AMERICAN SOCIETY
of
PREVENTIVE ONCOLOGY

36th ANNUAL MEETING

PROGRAM & ABSTRACTS

March 3-6, 2012

The Georgetown Hotel & Conference Center, Washington, DC

ASPO PROGRAM AT A GLANCE: March 3-6, 2012, Georgetown Conference Center
(more details available in following pages)

Time	Name of Session	Room Name
Saturday, March 3		
4-8pm	Assoc Director/Prog Leader Workshop - Part 1	Conf Rm. 5 & 6
Sunday - March 4		
8am - Noon	Assoc Director/Prog Leader Workshop - Part 2	Conf Room 5 & 6
10am - 1pm	New Investigators Workshop (NIW)	Conference Room 2
Noon - 4pm	Working Lunch Meeting of ASPO Exec Comm	Executive Board Room
2 - 4pm	Mtg of NCI R25 Principal Investigators	Salon F
1-4pm	ASPO Junior Member Sessions	Salon BC
4 - 6pm	General Session of ASPO	Salon AG
6 - 7:30pm	Networking mixer	South Gallery
Monday - March 5		
8 - 9:30am	Breakfast Session 1 Diet & Nutrition	Salon HF
	Breakfast Session 2: Tobacco	Salon BC
	Breakfast Session 3: Behavioral Onc/Cancer Comm	Salon DE
9:30 - 10am	BREAK	
10-11:45 am	Concurrent Paper Sessions	
	Paper Session 1: Transdisciplinary Risk Prediction	Salon AG
	Paper Session 2: Biobehavioral Determinants	Salon BC
Noon - 1:30pm	Best Hot Topic Paper Session lunch	Salon AG
2pm - 3:30pm	Concurrent Symposia	
	Symposium 1: Energetics & Genomics	Salon AG
	Symposium 2: Practice -Based Evidence	Salon BC
3:30-4 pm	BREAK	
4 - 5:30pm	Concurrent Symposia	
	Symposium 3: Decision Making	Salon AG
	Symposium 4: Comparative Effectiveness	Salon BC
5:30pm - 6:15pm	ASPO Business Meeting	Salon AG
6:15pm-8pm	Poster Session & Reception (dinner on your own)	West Lobby
Tuesday - March 6		
8:00 - 9:30am	Breakfast Session 1: Survivorship	Salon BC
	Breakfast Session 2: International Cancer Prevention	Salon HF
	Breakfast Session 3: eHealth/mHealth	Salon DE
9:30 - 10am	BREAK	
10am - Noon	Current and Future Perspectives	Salon AG
Noon - 12:30pm	BREAK	
12:30 - 2pm	Concurrent Lunch Programs	
	Session 1: NCI Session on Career Development	Salon BC
	Session 2: Senior Faculty Development	Salon HF
2 - 3:30pm	Concurrent Paper Sessions	
	Paper Session 3: Breast Cancer	Salon AG
	Paper Session 4: Opportunities for Prevention	Salon BC
3:30pm	conclusion of ASPO meeting	

American Society of Preventive Oncology

36th Annual Meeting

President:
Peter Shields, MD
The Ohio State University

Program Co-Chairs:

Michele R. Forman, PhD
University of Texas - Austin

Anita Y. Kinney, PhD
University of Utah

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. Michele Forman** and **Anita Kinney** for their extraordinary commitment in facilitating the development of the program for this meeting, and to the entire 2012 ASPO Program Committee for sharing their expertise and their valuable contributions to the program.

2012 Program Committee

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Fred Hutchinson Cancer Research Institute

Cheryl Thompson, PhD
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Support Acknowledgements

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

National Cancer Institute (conference grant R13 CA168298)
The Ohio State University
American Society of Clinical Oncology (ASCO)
Prevent Cancer Foundation

American Cancer Society
In addition to its generous support of the ASPO Distinguished Achievement Award, the American Cancer Society and American Society of Preventive Oncology are pleased to announce the first annual "Calle/Rodriguez Minority Travel Award for a Top-Ranked Abstract" funded by the American Cancer Society. Drs. Jeanne Calle and Carmen Rodriguez were highly-respected epidemiologists, beloved colleagues and friends to many in the cancer research community. As Vice President of Epidemiology at the American Cancer Society, Dr. Calle was Principal Investigator of the Cancer Prevention Study (CPS)-II, a prospective study of more than one million men and women designed to identify risk factors for cancer. In particular, Dr. Calle was the lead author on widely-cited landmark studies establishing the link between obesity and cancer risk. She also guided the development and initiation of CPS-III, a study that will further our understanding of the causes of cancer and ways to prevent it for the next generation. A physician from Spain, Dr. Rodriguez was the Strategic Director of the CPS-II biospecimen repository. She published more than 100 scientific articles, with a special interest in studying ovarian and prostate cancers. Her work on the associations between hormone replacement therapy and cancer risk earned widespread media attention. Dr. Rodriguez also served as a Spanish-speaking spokesperson for the American Cancer Society. Professionally, Jeanne and Carmen were more than scientists; they were valued colleagues and committed mentors to many. Carmen and Jeanne passed away within months of each other in 2008-2009. While their deaths have been a tremendous loss, their spirits will live on in part due to the generosity of others whose donations allow the American Cancer Society to create this memorial award.

1st Annual Calle/Rodriguez Minority Travel Awards for a Top-Ranked Abstract awardees:

Arelis Martir-Negron, MD, City of Hope
Iman Martin, PhD, MPH, MS, University of Illinois – Chicago

EXHIBITORS

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

American Institute for Cancer Research (AICR)

The American Institute for Cancer Research is a non-profit organization focusing exclusively on diet, nutrition, physical activity, and cancer. Our mission is to fund research and to increase the awareness and understanding of the role of diet, nutrition and physical activity in cancer prevention, treatment, and survivorship.

American Society of Clinical Oncology (ASCO)

The American Society of Clinical oncology (ASCO) is the world's leading professional society of multidisciplinary oncology practitioners. Join ASCO onsite and receive a free engraved organizer and immediate access to valuable member benefits. Current members can also receive an engraved organizer when they bring a colleague to join ASCO.

Division of Cancer Control and Population Sciences (DCCPS) National Cancer Institute (dccps.nci.nih.gov)

The Division of Cancer Control and Population Sciences at the National Cancer institute, part of the National Institutes of Health, conducts and supports an integrated program of the highest quality genetic, epidemiological, behavioral, social, applied, and surveillance cancer research. Learn about funding announcements, tools, resources, and employment opportunities.

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 Ohio State University Comprehensive Cancer Center – Arthur G. James Cancer Hospital and Richard J. Solove Research Institute (OSUCCC-James)

The OSUCCC – James is the only cancer program in the country that features an NCI-designated comprehensive cancer center aligned with a nationally ranked academic medical center and free-standing cancer hospital. It is here, at one of the nation's largest public universities, that some of the world's leading experts and brightest minds from many disciplines join forces to create knowledge and integrate groundbreaking research with excellence in education and patient-centered care. We are singularly focused on our shared vision: to create a cancer-free world, one person, one discovery at a time.

ASPO – 2012

Executive Committee

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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's poster session will be Monday, March 5th. Please have your poster displayed by 5pm for judging purposes. The poster session and reception will be from 6:30pm – 8pm. Your poster must be removed by 8:30pm on Monday evening.
*In order to be considered for the student prizes (pre- or post-doc status) , PLEASE affix an ORANGE sticker (available at registration desk) to your poster.

A distinguished panel of senior faculty will select various outstanding posters at the poster session. Awards will be announced and presented at the end of the poster 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 8:30pm 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 37th Annual Meeting of the American Society of Preventive Oncology will be held: **March 9-12, 2013, at the Peabody Hotel, Memphis, TN**

ASPO 2012 - Program Details

Saturday, March 3, 2012

4-8pm
Conf Room 5 & 6

Meeting of the Associate Directors/Program Leaders for Cancer Prevention & Control (Part 1) (*invitation only)*

Sunday, March 4, 2012

8-5pm

ASPO registration (in the ballroom foyer)

8-Noon
Conf Room 5 & 6

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

10am-1pm
Conference Room 2

New Investigators Workshop
(open to accepted applicants)
Organizer: **Judith Jacobson, DrPH**
Columbia University Mailman School of Public Health

Workshop Faculty:

Jean Ford, MD, Johns Hopkins University
Li Li, MD, PhD, Case Western Reserve University
Alfred Neugut, MD, PhD, Columbia University
Parisa Tehranifar, DrPH, Columbia University

Workshop Participants:

Hannah Arem, MHS, National Cancer Institute
Rachel Atkinson, PhD, UT M.D. Anderson Cancer Center
John T. Brinton, MS, UC-Denver
Lissette Delgado-Cruzata, PhD, MPH, Columbia University
Gem M. Le, PhD, Cancer Prevention Institute of California
Jonathan Mitchell, PhD, University of Pennsylania
Rebekah Nagler, PhD, Harvard University

Noon-4pm
Executive Board Room

ASPO Executive Committee Working Lunch Meeting
(Open to ASPO Executive Committee members)

1-4pm
Salon BC

ASPO Junior Members Sessions (open to all registrants):
1) Careers in Cancer Prevention: What You May Not See from Inside your Academic Department
Chair: Brian Sprague, PhD, University of Vermont

This will be a panel discussion of various career paths in cancer prevention research, with particular attention to careers outside of academia. Brief presentations by speakers with experience at non-profit organizations, government, consulting firms, cancer centers, and health care research divisions will be followed by an extended question and answer session.

Panelists include:
Diana Buist, PhD, Group Health Research Institute
Deborah Erwin, PhD, Roswell Park Cancer Institute
Shira Kramer, PhD, Epidemiology International
Corinne Leach, PhD, American Cancer Society
Heather Patrick, PhD, National Cancer Institute

2) Getting Published: Tips for Writing Manuscripts and Navigating the Review Process
Chair: Karen Kaiser, PhD, Northwestern University

The seminar will focus on practical tips and information related to manuscript writing, including: 1) drafting manuscripts in a timely manner; 2) working with co-authors; and 3) successfully handling the manuscript submission and revision process.

Panelists are:
Timothy Rebbeck, PhD, University of Pennsylvania
Lisa Sharp, PhD, University of Illinois at Chicago
Sally Vernon, PhD, University of Texas Houston

2-4pm
Salon F

Meeting of NCI R25 Principal Investigators

Sunday, March 4, 2012 (cont.)

4-6pm
Salon AG

OPENING SESSION

Welcome: ASPO President, **Peter Shields, MD,**
The Ohio State University

Plenary Session:

"Obesity, Metabolic Syndrome, and Breast Cancer Disparities"'

Lucile Adams-Campbell, PhD, Georgetown University

Awardee Addresses:

Distinguished Achievement Award Address:

"The Science of Cancer Health Disparities: The Good, the Bad, and the Ugly"

Electra Paskett, PhD, The Ohio State University

Distinguished Achievement Award is sponsored by the American Cancer Society

Joe Cullen Award Address:

"Tobacco Smoke Biomarkers and Cancer Risk in the Shanghai Cohort Study"

Stephen Hecht, PhD, University of Minnesota

6-7:30pm
South Gallery

Networking Mixer (open to all - Jr/Sr Member Networking)
(cash bar, light appetizers)

Dinner on your own

Monday, March 5, 2012

8am-5pm ASPO registration (in the ballroom foyer)

8-9:30am **Concurrent Breakfast Roundtable Sessions**
(continental breakfast served)

Salon HF **1. Diet & Nutrition Special Interest Group Breakfast**
"Lessons Learned from Animal Models of Prevention and Transdisciplinary Studies"
Chair: **Michele Forman, PhD**, UT-Austin
Patti Thompson, PhD, University of Arizona
Stephen Hursting, PhD, UT-Austin

Salon BC **2. Tobacco Special Interest Group Breakfast**
"The Changing Smokeless Tobacco Market: Implications for Cancer and Public Health"
Chair**: K. Michael Cummings, PhD, MPH,**
Medical University of South Carolina
Alan Blum, MD, University of Alabama; and
Richard O'Connor, PhD, Roswell Park Cancer Institute

Salon DE **3. Behavioral Oncology/Cancer Comm SIG Breakfast**
"Participatory Research – CTSA"
Chairs: **Chanita Hughes-Halbert, PhD**, Medical University of South Carolina & **Rena Pasick, DrPH**, UC-San Francisco
Speakers: **Lorna McNeill, PhD**, M.D. Anderson Cancer Center & **Brian Rivers, PhD,** Moffitt Cancer Center

9:30-10am **Nanomixer**

Monday, March 5, 2012 (cont.)

10-11:45am **Concurrent Paper Sessions**

Salon AG **Paper Session 1: Transdisciplinary Risk Prediction**

Chairs: **Li Li, MD, PhD,** Case Western Reserve University
Guillermo Tortolero-Luna, MD, PhD, University of Puerto Rico

Michael Scheurer, PhD, MPH, Baylor College of Medicine,
"The role of polymorphisms in DNA repair genes and HPV 18 integration status in cervical dysplasia"

Yuan-Chin Amy Lee, PhD, University of Utah,
"Tobacco addiction and the risk of upper aerodigestive tract cancer in a multicenter case-control study"

Kristin Wallace, PhD, Medical University of South Carolina,
"Race and risk of large bowel polyps in younger and older patients"

Xuehong Zhang, , MD, ScD, Harvard University,
"Prospective cohort studies of vitamin B6 intake and colorectal cancer incidence: modification by time?"

Sarah Lowry, MPH, University of Washington,
"Risk of non-Hodgkin lymphoma in relation to tricyclic antidepressant use"

Salon BC **Paper Session 2: Biobehavioral Determinants and Mechanisms**

Chairs: **Clement Gwede, PhD,** Moffitt Cancer Research Center
Marc Schwartz, PhD, Georgetown University

Isaac Lipkus , PhD, Duke University,
"Perceived Risk and Worry for One's Partner and Self Correlate with Desire to Quit in Dual-Smoker Couples"

Rebecca Ferrer , PhD, National Cancer Institute,
"An Affective Booster Moderates the Relationship Between Message Frame and Behavioral Intentions "

Jane Zapka, ScD, Medical University of South Carolina,
"Research Addressing Follow-up for Abnormal Cancer Screening Tests: NCI Portfolio Analyses"

Kathrin Milbury, PhD, UT M.D. Anderson Cancer Center,
"Observed Social Support Behaviors and Cancer-Related Cognitive Processing in Couples Coping with Head and Neck Cancer (HNC)"

Erin Costanzo, PhD, University of Wisconsin-Madison,
"Immune Responses Contribute to Depression, Fatigue, and Pain in Hematopoietic Stem Cell Transplant Recipients"

Noon-1:30pm
Salon AG

Best Hot Topic Papers: Cancer Epidemiology, Biomarkers and Prevention (CEBP) (Box lunch provided)

Chair: **Timothy Rebbeck, PhD**, University of Pennsylvania

"Detection of Bladder Cancer Using Novel DNA Methylation Biomarkers in Urine Sediments"
Jean-Pierre Issa, MD, Temple University

"A Large Cohort Study of Long-term Acetaminophen Use and Prostate Cancer Incidence"
Eric Jacobs, PhD, American Cancer Society

"A Long-Term Prospective Study of Type-Specific Human Papillomavirus Infection and Risk of Cervical Neoplasia among 20,000 Women in the Portland Kaiser Cohort Study"
Mark Schiffman, MD, MPH, National Cancer Institute

2-3:30pm
Salon AG

Concurrent Symposia
Symposium 1: Energetics & Genomics
Chairs: **Lisa Colbert, PhD,** University of Wisconsin
Marc Schwartz, PhD, Georgetown University
Cheryl Thompson, PhD, Case Western Reserve University

"DNA Methylation as a Sensor for Age and Exposures"
Jean Pierre Issa, MD, Temple University

"Obesity, Insulin-related Markers, Cancer Risk and Prevention – Implication to Personalized Medicine"
Jing Ma, MD, PhD, Harvard Medical School

"DNA Methylation: A Potential Biomarker for the Evaluation of the Efficacy of Behavioral Interventions"
Angela Bryan, PhD, University of Colorado-Boulder

Monday, March 5, 2012 (cont.)

