudied population and face unique challenges due to their developmental life stage; cancer has the potential to negatively impact upon these challenges. Among the likely concerns faced by this group are those related to relationships, dating and intimacy, and sexuality. The diagnosis and treatment of "female" cancers may have particularly acute as well as long-term implications for sexuality due to the involvement of the genitalia (both primary and secondary). The present study investigated the associations between self-report measures of partnered relationship strength, sexual functioning and psychological distress in 65 women diagnosed with cancer during young adulthood (mean age=34). Linear regression analyses revealed that relationship strength was a significant predictor of better sexual functioning ($p=.01$). Additionally, psychological distress was significantly and negatively correlated with both relationship strength ($r=-.388$, $p=.001$) and sexual functioning ($r=-.300$, $p=.01$). Furthermore, on a concerns checklist participants endorsed worry related to "My relationship with my partner" (52% of the sample), 'Dating and intimacy' (55%), "Sexuality" (61%), and "Body image" (76%). These findings indicate that women diagnosed with cancer during young adulthood indeed have concerns related to relationships, dating and intimacy, and sexuality. Importantly, the results also revealed that relationship strength and psychological distress, both of which are modifiable, are significantly associated with sexual functioning. Therefore, future studies should investigate interventions targeting these modifiable factors to help improve the sexual functioning and quality of life of these women. Longitudinal research is needed to more carefully investigate the relationship and directionality among these variables.

#72

Development of the Survivor Program to Empower Action in Care: A Health Communication Intervention for Childhood Cancer Survivor

Sharp L; Stolley M, Sokolovsky A

Approximately 1 in every 640 adult in the United States is a childhood cancer survivor. Although cured of their cancer, recent research reveals that 66% of adult survivors experience delayed health problems caused by their cancer treatment. The Children's Oncology Group has published guidelines for providing specialized long-term follow-up based upon the types of treatments they received. The care is designed to prevent or identify treatment-related health problems early before they become life threatening. However, the vast majority of adult survivors are receiving care from primary care physicians who have no knowledge of the specialized guidelines. To address this problem, a novel health communication and education program entitled, "Survivor Program to Empower Action in Care (SPEAC)" was developed. SPEAC represents an integration of knowledge gained from focus groups with adult childhood cancer survivors and pre-pilot testing. SPEAC is designed to increase the number of adult childhood cancer survivors who receive the recommended care. The program attempts to accomplish this by educating survivors about health risks associated with cancer treatments, helping them decide what type of healthcare is right for them, and building their capacity to speak with their primary care physician about the healthcare they desire. This presentation will address the careful, iterative steps involved in developing SPEAC from the focus group phase thru pre-pilot testing along with the information gained from each phase. A randomized trial of SPEAC is currently underway.

#73

Bridging Prostate Cancer Awareness and Screening of First-Degree Relatives of Survivors

Dotson, E; Bloom, J; Stewart, S

Purpose:

In prostate cancer research, family history and ethnicity are strong predictors of prostate cancer. Whether the knowledge of these risks can be translated into health seeking behavior, using a low-cost intervention, is the focus of this study.

Methods:

A sample of 258 African and Euro-American men were recruited through relatives whose prostate cancer diagnoses were reported to the Greater San Francisco Bay Area Cancer Registry between 1997-2003. Participants were randomized into either an intervention ($n=128$) or control group ($n=130$). Over the study period 2004-2006, pre-test and post-test surveys were administered to both cohorts, with a telephone counseling intervention following the pre-test in the experimental group. Following the post-test, the intervention was offered to the control group (delayed intervention). The surveys measured knowledge, perceived risks, and identifying factors associated with health seeking behavior for prostate cancer screening using the Digital Rectal Exam (DRE) and Prostate Specific Antigen (PSA). Logistic regression was used to create models of health seeking behavior in the form of receipt of DRE, and receipt of PSA.

Results:

Overall, older men, and those that have access to medical care reported receipt of both prostate cancer-screening tests. Being in the intervention group ($OR=1.92$; 95% CI, .975, 3.77) was associated with recent receipt of a PSA test, but not with the DRE. Ethnicity, knowledge, or perceived risks were not significant factors in either model. The demographic factors of age (PSA: $OR=1.12$; 95% CI, 1.07, 1.16; DRE: $OR=1.06$; 95% CI, 1.03, 1.10) and having obtained a college degree (PSA: $OR=1.97$; 95% CI, .929, 4.16), along with the health related factor of having a recent health checkup (PSA: $OR=5.06$; 95% CI, 2.17, 11.8, DRE: $OR=3.86$; 95% CI, 1.77, 8.43), were independently associated with receipt of prostate screening tests.

Conclusion:

We concluded that telephone counseling, as a low-cost intervention, was helpful for changing prostate cancer screening behaviors for the PSA Test only, and not the DRE. Our analysis did not reflect increased knowledge as predictor of those behaviors in our sample participants.

#74

Uptake of Tamoxifen and Aromatase Inhibitors in women with early stage, invasive breast cancer in a community setting, 2001-2008

Bowles E, Buist D, Chubak J, Yu O, Boudreau D

Purpose: To describe patient and tumor characteristics associated with uptake of tamoxifen and aromatase inhibitors (AIs) over time in a community setting.

Methods: We conducted a retrospective cohort study of 1,501 women >18 years enrolled in an integrated delivery system, and diagnosed with early stage, invasive, hormone receptor-positive breast cancer from 2001-2008. Using automated pharmacy prescription fill data, we classified women's receipt of endocrine therapy (ET, tamoxifen or AIs) within 12 months of breast cancer diagnosis. We used generalized linear models to evaluate the rate of women's first tamoxifen or AI use adjusting for age, stage, lymph node involvement, comorbidities, BMI, and year of diagnosis. We further calculated the adjusted relative risk (RR) with 95% confidence intervals (CIs) of any ET use (versus none) associated with patient and tumor characteristics. Among women >55 years, we calculated the adjusted RR of AI use (versus tamoxifen) associated with patient and tumor characteristics.

Results: The adjusted rate of tamoxifen uptake was 57.5% in 2001 and dropped to 36.8% in 2008. The adjusted rate of AI uptake was 5.6% in 2001, peaked at 36.8% in 2005, and declined to 27.8% in 2008. Thirty-six percent of women used neither drug in 2001, which dropped to 24.3% in 2005, and increased to 32.3% in 2008.

Women >65 years were less likely to start ET (versus none) compared to women ages 55-64 (RR=0.85, 95%CI=0.77-0.95 for ages 65-74; RR=0.71, 95%CI=0.61-0.81 for ages 75+). Women with stage II disease were more likely to start ET (versus none) compared to women with stage I disease. Women >65 years were less likely to use AIs (versus tamoxifen) compared to women ages 55-64 (RR=0.78, 95%CI=0.62-0.98 for ages 65-74; RR=0.69, 95%CI=0.51-0.93 for ages 75+).

Conclusions: In a community setting, AI uptake increased over time while tamoxifen uptake decreased. Tamoxifen and AI use were not independent of patient or tumor characteristics, and a substantial number of women used neither drug. The lack of ET use among some women may decrease the overall effectiveness of these drugs in the general population. These results may inform future comparative effectiveness studies of ET and survivorship for breast cancer.

#75

Tumor Histology and Treatment Modality Predict Ependymoma Survival Differently in Children and Adults

Amirian E, Scheurer ME, Armstrong TS, Gilbert MR

PURPOSE: Despite previous research, prognostic factors for pediatric and adult ependymoma remain controversial. The purpose of our study was to examine various demographic, clinical and tumor attributes as potential predictors of patient survival using currently available Surveillance, Epidemiology, and End Results (SEER) program data (1973-2007).

METHODS: All low-grade (ICD-O-3 code 9391) and anaplastic ependymoma cases (ICD-O-3 code 9392) from the full SEER dataset (n=2474 and n=328, respectively) were included. Kaplan-Meier curves were used to visualize survival differences by characteristics of interest, and backwards stepwise selection was utilized to build predictive Cox regression models among pediatric and adult cases. CART analysis was used to corroborate results from regression models. Median survival times and 5-year survival probabilities were also calculated. RESULTS: Age was a strong predictor of outcome, with the worst survival observed among cases under five and over 59 years of age. Among all pediatric cases, tumor characteristics with a significantly increased mortality risk were anaplastic histology (vs. low grade, HR: 1.51, 95% CI: 1.04-2.19), and infratentorial tumor location (vs. spinal cord, HR: 3.86, 95% CI: 1.17-12.77). Gross total tumor resection conferred the most protection, in both pediatric and adult patients. However, in children, subtotal resection in combination with radiation therapy was associated with an improved outcome compared to subtotal resection without radiation, although the adjusted hazard ratio was only of borderline significance (HR: 0.63; 95% CI: 0.37-1.07). Among adults, supratentorial tumors were associated with a higher mortality hazard (vs. spinal cord tumors) than infratentorial tumors (HR: 4.83, 95% CI: 3.49-6.68 & HR: 2.41, 95% CI: 1.79-3.25, respectively). CONCLUSION: Our results indicate that treatment type and tumor characteristics are important prognostic factors in patients with ependymoma. However, there may also be key differences between pediatric and adult cases in the way such factors impact survival. Furthermore, our findings support the hypothesis that mortality risk among ependymoma cases may have U-shaped age distribution, with the worst prognosis at the extremes of age.

#76

Smokers' estimates of lung cancer risk: Examination of the underaccumulation bias
Kaufman, A., Klein, W., Vail III, K. E., & Arndt, J.

Research has demonstrated that smokers hold unrealistically optimistic beliefs about their risk by underestimating the likelihood of negative outcomes due to smoking relative to objective risk estimates. However, a single assessment demonstrating risk underestimation fails to measure how individuals see their risk as changing over time. This research focuses on the underaccumulation bias; that is, how individuals underappreciate the extent to which their risk changes over time. The true relationship between smoking and lung cancer (LC) risk is curvilinear over the lifespan, rather than linear, such that risk increases exponentially. This research offers a novel view of the underaccumulation bias by assessing how smokers estimate their risk of LC over their life course.

Two studies were conducted with smokers at two sites. Both utilized student participants and one included community participants (N=176). The mean age was 20.3 (range 18-48). Approximately 60% were male. The majority smoked 10 cigarettes or fewer each day (67%). To measure the underaccumulation bias, participants were asked to estimate their risk of death from LC at age 35, 45, and 55 compared to a non-smoker of their gender (e.g., at age 35, my risk would be X times higher than that of other 35-year-olds of my sex who don't smoke)

A significant linear trend emerged for participants' estimates of risk at age 35, 45 and 55 ($F(1)=51.32$, $p<.0001$). The quadratic trend was non-significant ($F(1)=.411$, $p>.05$). At age 35, participants reported that their risk would be, on average, 7.73 times higher than a non-smoker; at age 45, 12.12 times higher; at age 55, 15.82 times higher. There was no significant influence on risk estimates based on age, gender, or number of cigarettes smoked.

The current study reveals that smokers estimate their risk as increasing linearly over time and thus miss the reality of an exponential increase in LC risk over time. This bias may have a potent influence on risk behavior and suggests that public health interventions may need to find ways of providing information about long-term cumulative risk. Health communications that better explain to smokers how their LC risk increases substantially with continued smoking may help to motivate smokers to quit.

#77

CLOSET QUITTING: IMPLICATIONS FOR SMOKING CESSATION

Carpenter, M. & Sterba, K

The potential benefits of social support for smoking cessation are unclear. This study sought to examine the 1) prevalence, 2) predictors, and 3) cessation outcomes of smokers who engage in undisclosed quit attempts.

The sample (N=575) consisted of an online research panel, with balanced recruitment of current smokers (54%) and past year quitters (46%).

Participants were eligible if they were daily smokers (current or previous) and made at least one attempt to quit smoking in the past year.

Respondents were grouped on whether they did vs. did not make advanced disclosure to others of their most recent attempt to quit smoking. Almost half (45%) of participants reported that their most recent quit attempt was undisclosed to anyone. Smokers who made undisclosed quit attempts (n=259), relative to those who did disclose (n=316), were older (39.0 vs. 36.4; $p=.01$), smoked fewer cigarettes per day (17.8 vs. 19.5; $p=.03$), were less likely to plan the quit attempt in advance (47% vs 75%; $p<.001$), less likely to use either cessation medication (44% vs. 65%; $p<.001$) or behavioral treatment (8% vs. 16%; $p=.002$), reported decreased positive social support for quitting (7.7 vs. 8.9 [0-20 scale]; $p=.002$), had greater privacy concerns (2.4 vs. 2.1 [1-4 scale]; $p<.001$), and were more likely to devalue both the quality (2.3 vs. 2.2 [1-4 scale]; $p=.02$) and need for social support (2.7 vs. 2.4 [1-4 scale]; $p<.001$). Surprisingly, there were no differences between disclosers and non-disclosers on previous quit history (number of prior quit attempts, duration of longest, and latency since most recent), nor on whether the person lived with another smoker.

Of the smokers who did not disclose their most recent quit attempt, 137 (53%) reported successfully quitting (>1 week of abstinence), compared to 127 (40%) of smokers who did disclose their attempt in advance ($p=.002$). Conclusions: Attempting to quit smoking without telling anyone in advance is common, predicted by psychosocial barriers to disclose, unrelated to previous quit history, and may be associated with a higher likelihood of quitting success. With further study, "closet quitting" may have implications for assessment and evaluation of social support for smoking cessation.

#78

Effects of Gender and Race on the Association of Smoking with Colorectal Polyps
Shaikhouni S, Kaur A, Lynn A, Chen Z, Thompson C, Cooper G, Chak A, Berger N, Li L
Purpose: Several studies have demonstrated a link between smoking and the risk of adenomatous polyps (AP), and others have also noted an association between smoking and hyperplastic polyps (HP). However, the populations in previous studies were predominantly Caucasian, and few have examined potential gender and racial differences in these associations.

Methods: We conducted a case-control study of colorectal polyps with 1,671 patients undergoing a screening colonoscopy. Each participant answered questions regarding their smoking behavior, including smoking amount and duration, through an interview conducted prior to a colonoscopy. Pathology reports from the colonoscopy were used to classify subjects into four categories: HP (N=197), AP (N=322), both HP and AP (N=125), and polyp-free controls (N=1013). We used multivariate logistic regression models to assess the risks of adenomatous and hyperplastic polyps in former and current smokers.

Results: Gender stratified analyses showed a distinct difference in associations between females and males: males who are current smokers were more likely to develop HP [OR = 2.02 (95% CI: 1.50-2.55, $p < 0.01$)] and, to a lesser extent, AP [OR = 1.54 (95% CI: 1.06-2.03, $p = .05$)] compared to never smokers; current smoking men were especially at risk of developing both HP and AP [OR = 5.65 (95% CI: 5.01-6.28, $p < 0.0001$)]. In contrast, current smoking women showed no significant association between smoking and polyps, whether adenomatous or hyperplastic. Race stratified models revealed that current smoking African Americans were more likely to develop AP [OR = 1.84 (95% CI: 1.32-2.36, $p < 0.01$)], and HP [OR = 2.20 (95% CI: 1.57-2.82, $p < 0.01$)] than Caucasians, among whom no significant correlation was found between smoking and HP or AP. The likelihood of developing both types of polyps among African American current smokers [OR = 4.01 (95% CI: 3.25-4.78, $p < 0.0001$)] was more than 60% higher than that of Caucasian current smokers [OR = 2.38 (95% CI: 1.64-3.12, $p < 0.01$)].

Conclusion: Our results suggest that African Americans who are currently smoking, and males in particular, are at heightened risk of developing colonic dysplasia.

#79

Smoking Cessation Activities in the Outpatient Oncology Setting: Provider Attitudes & Behaviors. Weaver, K.E., Thomas, L., Sutfin, E.L., Tooze, J.A., Spangler, J., & Blackstock, A.W.

Purpose: Describe current practices and attitudes of oncology providers at a comprehensive cancer center regarding smoking cessation activities with oncology outpatients. Method: An internet-based survey was e-mailed to 183 physicians, residents/fellows, midlevel providers, and registered nurses (overall response rate=61.7%); 78 of the 98 eligible respondents completed the survey. Respondents were predominately female (52.6%), physicians (73.5%) from hematology/medical oncology (55.9%), who had been in practice a mean of 11.5 years. We adapted questions measuring assessment and intervention practices, attitudes, and perceived barriers regarding providing smoking cessation services from previous surveys of medical professionals. Results: Providers reported that they frequently or always assessed (76.2%) and documented (84.5%) smoking at the initial visit, but fewer reported assessment of smokers (56.6%) or recent quitters (39.8%) at subsequent visits. A majority frequently or always advised smoking patients to quit (83.9%), but far fewer reported other cessation interventions. Less than 30% reported frequently or always referring the patient, advising setting a quit date, prescribing or recommending nicotine replacement or other medications, providing self-help materials, and assessing progress with quitting. In multivariate logistic models, endorsement of forgetting (OR=0.31, 95% CI 0.11-0.95) and not knowing where to refer patients (OR= 5.00, 95% CI 1.79-13.93) were associated with always providing advice to quit, albeit in opposite directions. Providers who were less confident in their ability to counsel smokers ("somewhat" vs. "every" OR= .13, 95% CI .02-.99), and perceived their lack of training as more of a barrier (OR= .43, 95% CI 0.19-0.97) were significantly less likely to report frequently or always providing cessation interventions beyond advice to quit. Conclusion: Assessment of smoking commonly occurs at the initial oncology appointment, but follow-up of smokers is inconsistent. Most providers commonly advise patients to quit, but far fewer provide additional smoking cessation counseling or assistance. Provider confidence and perceived training is associated with providing cessation intervention.

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CURRENT SMOKING PREDICTS NON-ADHERENCE TO CYSTOSCOPIC MONITORING AMONG NONMUSCLE-INVASIVE BLADDER CANCER SURVIVORS

Kowalkowski MA, Goltz HH, Amiel GE, Lerner SP, Latini DM

Objectives: Consistent adherence to cystoscopic monitoring is an important disease management strategy for nonmuscle-invasive bladder cancer (NMIBC) survivors. Data from SEER and other sources suggest adherence is inadequate without indicating reasons. This study aims to explore factors predicting adherence among NMIBC survivors.

Methods: A convenience sample of NMIBC survivors (n=109) completed telephone-based surveys containing EORTC general (QLQ C-30) and disease-specific (BLS-24) quality of life scales, demographic, and psychosocial items. Adherence was determined by measuring time between diagnosis date and interview date; researchers then compared the number of cystoscopies received versus the number suggested by AUA guidelines. Data were analyzed using t-tests and stepwise logistic regression.

Results: Participants averaged 62 years (SD=9.3) and were primarily white (94.5%), male (75.2%), married (75.2%), and non-smokers (83.5%). Almost one-third (31%) adhered to AUA guidelines. Regression analyses revealed current smokers (OR=15.6) and those worried about future test results, treatments, and outcomes (OR=2.4) were more likely to be non-adherent to monitoring guidelines ($p < .01$). Findings also revealed a trend for low adherence in older survivors (OR=0.95, $p < .10$). Compared to non-smokers, current smokers reported increased ($p < .05$) fear of recurrence and psychological distress.

Conclusions: Substantial numbers of NMIBC survivors are non-compliant, though our findings cannot distinguish between individual non-adherence and those survivors monitored by providers not ascribing to AUA guidelines. Non-adherence was related to smoking and several psychosocial characteristics that could be targeted with effective programs for smoking cessation and distress management. Research to design and evaluate such programs should be a high priority for bladder cancer survivors.

ASPO Abstracts presented in SATURDAY POSTER SESSION in conjunction with NCI conference - Multilevel Interventions in Health Care: Building the Foundation for Future Research

Intention to Recommend HPV Vaccination to Males prior to ACIP Guidelines: Results from a National Sample of U.S. Physicians

T. Malo, A. Giuliano, J. Kahn, S. Vadaparampil

ABSTRACT: Physician recommendation is consistently cited as an influential factor in vaccine uptake, yet little is known about physicians' intentions to recommend the human papillomavirus (HPV) vaccine to males.

PURPOSE: The primary aim of this study was to examine physicians' intention to recommend HPV vaccination to early (ages 11-12), middle (13-17), and late adolescent/young adult (18-26) males. A secondary aim was to assess variability in physicians' intention to recommend and current recommendation for vaccination of male and female patients, respectively.

METHODS: The current analyses included Family Medicine (FM; n=499) and Pediatric (Peds; n=287) physicians responding to a national survey conducted in 2009 on recommendation of HPV vaccination. Physicians' intention to recommend HPV vaccination to males and current recommendation for females were measured on a 5-point scale (range: never to always with quantitative anchors) and dichotomized into always (76-100% of the time) vs. other (0-75%). Intentions to recommend vaccination to males were compared to current recommendation to females for each age group using McNemar's test for paired data.

RESULTS: Of the 786 physicians, about 36% reported intention to always recommend the HPV vaccine to early adolescent males, 48% to middle adolescents, and 49% to late adolescents/young adults. The likelihood of always recommending the HPV vaccine was higher among Peds than FM for each age group

($p < .001$). There was no statistically significant difference in intentions to recommend vaccination for males compared to actual current recommendation for females for each age group ($p > .05$).

CONCLUSIONS: Similar to current recommendation for females, fewer than half of physicians intend to always recommend HPV vaccination for males ages 11-26. The fact that providers are as likely to recommend vaccination of males as they are to actually recommend vaccination to females may indicate they value the direct benefits of vaccination to males. Now that the ACIP has issued a recommendation for vaccination of males, it is important to better understand patterns of actual recommendations and to design educational and public health interventions to enhance optimal dissemination of HPV vaccination to males.

Reduction in Colonoscopy Screening Disparities in New York City in the Context of a Citywide Campaign from 2003 to 2007

C. Richards, B. Kerker, L. Thorpe, C. Olson, M. Krauskopf, L. Silver, S. Winawer

ABSTRACT: In 2003, in response to low colonoscopy screening rates and significant sociodemographic disparities in colonoscopy screening in New York City (NYC), the NYC Department of Health and Mental Hygiene, together with the citywide Colon Cancer Control Coalition (C5), launched a multifaceted campaign. We evaluated trends in colonoscopy among adult New Yorkers age 50 years and older between 2003 and 2007, the first 5 years of the citywide effort to increase screening.

METHODS: To assess trends, data were analyzed from the NYC Community Health Survey, an annual, population-based surveillance of New Yorkers. Annual prevalence estimates of adults who reported a timely colonoscopy, one within the past 10 years, were calculated. Multivariate models were used to analyze changes over time in associations between colonoscopy screening and sociodemographic characteristics.

RESULTS: Overall from 2003 to 2007, the proportion of New Yorkers aged 50 years and older who reported timely colonoscopy screening increased from 41.7% to 61.7%. Significant racial/ethnic and gender disparities observed in 2003 were eliminated by 2007: prevalence of timely colonoscopy was similar among non-Hispanic Whites (62.2%), non-Hispanic Blacks (64.0%), Hispanics (63.3%), males (62.0%) and females (61.5%). However, despite sizable improvements in colonoscopy screening, Asians, the uninsured, and those with lower education and income continued to lag in receipt of timely colonoscopies.

CONCLUSIONS: The reduction of racial/ethnic disparities in colonoscopy screening observed in NYC suggests that multifaceted, coordinated citywide campaigns may have a positive impact on improving low utilization of clinical preventive health services and on reducing public health disparities.

Associations Between Variants of the 8q24 Chromosome and Survival in Smoking-Related Cancer Sites

Po-YinChang, Zuo-Feng Zhang

ABSTRACT: Previous genome-wide association studies and molecular epidemiologic studies have reported that the single nucleotide polymorphisms (SNPs) in the 8q24 region are associated with the incidence of prostate, bladder, lung and upper aerodigestive tract (UADT) cancers. However, the effects of the 8q24 SNPs on cancer survival are unclear. Using the previously collected epidemiologic data and biological samples from a population-based case-control study in Los Angeles, the effects of three 8q24 SNPs, rs1447295, rs16901979, and rs6983267, on survival rates among lung and UADT cancer patients were examined.

RESULTS: Results from adjusted COX proportional hazard model showed no associations between these 3 SNPs and lung or UADT cancer patient survival. However, after stratification on smoking status, the rs6983267 SNP was associated with lung cancer survival in patients who smoked more than 30 pack-years [adjusted hazard ratio (HRadj), 1.52; 95% confidence interval (95% CI), 1.05 - 2.2]. The rs16901979 SNP was positively associated with lung cancer survival in adenocarcinoma subtype, either in male patients (HRadj, 1.85; 95%CI, 1.0 - 3.44) or smokers (HRadj, 1.94; 95% CI, 1.13 - 3.34). Increased survival rate was found for rs1447295 (which allele/genotype) among oropharyngeal cancer patients who have even smoked (HRadj, 1.33; 95% CI, 1.22 - 4.43). No obvious associations were found after stratification on alcohol drinking.

These findings suggest that the variants of 8q24 chromosome may play an important role in smoking-related cancer survival, especially among smokers. Further studies are needed to confirm the associations and explore the effects among other smoking-related cancers.

Risk of a Second Breast Cancer Associated with Hormone-Receptor and HER2/neu Status of the First Breast Cancer

L. Bessonova, T. Taylor, R. Mehta, J. Zell, H. Anton-Culver

OBJECTIVES: Hormone-receptor (HR) and HER2/neu-receptor (HER2) status of breast tumors are important indicators for targeted therapies. We examine the association of receptor status and risk for a second breast cancer.

METHODS: We analyzed data on 106,331 women in the California Cancer Registry whose first cancer is local-regional invasive breast disease, diagnosed from 1999 through 2005, yielding 1613 second primary breast cancers. Standardized incidence ratios (SIR) with 95% confidence intervals (CI) were used to evaluate risk of second tumors, accounting for age at first diagnosis, duration at risk, and race/ethnicity.

RESULTS: Among non-Hispanic Whites, HR-positive first tumors signal a reduction in risk for second breast cancers (SIR=0.83, 95% CI:0.77-0.89), while HR-negative status signals elevated risk (SIR=1.48, 95% CI: 1.29 -1.70). Asian/Pacific Islanders, African-Americans, and Hispanics are at elevated risk of second breast cancers regardless of HR status of the first tumor. Hispanics with HR-negative first tumors are at greater risk than those with HR-positive disease (HR-negative: SIR=3.76, 95% CI: 2.97 - 4.71; HR-positive: SIR=1.86, 95% CI: 1.56 - 2.20). HER2 status does not differentiate risk for second tumors in any group examined.

CONCLUSIONS: HR status of a first breast cancer is a marker for risk of a second breast cancer. HER2 status does not appear to be a marker of risk for a second breast cancer. Risk differences across race/ethnic groups by HR status suggest heterogeneity of breast cancers across race/ethnicity.

IMPACT STATEMENT: These data suggest that HR status may be helpful in shaping strategies to reduce risk of a second breast cancer, while HER2 status seems uninformative for this purpose.