2-3:30pm **Symposium 2: Practice-Based Evidence: Sustainable Interventions for the Clinic and Community**

Salon BC

Chairs: **Amelie Ramirez, DrPH,** UTHSC at San Antonio
Beti Thompson, PhD, Fred Hutchinson Cancer Research Center
Rena Pasick, DrPH, UC-San Francisco

"If We Want More Evidence-Based Practice, We Need More Practice-Based Evidence"
Lawrence W. Green, DrPH, UC-San Francisco

"What Types of Evidence Do We Need to Produce Relevant and Sustainable Interventions?"
Russell E. Glasgow, PhD, National Cancer Institute

"Reaching Thousands to Efficiently Find the Few: A Practice-Based Intervention for Low-Income Women at Risk for Hereditary Breast Cancer"
Rena Pasick, DrPH, UC-San Francisco

3:30-4pm **Nanomixer**

4-5:30pm **Concurrent Symposia**

Salon AG

Symposium 3: Decision Making: What Does it Take to Move Observational Research to Policy?
Chairs: **Michele Forman, PhD,** UT-Austin
Peter Shields, MD, The Ohio State University
Walter Willett, MD, DrPH, Harvard University
Moderator: **Michele Forman, PhD**, UT-Austin

"Diet and Lifestyle: Getting to Action Without Randomized Trials"
Walter Willett, MD, DrPH, Harvard School of Public Health

"Translating Tobacco Control Research to Regulation and Policy"
Peter Shields MD, PhD, The Ohio State University

"Evidence-Based Review System for Cancer Health Claims"
Paula Trumbo, PhD, U.S. Food and Drug Administration

Salon BC

Symposium 4: Comparative Effectiveness Research Across the Cancer Continuum – Building Blocks Necessary to Influence Policy

Chairs: **Diana Buist, PhD,** Group Health Research Institute
Mack Ruffin, MD, University of Michigan

"Cyberinfrastructure for Improving Comparative Effectiveness Research in Cancer: The CYCORE Project"
Susan Peterson, PhD, UT MD Anderson Cancer Center

"Common Ground: Proposed Terminology for Consistency in CER – The Case of Cancer Screening"
Jessica Chubak, PhD, Group Health Research Institute

"Stakeholder Engagement in Research – How Does this Work and is this Possible with the Existing Funding Paradigm"
Diana Buist, PhD, Group Health Research Institute

5:30-5:45pm
Salon AG

ASPO/ASCO/Prevent Cancer Foundation Cancer Prevention Research Fellowship Awardee Address:
"Inflammatory Bowel Disease and Survival After Colorectal Cancer"
Scott V. Adams, PhD, MPH
Fred Hutchinson Cancer Research Center

5:45-6:30pm
Salon AG

ASPO Business Meeting (open to all ASPO members)
Please come and discuss the 3-5 year Strategic Plan for ASPO:
See our draft new vision, mission statement and goals next page

6:30-8pm
West Lobby

Poster Session and Reception *(dinner on your own)*
(Appetizers and cash bar available)

The Poster Session Reception is partially sponsored by The Ohio State University Comprehensive Cancer Center - Arthur G. James Cancer Hospital and Richard J. Solove Research Institute.

Monday, March 5, 2012 (cont.)

In 2011, ASPO began a strategic planning process to revise our Vision and Mission, and to develop goals and objectives for the next 5 years. We will discuss the current draft with the membership at the business meeting on Monday, March 5 at 5:45pm. ***Please attend!***

For discussion at ASPO Business Meeting:

ASPO STRATEGIC PLANNING KEY DECISIONS TO FINALIZE

Draft VISION:

ASPO is the Organization for accelerating progress towards cancer prevention and control

Draft MISSION:

ASPO fosters the continuing development of investigators involved in cancer prevention and control, and the exchange and translation of scientific information to reduce the cancer burden.

Draft GOALS:

1. **ASPO Infrastructure: Enhance organizational and financial resources to maximize membership growth, retention and involvement.**

2. **CAREER DEVELOPMENT: Provide exceptional professional development to investigators at any career stage to maximize their success.**

3. **EXCHANGE OF SCIENTIFIC INFORMATION: Provide forums for the ongoing exchange of scientific information.**

4. **TRANSLATION OF SCIENTIFIC INFORMATION: Foster implementation and broaden dissemination of scientific discoveries.**

ASPO Strategic Planning Committee Members:

Melissa Bondy
Dejana Braithwaite
Wendy Demark-Wahnefried
Michele Forman
Sue Gapstur
Ellen Goode
Kristi Graves
Ernie Hawk
Peter Kanetsky
Anita Kinney
Frank Meyskens
Polly Newcomb
Suzanne O'Neill
Electra Paskett
Peter Shields
Mary Beth Terry
Amy Trentham-Dietz

ASPO 2012 - Program Details

Tuesday, March 6, 2012

7:30am-2pm **Registration**

8-9:30am **Concurrent Breakfast Sessions:**
(continental breakfast available)

Salon BC **1) Survivorship Special Interest Group Breakfast:**
Late Effects of Cancer Treatment: Opportunities for Prevention/Early Detection
Chairs**: Anita Kinney, PhD,** University of Utah
Les Robison, PhD, St. Jude Children's Research Hospital

"NCI's Investment in Cancer Survivorship Research: Past, Present and Future"
Catherine Alfano, PhD, NCI Office of Cancer Survivorship

"Late Effects of Childhood Cancers"
Melissa Hudson, MD, St. Jude Children's Research Hospital

"Late Effects of Adult Cancers"
Kevin Oeffinger, MD, Memorial Sloan Kettering Cancer Center

Salon HF **2) International Special Interest Group Breakfast:**
Cancer Prevention for Global Health
Chairs**: Frank Meyskens, MD,** UC-Irvine; and
Dejana Braithwaite, PhD, UC-San Francisco

"Global Cancer Prevention: What has been Achieved and What Could be Achieved?"
Paolo Boffetta, MD, MPH, Mount Sinai School of Medicine

"Capacity-Building Research Partnerships in the African Diaspora?"
Timothy R. Rebbeck, PhD, University of Pennsylvania,

8-9:30am **Salon DE**	**3) Behavioral Oncology/Cancer Communication Special Interest Group Breakfast:** **eHealth/mHealth: Challenges and Opportunities for Use Among Minority Populations** Chairs**: Lorna McNeill, PhD,** UT M.D. Anderson Cancer Center **Amelie Ramirez, DrPH,** UTHSC at San Antonio Speakers: **Jason Purnell, PhD**, Washington University in St. Louis **Damon Vidrine, DrPH**, UT M.D. Anderson Cancer Center **Gary Bennett, PhD**, Duke University
9:30-10am	**Nanomixer**
10-Noon **Salon AG**	**Current and Future Perspectives on Cancer Prevention & Control Research** Moderator: **Peter Shields, MD,** The Ohio State University Panel: **Robert Croyle, PhD**, National Cancer Institute **Barnett S. Kramer, MD, MPH**, National Cancer Institute Cancer Center Directors: **Mary Beckerle, PhD,** Huntsman Cancer Institute, Univ of Utah **Nancy Davidson, MD**, University of Pittsburgh Cancer Institute **Shelton Earp, MD,** Lineberger Comprehensive Cancer Center, UNC – Chapel Hill **Louis Weiner, MD,** Lombardi Comprehensive Cancer Center, Georgetown University
Noon-12:30pm	**Break**

12:30-2pm **Concurrent Lunch Programs** (box lunches will be served):

Salon BC

Session 1: NCI Session on Career Development for Doctoral Students, Postdoctoral Fellows and Junior Faculty

Chairs:
Ming Lei, PhD and Susan Perkins, **PhD**,
National Cancer Institute

Panel:
Joanne Wilkinson, MD, Boston University
Brenda Birmann, ScD, Harvard Medical School

This session, previously open only to invited K07 and R25 awardees, is now open to all ASPO attendees. Presented by NCI, this session will feature

1) introduction to individual funding opportunities available through NCI;
2) tips on how to write a competitive K07 application; and

3) a panel of K07 awardees who have successfully transitioned into independent positions and obtained R01 funding. Participants will have the opportunity to meet with NCI Program staff.

Salon HF

Session 2: Senior Faculty Development:
Career Transition and Mobility: What Does It Take to Move?
Moderator: **Anita Y. Kinney, PhD, RN,** University of Utah

Panel:
Wendy Demark-Wahnefried, PhD, UA - Birmingham
Michele Forman, PhD, UT-Austin
Laura Koehly, PhD, National Human Genome Research Institute
Peter Shields, MD, The Ohio State University

2-3:30pm **Concurrent Paper Sessions**

Salon AG **Paper Session 3: Breast Cancer: Risk Prediction, Screening and Behavior Modification**

Chairs: **Jessica Chubak, PhD,** Group Health Research Institute
Susan Steck, PhD, MPH, University of South Carolina

Rachel Atkinson, PhD, UT M.D. Anderson Cancer Center, "Epidemiological Risk Factors Associated with Inflammatory Breast Cancer Triple Negative Subtype "

Amy Trentham-Dietz, PhD, University of Wisconsin-Madison, "Phenol Xenoestrogens and Mammographic Breast Density"

Elisabeth Beaber, MPH, University of Washington, "Relationship Between Use of Different Oral Contraceptive Formulations and Breast Cancer Risk among Young Women"

Theresa Hastert, MPP, University of Washington, "Reduction in Breast Cancer Risk Associated with Meeting the WCRF/AICR Cancer Prevention Recommendations"

Dejana Braithwaite, PhD, UC – San Francisco, "Benefits and Harms of Screening Mammography Frequency by Age and Comorbidity Score"

2-3:30pm

Salon BC **Paper Session 4: Opportunities for Prevention Across the Cancer Control Continuum**

Chair: **Deborah Glueck, PhD**, UC-Denver

Stephanie Michal, BA, Case Western Reserve University, "Lifestyle and Dietary Risk Factors for Colorectal Hyperplastic and Adenomatous Polyps"

Margaret Wright, PhD, University of Illinois at Chicago, "Ruminant Fatty Acids and Prostate Cancer Risk in the Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study"

Marc Kowalkowski, MS, Baylor College of Medicine, "Deficits in Health-Promoting Behaviors Among Veteran and Non-Veteran Male Cancer Survivors in Texas"

Karen Basen-Engquist, PhD, M.D. Anderson Cancer Center, "Predictors of Cancer Survivors' Receptivity to Lifestyle Behavior Change Interventions"

Deanna Kepka, PhD, MPH, National Cancer Institute, "Non-physician Providers, Cancer Screening, Health Behavior Counseling, Preventive Medicine"

3:30pm **ASPO conference concludes**

PAPER SESSION ABSTRACTS
Monday, March 5, 2012
Session 1: Transdisciplinary Risk Prediction

Michael Scheurer, PhD, MPH

The role of polymorphisms in DNA repair genes and HPV 18 integration status in cervical dysplasia

Amirian ES, Marquez-Do D, Adler-Storthz K, Follen M, Scheurer ME

Despite the fact that cervical cancer is one of the leading causes of death in women worldwide, research has yet to elucidate why some HPV-infected women develop cancerous lesions while others are able to clear the infection. Previous studies have shown that HPV integration status may be associated with cervical cancer development, and yet, host genetic factors that may be involved in the viral integration process have not yet been identified. The purpose of this study was to examine the association between both HPV 18 viral integration status and single nucleotide polymorphisms (SNPs) in non-homologous end-joining (NHEJ) DNA repair pathway genes on cervical dysplasia. Specifically, we sought to compare women with no dysplasia to those with low-grade or high-grade squamous intraepithelial lesions. METHODS: A total of 765 women were selected from two large trials designed to evaluate optical technologies for cervical cancer. Genotyping was performed using the Illumina Golden Gate platform. HPV 18 integration status was determined using a previously established protocol. Chi-square tests were conducted to determine which SNPs were associated with normal cytology, low-grade, or high-grade lesions. Among participants with cervical dysplasia, polytomous logistic regression models were used to evaluate the effect of each polymorphism on viral integration status. An additive genetic model was used for all tests. P-values were adjusted using the false discovery rate method. RESULTS: Women with high-grade lesions were significantly younger than women with low-grade or no lesions. Tag-SNPs in 13 DNA repair genes, including MRE11A, ATM, and XRCC4, were significantly associated with cervical dysplasia. Most participants had a mix of both episomal and integrated HPV 18. Tag-SNPs in the XRCC4, PRKCH, and MRE11A genes were found to be significantly associated with HPV 18 integration status. CONCLUSION: Our study indicates that host genetic variation in NHEJ DNA repair pathway genes, including MRE11A and XRCC4, are significantly associated with HPV 18 integration, and that these genes may play a key role in determining cervical cancer development and progression. This is the first study to examine host genetic variation in association with the viral integration event.

Yuan-Chin Amy Lee, PhD

Tobacco addiction and the risk of upper aerodigestive tract cancer in a multicenter case-control study

Lee YC, Marron M, Benhamou S, Bouchardy C, Ahrens W, Pohlabeln H, Lagiou P, Trichopoulos D, Agudo A, Castellsague X, Bencko V, Holcatova I, Kjaerheim K, Merletti F, Richiardi L, Macfarlane GJ, Macfarlane TV, Talamini R, Barzan L, Canova C, Simonato L, Conway DI, McKinney PA, Thomson P, Znaor A, Healy CM, McCartan BE, Boffetta P, Brennan P, Hashibe M

Background: While previous studies on tobacco and alcohol and the risk of upper aerodigestive tract (UADT) cancers have clearly shown dose-response relations with the frequency and duration of tobacco and/or alcohol, studies on addiction to tobacco itself as a risk factor for UADT cancer have not been published, to our knowledge. The aim of this report is to assess whether smoking addiction is a risk factor for UADT SCC risk in the multicenter case-control study (ARCAGE) in Western Europe independent of tobacco smoking or alcohol drinking intensity or duration. Methods: The analyses included 1,905 ever smoking UADT SCC cases (871 oral cavity/oropharynx, 814 hypopharynx/larynx, 127 esophagus, and 93 overlapping oral cavity/pharynx) and 1,489 ever smoking controls. The addiction variables included first cigarette after waking up, difficulty refraining from smoking in places where it is forbidden, and cigarettes per day. Odds ratios (OR) and 95% confidence intervals (95% CI) for UADT cancers with addiction variables were estimated with unconditional logistic regression, adjusting for center, age, sex, education level, alcohol consumption, and tobacco smoking. Results: Among current smokers, 76.47% of cases were categorized in the highest addiction level, whereas 54.69% of controls were in that category. The participants who smoked their first cigarette within 5 minutes of waking up were two times more likely to develop UADT SCC (OR=2.22, 95% CI 1.57-3.15) than those who smoked 60 minutes after waking up. A higher modified Fagerstram score, reflecting greater tobacco addiction, was associated with an increased risk of UADT SCC among current smokers, but not among former smokers. Conclusion: We observed that time to first cigarette after waking up was associated with UADT SCC risk, regardless of heavy smoking or alcohol drinking behaviors. These results are consistent with residual effect of smoking that was not captured by the questionnaire responses alone.