An Investigation of the Association Between Glioma and Socioeconomic Status: Effects of Group-Level Spatial Autocorrelation

J. Plascak, J. Fisher

ABSTRACT: The primary goal of this analysis is to investigate the glioma-SES relationship within a hierarchical framework using Surveillance Epidemiology and End Results (SEER) data. Cases were defined as individuals 25+ years diagnosed with glioma between 2000 and 2006 and residing within the SEER 17 catchment area. County-, sex-, race-, age-specific subgroupings were created in order to investigate individual-level associations nested within counties. Principal component analysis was utilized to create two distinct county-level socioeconomic variables. A Bayesian hierarchical Poisson spatial conditionally autoregressive (CAR) model was utilized to simultaneously estimate individual- and county-level effects while controlling for possible county spatial dependence. Males, whites, aged 45-64 yrs, and aged 65+ yrs had estimated glioma incidence rates that were 1.50 (95% CI: 1.46 - 1.53), 1.99 (95% CI: 1.86 - 2.11), 2.37 (95% CI: 2.29 - 2.46), and 4.86 (95% CI: 4.70 - 5.02) times that of their respective reference group. Those residing in counties of the 4th, 3rd, and 2nd quartiles of SES had estimated glioma incidence rates that were 1.10 (95% CI: 1.02 - 1.18), 1.12 (95% CI: 1.02 - 1.19), 1.15 (95% CI: 1.07 - 1.23) times that of the 1st quartile, respectively. The assumption of error spatial independence was questionable for both individual-level + random intercept (RI) and individual-level + RI + SES covariates models (Moran's I and p : 0.0676 and 0.001; 0.0366 and 0.06, respectively). An individual-level + RI + SES + CAR model properly controlled for the spatial dependence (Moran I=0.0258, p = 0.166), yielding less biased estimates. Lag times were investigated comparing Deviance Information Criterion fit statistics between models using 1990 and 2000 census SES data, with 2000 census data yielding a model with superior fit. Absence of data on individual SES precludes any conclusions which may attribute the increased glioma rates to individual SES as opposed to possible contextual affects due to county SES. Subsequent studies should strive to collect analogous SES data at each level to fully address the glioma-SES relationship. Careful consideration of model assumptions and exposure-outcome lag time is critical for yielding unbiased estimates and best model fit.

Effects of a Point-of-Purchase Healthy Shopping Intervention on Shopping Basket Nutrient Content: A Randomized Controlled Trial

B. Milliron, K. Woolf, B. Appelhans

ABSTRACT: Previous research has reported convincing evidence that excess adiposity is a risk factor for certain types of cancer, such as cancers of the esophagus, pancreas, colorectum, breast, endometrium, and kidney. Dietary changes at the population level may reduce the incidence of obesity-related cancer at the population level. Individual-based weight loss programs can be expensive and labor-intensive, therefore policy and environmental interventions have been recommended.

OBJECTIVE: We examined the impact of a point-of-purchase (POP) intervention with individualized counseling from a nutrition educator on food purchasing behaviors between an intervention group (POP) and control group.

METHODS: 153 adult shoppers met inclusion criteria and were randomly assigned to a control or intervention group. Those in the intervention group received a 10-minute education session that introduced the shopper to the POP program focusing on how to purchase more fruits and vegetables and less saturated and trans fat. The primary outcome variables, derived through nutritional analysis of participant shopping baskets via digital photographs and duplicate receipts of purchased foods, included total mean energy density, total fat, saturated fat, trans fat, and servings of fruits, vegetables, and dark green and bright yellow vegetables. A between-groups analysis of covariance was conducted to compare the effectiveness of the intervention on the nutrient profile of food purchases, and percent federal poverty level was used as a covariate.

RESULTS: The intervention group purchased significantly more servings of fruit (p = 0.002) and green and yellow vegetables (p = 0.030) when compared to the control group, and these differences remained significant after adjusting for percent federal poverty level.

CONCLUSIONS: Long-term evaluations of supermarket interventions should be conducted to improve the evidence base, and to determine the potential for impact on food choices associated with decreased adiposity. If researchers are able to provide useful evidence to policy makers and food providers, decision makers will be equipped with the most appropriate knowledge to help reduce poor nutrition, obesity, and cancer risk through this type of environmental modality.

Does Survival After Childhood Cancer Depend Upon Parents' Social or Economic Resources? A Population-Based Study

A. Syse, T.H. Lyngstad, O. Kravdal

ABSTRACT: Cancer affects children randomly across social strata, and diagnostic and treatment protocols are generally standardized. Survival ought therefore be fairly equal in a society with free public health care. Hardly any studies have assessed the influence of parents' characteristics on survival after childhood cancer. Possible differences in survival after childhood cancer depending on parents' socioeconomic resources were therefore explored.

PATIENTS AND METHODS: Data on all Norwegian children (< 20 years) diagnosed with cancer 1974-2007 was retrieved from the Cancer Registry (N=6280) and the Cause-of-Death Registry. Parental information came from the Central Population Register, the Directorate of Taxes, and the Education Register. Discrete-time hazard regression models were used to explore effects of parents' marital status, education, earnings, and number of siblings on survival the first ten years after diagnosis.

RESULTS: Survival after childhood cancer depends on families' resources. A statistically significant protective effect of 20% was observed for children with highly educated mothers and children without siblings. The effects were most pronounced for cancers predicted to encompass intense, long-lasting treatments resulting in chronic health problems. Parents' earnings, net of educational level, did not affect survival. Neither did marital status.

CONCLUSION: This large registry-based study shows that survival after childhood cancer depends on families' resources, even within a universal health care setting with limited private alternatives. There is a strong protective effect of being an only child and having a mother with a higher education. Further research to assess treatment decisions, delivery of care, and health care utilization across social groups to understand the background for discrepancies in outcomes appears warranted.

Policy Level Factors Related to HPV Vaccination: Legislative Review and Immunization Manager Perspectives

S. Vadaparampil, N. Halsey, T. Malo, T. Proveaux, A. Giuliano

ABSTRACT: Policy level factors that may impact human papillomavirus (HPV) vaccination were evaluated as part of a study to assess HPV vaccination recommendation among a national sample of U.S. physicians. We focused on vaccine financing policy and legislation pertaining to school entry requirements, insurance coverage, and education.

METHODS: Legislative websites for each U.S. state and D.C. were searched for bills containing the words "HPV" or "(human) papillomavirus" and "immunization" or "vaccine" from 2006-2010. Relevant bills were categorized as requirements for school entry, educational information regarding the vaccine, and/or who should cover HPV vaccine costs, and tracked to determine if the legislation passed. In September 2009 and August 2010, immunization program managers from all U.S. states, territories, cities, and metropolitan areas (n=65) were sent a survey regarding the ages HPV vaccines are provided for children who are Vaccines for Children (VFC)-eligible, underinsured in the private and public settings, and insured.

RESULTS: Of 167 bills introduced into 47 state and D.C. legislative sessions, 52 pertained to mandating/encouraging HPV vaccination for school attendance, 59 were related to provision of vaccination information, and 111 addressed funding. Of the 26 bills enacted, 4 were related to school mandates, 13 to provision of vaccine information, 6 to insurance coverage, and 7 to state coverage for at least a portion of vaccination costs. A total of 44 immunization programs (72.1%) participated in the survey. All programs reported supplying HPV vaccine for VFC-eligible children, most supplied the vaccine for underinsured children in the public (97.7%) and private (63.6%) setting, and 34.1% supplied the vaccine for insured children.

CONCLUSIONS: Most bills introduced pertained to HPV vaccine funding, indicating the importance of cost as a policy level factor that may impact uptake. Immunization manager survey data indicate vaccination is generally available for uninsured and underinsured children in the public setting; however, national data suggest suboptimal levels of vaccine uptake among children. Thus, a policy level approach that focuses exclusively on cost may not be sufficient to achieve high levels of HPV vaccination.

Nondaily Smokers Versus Nonsmokers and Daily Smokers: Distinguishing Characteristics and Factors Related to Readiness to Quit

C. Berg, P. Ling, R. Hayes, E. Murtha, N. Nollen, E. Nehl, W. Choi, J. Ahluwalia

ABSTRACT: The increased prevalence of nondaily smoking has implications for tobacco control and cessation. Unfortunately, little is known regarding how nondaily smokers differ from nonsmokers and daily smokers and what predicts readiness to quit among this group. We examined (1) correlates of nondaily smoking versus being a nonsmoker or daily smoker among college students; (2) differences in smoking-related characteristics among nondaily and daily smokers; and (3) correlates of readiness to quit among nondaily and daily smokers. An online survey was administered to 2,265 college undergraduates aged 18-25 years from a two-year college and a four-year university in the Midwest. Assessments included sociodemographics, smoking behavior (days of smoking in the past 30, cigarettes per day [CPD], time to first cigarette, readiness to quit, confidence and motivation to quit), motives for smoking, parental smoking status, and other health behaviors (e.g., alcohol consumption).

RESULTS: Results indicated that nondaily smokers were younger than nonsmokers and daily smokers. They were less likely to have children and more likely to have college-educated and nonsmoking parents than nonsmokers. They were less likely to have parents who smoked than daily smokers. Nondaily smokers were also more likely than nonsmokers to use other forms of tobacco, consume alcohol, binge drink, and were less likely to exercise, but were less likely than daily smokers to binge drink. Compared to daily smokers, nondaily smokers smoked fewer CPD, were less likely to smoke within 30 minutes of waking, more likely to be ready to quit in the next month, more confident and motivated to quit, and more likely to smoke for social reasons. Among nondaily smokers, readiness to quit smoking was associated with having nonsmoking parents, no binge drinking in the past month, fewer CPD, and fewer smoking days. Among daily smokers, readiness to quit was associated with being unmarried but having children in the home. Thus, nondaily smokers differ qualitatively from daily smokers and nonsmokers. Distinct correlates of readiness to quit smoking among nondaily and daily smokers suggest different intervention targets.

Disparity in Mammography Utilization Among Medicare Beneficiaries From High Breast Cancer Mortality Counties

M. Virk-Baker, M. Martin, R. Levine, T. Nagy, M. Pisu

ABSTRACT: Disparities in breast cancer mortality between older African American (AA) and Caucasian (CA) women have increased in the last two decades. Mammography screening is important for early treatment and increased survival. Lower mammography utilization among older AA women may contribute to mortality disparities especially in counties with high breast cancer mortality for AA women. However, factors affecting breast cancer screening in these counties are unknown. To address this knowledge gap, we randomly selected 1,000,000 female Medicare beneficiaries from 203 US counties with the highest number of breast cancer deaths in AA women age ≥ 65 in 1999-2005 (these were mainly urban counties in the eastern US (65%) with 25.7% of the female population being AA). For women continuously enrolled in fee for service Medicare (N=940,401), we conducted a retrospective analysis of administrative claims to determine how many women had ≥ 1 screening mammogram (ever screening), or ≥ 1 mammogram every two years (regular screening). We used logistic regressions to identify variables that may explain differences in screening. Approximately 16% of beneficiaries were AA and 84% were CA. Ever and regular screening was significantly lower among AA compared to CA [40.3% vs. 44.3% ($p < .0001$); 14.4% vs. 20.7% ($p < .0001$)]. Controlling for age, number of comorbidities, other preventive measures (flu shot, cervical and colorectal cancer screening, or lipids tests), and measures of regularity of care (number of doctors seen in a year, proportion of claims with the same doctor and from the ER) AA women were more likely to have ever screening (OR 1.26, CI: 1.25 - 1.28) but less likely to have regular screening (OR 0.85, CI: 0.84 - 0.87). Having comorbidities and other preventive measures was positively associated with having ever or regular screening. In these selected US counties, among women with coverage for breast cancer screening, racial disparities in mammography utilization exist for regular screening even after controlling for access to other preventive services. Further research is needed to understand barriers and appropriate interventions to increase regular screening in older AA women. This work was supported by the National Cancer Institute (R25 CA047888, and U54 CA118948).

Patient Ratings of Physician Relational Communication

A. Shay, J. Elston Lafata

ABSTRACT: Communication between patients and physicians has both content and relational components. Positive relational communication (RC) has been linked to a number of meaningful patient outcomes. The purpose of this study is to determine the patient, visit, and physician characteristics associated with patient ratings of positive physician RC. Data were derived from direct observations and a post-visit patient survey from periodic health examinations of patients aged 50-80 in which colorectal cancer screening was discussed. Patients rated their physician's RC on a 10-item scale. Two multilevel models were fit evaluating (1) factors related to patients scoring their physician's RC perfectly and (2) predictors of positive RC among those who did not score their physician perfectly. Of 344 patient visits, 147 patients rated their physician's RC perfectly. Factors significantly ($p < .05$) associated with perfect RC score included increasing patient age (odds ratio=1.05), lower education (OR=0.71), and stronger agreement that "my physician and I been through a lot" (OR=2.70). No physician or visit factors were related to perfect RC. Among those not rating their physician's RC perfectly, positive RC was associated lower levels of patient depressive symptoms (incident rate ratio=1.19) and decreasing Charlson comorbidity index scores (IRR=1.24). Visit factors associated with positive RC included the patient bringing a list of concerns to the appointment (IRR=3.42), patient and physician interacting outside of exam room (IRR=3.34), and morning (vs. afternoon) appointment (IRR=1.64). No physician factors were related to positive RC score. These findings indicate that patient-reported positive RC is a function of both patient and visit characteristics. Importantly, positive RC may be fostered by encouraging patients to bring lists of concerns to visits and physicians to interact with patients outside the exam room. Physicians should be aware that patients with multiple comorbidities, depressive symptoms, and afternoon appointments may be particularly vulnerable to reporting relatively poor physician RC.

Trust and Communication Influences Willingness to Follow Physician HPV Vaccine Recommendation

J.A. Tiro, W.P. Bishop, C.S. Skinner

BACKGROUND: Physician recommendation increases likelihood of cancer screening and immunization. Aspects of the physician-patient relationship, such as patients' trust in and quality of communication with physician, may influence their willingness to follow physician recommendations. Trust and communication may be especially important issues for racial and ethnic minorities. As the primary medical decision-makers for their families, mothers play an important role in deciding whether daughters should receive the HPV vaccine. It is important to understand if a mother's relationship with her daughter's physician affects HPV vaccine uptake.

OBJECTIVE: Examine whether trust and communication were associated with mother's willingness to follow physician recommendation and vaccine uptake.

METHODS: Racially and ethnically diverse mothers of daughters aged 9-22 (N = 312) who attended safetynet clinics or community events completed a self-administered survey. Primary Care Assessment Tool was used to assess trust and communication. Logistic regressions were conducted.

RESULTS: Mother's rating of physician trust and communication were highly correlated ($r=0.65$). There were no differences in trust and communication scores between race/ethnic groups (Caucasian, Hispanic, and African American). In bivariate and multivariate analyses (latter controlled for mother's race/ethnicity), higher trust scores were associated with willingness to follow physician recommendation (AOR: 1.48; 95% CI: 1.10 - 1.99) and HPV vaccine uptake (AOR: 1.66; 95% CI: 1.17 - 2.37). Race/ethnicity remained associated with willingness to follow physician recommendation when trust was included in the model, this association was not found for communication with physician.

CONCLUSIONS: Our findings support the importance of trust and communication with physician in mother's HPV vaccine decisionmaking.

LEARNING OBJECTIVE 1: Describe factors associated with willingness to follow physician recommendation for HPV vaccine and vaccine uptake.

LEARNING OBJECTIVE 2: Discuss the influence of communication and trust on willingness to follow physician recommendations.

Geographical Clustering of Cancer Screening Among African American Older Adults in Baltimore City, MD

D. Markakis, D. Phelan, G. Shapiro, L. Bone, J. Wenzel, C. Pollack, L. Johnson, M. Garza, J. Ford

PURPOSE: Previous surveys have examined cancer screening in Baltimore City, but few have documented variations in cancer screening rates among African Americans by geographic clustering.

METHODS: The analysis included 2,424 African American Medicare beneficiaries who completed a baseline survey upon enrollment in the Cancer Prevention and Treatment Demonstration (CPTD) in Baltimore, MD. The CPTD, funded by the Centers for Medicare & Medicaid Services, is a multisite randomized controlled trial examining the effect of patient navigation on adherence to cancer screening among racial and ethnic minorities. Spatial Scan Statistic (SaTScan, 9.01) was used to identify clusters of census tracts with comparatively higher or lower breast, cervical, prostate, and colorectal screening rates. Sociodemographic characteristic comparisons were performed for the primary screening type cluster versus the remainder of Baltimore City.

RESULTS: Among women, compared to the remainder of Baltimore city, high colorectal screening rates were identified in the Northwestern and Northern regions (relative risk (RR) 1.14, $p = .036$); low colorectal screening rates were found in the Central, Western, Southwestern, Eastern, Southeastern and Southern regions (RR 0.85, $p < .001$); and low cervical were found in the Eastern and Southeastern regions (RR 0.74, $p = .001$). Among men, low prostate screening rates were identified in the Eastern, Southeastern, and Southern regions (RR 0.64, $p = .006$). There were no significant clusters found for female breast and male colorectal cancer screening. In the census tracts of the primary cluster of low colorectal screening rates, the estimated poverty rate is 35% for female African Americans aged 65 years and older, compared to 18% outside the primary cluster ($p < .001$), according to US 2000 census data.

CONCLUSION: Application of the SaTScan method successfully identified cancer screening clusters in Baltimore City among our study population. Knowledge of factors that contribute to the geographic heterogeneity of cancer screening, such as socioeconomic status or distance to health care facility, may help improve area-based interventions to increase cancer screening among African American older adults.

Racial Disparities and the Impact of Failing to Achieve the Healthy People 2010 Cancer Mortality Objective

N. Jones, C. Fields, A. Williamson, R. Strickland, P. Remington

PURPOSE: This study focuses on the impact of racial cancer disparities between African Americans and whites over ten years spanning the establishment of the Healthy People 2010 cancer mortality objective in 2000 and the revision of the plan in 2010.

METHODS: For 2000 through 2006, excess mortality can be calculated from the difference between the HP2010 goal trajectory and observed mortality rates. From 2007 to 2010, mortality rates were estimated by extrapolating the linear trend observed from 2000-2006. Relative cancer disparities were estimated by comparing the ratio of projected deaths among African Americans and whites according to the observed trend to the deaths estimated if the state had followed a trend to achieve the HP2010 goal over the period.

RESULTS: In the United States, cancer mortality rates declined from 199.6 per 100,000 to 169.2 per 100,000 between 2000 and 2010. By failing to follow the annual trajectory to reduce cancer mortality rates to the HP2010 goal of 159.9 per 100,000, the United States experienced 143,742 excess deaths over the decade, representing 2.6% of all cancer deaths. Among whites, cancer mortality rates declined from 197.2 per 100,000 to 169.1 per 100,000 between 2000 and 2010. If whites had made annual progress to achieve the HP2010 goal, 125,105 fewer people would have died from cancer over the decade, representing 2.6% of all cancer deaths among whites. Among African Americans, cancer mortality rates declined from 248.5 per 100,000 to 201.6 per 100,000 between 2000 and 2010. If African Americans had made annual progress to achieve the HP2010 goal, 63,133 fewer people would have died from cancer representing 10.1% of all cancer deaths among African Americans over the decade. Racial cancer disparities within each state are presented in the full report.

CONCLUSION: Racial disparities in cancer burden have persisted and, in many states, worsened over the past decade. Reduction and elimination of these chronic disparities will require further research into a multitude of contributing factors, as well as into effective intervention strategies. Any solution will require a careful balance of resources and appropriate priorities to target these inequities as well as engagement of the communities affected.

Associations Between Breast Cancer Risk Perceptions and Mammography Use for Women Ages 35-39, 40-44, and 45-49

J.M. Kapp, S.C. O'Neill, R.P. Moser

PURPOSE: There is limited research on the association of risk perceptions and early mammography in population-based samples. Using the recommended age of 40 to begin routine mammography screening at the time of data collection in 2003, we examine the association between ever having had mammography and breast cancer risk perceptions and worry, by ages of early mammography (35-39) compared to 40-44 and 45-49.

METHODS: Using data from the 2003 Health Information National Trends Survey (HINTS), we calculated frequencies and percentages of ever and never having mammography. We conducted multiple logistic regression for mammography on the following variables: perceived relative likelihood of developing breast cancer compared to an average woman, frequency of worry about breast cancer, health insurance, and having a usual provider. All analyses were weighted for population-level estimates and stratified by the three age groups.

RESULTS: 39.6%, 78.3%, and 90.1% of women ages 35-39, 40-44, and 45-49, respectively, reported ever having had a mammogram. Among women who had a mammogram, 21.7% of women ages 35-39 reported worrying about breast cancer often/all the time compared to 13.8% of women 40-44 and 8.6% of women ages 45-49. Yet the percentage of women who felt they were more likely than the average woman their age to develop breast cancer was not higher for women with early mammography ages 35-39 (19.9%) compared to ages 40-44 and 45-49 (18.7%-21.6%). In multivariate models, women who sometimes worried about breast cancer were less likely than those who worried often/all the time to have mammography only among women ages 35-39. Having a usual provider was significantly associated with mammography for women ages 35-39 and 40-44; having health insurance was only associated with mammography for women ages 45-49.

CONCLUSIONS: Worry and having a usual provider were associated with early mammography for women ages 35-39, which differed from other age groups. Our results emphasize the need to understand the interplay between patient values/preferences for early mammography and physician recommendation in the context of patient-centered care.

Exploring Black-White Differences and SES as a Mediator of Survivor Expectations for Cancer Follow-Up Care

S. Hudson, S. Miller, J. Hemler, A. McClinton, K. Oeffinger

PURPOSE: To explore the impact of race, socio-economic status (SES), and treatment facility in cancer survivors' expectations for extended cancer follow-up care.

METHODS: Depth interviews were conducted with a purposive sample of early stage (I or II) breast and prostate cancer survivors from two comprehensive cancer centers (CC) and five community hospitals (CH) in NJ and PA. Interviews lasted 30-90 minutes and were audio-taped and transcribed. Data were analyzed using an iterative approach. Two researchers independently coded interviews, using consensus to resolve discrepancies.

RESULTS: Forty survivors (22 breast, 18 prostate) participated in the study. Eleven participants were Black and 29 White. Over half of participants received treatment at a CC (54%) compared to 46% from a CH. Eight participants (20%) reported current household income less than \$40K; 38% reported \$40-79K; and 36% reported \$80K+. The majority reported at least a high school (54%) or college degree (41%). There was substantial overlap in the follow-up expectations and narratives of middle SES Black and White survivors from CCs and CHs. However, different narratives emerged about follow-up care expectations and care-seeking from lower SES CH-treated Blacks n=6 (household incomes less than \$40K) in contrast with higher SES CC-treated Whites n=7 (household incomes 80K+). Lower SES CH Blacks reported discussing follow-up care with cancer specialists before ending active treatment; however, they had difficulty describing what should be part of survivor care or cancer follow-up. High SES CC Whites seemed to be more prepared and understood what follow-up care entails; but, they did not have expectations about when or how often follow-up tests should occur and relied on their cancer specialists to guide them.

CONCLUSIONS: Our findings suggest that a nuanced approach to analysis that examines the complex interaction between culture and socio-demographic factors is required to impact disparities in cancer survivors' health and experiences of follow-up care. Further cancer survivorship research that examines the impact of race/ethnicity, socioeconomic status, cancer care providers and expectations for care is needed. Study supported by NCI grant K01 CA131500 and DOD grant DAMD17-01-1-0755.

Reduced Lung Cancer Fatalism Following a High-Profile Death: The Peter Jennings Effect

D.B. Portnoy, C.R. Leach, R.P. Moser, A.R. Kaufman, C.M. Alfano

ABSTRACT: Media attention of cancer prevention, such as Katie Couric's on-camera colonoscopy, influences health attitudes and behaviors on a national scale. This study sought to extend those findings to news about a cancer death and subsequent media focus on risk factors. This study examined changes in lung cancer fatalism (LCF) following the death of news anchor Peter Jennings, and analyzed the surrounding media attention. Data from the National Cancer Institute's nationally-representative Health Information National Trends Survey (N = 5,394), which was being fielded when Jennings died in August 2005, were used. LCF was measured, randomly administered to one-third of the sample, with the item "It seems like everything causes lung cancer." Smoking status and other demographics factors were also collected. In addition, a nationally representative sample of news articles on Jennings' death (N = 109), retrieved from Lexis-Nexis, were coded for mention of lung cancer risk factors (e.g., smoking). Weighted analysis revealed that current smokers were more likely to endorse LCF (OR=2.21, 95% CI=1.36, 3.58) compared to never smokers. Also when compared to those who responded before Jennings' death (controlling for smoking status), those responding after were significantly less likely to endorse LCF (OR=0.13, 95% CI=0.02, 0.80). Analysis of the media coverage of Jennings' death found that, of articles focused on his diagnosis or death, nearly half (45.6%) mentioned smoking as a risk factor for lung cancer and/or his status as a lifelong smoker.

News of Jennings' death may have had an effect on LCF. This may be attributed to the media coverage of his death, which often discussed his smoking status as a risk factor. As LCF was operationalized, the increased focus on smoking as the main cause of lung cancer may have reduced fatalism. Overall, smokers reported higher LCF, perhaps to discount their own smoking as a potential cause for future disease. The results of this study suggest that known cancer risk factors, especially those that are modifiable, should be incorporated into coverage of cancer-related news to act as population-based interventions.

Patient Barriers to Follow-Up Care for Breast and Cervical Abnormalities

S. Tejeda, J.S. Darnell, Y.I. Cho, O.S. Adegboro, T. Markossian, J. Shklovskaya, M. Ashley, E.A. Calhoun

PURPOSE: Patient navigators facilitate timely follow-up care by connecting patients to resources and support systems. The purpose of this study is to describe barriers among women seeking follow-up care for a breast or cervical abnormality and to determine the time navigators spend on addressing these barriers.

METHODS: The sample consists of 387 Latina and African American women who had an abnormal finding on screening studies or clinical findings suspicious for cancer. All women were in the intervention arm of the Chicago Patient Navigation Research Program and were recruited from Federally Qualified Health Centers. The data on participant personal characteristics were collected through a survey administered at the time of enrollment. Navigators documented participant barriers in a tracking log which included the following information: the date and length of time spent on an encounter, type of encounter (e.g. in-person, telephone), type of barrier (e.g. transportation, scheduling) and actions taken by the navigator to address each barrier (e.g. arrangement, support).