Kristin Wallace, PhD	Xuehong Zhang, PhD
Race and risk of large bowel polyps in younger and older patients Wallace K., Ahnen D., Burke C., Barry E., Bresalier R., Saibil F., Baron J. African Americans (AA) have a higher incidence of colorectal cancer (CRC) compared to European Americans (EA). However, AA are consistently diagnosed with CRC at a younger age suggesting a possible biologic difference in neoplasms by race. Few studies have investigated racial differences in risk of adenomas, precursors to most colorectal cancer and, to our knowledge, none have investigated whether this risk differs by adenoma type or age. To address this gap, we analyzed data pooled from three placebo-controlled adenoma chemoprevention trials to explore racial differences in the risk of large bowel polyps among younger and older subjects. Eligible subjects had at least one documented adenoma and were followed until their next scheduled colonoscopy. Using generalized linear regression, we estimated risk ratios and 95% confidence intervals (CI) as measures of the association between race and risk for one or more adenomas, advanced lesions, or hyperplastic polyps (HP) after randomization adjusting for age, sex, follow-up time, and treatment assignment. We defined advanced lesions as adenomas with at least 25% villous component, high-grade dysplasia, or an estimated size of 1 ≥ centimeter. We also assessed the potential interaction between race and age on the risk of large bowel polyps. Of the 2683 subjects enrolled, 2605 completed one follow-up exam after randomization (193 AA, 2412 EA). Overall, our results suggested a racial difference in risk for adenomas among younger (< 50 years) but not among older (≥ 50 years) subjects (p-for interaction between age and race for any adenoma (p=0.13) and for advanced adenoma (p=0.04)). Younger AA, when compared to EA had a significantly higher risk of any adenoma (RR 1.73, 95% CI 1.00-3.00) and advanced lesions (RR 4.40, 95% CI 1.47-13.15) but no difference in risk of HP. Among older patients, using the same comparison, there was no racial difference in risk of adenomas (RR 1.06, 95% CI 0.91-1.25) or advanced lesions (RR 1.06, 95% CI 0.71- 1.57)) but there was a significantly lower risk of HP (RR 0.64 (95% CI 0.47-0.88). Our findings suggest that older AA have a lower risk of HP; and AA under the age of 50 years of age are at increased risk of adenomas, especially advanced lesions.	Prospective cohort studies of vitamin B6 intake and colorectal cancer incidence: modification by time? Zhang X, Lee JE, Ma J, Je Y, Wu K, Willett WC, Fuchs CS, Giovannucci EL Background: Vitamin B6 may influence colorectal carcinogenesis through its role in one-carbon metabolism related DNA synthesis and methylation. However, observational studies have been inconclusive and no studies have investigated when in the natural history vitamin B6 intake may prevent colorectal cancer. Method: We followed 86,440 women in the Nurses' Health Study and 44,410 men in the Health Professionals Follow-up Study for up to 28 years. We assessed vitamin B6 intake every 4 years using validated food frequency questionnaires. We evaluated whether higher vitamin B6 intake in the remote past is strongly associated with a lower risk of colorectal cancer than intake in the recent past. Cox proportional hazards regression models were used to estimate multivariable relative risks (MV RRs, 95%CIs). Results: Comparing top with bottom quintiles of total vitamin B6 intake, the mean plasma pyridoxal 5--phosphate (PLP, the active form of vitamin B6) levels were 98.3 pmol/mL and 38.9 pmol/mL in women and were 183.2 pmol/mL and 66.0 pmol/mL in men. Total vitamin B6 intake was significantly associated with an approximately 20-30% lower risk of colorectal cancer in age-adjusted results but these significant associations became attenuated and non-significant after adjustment for other colorectal cancer risk factors. Compared extreme quintiles of cumulative intake of total vitamin B6, the MV RRs (95%CIs) for colorectal cancer were 0.98 (0.80, 1.22; P trend = 0.79) in women and 0.98 (0.76, 1.26; P trend = 0.60) in men. For the same comparison, the MV RRs were 0.92 (0.73, 1.16) for total vitamin B6 intake 0-4 year before diagnosis, 0.99 (0.78, 1.26) for intake 4-8 year before diagnosis, 0.93 (0.71, 1.21) for intake 8-12 year before diagnosis, and 0.93 (0.69, 1.26) for intake 12-16 years before diagnosis. The corresponding MV RRs for men were 0.85 (0.63, 1.16), 0.98 (0.70, 1.37), 0.90 (0.63, 1.28), and 1.19 (0.78, 1.83), respectively. Additionally, results did not differ by cancer sub-site, sources of vitamin B6 (food or supplement), or intake of alcohol and folate. Conclusion: Although a small effect cannot be excluded, our results do not support a strong role of vitamin B6 intake in adulthood in colorectal carcinogenesis among middle-aged and elderly U.S. health professionals.

Sarah Lowry, MPH

Risk of non-Hodgkin lymphoma in relation to tricyclic antidepressant use

Lowry S, Chubak J, McKnight B, Press O, Weiss N

Purpose: We investigated the relationship between prior use of tricyclic antidepressants (TCA) and risk of non-Hodgkin lymphomas (NHL), both overall and for common subtypes of NHL; previous studies provided some evidence of an association with NHL, but did not assess the risk of specific subtypes of NHL, which have been shown to be etiologically diverse.
Methods: We conducted a population-based matched case-control study among members of Group Health (GH), an integrated healthcare delivery system. Cases included GH members diagnosed with NHL between 1980-2011 at age ≥25 with no record of a prior cancer or of certain autoimmune conditions, who had been enrolled for ≥2 years at the reference date (date of diagnosis). Eight controls were matched to each case on age, sex, enrollment on the reference date, and length of prior enrollment at GH. Information on prior TCA use, including dose, duration, recency, and type, was ascertained from automated pharmacy data. We calculated odds ratios (ORs) and 95% confidence intervals (CIs) for NHL (and common subtypes) in relation to various patterns of TCA exposure using conditional logistic regression adjusted for confounders.
Results: We identified 2,768 cases and 22,127 matched controls. We did not observe an appreciably increased risk of NHL among persons who had filled ≥2 TCA prescriptions prior to the reference date compared to those who had filled none (OR: 1.1; 95% CI: 1.0-1.2). Overall risk of NHL was associated to at most a small degree with longer-term use (OR: 1.2; 95% CI: 1.0-1.4 for ≥10 prescriptions), high-dose use (OR: 1.1; 95% CI: 0.8-1.5 for ≥50 mg or equivalent), or use that began more than 5 years prior to reference date (OR: 1.0; 95% CI: 0.9-1.2). TCA use was generally not associated with most major NHL subtypes, though longer-term TCA use was associated with increased risk of chronic lymphocytic leukemia/small lymphocytic lymphoma (OR: 1.5; 95% CI: 1.1-2.0).Conclusions: We found little evidence that TCA use increases risk of NHL, overall or for specific common subtypes of NHL.

PAPER SESSION ABSTRACTS
Monday, March 5, 2012
Session 2 – Behavioral Determinants & Mechanisms

Issac Lipkus, PhD	Rebecca Ferrer, PhD
Perceived risk and worry for one's partner and self correlate with desire to quit in dual-smoker couples Ranby KW, Lewis MA, Toll BA, Rohrbaugh MJ, Lipkus IM Among smokers, the desire to quit smoking is often related to one's health concerns. However, much less is known about how perceptions of health concerns are related in couples in which both partners smoke (i.e., dual smoker couples) and their associations with desire to quit for self. We explored these issues using baseline survey data collected from 63 dual smoker couples recruited from the community in central North Carolina. Participants were aged 21 to 67 (M=43.0, SD=11.3) and had been smoking for 4 to 51 years (M=22.9, SD=11.3) with an average of 17 (SD=8.8) cigarettes per day. Within couples, partners exhibited similar beliefs about worry about physical harm of smoking for oneself (r=.30, p<.05) and partner (r=.30, p<.05), perceived risk of disease for self (r=.26, p<.05) and partner (r=.24, p<.05), and desire that their partner quit (r=.34, p<.01). Individuals' desire to quit was related to their own perceived risk of disease (r=.34, p<.05) and worry about harm (r=.47, p<.001). Further, own desire to quit was related to worry about partner's health (r=.29, p<.01), perceived risk of partner getting a disease if they continued to smoke (r=.39, p<.001), and belief that their smoking has caused partner physical harm (r=.38, p<.001). Participants had an extremely strong desire (78%=7 on 1-7 scale) for their partner's help if they were to quit smoking. These data show 1) there is significant concordance in partners' rating of risk of disease and worry; and 2) an individual's desire to quit is related to both one's perceptions of risk and worry of harm for self but also importantly perceptions of risk, and worry of harm for the partner. Interventions that highlight how smoking harms a couple may be a fruitful, yet currently underutilized, method to increase cessation in dual smoker couples, a high risk group with lower cessation rates and higher relapse rates.	An affective booster moderates the relationship between message frame and behavioral intentions Ferrer RA, Klein WMP, Zajac LE, Land SR , and Ling BS. This study examined whether emotion moderates the degree to which framed messages influences colorectal cancer (CRC) screening intentions and self-efficacy for screening. Previous research has demonstrated that loss-framed messages are more effective than gain-framed messages in motivating detection behaviors such as screening. However, overall effects of framing in the context of health messages have been small and heterogeneous, highlighting the pressing need to identify moderators of framed message effectiveness. We paired a standard framing manipulation with an "affective booster" to increase anticipated and anticipatory emotions associated with the framed messages in a 2x2 (gain-loss by affective booster-no booster). The loss-framed message was paired with a complementary affective booster intended to facilitate worry and regret; the gain-framed message was paired with a complementary booster intended to facilitate relief. Consistent with previous research, we found that loss-framed messages were more effective in increasing intentions to screen for CRC ($\hat{I}^2$ = -.38, t = -2.19, p = .03, d = 0.55). The inclusion of the affective booster had no overall effect on intentions to screen ($\hat{I}^2$ = -.06, t = -0.39, p = .70, d = 0.10). However, we found a significant interaction ($\hat{I}^2$ = .48, t = 2.13, p = .04, d = 0.53), such that among individuals who received gain-framed messages (but not loss-framed messages), the affective booster increased message persuasiveness. A similar pattern of results was uncovered with respect to self-efficacy for screening, where an affective booster increased self-efficacy among the gain-frame message recipients, bringing their self-efficacy in line with those who had received the loss-framed message. This study indicates that in the presence of affective boosters, loss-framed messages may lose their advantage over gain-framed messages in motivating detection behaviors.

Jane Zapka, ScD	Kathrin Milbury, PhD
Research Addressing Follow-Up for Abnormal Cancer Screening Tests: NCI Portfolio Analyses Zapka J, Edwards H, Chollette V, Taplin S *Purpose:* The study's purposes were to identify the portfolio of grants awarded by the National Cancer Institute that addressed follow-up to abnormal screening tests for colon, breast and cervical cancer, document key research design characteristics, and discuss questions and issues for future practice and research. *Methods:* A standardized form was used to audit grants funded from 2002 through 2011. Grant text was independently reviewed by two auditors; differences in reports were discussed until consensus was reached. The investigators then summarized findings in order to distill trends and issues. *Results:* Twelve grants met inclusion criteria; 5, 4, 2 and 1 addressed follow-up of Pap tests, mammography, and colorectal tests and multiple screens respectively. Fifty percent were R01 awards, the majority of which applied group or individual RCT designs. One was a prospective cohort study. R21s typically emphasized qualitative methods and stressed behavioral epidemiology, measurement tool development and intervention planning; several listed aims related to determining prevalence. Definition of outcome measures was variable: e.g. completion of a follow-up test; time to follow-up; and steps until diagnosis. Four studies explicitly focused on ethnic/racial disparities; 5 on low income and underserved populations. Several emphasized measurement development. Three included cost analyses research questions. Most focused on individual level change, although changes in the broader multi-level context were proposed, but at times implicit, often viewed as process measures. A majority included aims related to understanding important mediator and moderator variables. Few explicated multilevel theories, although models reflected an ecological orientation. *Conclusions:* Future practice and research priorities include development of clear operational definitions of follow-up; conceptual and descriptive evaluations of how providers, patients, and organizations interact across the steps and interfaces of follow-up care; determination of priorities for multilevel intervention testing and improvement of measures, and application of appropriate and innovative study designs using multi-methods. This project has been funded in whole or in part with federal funds from the National Cancer Institute, National Institutes of Health, under Contract No. HHSN261200800001E.	Observed Social Support Behaviors and Cancer-Related Cognitive Processing in Couples Coping with Head and Neck Cancer (HNC). Milbury, K; Badr, H. Given the disfiguring and debilitating nature of HNC and its treatment, patients and their spouses are at risk of experiencing trauma symptoms including cognitive intrusion and avoidance which may exacerbate psychological distress. Even though the Social Cognitive Processing Model (SCPM) posits that social support facilitates adaptive cognitive processing, recent literature has pointed to harmful effects of received support. Most studies use self-report measures of perceived as opposed to actual received support focusing on the patient as the recipient of support. In reality, the support process is reciprocal and interdependent involving both receiving and providing support in both patients and spouses. Further, self-reports of cognitive processing are susceptible to self-presentation and defensive biases. The purpose of this research was to examine the association between actual observed support behaviors and cognitive intrusion and avoidance in 60 newly diagnosed HNC patients (87% male) and their spouses using a multi-method approach. As part of an ongoing longitudinal study, couples completed baseline questionnaires including an explicit measure of cognitive intrusion and avoidance (IES), completed a problem-solving discussion task in the laboratory immediately followed by an implicit assessment of cognitive intrusion (cancer Stroop task (CST)). We used the Social Support Interaction Coding System (SSICS) to code the video-recorded discussions. Dyadic analyses using multi-level modeling revealed that when patients and spouses received more (compared to less) positive support behaviors, they demonstrated slower reaction times (RT) on the CST ($p<.01$) indicating greater cognitive intrusion. The results were similar using the self-report method (IES; $p<.05$). No role differences (patients vs. spouses) were found. The current findings map on to recent literature suggesting that receiving support may be initially distressing in the acute phase of the traumatic event as it may elicit negative emotional responses, which are yet necessary to facilitate successful long-term adjustment. Thus, our next step in this ongoing longitudinal study is to examine long-term consequences of these findings as they will reveal clinical implications.

Erin Costanzo, PhD

Immune Responses Contribute to Depression, Fatigue, and Pain in Hematopoietic Stem Cell Transplant Recipients

Costanzo E, Juckett M, Nelson A, Erdmann A, Rathouz P, Hematti P, and Coe C.

Depression, fatigue, and pain are prevalent and distressing quality of life concerns for individuals recovering from hematopoietic stem cell transplantation (HSCT). Recent research in other cancer populations suggests inflammatory cytokines can activate central nervous system pathways, evoking adverse behavioral responses including depressed mood, fatigue, and pain. We hypothesized that inflammatory responses also contribute to these symptoms among HSCT recipients. Participants (24 allogeneic and 68 autologous transplant recipients) completed well-validated measures of depressive symptoms, fatigue, and pain prior to transplant and 30, 100, and 200 days post-transplant. Circulating proinflammatory (IL-6, TNFÎ±) and regulatory (IL-10) cytokines were measured by ELISA in peripheral blood plasma at the same time points. Subject-level fixed effects and mixed effects linear regression models were employed to examine relationships between cytokine levels and quality of life assessments. Results indicated that depression and fatigue were most severe 30 days post-transplant, with allogeneic recipients showing markedly slower improvement than autologous recipients at later assessments. Pain did not change significantly over time. Among individual patients, changes in IL-6 levels across the assessment points were associated with corresponding changes in depressive symptoms (t=2.0, p=.048), fatigue (t=2.7, p=.008), and pain (t=2.0, p=.048), after adjusting for the effects of time since transplant. Similarly, participants with elevated IL-6 levels reported more severe depression (z= 2.9, p=.004), fatigue (z=2.9, p=.004), and pain (z=3.0 p=.003) compared to participants with low/normal IL-6 levels. All models adjusted for graft type and recipient's age. Similar relationships were seen for IL-10, while TNFÎ± was not significantly associated with symptoms. Results provide evidence for a novel biobehavioral pathway by which inflammatory processes secondary to treatment and/or treatment-related complications may contribute to depression, fatigue, and pain among HSCT recipients. Findings may assist health care providers in identifying patients at risk for this constellation of symptoms.