RESULTS: Participants' mean age was 34 years (range 18-69), and the majority (76%) were low income (<\$20,000) and had public health insurance (86%). The most common barriers among African American women with a breast or cervical abnormality included system problems with scheduling care (27%), not understanding the information given to them by medical personnel (18%) and insurance issues (11%). Among Latinas, the most common barriers included insurance issues (31%), system problems (18%) and fear about medical care or their health (10%). Navigators recorded a median number of five encounters per participant (range: 1-18) and spent a median of 165 minutes per participant (range 15-495). Barriers that took the longest time to resolve, although less common, included issues related to language (e.g. providing interpreter services), patient perceptions about tests and/or treatment and barriers related to financial problems. **Conclusion:** Barriers to follow-up care may cause delays in cancer diagnosis and treatment. Understanding barriers and time spent on addressing them will inform in the development of culturally appropriate interventions for ethnic minority women with cervical and breast abnormalities.

Gender Differences in Factors Associated With Colorectal Cancer Screening Among African American Medicare Beneficiaries

K. Martinez, D. Markakis, D. Phelan, L. Bone, G. Shapiro, J. Wenzel, C. Pollack, L. Johnson, M. Garza, J. Ford

PURPOSE OF STUDY: Underutilization of screening by African American older adults may contribute to excess mortality from colorectal cancer. The purpose of this study was to examine gender differences in factors associated with colorectal cancer screening adherence among African American Medicare beneficiaries.

METHODS: We performed a cross sectional analysis of baseline data from the Cancer Prevention Detection and Treatment Demonstration at the Johns Hopkins University. The sample includes 2,137 African American Medicare beneficiaries between the ages of 65 and 85 in Baltimore City, 72.5% of whom are female. The baseline questionnaire included items on socioeconomic factors, co-morbidities, access to care, social support, knowledge, and beliefs. The primary dependent variable in this analysis is colorectal cancer screening, defined as self-reported colonoscopy or sigmoidoscopy in the past 10 years. We used gender-stratified multivariable logistic regression to identify determinants of adherent colorectal screening, while controlling for potential confounders.

RESULTS: Factors associated with colorectal screening adherence differed by gender in this population. In the adjusted analysis, being married or living with a partner was associated with screening adherence among females (OR 1.70; 95% CI 1.02 - 2.84) but not males. Reporting an annual income greater than \$30,000 was associated with screening adherence only among males (OR 2.92; 95% CI 1.37 - 6.21). Both males (OR: 2.56; 95% CI 1.12 - 5.87) and females (OR 2.14; 95% CI 1.29 - 3.55) reporting that they see the same health care professional on a regular basis were more likely to be colorectal cancer screening adherent. However, reporting that doctors "usually" or "always" explain things in a way the respondent could understand was associated with screening adherence among females only (OR 2.00; 95% CI 1.25 - 3.18).

CONCLUSIONS: Our findings suggest that there are important differences in the factors associated with colorectal cancer screening between African American males and females enrolled in Medicare. Interventions aimed at increasing colorectal cancer screening adherence in this population should consider gender-specific barriers and facilitators to screening.

Geographic Disparity in Triple-Negative Breast Cancer Survival: A Prospective Multilevel Study

M. Lian, E. Foldes, M. Perez, A. Deshpande, M. Schootman, D. Jeffe

STUDY PURPOSES: We sought to 1) determine the roles of small-area poverty and race in TNBC survival; 2) examine geographic variation in triple-negative breast cancer (TNBC) survival; and 3) identify factors accounting for geographic variation in TNBC survival.

METHODS: We identified 522 primary TNBC cases (270 White, 241 African American and 11 other race) diagnosed between January 1, 2000 and May 29, 2009 at the Siteman Cancer Center (St. Louis, Missouri). Patients' vital status was followed until May 29, 2009. Kaplan-Meier method was used to plot the survival curves. A Bayesian multilevel Weibull survival model was applied to examine geographic variation in and the effect of census-tract poverty on TNBC survival. The models were adjusted for individual characteristics, including age, race, insurance types, cancer stage and grade, and comorbid conditions. We used SAS and WinBUGS for data management and statistical modeling.

RESULTS: Kaplan-Meier survival curves showed that African American women had lower survival than White women (52.5% vs. 67.0%, Log rank test $P=0.03$). Neither census-tract poverty (the highest vs. the lowest quartile adjusted Hazard Ratio [HR]: 0.99, 95% confidence interval [CI]: 0.51 - 1.89) nor race (African American vs. White adjusted HR: 1.23, 95% CI: 0.75 - 2.01) was associated with TNBC survival after controlling for other individual-level characteristics. Bayesian multilevel survival model indicated that there was significant geographic variation in TNBC survival (variance: 0.38, 95% CI: 0.06 - 0.70; median HR: 1.79, 95% CI: 1.34 - 2.23; interquartile HR: 4.16, 95% CI: 1.48 - 6.84). After adjusting for individual-level characteristics, geographic variation in TNBC survival was still present.

CONCLUSIONS: Census-tract poverty and race were not associated with TNBC survival in multivariable analysis. We found small-area geographic variation in TNBC survival, but it was not explained by factors examined. Future studies should focus on identifying other contextual and individual-level factors that might account for geographic disparity in TNBC survival.

Use of Screening Mammography Among Ohio Medicaid Beneficiaries With and Without Mental Illness

S.M. Koroukian, P.M. Bakaki, N. Golchin, C. Tyler, S. Loue

STUDY AIM: To determine whether Medicaid beneficiaries with mental illness (MI) are less likely than their non-MI counterparts to undergo screening mammography (SM).

METHODS: Our study population consisted of women 50-64 years of age and with no intellectual developmental disabilities, enrolled in Medicaid during the years 2002 to 2008, and receiving their care through the fee-for-service system ($n=130,088$). Using the Medicaid enrollment files, we obtained data on demographics, county of residence, and length of enrollment (LOE) in Medicaid. From claims data, we used diagnostic codes for MI, service codes for psychiatric care, and prescription drugs to identify the presence of MI ($n=66,599$). We also used diagnostic and procedure codes to identify comorbid conditions and use of SM. We analyzed SM in two separate logistic regression models, adjusting for potential confounders: Model 1 to study the use of at least one SM during the study period, vs. none; Model 2, to study, among SM users, use of SM at the recommended level (once a year) vs. less.

RESULTS: Use of SM was 37.5% in the MI group and 30.8% in the non-MI group ($p < .001$). Adjusting for potential confounders, however, findings from Model 1 indicated that women with MI were 33% less likely than women with no MI to undergo at least one SM during the study period (adjusted odds ratio and 95% Confidence Interval: 0.67 (0.65, 0.69)). Conversely, women with at least one comorbid condition were nearly 6 times as likely as those with no comorbidities to undergo SM (5.87 (5.50, 6.27)). Additionally, each year of enrollment in Medicaid increased the likelihood of SM use by at least 50% (1.53 (1.52, 1.54)). Findings from Model 2 indicated that, among SM users, women with MI were nearly half as likely as those with no MI to use SM at the recommended level (0.53 (0.50, 0.56)). Similarly, the presence of comorbidities was associated with a lower likelihood to undergo SM at the recommended frequency (0.23 (0.20, 0.26)).

CONCLUSIONS: In both models, MI is associated with lower use of SM. While the presence of comorbidities is associated with significantly greater likelihood of undergoing SM, it is negatively associated with use of SM at the recommended frequency, possibly due to competing health care needs.

Breast Cancer in Six U.S. Metropolitan Areas: The Elevated Risk of Late-Stage Diagnosis Among Young Minority Women and the Poor

R. Campbell, K. Kaiser, R. Barrett, T. Dolecek, X. Li

PURPOSE: Using breast cancer registry data from six major metropolitan areas, we consider age-specific racial and ethnic differences in stage at diagnosis, controlling for census tract level poverty estimates specific to age, race/ethnicity and sex.

METHODS: We identified non-Hispanic white, non-Hispanic black, and Hispanic breast cancer cases from Washington DC, Philadelphia, Los Angeles, Boston, Detroit, and Chicago. Cases were geocoded to their census tract. Socioeconomic status was measured using empirical Bayes estimates of tract-level poverty, specific to age, race/ethnicity and sex. We modeled our outcome of interest, stage at diagnosis, using ordinal logistic regression.

RESULTS: In each urban area, blacks are at greater risk of late stage diagnosis. However, the disparity in late stage diagnosis experienced by black women is conditional on age, with the disparity being greatest at younger ages. In areas with a large enough Hispanic population to obtain estimates, we find a similar, though less extreme result for Hispanic women. Poverty was found to have a strong effect on the probability of being diagnosed at a later stage, regardless of race/ethnicity.

CONCLUSIONS: These findings extend and replicate our earlier research among women with breast cancer in Cook County, IL. Our results are highly relevant to the recent controversy involving the United States Preventive Services Task Force recommendations about the age at which women should begin breast cancer screening. Notably, the Task Force acknowledged that additional research is needed to understand how age, race, breast density, and other factors may predispose certain women toward tumors with faster growth rates and greater lethality. Our results shed some light on these issues by demonstrating the increased risk for late stage diagnosis among young black and Hispanic women across the United States. In addition to their policy relevance, our results demonstrate the usefulness of several methodological innovations, particularly ordinal regression models and tract level poverty estimates specific to age, race/ethnicity and sex.

Temporal Trends in Incidence and Mortality Rates for Colorectal Cancer by Tumor Location: 1975-2007

A.I. Phipps, J. Scoggins, C.I. Li, M.A. Rossing, P.A. Newcomb

PURPOSE: Declines in colorectal cancer (CRC) incidence and mortality rates over recent decades are largely attributable to increases in CRC screening. Because some CRC screening modalities are restricted to examination of the distal portion of the colon and rectum, evaluating incidence and mortality rates by tumor location could better inform the contribution of screening to observed trends.

METHODS: Using data from 9 cancer registries that have participated in the Surveillance, Epidemiology, and End Results program since 1975, we evaluated annual percent changes (APC) in CRC incidence and incidence-based mortality rates through 2007. We evaluated trends separately for proximal and distal CRC and, within subsite, by stage and race. In all analyses, we identified time-points within the study interval where trends shifted, and calculated the average annual percent change (AAPC) over the most recent 10-year interval (1998–2007).

RESULTS: Incidence rates for proximal and distal CRC rose similarly from 1975 to 1985 (APCProximal = +1.1%, APCDistal = +1.0%). However, between 1999-2007, CRC incidence rates declined significantly, with greater reductions in rates of distal (APC = -3.6%) than proximal (APC = -2.5%) CRC. Site-specific recent declines in CRC incidence were most different with respect to localized disease (AAPCProximal = -0.2%, AAPCDistal = -2.7%).

Regardless of tumor site, the drop in CRC incidence rates over the past 10 years was greater among individuals of White race than of Black race.

There was little difference in temporal trends in incidence rates across subsites within the proximal and distal colon and rectum, with the exception that declines were more modest for cancers in the ascending and transverse colon. Patterns of decline in incidence-based mortality rates mirrored those for incidence rates, indicating the greatest improvement with respect to distal CRC diagnosed at a regional stage among individuals of White race.

CONCLUSIONS: Recent declines in CRC incidence and incidence-based mortality are greatest for distal CRC and differ by race and stage. Observed differences across population groups may reflect differences in the uptake of screening whereas differences by tumor stage and site also likely reflect differences in screening efficacy.

Colorectal Cancer Screening Practices and Provider Recommendation in Puerto Rico: HINTS in Puerto Rico

A.P. Ortiz, L.J. Finney Rutten, B.W. Hesse, R.P. Moser, M.M. Sanchez-Aracil, R.A. Serrano-Rodríguez

PURPOSE: Assess colorectal cancer screening practices and the role of health care providers' recommendation, communication-related factors, and demographic factors on CRC screening practices in PR.

METHODS: HINTS 2007 telephone survey (Spanish version) was conducted among adults aged 18+ years in PR between April-June, 2009. This analysis includes only respondents aged 50+ years (n=443 out of 639 participants). Variables of interest are: Ever had CRC screening test; providers' recommendation of CRC test; health and cancer information seeking; Internet use; and sociodemographic variables (age; sex; education; and marital, employment, and health status; and personal and family history of cancer). Weighted prevalence and 95% CI are presented, and multivariate logistic regression models used to estimate the odds ratios (ORs) and 95% CIs for the associations between outcome and co-variables.

RESULTS: 57% were females, 53% were aged 50-64 years, and 34% had greater than high school education. Personal and family history of cancer was reported by 11% and 65%, respectively. Health and cancer information seeking was reported by 27% and 20%, respectively; and only 10% used the Internet. A health professional recommended a CRC test to 49% of respondents; 90% of them received the recommendation from a physician. A particular test was recommended to 58% of those receiving a recommendation; colonoscopy to 81% and fecal occult blood test (FOBT) to 36% of them. Ever having had a CRC screening test was reported by 55%; 36% FOBT and 36% colonoscopy. After adjusting for sex, age, education, and health information seeking, provider's recommendation was the strongest, and only significant, factor associated with "ever having had a CRC screening test" (OR = 4.3; 95% CI 2.3 - 8.3); whereas health information seeking was borderline associated (OR=1.9, 95% CI 0.9 - 4.3).

CONCLUSION: Our data shows that provider recommendation is the strongest predictor of ever having had a CRC screening test. Despite this, only half of the men and women aged 50+ years reported receiving this recommendation from a health professional. A higher proportion of health professionals recommend colonoscopy over other CRC screening tests.

Cancer Screening in Older Minority Adults

E.S. Breslau, K.M. Belizzi, A. Burness

BACKGROUND: The aging of the baby boom generation coupled with the rising life expectancy of Americans, as well as the increase risk of cancer with age represents a major public health concern. Early detection of cancer has been found to contain health care costs, yet most cancer screening guidelines advocate discontinuing screening after age 75. Screening rates also tend to be lower for racial/ethnic minority groups; a concern due to the projected increases in racial diversity in the U.S.

METHODS: National Health Interview Survey (NHIS) was used to investigate current cancer screening rates (fecal occult blood test [FOBT] within last year, mammogram within last two years, Pap smear within last three years, prostate screening antigen [PSA] within last year among older adults (75 and older) from minority backgrounds without cancer (n=2,328), as well as physician recommendation for screening by these different groups.

RESULTS: Overall, >31% (range=31% to 64% depending on screening test) of older adults received cancer screening tests. Blacks, Hispanics and Asians were less likely than non-Hispanic whites (NHW) to receive FOBT (OR=0.8, 0.4, 0.7, respectively). Similar patterns were found with mammography and PSA for Hispanics and Asians. Hispanics were less likely (OR=0.5) than NHW to receive mammography screening and Pap smear test (OR=0.5; 0.3). Physicians were significantly less likely to recommend FOBT screening to Blacks (OR=0.4) and Hispanics (OR=0.5) compared to NHW. Similarly, Hispanics were less likely (OR=0.5) to receive a doctor's recommendation for mammography screening (OR=0.5) and FOBT (OR=0.3) compared with NHW.

CONCLUSIONS: Despite guidelines that advocate for discontinued screening in older adults after age 75, a significant proportion of older adults are continuing to get screened, with racial/ethnic disparities in screening rates and physician's recommendation for screening tests. Examining the costs versus benefits of continued screening in older minority adults will be critical in light of the changing demographics of the U.S., coupled with the fact that older Americans are living longer and healthier.

Blood-Based Colorectal Cancer Screening: Eliciting Attitudes and Determining Predictors of Interest in a Multiethnic Sample

J. Taber, L.G. Aspinwall, K. Heichman, A. Kinney

PURPOSE: Screening for colorectal cancer (CRC) decreases CRC incidence and mortality; however, screening rates are low and significant health disparities exist. The advent of biomarker technologies such as a blood-based CRC screening test (Septin 9 blood test) may increase CRC screening by decreasing barriers currently contributing to health disparities. While the Septin 9 blood test is highly effective, relatively inexpensive, and requires no preparation, patient beliefs about and interest in this test have yet to be assessed.

METHOD: Both quantitative and qualitative methods will assess beliefs about and interest in the Septin 9 blood test. In an initial elicitation study, 120 community members aged 50-74 will participate in focus groups stratified by race and ethnicity (White, African American, and Hispanic or Latino/a) and screening status (previously screened, never screened). These discussions are designed to elicit perceptions of the Septin 9 blood test on multiple indices of effectiveness, comfort/convenience, and cost, and to identify potential misunderstandings of the test. Focus groups will also be conducted with primary care physicians from multiple settings to assess physician interest in and willingness to recommend the Septin 9 blood test to patients. In the second study, information from the focus groups will be used to design a quantitative survey to assess patients' preferences and perceived barriers and benefits of CRC screening. Demographic (e.g., age, gender, SES), medical history, and psychosocial predictors (e.g., monitoring style, cancer worry, perceived risk) of intentions to undergo the Septin 9 blood test relative to established screening options such as colonoscopy and FOBT will also be assessed. Finally, we will assess differential predictors of Septin 9 blood test uptake versus colonoscopy by offering screening as part of a third study. Information from these studies will be used to develop patient education materials and decision aids.

CONCLUSION: Together, these studies provide a comprehensive assessment of patient and physician attitudes toward blood-based CRC screening, and will provide critical information about how to implement emerging biomarker technology in ways that reduce, rather than exacerbate, health disparities.

Use of Screening Mammography Among Ohio Medicaid Beneficiaries With or Without Intellectual and Other Developmental Disabilities

C. Tyler, P. Bakaki, N. Golchin, S. Loue, S. Koroukian

STUDY OBJECTIVE: To determine whether Medicaid beneficiaries with intellectual and other developmental disabilities (IDD) are less likely than their counterparts without IDD to undergo screening mammography (SM).

METHODS: Our study population consisted of women 50-64 years of age enrolled in Medicaid in Ohio during the years 2002 to 2008, and receiving care through the fee-for-service system (n=140,753). Women with IDD were identified either through diagnostic (ICD-9) codes related to IDD (IDD/Dx), by support service codes related to IDD (IDD/Sc), or by concomitant ICD-9 plus service codes (IDD/Dx+Sc). Data related to SM, demographics, enrollment, and co-morbidities were abstracted to create two logistic regression models. Model 1 examined receipt of at least one SM during the study period, versus none. Among SM recipients, Model 2 examined receipt of SM at the recommended level (annually) vs. less.

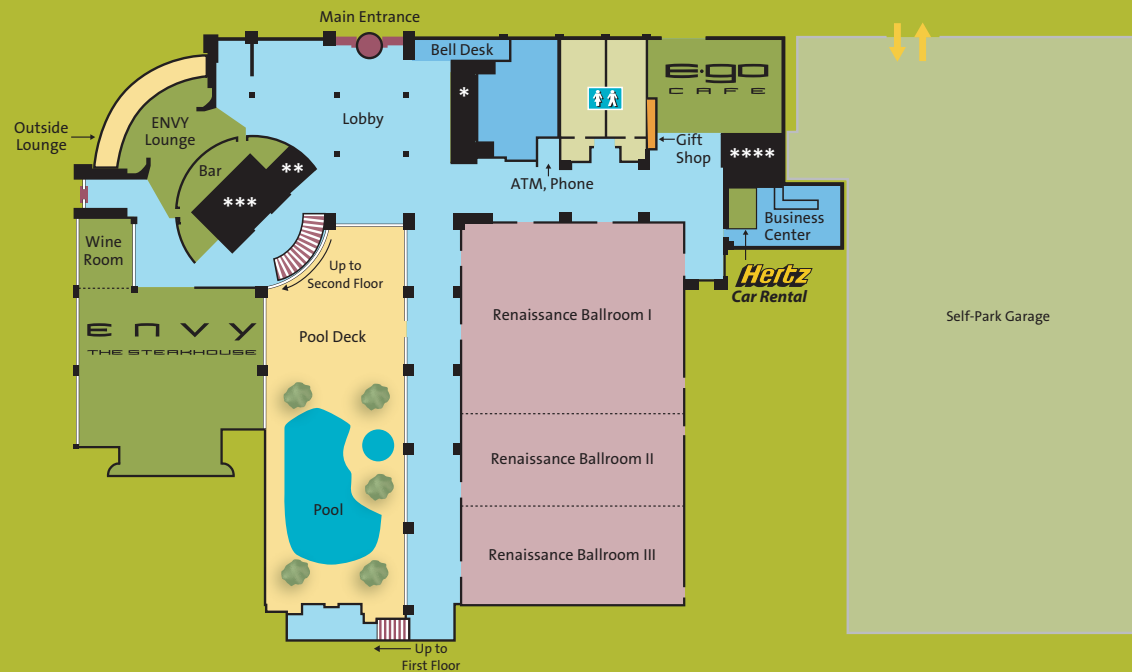
RESULTS: The 5,890 women bearing both ICD-9 and support service codes relevant to IDD (IDD/Dx+Sc) were most likely to receive at least one SM (61.1%) compared to 3732 women in the IDD/Dx (44.8%), 1043 in the IDD/Sc (31.2%), or 130,088 women in the non-IDD groups (34.2%), ($p < .001$). Women in the IDD/Dx+Sc group were also most likely to receive annual SM (12.1% vs. 3.2%, 2.8%, 3.8% respectively, ($p < .001$)). In Model 1, women in the IDD/Dx+Sc group were 79% more likely to receive a SM during the study period (adjusted odds ratio 1.79, 95% CI 1.68 - 1.90) and women with at least one co-morbidity were nearly 6 times more likely to receive a SM (OR 5.6, 5.26-5.98). Each year of enrollment in Medicaid increased the likelihood of SM use by at least 50% (OR 1.53, 1.52, 1.53). Findings from Model 2 indicated that, among SM users, women with IDD/Dx+Sc were nearly twice as likely to receive annual SM (OR 1.92, 1.75, 2.10). Co-morbidities were associated with a lower likelihood to undergo annual SM (OR 0.27, 0.23, 0.30).

CONCLUSIONS: In both models, those women with IDD identified by concomitant diagnosis and support service codes were most likely to receive mammography. Identifying those factors which facilitate better SM in this sub-group might inform cancer screening improvements in the other sub-groups of women with IDD, and in other under-screened populations.

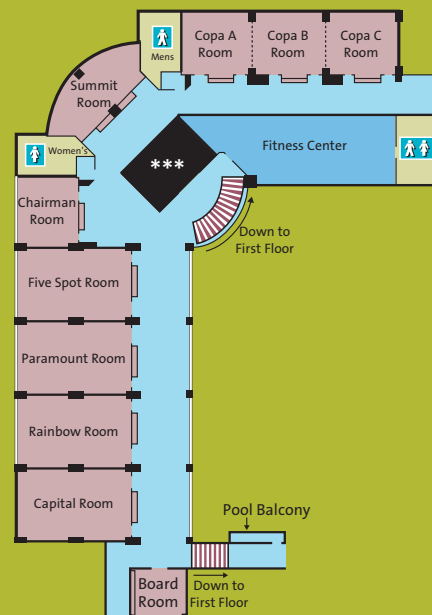


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ASPO fondly remembers those who have passed away in the last year. Their dedication to the prevention of cancer and to cancer research will forever be a part of both their personal and professional legacy.



**Arthur Schatzkin, MD, DrPH
1948-2011**

Dr. Schatzkin was internationally renowned in the area of nutrition and cancer and was dedicated to the advancement of nutritional epidemiology and the mentoring of young scientists.

**Fred F. Kadlubar, PhD
1946-2010**

Dr. Kadlubar was a leading expert in toxicology, biochemistry, carcinogenesis and molecular epidemiology. He was passionate about not only his research but mentoring the junior faculty of the next generation of cancer researchers.



**Elaine Ron, PhD, MPH
1943-2010**

Dr. Ron was a senior investigator at NCI and a leading expert in radiation epidemiology and the causes of thyroid cancer. She was a constant champion of encouraging women in science.

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Faculty Position, Cancer Prevention and Control Program Samuel Oschin Comprehensive Cancer Institute

We are pleased to announce a new faculty position at Cedars-Sinai Medical Center in the Cancer Prevention and Control Program at the Samuel Oschin Comprehensive Cancer Institute (SOCCI). This outstanding academic opportunity will allow the faculty to play a key role in clinical services and translational research related to cancer prevention. This Program will focus on emerging scientific aspects of epidemiology, genetics and translational approaches to cancer risk assessment and prevention and individualized therapies. The faculty member may also help support training of young investigators in cancer risk assessment, prevention and related research.

The cancer prevention program links existing programs and studies across all disciplines in cancer including the coordination of basic research and clinical trials relating to cancer prevention, predisposition, population science, and survivorship. The resulting research program will acquire independent funding and leverage institutional and philanthropic resources.

Qualified candidates will have a Medical Degree from an accredited medical school, have or be eligible for an unrestricted California license as Physician, and have experience in cancer prevention and control, translational research, and collaborative clinical trial design and conduct. Advanced degree or certification in oncology, epidemiology, and clinical investigation is highly desirable. Accomplished PhD's will be considered for the program. Additional requirements include a successful record of publication in peer reviewed journals; the ability to serve as principal or co-investigator on research projects; demonstration of extramural funding. The successful candidate will be eligible for recommendation to the appropriate academic rank in the Cedars-Sinai Medical Center's professorial series and at the David Geffen School of Medicine at UCLA.

A cover letter and CV can be submitted to Dr. Beth Karlan c/o Patricia Carson; carsonp@cshs.org

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**Faculty Position – Translational Cancer Research
Dartmouth Medical School Lebanon, NH**



Norris Cotton Cancer Center invites applications for an established behavioral scientist to enhance translational research relevant to cancer control. A component of Dartmouth Medical School, NCCC is one of only 40 National Cancer Institute-designated comprehensive cancer centers in the nation, and is rated by US News and World Report as one of the top 50 hospitals for cancer care. Dartmouth is located in the Upper Valley of New Hampshire/Vermont, for additional information see the Cancer Center website:

<http://www.cancer.dartmouth.edu/research/index.html> Applicants for this full-time tenured or tenure-track faculty appointment should have a M.D., Ph.D., or M.D./Ph.D., and an outstanding publication record. Candidates will be evaluated based on their publications, ability to maintain an externally funded research program, and the degree to which their research intersects with other members of NCCC. The successful candidate will be appointed in a scientifically appropriate academic department in Dartmouth Medical School at the rank of Associate or Full Professor and will be expected to participate in teaching/mentoring graduate and/or medical students. The departmental appointment will depend on the scientific and clinical expertise of the faculty member. Successful candidates will receive competitive salaries and attractive start-up packages. Curriculum vitae, including extramural grant support, statements of current and future research interests, and contact information for at least five references should be sent in PDF format to: **Cancer.Control.Search@Dartmouth.edu**. Review of applications will begin immediately and will continue until the position is filled.

Meg Gerrard, Cancer Control Co-Director, will be **available at ASPO in Las Vegas** to meet with interested Scientists. Contact: Meg.Gerrard@Dartmouth.edu

Dartmouth is an Affirmative Action/Equal Opportunity Employer. Women and members of minority groups are encouraged to apply.