PAPER SESSION ABSTRACTS
Tuesday, March 6, 2012
Session 3 – Breast Cancer: Risk Prediction, Screening and Behavior Modification

Rachel Atkinson, PhD

Epidemiological Risk Factors Associated with Inflammatory Breast Cancer Triple Negative Subtype

Atkinson RL, Sexton K, Ueno NT, Krishnamurthy S, Woodward W, El-Zein R, Brewster AM

Background: Inflammatory breast cancer (IBC) is rare and accounts for ~1% of all invasive breast cancers. The 5-year survival rates are significantly lower than for other types of breast cancer, highlighting the significance of cancer prevention in IBC. A disproportionately higher percentage of IBC patients have triple-negative breast cancer (TNBC; ER^-,PR^- and $Her2^-$) than patients with non-IBC. TNBCs are thought to arise from normal breast stem cells. Our preliminary data indicates that normal breast stem cells are enriched in adjacent normal tissues of patients with TN IBC. We hypothesize that parity and breastfeeding, risk factors that influence the normal stem cell compartment in the breast, will differ between TN IBC and non-TN IBC subtypes. **Methods:** We identified 144 patients diagnosed with IBC in 1991-2011 at MD Anderson. Breast cancer risk factors including parity and breast-feeding were compared between patients with TN and non-TN IBC with chi square or Wilcoxon rank sum tests. **Results:** The average age at diagnosis was 54 years; 83% of patients were non-Hispanic white; and 36% were TN IBC. We found that patients with TN IBC had significantly lower frequency (p=0.02) and duration of breastfeeding (p=0.02) compared with non-TN IBC patients. No differences were found in the frequency of other breast cancer risk factors. **Conclusion:** The association between breastfeeding and TNBC indicates that stem cells that are retained in the absence of breastfeeding may be the cell of origin for TN IBC. These results highlight the importance of evaluating epidemiologic risk factors of IBC according to receptor subtype, which could lead to the identification of distinct etiologic pathways that could be targeted for prevention.

Amy Trentham-Dietz, PhD

Phenol Xenoestrogens and Mammographic Breast Density

Trentham-Dietz A, Sprague BL, Wang J, Hampton JM, Buist DSM, Aiello Bowles E, Sisney G, Burnside E, Hemming J, Hedman C

Concerns have been raised, largely on the basis of laboratory studies, regarding exposure to phenols, particularly bisphenol-A (BPA), in relation to hormone-related cancers. BPA is present in plastic consumer products including canned food linings and #7 polycarbonate plastics. According to recent NHANES data, human exposure as measured in urine is widespread (about 93% of people aged >5) and more common in females than males (Calafat EHP 2008). Concern regarding BPA in relation to breast cancer risk is based on in vivo and in vitro studies that suggest BPA may have a role in estrogen metabolism and mammary gland development. We examined the cross-sectional association of circulating serum levels of 3 phenols with mammographic breast density - a strong marker for breast cancer risk. A total of 264 postmenopausal women ages 55-70 years 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 octylphenol, nonylphenol, and BPA. Percent breast density (mean 15.3%, range 0.4-71.2%) was measured from subjects' mammograms using a computer-assisted thresholding method (Cumulus software). Since phenol levels are higher in the urine than in the serum, as expected many women had undetectable levels of the phenols in their serum: 86.7% octylphenol, 58.7% nonylphenol, and 73.1% BPA. After adjusting for age and body mass index in analysis of variance models, women with detectable serum BPA levels above the median (>0.56 ng/mL; N=35) had higher percent breast density than women with BPA levels below the median (0.01-0.56 ng/mL; N=36) and women with no detectable BPA (N=193) in their serum (17.8% vs. 13.3% vs 12.7%, respectively; P=0.01). Breast density was not associated with serum levels of either octylphenol or nonylphenol (P=0.77, P=0.36, respectively). Given that this study suggests that higher levels of BPA were associated with a clinically-relevant 5% greater breast density, further investigation into the potential influence of BPA on breast cancer risk using human populations is warranted. Supported by DOD BC062649, Komen FAS0703857, and NIH R03 CA139548.

Elisabeth Beaber, MPH	Theresa Hastert, MPP
Relationship between use of different oral contraceptive formulations and breast cancer risk among young women Beaber E, Buist D, Barlow W, Malone K, Reed S, Li C Purpose: Prior studies suggest that recent oral contraceptive (OC) use is associated with a modest increased risk of breast cancer among young women. However, the majority of these reports have relied on self-reported use and have not characterized risks associated with newer OC formulations. Methods: We conducted a nested case-control study among health plan enrollees at a large health maintenance organization, Group Health Cooperative, which serves the greater Seattle-Puget Sound region. Cases consisted of 1,102 women 20-49 years of age diagnosed with invasive breast cancer from 1990-2009. We randomly selected 21,952 controls matched on age, year, and enrollment length. Detailed information on recent OC use, including formulation, dose, and duration was ascertained from electronic pharmacy records. Multivariate-adjusted conditional logistic regression was used to calculate odds ratios (ORs) as estimates of relative risks and 95% confidence intervals (CIs). Results: Recent OC use (within 1 year of diagnosis) was associated with a 60% (95% CI=1.3-1.9) increased breast cancer risk. The association was slightly stronger for estrogen receptor (ER) positive compared to ER-negative disease (ER-positive OR=1.7, 95% CI=1.3-2.1 and ER-negative OR=1.2, 95% CI=0.8-1.8), though this difference was not statistically significant. The ORs varied somewhat by OC formulation, with recent use of OCs containing the progestin ethynodiol diacetate (OR=2.6, 95% CI=1.4-4.7) or high dose estrogen (OR=2.7, 95% CI=1.2-6.4) associated with particularly elevated risk estimates compared to non-use of OCs in the prior year. In contrast, risk estimates for recent use of OCs with the progestin norgestimate or low dose estrogen suggested either a modest association or no association (OR=1.2, 95% CI=0.6-2.2 and OR=1.0, 95% CI=0.6-1.7, respectively). Conclusions: These results suggest that recent use of contemporary OC formulations is associated with an elevated risk of breast cancer among women ages 20-49, with associations varying somewhat by OC formulation. Although breast cancer is rare among young women, the potential risk of breast cancer associated with certain formulations could impact OC recommendations by providers if these findings are confirmed.	Reduction in Breast Cancer Risk Associated with Meeting the WCRF/AICR Cancer Prevention Recommendations Hastert T, White E 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. An expert panel operationalized seven of those recommendations (maintaining normal body weight, participating in moderate physical activity for at least 30 minutes per day, avoiding energy-dense foods, eating 5 or more servings of non-starchy fruits and vegetables per day, limiting consumption of red meat to no more than 18 oz per week, limiting alcohol consumption to one drink per day for women and two drinks per day for men, and limiting sodium consumption to 2400 mg per day), and we examined their association with breast cancer incidence over eight years of follow-up in the VITamins And Lifestyle (VITAL) Study cohort. Participants included 24,916 women aged 50-76 years at baseline in 2000-2002 who had no history of cancer and who had complete data for the recommendations evaluated. Incident cancers (n = 694) were tracked through the Western Washington Surveillance, Epidemiology and End Results (SEER) database. The median number of recommendations followed was 3 (0-7). After adjusting for age, education, race/ethnicity, mammogram in previous two years, history of breast cancer in a first-degree relative, years of combined estrogen plus progestin hormone therapy use, age at menarche, age at first birth, and age at menopause, the hazard ratios and 95% confidence intervals associated with meeting 1, 2, 3, 4, 5, and 6-7 recommendations compared with meeting none of the recommendations were: 0.57 (0.35, 0.95), 0.63 (0.39, 1.02), 0.55 (0.34, 0.88), 0.46 (0.28, 0.74), 0.44 (0.26, 0.75), and 0.31 (0.15, 0.65). These results suggest that meeting the WCRF/AICR recommendations could substantially decrease breast cancer risk.

Dejana Braithwaite, PhD

Benefits and Harms of Screening Mammography Frequency by Age and Comorbidity Score

Braithwaite D, Zhu W, Hubbard R, O'Meara ES, Miglioretti DL, Geller B, Dittus K, Wernli K, Moore D, Kerlikowske K, for the Breast Cancer Surveillance Consortium

Background: There is uncertainty about the appropriate use of screening mammography in older women. We compared the benefits and harms of screening mammography frequency according to age and comorbidity scores.
Methods: We conducted analyses within a prospective cohort study of four mammography registries in the Breast Cancer Surveillance Consortium that had mammography data linked to Medicare claims information. Participants included 137,949 women aged 66-89 years without breast cancer and 2,993 women with breast cancer. We estimated odds of advanced (IIb, III, IV) stage, large tumor size (>20 millimeters), and estrogen receptor (ER) negative tumors and cumulative probability of false-positive mammography after 10 years of screening by mammography frequency, age and comorbidity score as determined by the Charlson Comorbidity Index.
Results: Mammography biennially vs. annually for women aged 66-89 years does not increase risk of tumors with unfavorable characteristics regardless of women's comorbidity score. Cumulative probability of a false-positive result for annual and biennial screening of women aged 66-89 years with a comorbidity score of ≥1 was 48 (46.1,49.9) and 29 (28.1,29.9) respectively. False-positives were more common among annual screeners than among those screened biennially irrespective of women's comorbidity score.
Conclusion: Mammography annually vs. biennially does not have added benefit for women aged 66-89 years, even among those in good overall health as reflected by the lack of comorbidity. Risk of false-positive mammography is much higher with annual mammography.

PAPER SESSION ABSTRACTS
Tuesday, March 6, 2012
Session 4 – Cancer Prevention

Stephaine Michal, BA

Lifestyle and dietary risk factors for colorectal hyperplastic and adenomatous polyps

Michal S, Li L, Chen Z

Background: Increasing evidence suggests that colon hyperplastic polyps (HP) increases predisposition to the development of colon cancer, albeit to a lesser degree than colon adenoma. Data on behavioral and lifestyle risk factors for HP are limited.
Methods: We compared the risk factor profiles for colon adenoma and colon HP in 1,826 patients without known history of colorectal cancer or polyps who are undergoing screening colonoscopy at our institution. Five hundred and eight patients were diagnosed with one or more colon adenomas, 215 with HP, 140 patients with both adenoma and HP, and 963 with negative colonscopic examination. Information on behavioral and lifestyle risk factors and dietary habits were collected by computer-assisted personal interview (CAPI) and Food Frequency Questionnaire prior to colonoscopy. We used multivariate unconditional logistic regressions to assess risk associations.
Results: Positive association were found between adenomatous polyps and male gender (OR 1.702 , 95% CI 1.210-2.394 , p 0.002), current smoker (OR 1.598, 95% CI 1.091-2.340, p 0.016) and family history (OR 1.409 , 95% CI 1.034-1.920, p 0.030). For hyperplastic polyps, positive associations were found between current smoker (OR 2.038, 95% CI 1.207-3.441, p 0.008) and regular alcohol drinker (OR 1.661, 95% CI 1.057-2.610, p 0.028). For both types of polyps positive associations were found between male gender (OR 2.282, 95% CI 1.233-4.222, p 0.009), current smoker (OR 2.692, 95% CI 1.475-4.912, p 0.001) and family history (OR 2.472, 95% CI 1.506-4.057, p 0.00). In a subgroup analysis by gender, regular alcohol consumption (OR 1.780, 95% CI 1.008-3.143, p 0.047) was associated with increased risk and HRT (OR 0.450, 95% CI 0.225-0.903, p 0.025) was associated with a decreased risk of hyperplastic polyps in females. Whereas in males, ever smokers (OR 3.074, 95% CI 1.357-6.965, p 0.007) and current smokers (OR 3.311, 95% CI 1.307-8.389, p 0.012) were associated with an increase risk of hyperplastic polyps.
Conclusion: Our data indicate that there are several lifestyle and dietary risk factors that are associated with both colorectal adenomatous and hyperplastic polyps. These risk factors vary not only by type of polyp but also gender.

Margaret Wright, PhD

Ruminant fatty acids and prostate cancer risk in the Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study

Wright M, Albanes D, Moser A, Snyder K, Virtamo J, Gann P

Consumption of high fat animal products is a characteristic feature of Western diets, which have been consistently linked with elevated risks of prostate cancer. In order to elucidate which specific fatty acids may contribute to this association, we measured circulating concentrations of myristic (C14:0), pentadecanoic (C15:0), palmitic (C16:0), heptadecanoic (C17:0), vaccenic (C18:1n-7), and alpha-linolenic (C18:3n-3) acids - all of which are present in ruminant meat and / or dairy products - in a nested case-control study within the Alpha-Tocopherol, Beta-Carotene Cancer Prevention (ATBC) Study. Prediagnostic blood samples from 300 prostate cancer cases and 300 controls matched on age and date of serum blood draw were analyzed for the aforementioned fatty acids by gas chromatography-mass spectrometry. There was a positive association between serum alpha-linolenic acid and overall prostate cancer risk, with a notable threshold effect (for increasing quartiles, odds ratios and 95% confidence intervals = 1.0 (referent), 1.65 (1.02-2.67), 1.96 (1.22-3.14), and 1.57 (0.97-2.54); p trend = 0.15). This association was stronger among men with low baseline levels of beta-carotene and vitamin E. The other fatty acids were unrelated to prostate cancer risk. Our findings indicate that higher blood levels of alpha-linolenic acid - the predominant omega-3 fatty acid in Western diets - is associated with elevated risks of prostate cancer, particularly within subgroups of men with low antioxidant levels.

Marc Kowalkowski, MS	Karen Basen-Engquist, PhD
Deficits in Health-Promoting Behaviors Among Veteran and Non-Veteran Male Cancer Survivors in Texas Kowalkowski M, Goltz H, Latini D Objectives: Cancer survivors may have increased risk for additional malignancies and illnesses. Veterans comprise a significant proportion of Texas male cancer survivors and may differ in their health status and needs from non-veterans. It is unknown whether they differ in general health-promotion strategies. This study sought to identify deficits in health-promoting behaviors among Texas male cancer survivors and to determine whether veteran-status predicts differences along these behaviors. Methods: Using the Behavioral Risk Factor Surveillance System 2009 survey, we conducted secondary analysis of 280 veteran and 250 non-veteran Texas male cancer survivors. Data were analyzed using Fisher's exact test and logistic-regression models. Results: Survivors averaged 68 years (SD=11.4) and were primarily white (93%), married (71.5%), college graduates (51%), and non-smokers (91%). Respondents reported several different cancer diagnoses; most commonly prostate (28%). More non-veterans than veterans were obese (31.6% vs. 22.5%; p=0.03). Veteran-status was not associated with other co-morbidities, current smoking, binge drinking, or fruit/vegetable consumption. However, only 22% met recommendations for daily fruits/vegetables. In multivariate regression, veterans were less likely to meet moderate (OR=0.54, 95%CI=0.30-0.95) and vigorous (OR=0.67, 95%CI=0.45-0.99) physical-activity recommendations, but were more likely to have had health examinations within the previous year (OR=1.77, 95%CI=1.11-2.83). Conclusion: Texas male cancer survivors reported deficits across important health behaviors, including dietary and physical-activity recommendations. Veterans reported low compliance with physical-activity guidelines, in spite of evidence-based veterans health-promotion programs, e.g., MOVE! ®. Our results suggest veterans' adherence to routine care may offer a point of intervention to implement health-promotion guidelines among cancer survivors. Further research is needed to understand how to use the growing focus on cancer survivorship within the VA healthcare system to encourage greater adoption of health promotion practices among veteran cancer survivors.	Predictors of cancer survivors' receptivity to lifestyle behavior change interventions Basen-Engquist K, Carmack C, Blalock J, Baum G, Rahming W, Demark-Wahnefried W Purpose: To assess cancer survivors' interest in lifestyle behavior change interventions, and to identify predictors of interest. Methods: Mailed surveys were sent to a stratified random sample of breast, colorectal, and prostate cancer survivors ascertained from the MD Anderson tumor registry and departmental databases. Surveys queried survivors about their diet, exercise, and smoking behaviors; symptoms; and their interest in interventions. Results: Surveys were received from 1053 cancer survivors. Roughly half of the sample were very/extremely interested in programs to help them get in shape (45%), eat a healthy diet (54%), and control weight (49%), and 20% had no interest at all. Because they were highly intercorrelated we combined interest in diet/exercise/weight control into a single interest index. Interest was related to race/ethnicity (AA and Hispanics more interested than whites), age (p=.000, younger more interested), marital status (p=.000, divorced most interested, widowed least interested), education (p=.008, college-educated less interested than those with HS degree or some college/vocational training), and gender (p=.000; women more interested). Interest was not related to time from diagnosis, and there were no differences by cancer site after controlling for gender. BMI had a small but significant correlation with interest in programs (r=.19, p=.000; the correlation was higher in women [r=.24] than men [r=.18]). Symptom severity and interference, and feelings of distress and sadness, were positively correlated to interest (r = .07-.12, p=.000-.034); relationships were stronger among men than women. Among the 78 smokers, 51% were very/extremely interested in smoking cessation, while 20% were not at all interested. Demographic and disease-related predictors were not significantly related to interest in smoking cessation, but symptom severity and interference, and feelings of sadness were positively related to interest. Conclusion: Survivors' interest in lifestyle behavior change interventions varies with demographic variables, but also with symptom distress. Experiencing symptoms after cancer diagnosis is related to higher receptivity to intervention opportunities.

Deanna Kepka, PhD, MPH

Non-physician providers, cancer screening and health behavior counseling

Kepka, D and Yabroff, KR

Purpose: Patients who receive a physician's recommendation for cancer screening and behavioral modification are most likely to comply with these recommendations. However, physicians face time constraints that make it nearly impossible to provide all recommended preventive services. The 2010 Affordable Care Act will expand health insurance coverage to 42 million Americans by 2014. Non-physician providers may help meet this new demand for primary care and ensure compliance with preventive services recommendations.

Methods: Data from the 2005 National Health Interview Survey were analyzed using multivariate logistic regression to assess the association between provider type seen in the past 12 months and compliance with U.S. Preventive Services Task Force cancer screening recommendations and receipt of behavior counseling among age-eligible adults (n=23,201). Models were adjusted for age, level of education, and insurance status and stratified by gender.

Results: About 15% of NHIS participants (N=4,652) saw a non-physician provider (nurse practitioner, certified nurse midwife or physician assistant) and a primary care physician. In adjusted analyses, age-eligible women were more likely to be compliant with Pap screening (OR: 5.0; 95% CI: 4.2 - 5.9), mammography (OR: 6.6; 95% CI: 5.2 - 8.4) and colorectal screening recommendations (OR: 7.8; 95% CI: 5.3 -11.4) if they saw a non-physician provider and a primary care physician compared to not seeing any provider. Similarly, men were more likely to be compliant with colorectal screening recommendations (OR: 9.6; 95% CI: 6.9 -13.5) if they saw a non-physician provider and a primary care physician. Women and men were more likely to report a provider asking about smoking status if they saw a non-physician provider and a primary care physician than those who saw other types of healthcare providers ((OR: 2.2; 95% CI: 2.0 - 2.4) and (OR: 3.0; 95% CI: 2.4 - 3.7), respectively).

Conclusions: Seeing a non-physician provider and a primary care physician is related to an increased likelihood of compliance with cancer screening recommendations and receipt of health behavior counseling. Opportunities exist for non-physician providers during this era of healthcare reform.

2012 Poster Directory

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Poster #	Last Name		Keywords
1	Chandwani	POST-DOC	Hot flashes, self-rated health, vasomotor symptoms
2	Conway	PRE-DOC	
3	Carpentier		survivorship; health care use; HINTS
4	Dennis		preference CRC genetic risk assessment
5	Devine	POST-DOC	children; family; coping; SES
6	Dignan		biospecimen collection, Appalachia, Barriers
7	Flocke		health behavior change, communication, smoking, obesity, physical activity
8	Gilkey	POST-DOC	human papillomavirus vaccine; adolescent health
9	Graves		translational genomics, SNP testing, psychosocial, behavioral outcomes
10	Holman		sun protection; sunburn; young adults; behavioral surveillance
11	Koskan	POST-DOC	colorectal cancer, cancer, perception
12	Loescher		skin cancer, education, organ transplant recipients
13	Malo	POST-DOC	human papillomavirus, vaccine, physicians
14	McDonald	POST-DOC	Future Temporal Orientation; Race; BRCA1/BRCA2; Genetic Testing
15	Nusbaum		
16	O'Neill		
17	Reiter		HPV; vaccine; males; policy
18	Tercyak		
19	Tercyak		
20	Tercyak		
21	Dean	PRE-DOC	
22	Hall	POST-DOC	genetic testing, preferences, consent
23	Hatcher-Keller		breast cancer, Emergency Department, screening
24	Stevens	PRE-DOC	Papillomavirus vaccines, Healthcare Disparities, Hispanic Americans,
25	Martir-Negron		Genetic Cancer Risk Assessment, Hispanic,Breast Cancer, Ovarian Cancer
26	SchoueriMychasiw	PRE-DOC	
27	Wilkinson		disabilities, communication, screening
28	Milliron	POST-DOC	Therapeutic Gardens, Caregiver Well-Being, Nutrition, Survivorship, Physical Activity
29	Kamrudin	PRE-DOC	Mexican-American, BMI, family history, breast cancer, lifestyle factors
30	Birmingham	POST-DOC	genetics, prostate cancer, cancer screening, attitudes
31	Hamilton	POST-DOC	cancer screening, surveillance, health behaviors
32	Njoku	PRE-DOC	
33	Simmons	PRE-DOC	colorectal cancer registry relatives screening
34	Tomko	PRE-DOC	
35	Kiviniemi		beliefs about preventive behavior, cancer survivors
36	Tiro		cancer registry, outreach strategies, cancer survivor
37	Anderson K.		prostate cancer prevention
38	Swede		statins, colorectal cancer, aberrant crypt foci
39	Williams	POST-DOC	skin cancer, analytical methodology
40	Dubin-Rhodin	PRE-DOC	
41	Campo	POST-DOC	Geographic Disparities, BRCA1/BRCA2 Genetic Testing/Counseling

42	Gillespie		cancer, prostate, decision-making, disparities
43	Kaiser		breast cancer, disparity, communication, cancer beliefs
44	Katz		patient navigation; cancer disparties
45	Lengerich		Appalachian region, breast cancer, disparity, mortality
46	Liu		melanoma, gender, non-melanoma skin cancer
47	Marchand	POST-DOC	
48	Martin	PRE-DOC	Adiposity, Prostate Cancer, Racial Disparities
49	Sexton		obesity; disparities; subtype
50	Xu	PRE-DOC	
51	Cartmell	PRE-DOC	disparities, nutrition, physical activity, tobacco
52	Cartmell	PRE-DOC	tobacco, cessation, disparities, outreach
53	Brooks		mobile mammography, navigation, underserved
54	Withdrawn		
55	Plascak	PRE-DOC	late stage, insurance status, marital status, prevention intervention
56	Johnston Cloud		
57	Aldridge-Gerry	POST-DOC	breast cancer, mammogram, screening, disparities
58	Taber		colorectal cancer, screening, Septin 9, biomarker, blood-based cancer screening
59	Martinez	POST-DOC	Cancer Screening, Primary Health Care, Hispanic, Latino, Health Disparities
60	Lu		survival, breast cancer, prognostic factors
61	Delgado-Cruzata	POST-DOC	breast cancer, DNA methylation, family history
62	Goerlitz	POST-DOC	NQO1, SOD2, smoking, Schistosoma, bladder cancer, epidemiology
63	Llanos	POST-DOC	adiponectin/leptin ratio, breast tissue, plasma
64	Perrin		IGF2, breast cancer, methylation
65	Royse	PRE-DOC	Gene Expression, Cervical Intraepithelial Neoplasia, Systematic Review
66	Skinner		
67	Vin-Raviv	POST-DOC	
68	Warren Andersen	PRE-DOC	breast cancer, reproductive and menstrual factors, SNPs
69	Wu		
70	Tehranifar		Early life, Lifecourse, DNA methylation, Social Environment
71	Ashmore	PRE-DOC	Cruciferous vegetables, colorectal cancer
72	Azrad	POST-DOC	prostate cancer, flaxseed, anti-proliferative
73	Charbonneau	POST-DOC	
74	DATTA	POST-DOC	Performance status, tomato juice, radiation therapy, prostate cancer
75	Rundle		
76	Vernarelli	POST-DOC	energy density, NHANES, waist circumference, BMI, CRP
77	Wei	POST-DOC	
78	Virk-Baker	PRE-DOC	S-equol, prevalence, breast cancer risk
79	Milliron	POST-DOC	Nutrition, Survivorship, Breast Cancer, Diet Assessment
80	Al-Temimi	PRE-DOC	
81	Blake-Gumbs		Obesity, colon cancer, hormone replacement therapy
82	Clarke Hillyer		cancer prevention, health education, colorectal cancer, community health workers
83	Ellis	PRE-DOC	health policy, clinical trials, insurance coverage
84	Martin	PRE-DOC	
85	Nichols	POST-DOC	breast cancer, tubal ligation, cohort, menopause
86	Yu	PRE-DOC	
87	Bewry		Antibody-drug conjugate, targeted therapy, FDA, cancer
88	Christie	POST-DOC	breast cancer, genetic counseling and testing outcomes, definitive surgical status
89	Stover	PRE-DOC	Piper Fatigue Scale, cut-points, thresholds, cancer-related fatigue, measurement
90	Trevino	POST-DOC	chemotherapy-related nausea, surgery
91	Tsai		androgen deprivation theapry; prostate cancer

92	Kirchhoff		Young adult cancer survivors; marital outcomes
93	Hu		Prognosis, Breast Cancer Recurrence, Her2
94	Yi		
95	Yeh		gastric cancer; risk factors; trends; smoking; Helicobacter pylori
96	Luu	POST-DOC	Kaposi's sarcoma, interaction, smoking, HAART
97	Addison	PRE-DOC	Strength, Mobility, Intermuscular Fat
98	Chang	PRE-DOC	Confirmatory Factor Analysis, Exploratory Factor Analysis, Invariant Structure Tests
99	Colbert		
100	Sprod	POST-DOC	cancer survivors, older adults, cancer-related fatigue
101	Arem	PRE-DOC	obesity, physical activity, survival, prospective cohort
102	Valle	PRE-DOC	physical activity, cancer survivors, young adults
103	Anderson A.		
104	Burnett-Hartman	POST-DOC	Colonoscopy trends
105	Chubak		
106	Coa	PRE-DOC	
107	Jean-Pierre	PRE-DOC	Cancer Screening, Mammography. Breast CAncer
108	Jean-Pierre	PRE-DOC	Cancer Screening, Colorectal Cancer
109	Kelly	PRE-DOC	PLCO, PSA, quality of life,radical prostatectomy, disease-specific functioning
110	Kowalkowski		HPV, Human immunodeficiency virus, squamous cell carcinoma of the anus
111	Kowalkowski		Human papillomavirus, Human immunodeficiency virus, Anal dysplasia
112	Pollack		PSA screening, Prostate Cancer, Primary Care Provider
113	Salloum	POST-DOC	
114	Urbansky		Colorectal Cancer Screening, Hispanic Men, Navigation
115	Wernli		ovarian cancer, screening, breast density, longitudinal
116	Wiseman	PRE-DOC	Cancer Screening, Family History, Barriers
117	Blair	POST-DOC	gardening, cancer survivors, intervention
118	Broderick	PRE-DOC	breast cancer, long-term survival
119	Burris	PRE-DOC	Obesity, BMI, adiposity, cancer survival, colorectal cancer
120	Burris	PRE-DOC	Obesity, BMI, adiposity, cancer survival, prostate cancer
121	Parekh		
122	Dittus		cancer survivorship; cancer care plans,
123	Geller		survivor needs, cluster analyses
124	Gewandter	POST-DOC	chemotherapy-induced neuropathic pain, sleep disturbance
125	Maskarinec		
126	Sprague		
127	Sterba		head and neck cancer, survivorship care, program planning
128	Villasenor	PRE-DOC	breast cancer prognosis, genetic variation, vitamin D metabolism pathway
129	Weaver		Cancer Survivors, Rural, Disparities, Quality of Life
130	Yassine		
131	Soldin		

1	2
Hot flashes severity and self-rated health in women with breast cancer K. Chandwani, J. Roscoe, C. Heckler, S. Mohile, Y. Inoue, J. Atkins, G. Morrow, K. Mustian. Purpose: Hot flashes (HF) are one of the common symptoms in women with breast cancer (BC) and reduce their quality of life. Self-rated health (SRH) measures general health status and is a potential indicator of morbidity and mortality. This study examined the association between HF severity and SRH in women with breast cancer before, during (TRx), and six months post-treatment(TFu). Methods: In a longitudinal study of a nationwide sample of cancer patients, 373 women with BC were studied at baseline, TRx, and TFu. Women rated their HF responding to a question about HF "at its worst" on a scale of 0 (not present) to 10 (as bad as you can imagine), and perception of their health status on a scale of 1-5 (1=excellent, 2= very good, 3=good, 4= fair, 5= poor) at baseline, during treatment, and six months post-treatment. Results: HF was reported by 41% of the respondents at baseline, 79% during treatment and 73% at six-month follow-up. SRH was reported as “excellent” by 33% at baseline, 13% at TRx, and 8% at TFu. Mean age was 55.5 years (range: 31-82); 93% were Caucasian and 5% African-American. A linear mixed model analysis showed a significant time effect ($p<0.0001$), with less severe HF at baseline (M=2.1, SE=0.35) and TRx (M=5.32, SE=0.52) compared to TFu (M =4.82, SE=0.48), ($p=0.0001$). A significant association of HF with SRH ($p=0.0053$) revealed an increased HF severity with decrease in SRH adjusted for age and race. There was significant main effect of age ($p<0.0001$) and race ($p<0.01$). A significant interaction with time showed that younger women reported more severe HF during treatment ($p<0.0001$). A marginally significant interaction of time with race showed that African-American women reported significantly more severe HF at TFu ($p<0.03$). Conclusion: Hot flashes severity in women with breast cancer increased during treatment followed by a slight decrease at six-month follow-up and were significantly associated with lowered SRH. More severe HF were reported by younger women during treatment and African-American women six months post-treatment. Study of SRH and factors affecting it can be helpful in designing tailored behavioral interventions for favorable outcomes while managing HF; future studies are needed.	Cancer Information-Seeking Behavior in American Adults Conway, S.; Carpentier, M. This study sought to identify and characterize individuals who seek cancer information in terms of socio-demographics, health status, health care access and use, and patterns of cancer information seeking. We analyzed data from the NCI's 2007 Health Information National Trends Survey (HINTS) of 7,674 American adults, of whom 46.6% reported that they had "ever looked for information about cancer from any source." Once identified, we calculated population estimates for the variables of interest. Analyses were conducted using STATA v12. The majority of cancer information seekers was female (66.3%), White/Non-Hispanic (80.1%), and married (61.7%). Age was fairly evenly split between 50 and 64 years (36.7%), < 50 years (35.6%) and > 64 years (27.7%). The largest proportion of cancer information seekers had a household income > $75,000 (38.1%) and a bachelor's or post-baccalaureate education (44.5%). Overwhelmingly, they reported being in good health (85.6%), having a regular health care provider (84.8%), and being insured (91.7%). Although only 20% of cancer information seekers had ever been diagnosed with cancer, 82% reported a family history of cancer. The majority (65%) was interested in learning more about a site-specific cancer. Although physicians were the most trusted source of information (69.1%), only about a quarter of individuals (24.7%) sought information from their health care provider initially. Half of respondents (51.2%) reported utilizing the internet as their first source of information, despite relatively low levels of trust in the information found therein (24.7%). Consistent with previous findings, cancer information seekers are more likely to be female, have higher education and income levels, and have a usual source of health care. Meanwhile, a significant proportion of Americans are not actively seeking cancer information. A number of potential explanations exist, including actual and/or perceived barriers to accessing health information and differing degrees of health literacy. Such disparities in cancer information-seeking behavior contribute to lower levels of awareness and knowledge regarding cancer prevention and control, which may lead to poorer future health outcomes.