**Leadership Position in Cancer Control Research:
Associate or Full Professor**

The Department of Medical Social Sciences (MSS)
and the Robert H. Lurie Comprehensive Cancer



Center at Northwestern University invite applications for a tenure-track senior leadership position in cancer control. The candidate will serve as Program Leader of the outstanding ranked cancer control program of this NCI-designated comprehensive cancer center (see www.cancer.northwestern.edu). The cancer control program includes behavioral and population science research, outcomes measurement, disparities research and supportive oncology. It is closely linked to MSS's extensive portfolio in cancer outcomes research including psychosocial aspects of survivorship, quality of life and efficacy of psychosocial interventions. MSS was established in March 2009 by Dr. David Cella to provide a unique interdisciplinary home for applied researchers who integrate biomedical and social science approaches to improvement of health. Scientific themes of the Department center on measurement innovation and rapid translation of basic discovery to clinical application (see www.mss.northwestern.edu). The candidate will be joining MSS at a time of significant opportunity, as it forms its scientific direction. We are particularly interested in candidates who wish to build a sustaining and transformative research program in one or more of the following areas: health disparities, decision science, psychosocial interventions, symptom management, health services and comparative effectiveness research, survivorship and community-engaged research. Considerable departmental and cancer center resources will be allocated to this recruitment.

Candidates should have an outstanding record of scholarly publication, an independent program of extramurally-funded research, which includes evidence of interdisciplinary collaboration, and demonstrated leadership capabilities. Participation in Departmental training activities and University service are also expected and valued. Salary and rank are open and commensurate with experience and credentials. Please email letter of interest (reference # P-211-10), research statement, curriculum vitae, representative reprints and names of three references to Search Chair, David Mohr, PhD, c/o Robin Morrissey at mss@northwestern.edu **Northwestern University is an Affirmative Action, Equal Opportunity Employer. Women and minorities are encouraged to apply. Hiring is contingent upon eligibility to work in the United States.**

ENDOWED CHAIR IN CANCER-RELATED HEALTH DISPARITIES

University of South Carolina, Arnold School of Public Health

The University of South Carolina (USC) in Columbia, SC, seeks applications for an Endowed Chair position within the Arnold School of Public Health (ASPH, <http://www.sph.sc.edu/>), sponsored by the South Carolina Centers of Economic Excellence (CoEE) Program established by the SC General Assembly in 2002 (<http://www.sccoe.org/>). The successful candidate will have a record of publication and extramural support commensurate with a national/international reputation of excellence in a field associated with cancer-related health disparities. The successful candidate is expected to be appointed as a tenured full Professor. He /she will join a strong team of well-funded USC investigators in the areas of epidemiology, health behavior (especially diet and physical activity), basic laboratory-based science (with special focus on inflammation), policy and communications, and environmental, economic, social and health justice. Participation in professional and graduate education, and maintenance of a nationally recognized, extramurally funded research program, will be expected.

The Chair also will be expected to mentor junior faculty and collaborate with USC cancer disparities researchers, including through: P20 Center Grants in health disparities, HIV/AIDS and cervical cancer from the NCMHD and Colon Cancer from the NCCR; and the ASPH-based Cancer Prevention and Control Program, which houses both an NCI-funded Community Networks Program Center, the South Carolina Cancer Disparities Community Network, and a CDC-funded Cancer Prevention and Control Research Network. These ASPH-based programs attract collaborators from across the university, the major health care systems in SC, the SC Department of Health and Environmental Control (DHEC), and from many universities and research institutes from South Carolina, around the country, and across the globe.

Columbia enjoys more than 300 days of sunshine annually and has ready access to both beaches and mountains. It hosts historical and cultural attractions, festivals, performing arts and sporting events, and has parks and outdoor recreation including the Congaree National Park and 50,000 acre Lake Murray.

Candidates are encouraged to submit a letter articulating their research leadership, teaching experience and professional goals, a curriculum vitae, and a statement of research interests and accomplishments to:

Dr. James R. Hébert, Sc.D., Chair, Cancer Disparities CoEE Search,
Arnold School of Public Health, 800 Sumter Street, HESC 109, Columbia, SC, 29208

Electronic applications are encouraged to be sent to craigjr@mailbox.sc.edu

A list of references will be sought after an initial review of applications

The University of South Carolina is an Affirmative Action/Equal Opportunity Employer

The Ohio State University Comprehensive Cancer Center –
Arthur G. James Cancer Hospital and Richard J. Solove Research Institute

*Salutes Dr. Electra Paskett
for her leadership and service to the
American Society of Preventive Oncology*



*American Society of Preventive Oncology
President, 2009-2011*

The Ohio State University Comprehensive Cancer Center

Postdoctoral Fellow in Cancer Health Disparities

The Ohio State University (OSU) Comprehensive Cancer Center seeks applications from individuals interested in obtaining postdoctoral research experience in health disparities starting in summer 2011. OSU, located in Columbus, Ohio, is one of 10 Centers for Population Health and Health Disparities (CPHHD) established by the National Institutes of Health (NIH).

Successful candidates will receive two years of full-time formalized training in health disparities research in Ohio Appalachia that includes: 1) specialized curriculum, 2) mentored research experiences, and 3) development of an NIH grant proposal. Trainees will gain research experience by working on the Community, Awareness, Resources, and Education (CARE II) project. CARE II includes investigations focusing on biologic through policy-level factors and examines the genetic contributions to invasive cervical cancer, the influence of social networks on smoking behaviors, the biological effects of stress on immunity to HPV, and the effects of a multi-level intervention on uptake of the HPV vaccine. The program seeks individuals with an MD or PhD in a health-related discipline. A generous stipend, tuition, health insurance, research support, and travel to a scientific meeting are provided.

In addition, trainees will have the option of focusing their coursework and experiences toward a Master of Public Health degree in the OSU College of Public Health.

Program Eligibility

Prior relevant research and a strong commitment to a continuing career in cancer-related research are desirable. Applicants will be considered for admission based on the quality of their academic doctoral preparation and the rigor of their dissertation research. The OSU CPHHD values diversity and especially encourages applications from individuals from Appalachia, women and under-represented minority scholars. Candidates must be U.S. citizens or permanent residents.

Applications for summer 2011 are being accepted now.

They should include:

- All graduate transcripts
- Three letters of recommendation (including one from dissertation adviser or equivalent)
- Current curriculum vitae
- A statement of goals to be accomplished through the training period.

Send applications to Electra D. Paskett, PhD, at Electra.Paskett@osumc.edu.

For more information about the Center and training program, please visit our website at <http://go.osu.edu/CARE>.



UCLA's Jonsson Comprehensive Cancer Center congratulates
Dr. Patricia Ganz for being honored with the ASPO
2011 Distinguished Achievement Award



Congratulations to Alexander V. Prokhorov, M.D., Ph.D. Professor, Department of Behavioral Science, The University of Texas MD Anderson Cancer Center



Awarded the 2011 Joseph W. Cullen Memorial Award for Excellence in Tobacco Research

The Division of Cancer Prevention and Population Sciences at MD Anderson congratulates Alexander V. Prokhorov, M.D., Ph.D., a professor in the Department of Behavioral Science, and current chair of the American Society of Preventive Oncology's Tobacco Special Interest Group.

Dr. Prokhorov is this year's recipient of the Joseph W. Cullen Memorial Award for Excellence in Tobacco Research in recognition of distinguished leadership in tobacco control, research, prevention and program development. His dedication and expertise have broadly affected public health through innovative research and policy initiatives focused on creating and testing novel tobacco prevention and cessation programs for high-risk teens and young adults.

We honor him for his many contributions as an innovator, researcher, and translational leader dedicated to eliminating smoking and tobacco use in youth and adolescents.

Dr. Prokhorov's other current leadership positions include:

- Director of the Tobacco Outreach Education Program (TOEP) at MD Anderson
- Director of e-Health Technology, a shared resource funded by the Duncan Family Institute for Cancer Prevention and Risk Assessment at MD Anderson
- Principal Investigator of ASPIRE, a multimedia web-based prevention and smoking-cessation program for teens
- Principal Investigator of Project COMBAT, a smoking-cessation program for US Army soldiers



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MD Anderson
Cancer Center

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- ▶ Defining molecular pathways in cancer.
- ▶ Driving advances in personalized medicine through the Georgetown Database of Cancer (G-DOC).
- ▶ Delivering the most advanced and compassionate care.

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<http://lombardi.georgetown.edu/research>

Cancer Prevention Research: from the bench to the sidewalk

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University of New Mexico Cancer Center and School of Medicine

Endowed Chairs and Professorships in Cancer Epidemiology, Cancer Prevention and Control, and Cancer Health Disparities

The University of New Mexico Cancer Center (UNMCC) and the UNM School of Medicine seek applications from physicians and scientists engaged in research in cancer epidemiology – particularly molecular epidemiology, cancer prevention and control, and cancer health disparities. Positions are open at all academic ranks; endowed Professorships or endowed Chairs from the Surface Family Trust will be awarded to successful candidates based on academic rank and achievement. The UNMCC (<http://cancer.unm.edu>) is one of the nation's 66 National Cancer Institute-designated Cancer Centers and the Official Cancer Center of New Mexico. With 85 associated physicians and 127 scientists recruited from leading institutions across the nation, the Center has undergone remarkable growth in the past 10 years. In 2010, the Center cared for 15,888 patients in nearly 140,000 ambulatory clinic visits in a newly constructed \$100 million state-of-the-art cancer treatment facility; over 50% of these patients were racial/ethnic minorities, primarily Hispanic/Latino and American Indian. Supported by an NCI Minority-based Clinical Community Oncology Program grant, the Center annually accrues over 20% of patients to cancer prevention and treatment trials via a collaborative statewide clinical trials network. The UNMCC is supported by over \$59 million in annual research funding. Its distinguishing features are the multiethnic populations that it serves with their striking disparities in cancer incidence and mortality and the integration of regional scientific strengths in cell signaling, genomics, imaging, drug discovery, engineering, nanotechnology, and computational sciences into its research programs. The UNMCC Cancer Population Sciences Program includes the New Mexico Tumor Registry, a founding member of the NCI SEER program which has documented New Mexico's striking cancer patterns. The Program has built extensive regional collaborative networks for community-based participatory research. Clinical/translational targets include cancers of the breast, ovary, and cervix; skin cancer; hematologic malignancies; and cancers of the GI and hepatobiliary tracts, the lung and aerodigestive tracts, and of the head and neck. The UNM Health Sciences Center also has an NIH-funded Clinical and Translational Science Center (hsc.unm.edu/research/ctsc) which further supports clinical/translational/community research and faculty development.

Successful candidates in the junior ranks will be expected to conduct funded research programs in the cancer population sciences, participate in education and training programs, and fully participate in UNMCC and School of Medicine activities. More senior candidates applying for endowed Chairs will be expected to have a national reputation in cancer epidemiology, prevention, behavioral science, or health disparities, with a record of sustained scholarly accomplishment. Senior leadership positions in the UNMCC and SOM Departments are also available.

Specific Requirements:

Minimum Requirements: 1) PhD, Dr.P.H, or MD, with appropriate post-doctoral training in the Cancer Population Sciences; if an MD who wishes to actively practice, must be board certified and eligible to practice in New Mexico; 2) must be eligible to work in US; 3) senior candidates must have an established track record of academic accomplishments with extramural peer-reviewed funding. **Desirable Requirements (Depending on Area of Research):** 1) Experience in cancer-relevant, public health programs; 2) Experience/interest with clinical and community intervention; 3) experience in population cohort development and screening; and 4) experience in population-based molecular epidemiology.

Outstanding salary and programmatic support funds are commensurate with experience. For best consideration, interested candidates should send a signed letter of interest, CV, and the names of three references by June 1, 2011, but positions are open until filled. UNM's Disclosure of Information about Candidates for Employment Policy (Board of Regents' Policy #6.7), which includes information on public disclosure of documents submitted by applicants, is located at <http://www.unm.edu/~brpm/r67.htm>. UNM is an Equal Employment Opportunity/Affirmative Action Employer and Educator.

Please make all inquiries and forward applications or nominations to:

Marianne Berwick, PhD (mberwick@salud.unm.edu)

Chair, Search Committee

Professor and Chief of the Division of Epidemiology and Biostatistics, Department of Internal Medicine

UNMCC Associate Director for Population Sciences

Department of Internal Medicine, University of New Mexico, MSC 10 5550,

1 University of New Mexico, Albuquerque, NM 87131

Email Contact and Applications may also be sent to:

Shannon Griego, Chief Operations Officer, Dept. Internal Medicine

sgriego@salud.unm.edu

Phone: 505-272-4508

FAX: 505-272-4628



Hope at Work

Post Doctoral Fellowship Opportunities

Behavioral Oncology and Molecular & Genetic Epidemiology

Moffitt Cancer Center is an NCI-designated Comprehensive Cancer Center in Tampa, Florida that is shaping the future of cancer care through innovative research, clinical advances and leading-edge programs that bridge caregiver, family and hope.

We are inviting applications to our NCI funded R-25T post-doctoral training programs in Behavioral Oncology as directed by Dr. Paul Jacobsen, and in Molecular & Genetic Epidemiology as directed by Dr. Kathleen Egan. Both programs include a specialized curriculum (tailored to the candidate's needs, background, and interests), one-on-one interactions with experienced and dedicated mentors, and opportunities for research experience on one of our many ongoing studies (our portfolio of peer-reviewed funding is over \$20M per year).

To be considered, we require a doctoral degree in a relevant discipline, commitment to research, transcripts and letters of recommendations - plus some. We're looking for energetic, recently graduated investigators who want to work hard (and have fun while doing it) in the beautiful Tampa bay area - known for world class beaches, year-round golf, biking, tennis, great restaurants and museums (we think this part should be easy).