3	4
Health care use among Americans with and without cancer histories Carpentier M, Conway S Background: Cancer survivors are at high risk for a number of chronic health conditions. It is unclear whether this increased morbidity translates into increased health care use as compared to the general population. Methods: We analyzed cross-sectional data from 7,674 American adults responding to the 2007 Health Information National Trends Survey. Results: The number of times individuals sought care from a health professional over the past 12 months was significantly greater among cancer survivors as compared to the general population (4.05 vs. 2.96, $p < .01$). Survivors were more likely to report having a regular health provider as compared to the general population (OR, 2.94; 95% CI, 2.35 to 3.67). The most commonly reported health provider was a doctor, although the proportion of survivors who reporting seeing a doctor most often for their health care differed significantly from that of the general population (94.7% vs. 91.8 %, $p < .01$). Ratings of the quality of health care received in the last 12 months were significantly better among cancer survivors as compared to the general population (1.83 vs. 2.00, $p < .01$). The proportion of survivors who rated the quality of their health care as "excellent" (41.1% vs. 33.8%), "good" (15.5% vs. 18.4%), and "fair" (2.8% vs. 5.7%) differed significantly from that of the general population (all p's < .05). Survivors were less likely to report avoiding visits to the doctor as compared to the general population (OR, 0.58; 95% CI, 0.49 to 0.68); however, they were more likely to avoid seeing their doctor due to fear of serious illness (OR, 1.45; 95% CI, 1.09 to 1.94). Other reasons reported by survivors for avoiding doctor visits included money (24.8%), time (24.8%), and lack of health insurance (4.65%), which were also the primary reasons reported by the general population. Conclusions: Cancer survivors' reasons for avoiding health care are similar to those of the general population, despite the fact that their health care needs differ. Although survivors are regularly and primarily seeing doctors, their avoidance of health care puts them at risk for increased morbidity in the form of comorbid health conditions, recurrence of the index cancer and the development of new cancers.	Predictors of Strong Preference for Colorectal Cancer Genetic and Environmental Risk Assessment Myers, R., Petrich, A., Swan, H., Cocroft, J., Andrel, J., Sifri, R., Keenan, E., Manne, S., Weinberg, D. Background: Genetic and environmental risk assessment (GERA) in primary care may help to identify persons who are at increased risk for CRC. This report seeks to determine factors that are influence patient preference for GERA. Methods: A large randomized, controlled trial of GERA (i.e., a blood test for two risk factors: Methylenetetrahydrofolate Reductase (MTHFR) genotypes (677/1298) and folate level) is being conducted with primary care practice patients who are 50 - 79 years of age and are eligible for CRC screening. Participants complete a baseline survey to assess sociodemographic background, knowledge about GERA and CRC screening, and CRC screening decision stage (decided against /never heard of, not considering or undecided, decided to do CRC screening). Respondents are randomly assigned either to an intervention group (GERA) or a control group (usual care). Intervention group participants underwent a nurse-led decision counseling session to review information on GERA, elicit factors influencing preference and related factor weights, and determine a GERA preference score (0.00 to 1.00). Preference scores for the first 343 intervention group participants were dichotomized as weak to moderate (0.00-0.62) versus strong (0.63-1.00). Using baseline survey data, we conducted multivariable analyses to identify predictors of strong preference for GERA. Results: Most participants were 50-59 years of age (68%), white (58%), female (59%), single (52%), had > HS education (73%), and had decided to do CRC screening (88%). Only 24% of participants had a strong preference for GERA. Multivariable analyses showed that a negative predictor of strong preference was having > HS education (OR=0.5, CI:0.29,0.87) whereas positive predictors included being nonwhite (OR=2.3, CI:1.3,3.8) and having a decided-to-do screening decision stage (OR=3.2, CI:1.1,9.5). Conclusion: Preference for GERA appears to be relatively strong among patients who are nonwhite, as compare to whites; and among patients with a lower level of formal education, as compared those who are more highly educated. Preference GERA also seems to be stronger among patients who are interested in CRC screening than those who are not. Further research is needed to determine if GERA preference predicts uptake.

5	6
The Association of Socioeconomic Status with Family Environment and Caregiver Coping in Families of Children with Cancer Devine, K.; Gage, E. Purpose: The factors that influence caregiver choice of coping strategies after a child's diagnosis of cancer are not fully understood. The purpose of this study was to examine the relationship between caregivers socio-demographic characteristics, family environment, and the coping strategies they use to adapt to childhood cancer. Method: Data come from a larger mixed-methods study of parents of children with cancer (n = 76). Caregivers were recruited through the Pediatric Oncology Clinics at an NCI-designated comprehensive cancer center and a children's hospital in the Northeastern US, as well as through a local charity for pediatric cancer. Sixty caregivers of pediatric cancer patients (78% of whom were from the same family) completed a socio-demographic questionnaire, the Family Environment Scale, and the COPE inventory. Results: Linear mixed models were conducted using SAS 9.2 PROC MIXED. Variance components, including the within- and between-family variance, were estimated using the Restricted Maximum Likelihood (REML) method to account for correlations within members of the same family. There were no significant differences in family environment by income or education. Caregiver educational attainment was positively associated with use of planning and active coping strategies, while income was not associated with caregiver coping style. Mothers were more likely than fathers to use planning, instrumental support, religious coping, and emotional support. Conclusions: The findings show that educational attainment and caregiver gender influence caregiver coping styles following a pediatric cancer diagnosis, and suggest that educational attainment rather than financial resources drive the association between SES and coping. Programs that address educational gaps and teach caregivers planning and active coping skills may be beneficial for parents with lower educational attainment.	Biospecimen Collection in Appalachian Kentucky: Anticipating Barriers and Developing Solutions for a GI-SPORE Project White C, Pulliam J, Li L, Evers M, Tucker T, Dignan M Purpose: The University of Kentucky Markey Cancer Center is implementing a GI SPORE project to explore underlying mechanisms for the high incidence of colorectal cancer (CRC) in Kentucky, the state with the second highest CRC incidence rate in the U.S. In Kentucky, the highest CRC incidence rates occur in the Appalachian region, a 54 (45%) county area in the eastern part of the state. Coal mining is one of the main industries in Appalachian Kentucky. The GI-SPORE project is designed to investigate the role of exposure to two environmental carcinogens, Arsenic and Chromium, in the development and progression of colorectal neoplasia. Methods: Patients will be recruited from a network of five rural hospitals. From 2008 through 2009, 1,034 new cases of colorectal cancer were diagnosed, 719 (70%) of which were treated in one of the hospitals. The project employs a three group design: patients with colorectal cancer, adenomas and negative colonoscopy results (controls). Patients undergoing colonoscopy or surgical resection will be recruited with a goal of enrolling 160 incident CRC cases, 160 patients with adenomas, and 480 negative controls. Biospecimens including colon tissue, blood, urine and toenails will be collected, transported to the UK Biospecimen Core Program, processed, and tested for Arsenic and Chromium exposure. Results: Development of this project has required addressing institutional, distance, and cultural/individual barriers. Formative research revealed institutional barriers including differing regulatory requirements at the participating sites. For example, requirements for obtaining IRB approval from different institutions varied considerably. The distance of participating sites is complicated by the mountainous terrain in Appalachian Kentucky and the lack of existing resources to rapidly transport biospecimens to UK. Cultural and individuals barriers include a lack of experience with biospecimen collection in rural populations and mistrust of academic institutions. Conclusions: Overcoming barriers has required extensive personal interactions with partners to develop procedures for reducing administrative and clinical efforts to collect biospecimens and to identify appropriate incentives to compensate institutions and patients for their time.

7	8
Teachable moments for health behavior change and intermediate patient outcomes Flocke S, Mason M, Clark E, Antognoli E, Lawson P, Cohen D Background: National guidelines urge primary care physicians to routinely address poor health behaviors with patients. Teachable Moments (TM) are proposed as one way to effectively and efficiently address health behavior change in primary care. This study examines the effectiveness of a TM for increasing intermediate patient outcomes. Methods: A mixed-method observational study of 811 consecutive adult patient visits to 28 physicians at 16 community-based primary care practices in NE Ohio. A patient survey prior to the observed visit assessed smoking, exercise, fruit/vegetable consumption, height and weight and patient readiness to change each health behavior. Prior work established definitions of a TM that was applied to audio recordings of visits. The key features of TM include advice that links a patient's salient concern to the poor health behavior combined with an attempt to motivate the patient to change and patient commitment to change. Variations of advice that lacked key elements were categorized as Teachable Moment Attempt (TMA) and Missed Opportunity (MO). Patient outcomes assessed post-visit included recall, usefulness of advice, importance/confidence to change behavior, increased readiness to change behavior and change in health behavior. Chi-square and ANCOVA were used to test the associations. Results: Patient participation rate was 51%; 734 patients reported at least one poor health behavior and 418 health behavior discussions occurred. TM represented 14%, TMA 25%, and MO 61% of observed discussions. Recall of the discussion was greatest for the TM cases (83%) compared with the other categories (74-49%). TMs had the highest proportion of cases reporting the discussion was useful (96%) versus all other categories (78%-84%). Overall, TM had the greatest proportion of cases change in importance and confidence from pre-visit to post-visit, as well increase in readiness to change; however differences were small. TM were not different from other types of advice in affecting change in health behaviors assessed 6-weeks after the observed visit. Conclusions: TM appear to have a greater positive influence on several intermediate markers of patient behavior change compared to other categories of advice occurring naturally during primary care visits.	Comparing HPV vaccine initiation among male and female adolescents: Findings from a state-wide survey Gilkey M, Moss J, McRee AL, Brewer N Background: Guidelines now recommend human papillomavirus (HPV) vaccine for both male and female adolescents to prevent anal, cervical, vaginal, and vulvar cancers. We sought to compare initiation of HPV vaccine among boys and girls using a population-based sample. Methods: We analyzed data from 751 parents of 11-17 year-old adolescents who completed the 2010 North Carolina Child Health Assessment and Monitoring Program (CHAMP) survey. We used multivariate logistic regression to identify correlates of having initiated HPV vaccination separately for boys and girls. For adolescents who were unvaccinated, we assessed parents' primary reason for not getting their child HPV vaccine. Most parents reported on children who were non-Hispanic white (69%) or black (20%). Results: Parents indicated that, compared to 44% of daughters, only 14% of sons had received one or more doses of HPV vaccine ($p<0.01$). For both genders, vaccine initiation was correlated with being older (13-15 years old versus 11-12 years old) and having received the meningococcal vaccine. Among boys, HPV vaccine initiation was higher for sons whose race was reported as neither white nor black (odds ratio [OR] = 3.26, 95% CI, 1.06-10.04) and lower for those living in households with higher incomes (OR = 0.22, 95% CI, 0.09-0.53). Among girls, vaccine initiation was lower for those attending private rather than public schools (OR = 0.30, 95% CI, 0.12-0.71). Parents of unvaccinated sons most often reported not receiving a provider's recommendation (27%) and not being aware that the vaccine was available for boys (17%). Parents of unvaccinated daughters were most often concerned with the vaccine's safety and side effects (19%). Conclusion: Although HPV vaccine uptake in North Carolina remains much lower for boys than for girls, our findings suggest that initiation is higher among boys at risk for experiencing cancer-related health disparities as adults. To raise coverage among boys, providers should routinely recommend the HPV vaccine alongside other adolescent vaccines.

9	10
Behavioral and Psychosocial Responses to Genomic Testing for Colorectal Cancer Risk Graves K, Leventhal K, Nusbaum R, Salehizadeh Y, Hooker G, Peshkin N, Butrick M, Tuong W, Mathew J, Goerlitz D, Fishman M, Shields P, Schwartz M To date, provision of genomic information from low-penetrance genes does not appear to impact behavior change. Most prior work in this area has been conducted within the context of smoking cessation. We conducted a translational genomics pilot study to evaluate the impact of genomic information related to colorectal cancer risk on physical activity and nutrition behaviors. In a sample of 47 participants recruited from a primary care clinic, 96% opted for a free research SNP panel for testing of 3 single nucleotide polymorphisms (SNPs) related to risk for colorectal cancer. Certified genetic counselors conducted pre- and post-test sessions to educate participants about SNPs, the limitations and risks of SNP testing, and general health education about colorectal cancer, including common risk factors and screening procedures. Participants completed assessments at baseline, immediately post-results, and at a follow-up conducted approximately 3 months after receipt of results. SNP results were reported as total number of risk alleles (referred to as “risk versions”) and as a lifetime risk estimate. Participants averaged 2.5 of 6 possible SNP risk versions and 10% lifetime risk (SD=2.3%, Range=6.0% to 15.0%). 20% of the sample had a risk at or above 12% (twice average risk). Immediately post-results, 100% of participants due for colorectal cancer screening intended to have a colonoscopy in the next year; however, by follow-up, intentions to obtain a colonoscopy had decreased. Beyond intentions for screening, about half of the sample reported plans to improve physical activity (64%) and nutrition (48%) immediately post-test. At follow-up (n=30 to date), 43% and 45% reported actual changes to their eating and exercise behaviors, respectively, since receipt of their SNP results. Perceived colorectal cancer risk and cancer worry did not change following SNP testing. The majority of participants (65%) talked about their SNP results with other people, including 42% who shared their SNP results with their physicians. Results highlight the feasibility of offering SNP testing, high level of test uptake and potential for SNP risk information to influence health behavior change when provided in the context of general health education about colorectal cancer risk.	Trends in the prevalence of sun protective behaviors and sunburn among young adults, NHIS 2000, 2003, 2005, 2008, and 2010 Holman D, Berkowitz Z, Guy G, Hartman A, Perna F, Saraiya M Purpose: This study evaluates trends in the prevalence of sun protective behaviors and sunburn among adults aged 18-29 years in the United States using data from the 2000, 2003, 2005, 2008, and 2010 National Health Interview Survey. Methods: Participants were asked how often they engage in protective behaviors (wearing sunscreen, a wide-brimmed hat, clothing to the ankles, and a long sleeved shirt, and staying in the shade) and the number of sunburns they had in the past twelve months. We estimated the percentage who reported engaging in each behavior always or most of the time and the percentage reporting one or more sunburns in the past twelve months overall, by sex, and by race/ethnicity. Results: Among women, using sunscreen (37.1%) and staying in the shade (34.9%) were the most common behaviors reported in 2010. Wearing a long sleeved shirt (5.3%) and wearing a wide-brimmed hat (3.8%) were least common. Black women were less likely to report sunscreen use (p's < 0.05) compared to other racial/ethnic groups. Staying in the shade (29.6% to 34.9%), using sunscreen (31.5% to 37.1%), and wearing clothing to the ankles (21.1% to 25.7%) increased significantly over time among (p's < 0.05). Among men, wearing long clothing to the ankles (32.9%) and staying in the shade (25.6%) were the most common behaviors reported in 2010. Fewer men reported using sunscreen (15.6%), wearing a long sleeved shirt (7.6%), and wearing a wide-brimmed hat (6.7%). Black men were less likely to report sunscreen use compared to other racial/ethnic groups (p's < 0.05). Staying in the shade (18.5% to 25.6%), sunscreen use (13.7% to 15.6%), and wearing clothing to the ankles (28.3% to 32.9%) increased significantly over time (p's < 0.05). In 2010, 51.3% of women and 49.1% of men reported one or more sunburns in the past year. Sunburn was most common among non-Hispanic whites compared to other racial/ethnic groups (p < 0.05). Sunburn prevalence did not change significantly from 2000 to 2010. Conclusions: The observed improvements in sun protective behaviors among young adults are encouraging but have not been accompanied by a decrease in sunburn. More effective strategies and continued public health efforts are needed to promote sun protection and prevent sunburn among young adults.