Review of applications will begin immediately and continue until positions are filled. If interested, please email Christine.Marsella@Moffitt.org for the Behavioral Oncology Program, or Christine.Abel@Moffitt.org for the Molecular & Genetic Epidemiology Program.





**University of Pennsylvania's
Abramson Cancer Center
supports
the annual ASPO meeting
"Cancer Prevention & Control
Across the Lifecourse"**



Faculty Position in Cancer Epidemiology

The Department of Epidemiology and Biostatistics and the Cancer Therapy and Research Center of the University of Texas Health Science Center at San Antonio seek applications from nationally recognized leaders in cancer epidemiology.

The Department of Epidemiology and Biostatistics has 20 full-time faculty and 46 staff with a number of additional affiliate faculty. We have close research and education collaborations with the San Antonio Regional Campus of the University of Texas School of Public Health.

The CTRC is one of four National Cancer Institute (NCI)-designated Cancer Centers in Texas and the only NCI-designated center in South Texas, serving a region of 45,970 square miles (or 4 million people) including a large, multiethnic population. The CTRC is committed to integrated multidisciplinary research and care, and the translation of research findings into the diagnosis, treatment, and especially prevention of cancer while improving the quality of life of cancer survivors. The 96 CTRC researchers have more than \$61 million in extramural research funding and have a broad range of basic, clinical, and population science expertise. The CTRC's three research programs of Cancer Development and Progression, Experimental and Developmental Therapeutics, and Cancer Prevention and Population Science along with a group of developing programs are supported by eight shared resources.

Qualifications include: (1) an earned doctoral degree in epidemiology; (2) demonstrated expertise, research productivity, and extramural funding in cancer epidemiology including evidence of interdisciplinary collaboration; and (3) strong leadership capabilities including experience mentoring junior faculty and other trainees as well as building academic research programs. While all areas of cancer epidemiology will be considered, we particularly encourage candidates with expertise in etiologic research.

A start-up package for the position will include resources to support the development of the cancer epidemiology research program including recruitment of additional faculty.

Applications are being reviewed currently and will continue until the position is filled. The University of Texas Health Science Center is an Equal Opportunity/Affirmative Action Employer. All faculty appointments are designated as security sensitive positions. Interested applicants should send a cover letter describing their qualifications and current curriculum vitae to rolling@uthscsa.edu or by mail to:

Brad H. Pollock, MPH, PhD
Department of Epidemiology and Biostatistics
7703 Floyd Curl Dr., MC7933
San Antonio, TX 78229-3900

Postdoctoral Traineeship in Cancer Prevention and Control

The University of Illinois at Chicago Cancer Education and Career Development Program is seeking candidates for two- to three-year Postdoctoral trainee positions in cancer prevention and control research. One position must have a focus on health disparities. Qualified individuals must have completed a PhD or MD and must be a US citizen or have permanent status.

The positions will be available beginning the Summer 2011. Applications are being accepted until April 15, 2011.

For further information on the program and the application process, please visit our website at <http://cecdp.ihrp.uic.edu/> or contact Candice Zahora, University of Illinois at Chicago, 1747 W. Roosevelt Rd, M/C 275, Chicago, Illinois 60608, Telephone: 312-996-2664.

Please email cecdp@uic.edu if you would like us to contact you to discuss the program.

Faith Davis PhD
CECDP CO-Director



Marian Fitzgibbon, PhD
CECDP Co-Director





Stanford University School of Medicine
Division of Epidemiology, Department of Health Research & Policy
and Stanford Cancer Center

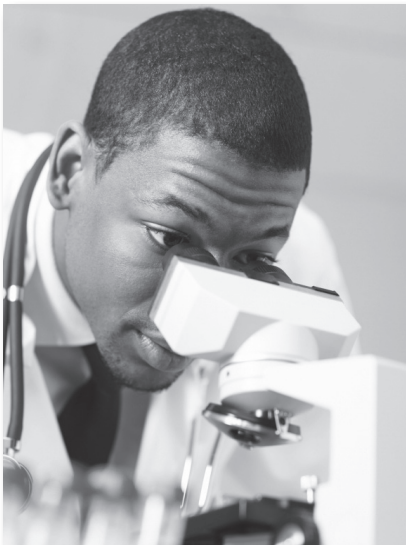


Associate Professor/Professor (Tenure Line)

The Stanford University School of Medicine seeks candidates for a full-time tenure line faculty position in the Division of Epidemiology, Department of Health Research & Policy. The predominant criterion for the University Tenure Line is a major commitment to research and teaching. The successful candidate will assume the role of Associate Director for Population Sciences of the Stanford Cancer Center. We seek demonstrated research excellence in cancer epidemiology, focused on genetic epidemiology, molecular epidemiology or pharmacoepidemiology and a strong interest in cancer prevention. The successful candidate will develop the nationally recognized program of research and participate in the graduate teaching of epidemiology. Qualified applicants should send (1) a letter that describes research and career interests, (2) a curriculum vitae, and (3) three letters of reference to:

Julie Parsonnet, MD, Chair, Epidemiology Faculty Search Committee
c/o Jessica Negrette, Department of Health Research & Policy
259 Campus Dr., HRP/Redwood Building, T152B
Stanford University School of Medicine
Stanford, CA 94305-5405
jnegrette@stanford.edu

Stanford University is an equal opportunity employer and is committed to increasing the diversity of its faculty. It welcomes nominations of and applications from women and members of minority groups, as well as others who would bring additional dimensions to the research, teaching and clinical missions of the university.



Cancer Prevention Research Training Program



The program offers fellowships with competitive stipends for:

- Undergraduate students
- Graduate students
- Predoctoral fellows
- Postdoctoral fellows

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Postdoctoral Position – Division of Epidemiology

Postdoctoral Fellowship in Cancer Genetics/Cancer Genetic Epidemiology, Mayo Clinic Department of Health Science Research, Division of Epidemiology (<http://hsrwww.mayo.edu/epi/>), announces a postdoctoral position in cancer genetics/cancer genetic epidemiology. This position will be funded by grants from the National Cancer Institute.

Qualified postdoctoral research fellow applicants will have a Ph.D. in epidemiology, statistical genetics, or a related field with significant experience in human genetics. The candidate in this position will collaborate with Mayo Clinic and external researchers on analysis, interpretation, presentation, and publication of results from ovarian and colorectal cancer case-control, survival, and family studies, including candidate gene, genome-wide, and sequenced-based approaches. Successful applicants must have a strong publication record demonstrating their creativity, expertise, and productivity. Applicants should have excellent communication skills, the ability to work as part of a fast-paced and collaborative team, and demonstrated ability to be self-directed, highly motivated, and industrious. The period of the appointment is negotiable.

Located 80 miles southeast of the Minneapolis-St. Paul metro area, the Mayo Clinic is a world-class healthcare institute with cutting-edge genetic research programs. It is well regarded for its cancer research, which includes established resources such as the Rochester Epidemiology Project, and SPORes in prostate, ovarian, breast, and pancreatic cancers, brain tumors, lymphoma, and myeloma. The NCI-designated comprehensive Mayo Clinic Cancer Center (MCCC) provides extensive infrastructure support for patient-oriented research, including strong biostatistical support, shared analytical resources supporting population science, and well-equipped laboratories and cores. Please visit <http://mayoresearch.mayo.edu/mayo/research/cancercenter/> and <http://www.mayo.edu/> for more information about the MCCC and Mayo Clinic.

The Mayo Clinic is a not-for-profit organization that integrates research with clinical practice and education in a multi-campus environment. Mayo Clinic offers an attractive benefit package. Salary is very competitive and will be determined by the successful candidate's experience. Please send a statement of interest and accomplishments, curriculum vitae, and the names of three references to:

Ellen L. Goode, Ph.D., M.P.H.
Department of Health Sciences Research
Mayo Clinic College of Medicine
200 First Street SW • Rochester, MN 55905
Phone 507-266-7997 • Fax 507-266-2478 • Email: egoode@mayo.edu

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It includes 36 PhD or MD investigators with expertise in cancer prevention and control, behavioral science, health services research, epidemiology, biostatistics, and other fields.
- **We are an integral part of Seattle's biomedical core** thanks to our partnerships with the University of Washington, Fred Hutchinson Cancer Research Center, and Seattle Children's Research Institute.
- **We are proud to be a founding member of the NCI-funded Cancer Research Network (CRN)** and to lead cutting-edge collaborative research that contributes to national efforts to prevent and control cancer.

Learn more at www.grouphealthresearch.org

Postdoctoral Fellowship in Cancer Prevention and Control

The Cancer Prevention and Control Program at the Arizona Cancer Center (AZCC) is seeking applications for postdoctoral research training. This position is funded through a R25T grant from the National Cancer Institute (NCI). The AZCC R25T Postdoctoral Fellowship trains individuals from the health professions, biomedical, and behavioral sciences to become leaders in the field of cancer prevention and control (CPC) via formal coursework, seminar series, workshops, conferences, and interactions with mentors.

Top-level Scientists

Research opportunities within a team of leading CPC scientists with extensive training and mentoring experience.

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Diverse experiential environment for transdisciplinary collaboration across departments, the state, nation, and internationally.

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Flexible training and specialized curriculum tailored to meet fellows unique interests and develop independent research projects.

NCI-Designated Cancer Center

One of four NCI-Designated Cancer Centers. One of five with a NCI Specialized Program of Research Excellence (SPORE) for gastrointestinal cancers and lymphatic cancers.

Eligible candidates are U.S. citizens/permanent residents who have completed doctoral-level training.

Visit us online at www.azcc.arizona.edu/academics/cpc-fellowship

or contact the R25T Program Coordinator, Crystal Espinoza, at 520-626-7517, cespinoza@azcc.arizona.edu



Visit cancercontrol.cancer.gov

Your SOURCE for

- Cancer control research funding announcements and opportunities
- Survey instruments and public use data for many topic areas, such as cancer information seeking, diet, physical activity, tobacco use, health services, and cancer outcomes and survivorship
- Cancer statistics from the SEER and State Cancer Profiles Web sites, among others
- Reports, including the *Cancer Trends Progress Report* and the *Annual Report to the Nation on the Status of Cancer*
- Monographs about tobacco control, diet and physical activity, cancer incidence, patient-centered communication, mortality, and survival
- Intervention products for health communication, nutrition, cancer screening, and smoking prevention and cessation
- Information concerning current trans-NIH and NCI-funded research initiatives
- Cancer control tools and resources
- Employment opportunities in the division

What's NEW

- *Small Area Estimates for Cancer Risk Factors & Screening Behaviors*, model-based estimates for states, counties, and health service areas using combined survey data
- *Smokefree Women* Web site, with downloadable, interactive social networking features and tools
- Interactive maps of DCCPS-awarded grants in the United States and internationally — including a breakout of ARRA-funded projects
- New dietary data and *NHANES Dietary Web Tutorial* for data users
- *Grid-Enabled Measures (GEM)*, a dynamic database containing behavioral and social science measures
- *Patient-Reported Outcomes Measurement Information System® (PROMIS®)* brochure
- Cancer Control P.L.A.N.E.T. Cyber-Seminar Series — Interactive sessions on identifying and adapting evidence-based programs
- *HMO Cancer Research Network (CRN)* publication (updated April 2010)
- *Energy Balance Research at NCI* Web site, including specific initiatives, research and training resources, and funding opportunities
- *Comparative Effectiveness Research (CER)* Web site, including funding information and resources
- Free archived *Webinar on Physical Activity Measurement*
- *Measures of the Food Environment* Web site, a searchable compilation of articles and instruments on community-level measures



COLUMBIA UNIVERSITY MEDICAL CENTER
Herbert Irving Comprehensive Cancer Center

**Columbia University's
Herbert Irving Cancer Comprehensive Cancer Center and
Mailman School of Public Health**

**Would like to congratulate our Outstanding
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**Columbia seeks outstanding cancer epidemiology and prevention
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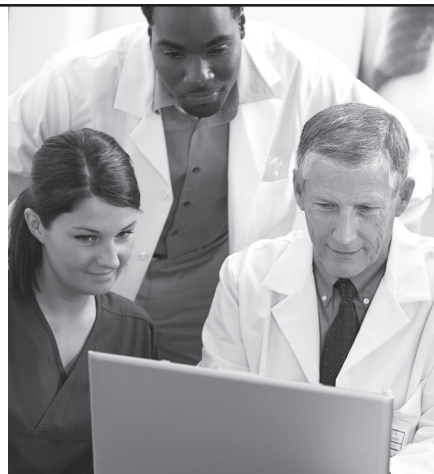
Please contact Al Neugut (ain1@columbia) for more information

Cancer Prevention Fellowship Program

The National Cancer Institute (NCI) Cancer Prevention Fellowship Program is looking for future leaders in the fields of cancer prevention and control.

During this 3-4 year postdoctoral training program, fellows receive:

- The opportunity to obtain a Master of Public Health degree
- Mentored cancer prevention research opportunities in epidemiology, biostatistics, laboratory, clinical, and social and behavioral sciences at the NCI or the Food and Drug Administration
- NCI Summer Curriculum in Cancer Prevention
- A stipend and other benefits



**To view the catalog and apply
online by August 25, 2011,
visit: [http://www3.cancer.gov/
prevention/pob](http://www3.cancer.gov/prevention/pob)**

Candidates must have a doctoral degree (M.D., Ph.D., J.D., or equivalent), less than five years postdoctoral experience, and must be a citizen or permanent resident of the United States at the time of application. NCI is an equal opportunity employer.



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