11	12
Perceptions and Receptivity to Colorectal Cancer Screening: Male Reluctance to Consider Colonoscopy Koskan, A., Ealey, J., Abdulla, R., Jackson, B., Quinn, G., Vadaparampil, S., Lee, J., Shibata, D., Roetzheim, R., Elliot, G., L Purpose: Although colorectal cancer (CRC) is detectable and preventable, screening remains largely underutilized, especially among men. This abstract explores gender-related perceptions of CRC screening among individuals receiving primary care in federally qualified health centers. Methods: Eight mixed gender focus groups were conducted with adults between the ages of 50-75 (n=53, 27 females and 26 males) with no diagnosis of CRC. Participants reported their perceptions about CRC, screening, and associated barriers. All focus groups were conducted by trained moderators, audio taped, and transcribed verbatim. Using content analysis, two researchers hand-coded transcripts to identify gender-related perceptions of CRC and screening. Results: Data showed that women were generally more health-oriented and receptive to being screened for CRC. Women were more willing to discuss the topic of cancer screening with other women and their families, while men were less likely to talk about their health with anyone. Male participants were less likely to have ever discussed the need for CRC screening, particularly colonoscopies. Paradoxically, when asked how they preferred to receive information and their sources of motivation to receive CRC screening, both male and female participants suggested that peers, friends, and spouses influence their decisions to undergo cancer screenings. When asked about specific tests, most men and women were willing to perform a fecal occult blood test. However, men reported stronger hesitation about receiving a colonoscopy because they believed the procedure was embarrassing and invasive. Some men reported feeling anxious about having a tube inserted in their rectum, and perceived that the procedure challenges their sense of masculinity and sexuality. A few men felt a colonoscopy was "no big deal" since, after being administered anesthesia, they were not likely to feel it. Conclusions: Interventions to improve men's receptivity of CRC screening should recognize their perceptions about sexuality and masculinity, and address the importance and benefits of screening to prevent or detect CRC. The use of peer education and testimonials are suggested methods to increase the salience of CRC screening messages.	Informing organ transplant recipients about skin cancer prevention and detection Loescher L, Hansen C, Hepworth J, Quale L Purpose: To evaluate two approaches to deliver skin cancer prevention and detection information to solid organ transplant recipients (OTR). Background: OTR have up to a 250-fold risk of developing skin cancer that is potentiated by life-long immunosuppressive therapy posttransplantation. Skin cancer in OTR is aggressive and difficult to treat. Sun protection and early detection are important for lessening skin cancer risk and improving skin cancer outcomes, but OTR are under-informed about these behaviors. Methods: Guided by the Integrated Behavior Model, we developed a brief, evidence-based video to provide tailored skin cancer prevention and detection information to OTR. We used a quasi-experimental design to compare skin cancer knowledge, beliefs, and personal agency (self-confidence/personal control); sun protection and skin self-examination (SSE) behaviors in two groups of OTR within 4-6 weeks posttransplantation. Group 1 viewed the video once and received skin cancer information brochures. Group 2 received the brochures only. To avoid contamination, participants in the four transplantation clinics received the same condition during the same time period. Each clinic used both conditions but in different random orders. Participants completed a baseline survey on sun protection behavior (6 items, alpha=.75), personal agency (6 items, alpha=.64), beliefs (6 items, alpha=.60), skin cancer knowledge (6 items), and SSE (1 item). They completed the same survey two months after the intervention. Data were analyzed using 2X2 ANOVAs. Results: Of 120 enrolled participants, 90 completed both surveys (Group 1, n=46; Group 2, n=44). For both groups, there was a significant increase in sun protective behavior (p<.001), skin cancer knowledge (p<.001), beliefs (p=.003), and personal agency (p=.003). There was no significant effect of either intervention on SSE. Implications: Both interventions were effective for informing OTR about skin cancer and sun protection, promoting favorable beliefs and improving personal agency for skin cancer prevention behaviors but they were not differentially effective suggesting that the addition of the video may not be necessary or that the video may need to be viewed more than once. More in-depth SSE teaching strategies may be necessary.

13	14
HPV Vaccine Recommendation at Three and Five Years Post-Vaccine Licensure: A National Survey of Physicians Malo T, Kahn J, Salmon D, Lee J-H, Quinn G, Roetzheim R, Bruder K, Proveaux T, Zhao X, Halsey N, Giuliano A, Vadaparampil S Purpose: Assessing provider recommendations for human papillomavirus (HPV) vaccination is an important step in understanding the diffusion of HPV vaccination in the U.S. The purpose of this study was to examine prevalence of physician recommendation to vaccinate female patients aged 11 to 26 years at three and five years after vaccine licensure. Methods: A nationally representative sample of primary care physicians practicing in the specialties of Family Medicine, Pediatrics, and Obstetrics and Gynecology was randomly selected from the American Medical Association Physician Masterfile. Physicians were mailed surveys in April 2009 (n=1538) and April 2011 (n=1543), assessing for whom they recommend HPV vaccination, as well as their patient and practice characteristics. Frequencies were used to compare recommendation of HPV vaccination in 2009 and 2011. Responses of "always" recommend (>75% of the time) and "often" + "always' recommend (51-100% of the time) were examined. Results: The response rate was approximately 68% in 2009 and 63% in 2011. In 2009, approximately 35% of physicians reported they "always" recommend the HPV vaccine to girls aged 11-12, 53% recommend to ages 13-17, and 50% recommend to ages 18-26. Preliminary results for the first 627 respondents in 2011 indicate that 40% "always" recommend to ages 11-12, 55% to ages 13-17, and 53% to ages 18-26. Combining the "often' and "always" responses, 57% recommended to ages 11-12, 83% to ages 13-17, and 81% to ages 18-26 in 2009, whereas 62% recommended to ages 11-12, 82% to ages 13-17, and 79% to ages 18-26 in 2011. Conclusions: These data indicate a small increase in consistent recommendation for HPV vaccination of females over a two year period. However, it is concerning that fewer than half of these primary care physicians are currently 'always" recommending the vaccine to 11-12 year-old girls, who are in the target age group for vaccination, and recommendation remains suboptimal for all age groups, despite national recommendations for universal immunization.	Temporality Orientation among Women with Increased Risk for Breast Cancer McDonald J, Stopfer J, Domchek S, Collier A, Weathers B, Halbert C Purpose: Temporal orientation, or the tendency to focus attention based on different modes of time, is a cultural value that is important to health behaviors and may also be a resource that helps individuals to cope with adverse events. But, empirical data are not available on the extent to which these values vary among women with different clinical experiences that generate psychological distress. Methods: We conducted a cross-sectional study to identify sociodemographic factors and/or clinical experiences that were predictive of future temporal orientation in African American (n=61) and white (n=185) women who have an increased risk of hereditary breast cancer. Results:Overall, 45% of the sample reported high levels of future temporal orientation. In the bivariate analysis, African American women were more likely than White women to have high levels of future temporal orientation (X2=18.45, p<0.00). Compared to those who were older, younger women were more likely to report high levels of future temporal orientation (OR=0.97, CI: 0.950-0.996, p=0.02). Women who were unaffected were also more likely to report high levels of future temporal orientation compared to those who had a personal history of cancer (X2=4.24, p=0.04). In the multivariate logistic regression model, African American women were about six times more likely than white women to report high levels of FTO (OR=5.67, CI 2.51-12.82, p<0.00). Women without a personal history of cancer were significantly more likely to report high levels of future temporal orientation in comparison to those with a history of disease (OR=1.87, CI (1.04-3.34, p=0.03). Higher levels of education were also significantly associated with high levels of future temporal orientation (OR=4.71, CI 1.47-15.18, p=0.01). Conclusions: Our findings show that African American women, those with a greater amount of formal education, and women without a personal history of cancer are most likely to have cultural resources that might mitigate the adverse effects of genetic testing for BRCA1 and BRCA2 mutations. It may be important to evaluate the presence or absence of cultural resources as part of genetic counseling and testing in order to identify those with the greatest need for adjunctive support.

15	16
Responses to SNP Testing for Colon Cancer Risk Nusbaum R, Leventhal K, Hooker G, Peshkin B, Butrick M, Salehizadeh S, Tuong W, Eggly S, Shields P, Schwartz M, Graves K The commercial availability of single nucleotide polymorphism (SNP) testing for susceptibility to common diseases has outpaced translational genomics research in this arena. The goal of this study was to explore attitudes about genomic testing in individuals offered SNP testing. We offered testing for three colon cancer SNPs in a pilot study with primary care patients. Participants completed pre and post-test education sessions followed by open-ended interviews. We analyzed interview transcripts with qualitative software using thematic analysis. All 20 participants chose to undergo SNP testing and at least one risk allele was identified in each individual. Analysis of the transcripts yielded several broad themes including Motivations for SNP Testing, What Do the Results Mean to Me?, Emotional Reaction to SNP Results and Genomic Literacy. The two reasons cited most frequently for pursuing SNP testing were Information Gathering and Altruism. The majority of participants seemed to understand the uncertain clinical utility of the test yet still proceeded with testing. Overall SNP results did not appear to have a substantial impact on the way participants viewed their risk of colon cancer. Participants with a personal or family history of cancer seemed to place greater weight on other risk factors than on SNP results. At least half of the sample discussed making dietary changes at both pre and post-test sessions. SNP results did not appear to alter most participants' plans for colon cancer screening. Most of the men in the study planned to discuss their SNP results with their physician while the majority of women did not plan to discuss SNP results with their physician. None of the participants expressed significant distress during the post-test session. Although some participants had difficulty understanding complex genomics concepts, the majority seemed to comprehend the key messages. Study findings demonstrate that individuals will pursue SNP testing in the context of pre and post-test education sessions. SNP test results may have some influence on health behavior change intentions; however, results did not seem to impact plans for colon cancer screening. Additional studies investigating the long-term impact of genomic information on behavior change critical.	Listening to the Internet: Young Previvors Needs for Decision and Psychosocial Support Spellman, E., Sulayman, N., DeMarco, T.A., Sharff, M., Tercyak, K.P., Friedman, S. and O'Neill, S.C. The changing landscape of genetic services and risk management options for young, high risk women makes it imperative that we understand and attend to the specific needs of this population. For 15 years, BRCA1/2 genetic counseling and testing has allowed individuals from high-risk families to make informed cancer risk management decisions. Historically, BRCA1/2 testing has been less common in at-risk women ages 18-25 than their older relatives and research and intervention efforts have rarely focused on these women. We conducted an online survey of female relatives age 18-25 of BRCA1/2 mutation carriers via a hereditary breast cancer organization. We assessed risk management practices, intervention needs and preferred modalities. Of the participants (N=60, mean age=23), 31% had a history of mammography and 36% had had breast MRI despite unclear utility of these modalities in young women. They also were interested in an array of services. These included decision support for genetic counseling (90%), risk management (95%) and fertility and family planning (93%), as well as for addressing communication with friends (78%), partners (80%) and adult relatives (83%). Standard clinical care for this population includes the provision of print materials for relatives of mutation carriers. However, these women indicated a preference in receiving intervention via peer support ($t=5.65$, $p<.001$) or a trained peer counselor ($t=4.87$, $p<.001$). In conclusion, these women expressed interest in interventions focused on an assay of medical and psychosocial concerns. They expressed specific interest in receiving these interventions using a peer-based modality. Research should inform the design and conduct of any such intervention to ensure quality, assess impact, and determine means for effective dissemination.

17	18
How Strong and Weak Default Policies Affect Parents' Consent to HPV Vaccination at School Reiter, P.; McRee, A.; Kadis, J.; Brewer, N. Background: Guidelines recommend routine HPV vaccination for males ages 11-21. Although defaults may encourage some health behaviors, how defaults influence behaviors involved in controversy is not well understood. We examined the effect of two default policies on parents' consent to have their adolescent sons hypothetically receive HPV vaccine at school. METHODS: A national sample of 404 parents of adolescent sons ages 11-17 years participated in an online 3x2 between-subjects factorial experiment during Fall 2010. One factor varied the default consent policy for sons receiving HPV vaccine at school (opt-in, opt-out, or neutral). The second factor varied the default number of vaccines sons would receive (HPV vaccine alone or HPV vaccine with two other recommended adolescent vaccines). The outcome was parents' consent to their sons hypothetically receiving HPV vaccine at school. Analyses used factorial logistic regression. RESULTS: Consent for sons to receive HPV vaccine was higher in the opt-in condition than in the opt-out condition (75% vs. 52%; OR=2.72, 95% CI: 1.06-7.00), among parents who wanted their sons to get vaccinated in the next year. These parents were also more likely to provide consent if the request included other recommended adolescent vaccines than if it was for HPV vaccine alone (71% vs. 53%; OR=2.21, 95% CI: 1.03â€“4.74). Default policies had no effect on consent decisions among parents undecided about HPV vaccination for their sons in the next year. CONCLUSIONS: Parents' consent for school-located HPV vaccination may be higher when presented as an opt-in decision and when other recommended adolescent vaccines are included. Such low-cost and sustainable strategies may be particularly effective among parents wanting to vaccinate their adolescent sons.	Framing Parents' Conflicted Decisions Over Talking to Children about Familial Breast Cancer Risk Tercyak, K. P., Mays, D., DeMarco, T. A., Peshkin, B. N., Sharff, M. E., Garber, J. E., Schneider, K., Patenaude, A.F. Decision support is a ubiquitous concept underlying work in cancer genetic counseling, but few evidence-based decision tools exist for patients in this context. The need for decision support is greatest when patients encounter values-based choices associated with high conflict, such as when mothers undergoing BRCA1/2 testing consider if, when, and how to share information about familial breast cancer risk with their minor-age children. Toward that end, we evaluated the contributions of 3 components of Ottawa Decision Support Framework (ODSF) toward maternal decision conflict regarding family communication. Baseline data from 122 mothers participating in a randomized controlled trial of a decision support intervention for communication of cancer genetic information to children were analyzed. ODSF-derived independent variables included: 1) decision appraisals, 2) decision self-efficacy, and 3) decision values. Decision conflict served as the primary dependent variable. In bivariate analyses, negative decision appraisals were significantly associated with greater decisional conflict ($r = 0.31$, $p < .001$), whereas positive decision self-efficacy ($r = -0.46$, $p < .001$) and values ($r = -0.18$, $p = .04$) were associated with less conflict. In the final regression model, both negative appraisals ($B = 0.69$, $p = .03$) and positive self-efficacy ($B = -1.14$, $p < .001$) remained associated with conflict after other factors were controlled, supporting the ODSF as a valid approach to decision support in this domain. The ODSF elements of decision appraisals, self-efficacy, and values are potential targets for interventions informing parents' choices to disclose or not disclose information about familial breast cancer risk to their children. Theory-based decision-support interventions offered as adjuncts to genetic counseling may be helpful in managing patients' uncertainty and promoting more informed choices about family communication.

19	20
Understanding Maternal Attitudes toward BRCA1/2 Testing in Children Tercyak, K. P., Mays, D., DeMarco, T. A., Peshkin, B. N., Sharff, M. E., Garber, J. E., Schneider, K., Patenaude, A.F. Genetic testing for hereditary breast/ovarian cancer (HBOC) risk is not recommended for children < age 18. However, mothers counseled/tested for BRCA1/2 often express interest in knowing about their minor children's HBOC risk status, despite the lack of effective prevention strategies for this age group. To better inform patient counseling efforts, we investigated both the measurement and predictors of maternal attitudes towards pediatric BRCA1/2 testing. Baseline data from 122 mothers participating in a randomized controlled trial of a decision support intervention for family communication were analyzed. Our measures included the Pediatric BRCA1/2 Testing Attitudes Scale (P-TAS)--a psychometrically sound assessment of parental testing attitudes and family communication, and related constructs. We used confirmatory factor analysis (CFA) to verify the factor structure of the P-TAS, and a multi-step regression approach to establish a parsimonious predictive model of P-TAS outcome. CFA independently verified the P-TAS's previously-established two factor solution (X2[41] = 75.3, CFI = 0.97, RMSEA = 0.08, Î± = 0.90): I. Attitudes & Beliefs (6 items, Î± = 0.96) and II. Decision Making & Communication (5 items, Î± = 0.66). After adjusting for the influence of covariates, mothers strongly valuing the communication of genetic health information to children also endorse more positive attitudes towards pediatric BRCA1/2 testing(B = 0.38, p < .001). Maternal attitudes supporting pediatric BRCA1/2 testing appear driven by desires to facilitate children's understanding of familial cancer risk. Our results underscore the importance of developing evidence-based adjuncts to genetic counseling to help meet mothers' needs for information and support in talking with children about HBOC.	Quality of Life and the Parenting Dynamic in Mothers Counseled and Tested for BRCA1/2 and their Untested Partners Tercyak, K. P., Mays, D., Luta, G., DeMarco, T. A., Peshkin, B. N., Sharff, M. E., Garber, J. E., Schneider, K., Patenaude, A.F. Despite the availability of BRCA1/2 testing for over a decade, there remains a dearth of information about how parents of minor-age children, both independently and jointly, adapt to learning about and navigate their or their partners' hereditary cancer risk. Family systems illness models would emphasize interconnectedness among members' quality of life, which may influence their parenting. Among mothers and their partners, we investigated the influence of parenting exchanges on quality of life outcomes surrounding maternal BRCA1/2 cancer genetic counseling and testing. A total of 109 intact parenting dyads completed assessments prior to and 1-month following BRCA1/2 testing. Using the Actor-Partner Interdependence Model (APIM; Cook & Kenny, 2005) for non-independent dyadic data, we examined mothers' and partners' quality of life (psychosocial stress), decision conflict regarding disclosure of genetic test results to children, and parent-child communication. Models estimated bidirectional "actor" (i.e., own) and "partner" (i.e., other) effects. The final model contained both actor and partner effects. Among mothers, poorer quality of life (B = 0.28, p < .001) and poorer parent-child communication (B = -0.13, p < .01) at baseline were significantly predictive of poorer quality of life at follow-up. Among partners, poorer quality of life (B = 0.68, p < .001) at baseline also predicted poorer quality of life at follow-up. An equality constraint (X2[1] = 0.9, p = .35) revealed that mothers' and partners' decision conflict at baseline equally influenced each other's quality of life at follow-up (B's = 1.29, p < .01), but not their own quality of life. Our analysis supports the APIM as a useful approach to understanding dyadic outcomes in the context of cancer genetic testing, with interdependent relationships among parents. A conflicted decision over family communication in 1 member of a parenting dyad adversely influences quality of life in the other dyad member. This suggests that supportive interventions to improve quality of life for mothers undergoing BRCA1/2 testing should attend to both mothers' and their partners' preferences regarding family communication.

21	22
Title: Follow-up behavior after abnormal Pap smear results in Appalachia Dean JA, Ferketich AK, Paskett ED OBJECTIVE: To describe follow-up and timely follow-up behavior according to guidelines and provider recommendations after abnormal Pap results among Appalachian women. METHODS: Subjects were cases from a case-control study at 18 clinic sites in 14 Appalachian counties and completed in June 2006. Eligible cases were designated by abnormal Pap result (n=282). Medical records were available for three years following the study Pap smear and abstracted to determine follow-up. Percentage were calculated for follow-up and timely follow-up in accordance with the 2006 ASCCP Consensus Guidelines, as well as provider recommendations when recorded. RESULTS: Overall, 70.9% of women received any treatment at all after an abnormal result. Follow-up within treatment guidelines was 60.3%, within treatment and time guidelines was 43.3%. Of those receiving any treatment, 10.6% failed to meet the guidelines. Of the 60.3% who received a treatment within the guidelines, 28.2% failed to receive that treatment within the recommended time frame. Provider recommendations were retrievable from the medical records of 168 cases. For those with data, 64.29% received the follow-up their provider recommended, and 31.8% received the recommended follow-up the recommended timeframe. Of those receiving any treatment, 15.6% received a treatment other than that which was recommended to them by the provider. Of those who received a provider recommended treatment and had data on time recommendations, 50.0% failed to receive that treatment within the recommended time frame. For those with data available (168), 83.3% of provider recommendations matched guidelines. CONCLUSIONS: Failure to follow-up abnormal Pap results with appropriate treatment and within appropriate time is a significant issue among Appalachian women. More study is needed to understand predictors of this behavior so multi-level interventions can be developed to increase adherence along the cancer continuum. To this end, a logistic regression of this data will be conducted, looking at the interfaces in care between screening and diagnosis in the context of the creation of a multi-level intervention.	Genomic tests in cancer care: Attitudes, informed consent needs, and preferences for information sharing Hall M, Patrick-Miller L, McCully K, Bradbury A Background: "Personalized" or gene-based medicine is expected to significantly alter health care delivery and to become integral to the comprehensive management of cancer. Yet, it is unknown to what extent patient attitudes vary by type of genetic test (eg predictive tests for hereditary cancer risk, pharmacogenomic tests, or pleiotropic tests with multiple clinical implications), or by factors that have been previously associated with genetics-related preferences. Methods: Breast, colon, and prostate cancer patients and first-degree relatives (FDRs) were purposively recruited based on age, sex, stage, and race to complete a semi-structured interview to assess attitudes and preferences toward 3 test types: predictive, pharmacogenomic, and pleiotropic (eg guides treatment and has predictive implications). Interviews evaluate perceived advantages/disadvantages, views on informed consent, and preferences for 3rd party information sharing (doctors, family members) for each test type. Results: To date, 53 (40 patients, 13 FDR) interviews have been completed. Advantages outweighed disadvantages for all 3 test types, and most patients reported they would have a test (predictive 84%, pharmacogenomic 95%, pleiotropic 84%) if offered. Metastatic patients (n=20) reported more perceived advantages to genomic tests to self (p=0.05) and to family members (p=0.005) compared to adjuvant therapy patients, and were more inclined to have testing. In contrast, relative to White patients, minority patients (n=11) reported fewer advantages to self (p=0.05) and to family (p=0.05), especially for pleiotropic tests. Overall, willingness to share results with family members was lower than with doctors, and results were more varied (2.70-4.65, 5-point Likert scale). Compared to >50 yrs (n=22) and White, patients <50 were most inclined (Âμ=4.4) and minority patients least inclined (Âμ=3.2)(p=0.005) to share results with family. FDRs reported high disadvantages to pleiotropic tests. Conclusions: Our results demonstrate marked variability in attitudes by test indication and demographic/disease-related factors, and suggest a need for research to better define standards for informed consent, and to develop targeted counseling and education to maximize health benefits of personalized medicine.

23	24
Exploring perceptions of risk, benefits, and barriers by stage of mammography adoption Hatcher-Keller, J, Rayen, MK, & Dignan, M Background: Despite evidence that mammography is an effective method of early detection certain vulnerable groups, such as those using the ED as a medical home, do not adhere to mammography screening guidelines, and suffer disparate mortality from breast cancer. The purpose of this paper is to investigate differences in beliefs regarding mammography screening, including perceived susceptibility and perceived benefits and barriers, among women attending the Emergency department for non-urgent care; to determine if those beliefs differ by stage of screening adoption; and to determine the demographic and personal factors that predict perceived susceptibility, benefits and barriers of mammography. Methods: Stage of mammography adoption was based on the Transtheoretical Model. Scales for risk, benefits, and barriers (based on the health beliefs model) were administered to a sample of 110 women who had presented to the ED for non-urgent complaints. The mean age was 55.9 years and 55% were African American. Results: Mammography adherence for the women was about 60%, less than the current national average. Most women who were not compliant with current guidelines were contemplating being screened. Those who were not contemplating being screened were significantly less likely to perceive themselves to be at risk of getting breast cancer. Women who had more barriers to mammography perceived less benefit from having a mammogram. African American women perceived less benefit from having a mammogram. Conclusions: Beliefs regarding mammography differ for women in various stages of mammography adoption and for minority women. These differences are important in developing appropriate interventions to promote mammography use.	HPV Knowledge, HPV Vaccine Awareness and Initiation Among Hispanics Stevens C., Tiro J., Caughy M. Background: Among Hispanics, the HPV vaccine has the potential to eliminate disparities in cervical cancer but only if optimal rates of vaccination are achieved. Media can be an important information source for increasing HPV knowledge and vaccine awareness yet very little is known about how Hispanics' media use affects their HPV knowledge and vaccine awareness. Even less is known about what differences in media use and information processing exist among English- and Spanish- speaking Hispanics. Aims: Examine the relationships between three health communication variables (media exposure, HPV information scanning and seeking) and three HPV outcomes (knowledge, vaccine awareness and initiation) among English- and Spanish-speaking Hispanics. Methods: Cross-sectional data from a survey administered to Hispanic mothers in Dallas, Texas was used for univariate and multivariate logistic regression analyses. Sample used for analysis included 288 mothers of females aged 8-22 recruited from clinics and community events. Dependent variables of interest were HPV knowledge, HPV vaccine awareness and initiation. Independent variables were media exposure, HPV information scanning and seeking. Language was tested as an effect modifier on the relationship between health communication variables and HPV outcomes. Results: English-speakers reported more media exposure, HPV information scanning and seeking than Spanish-speakers. Scanning for HPV information was associated with more knowledge (OR = 4.26, 95% CI = 2.41 - 7.51), vaccine awareness (OR=10.01, 95% CI=5.43-18.47) and vaccine initiation (OR=2.54, 95% CI=1.09-5.91). Seeking HPV information was associated with more knowledge (OR=2.27, 95% CI=1.23-4.16), awareness (OR=6.60, 95% CI=2.74-15.91) and initiation (OR=4.93, 95% CI=2.64-9.20). Language moderated the effect of information scanning and seeking on vaccine awareness. Discussion: Differences in information scanning and seeking behaviors among Hispanics subgroups have the potential to lead to disparities in vaccine awareness. Conclusion: Findings from this study underscore health communication differences among Hispanics, emphasizing the need to target Spanish language media as well as English language media aimed at Hispanics to improve knowledge and awareness.

25	26
Impact of Socio-cultural Factors on culturally adapted Genetic Cancer Risk Assessment in Underserved Hispanic Women Martir-Negron A., Uman G. , Ogaz R., Yang K, Sand S., Ashing-Giwa K. , Abraido-Lanza A. and Weitzel J. PURPOSE: Measure the effects of culturally tailored Genetic Cancer Risk Assessment (GCRA) in high risk underserved Hispanic women. METHODS: In this longitudinal study, 213 Hispanic women with personal or family history of breast and/or ovarian cancer from greater Los Angeles received GCRA from an oncogeneticist and a bilingual genetic counselor. GCRA includes the assessment of personal, medical and family cancer history to determine cancer risk and provide genetic counseling/testing as appropriate, as well as recommendations for screening and prevention. Patients completed baseline surveys measuring social-cultural factors, attended their consultations, and participated in 6-month follow-up surveys. Instruments included a personal and family history, acculturation, knowledge, self-efficacy and perceived access to health services. RESULTS: Patients' age at first diagnosis ranged from 23 to 73 (N=132 </= age 45), 25% were employed, only 35% had some college education or were graduates, and nearly 75% had Spanish as their primary language. Nearly 2/3 of the patients were of Mexican ancestry. There was a significant increase in breast health self-efficacy, communication self-efficacy, and total self-efficacy after GCRA (p=.01, .02, and .046, respectively). Post knowledge, education, personal acculturation, and pre perceived access accounted for 24% of the variance in post perceived access (p=.002). When controlling for those variables, post self-efficacy (performance, communication, and barriers), post expected outcomes, and post social support accounted for an additional 8% of the variance (p=.244). Overall, all the explanatory variables accounted for 32% of the variance (p=.006). Significant beta weights included post knowledge (.251, p=.055), personal acculturation (.250, p=.053) and post barriers self-efficacy (.265, p=.034). CONCLUSIONS: Socio-cultural variables, such as acculturation help explain patients' perceptions of access to health services. Delivery of GCRA in Spanish may contribute in part to increased communication self-efficacy. Culturally tailored GCRA may promote risk-appropriate cancer prevention and early detection behavior among high-risk families in multi-ethnic underserved communities	Cervical Cancer Screening among Women in Ontario, Canada Schoueri-Mychasiw, N. & McDonald, P. Objectives: Cervical cancer is the second most common cancer among women worldwide. Failure to prevent cervical cancer is partly due to non-participation in regular screening. This study examined Pap test participation rates and the factors associated with not having a time-appropriate (within 3 years ago) Pap test among a representative sample of women in Ontario, Canada. Methods: Univariate analyses, cross-tabulations, and logistic regression modeling was conducted using cross-sectional data from the 2007-2008 Canadian Community Health Survey. Analyses were restricted to women aged 18-69 years old living in Ontario, with no history of hysterectomy. Results: Almost 17% of at-risk women reported not having a time-appropriate Pap test. Immigrant women were more likely to report not having a time-appropriate Pap test (21.73%), compared to non-immigrants (14.22%). Not having a time-appropriate Pap test was associated with being 50-69 years, single, having low education and income, not having a regular doctor, being of Asian (Chinese, South Asian, other Asian) cultural background, perceiving having less than excellent health, and being a recent immigrant. Conclusion: Inequities still exist in terms of who is participating in cervical cancer screening. Targeted effort must to be directed towards those less likely to get a Pap test.

27	28
Improving preparedness for mammography in women with intellectual disabilities Wilkinson J, Bowen D Women with intellectual disabilities (mental retardation) have low rates of mammography and high breast cancer mortality compared to the general population. Our previous research highlighted the need for women with intellectual disabilities to be better prepared for the logistics of breast cancer screening to increase their comfort and likelihood of successful screening. Methods: In this project, an instrument to measure "preparedness" for mammography was developed using focus group data, qualitative data and cognitive interviewing. We are in the process of assessing test-retest reliability of the instrument in a population of women with intellectual disabilities and will have data to present by the meeting. We also developed a video intervention highlighting the logistics of breast cancer screening, using an actress with intellectual disabilities. The educational content of the video was based on focus group interviews and qualitative data. Results: Women with intellectual disabilities asked for concrete logistical information about breast cancer screening that highlighted the location, duration, and anticipated discomfort of screening. They also highlighted the disconnect between being screened and getting the results at a later date, saying that it was frustrating not to have the results sooner. A six-item instrument was developed asking concrete questions about mammography, to be read aloud to subjects. Data on test-retest reliability are pending. Conclusion: It was feasible to develop both an instrument to measure preparedness for mammography and a video intervention about mammography using an actress with intellectual disabilities. Data on test-retest reliability and acceptability will be available by March. Future plans include incorporating both the instrument and the intervention into a more comprehensive intervention to improve screening rates among women with intellectual disabilities.	Development of a therapeutic garden to enhance patient care and visitor satisfaction Milliron B, Brennan MJ, Gamble E, Vitolins M Background: Within the healthcare environment, particularly in the cancer treatment environment, encounters with nature have been associated with faster healing, improved patient outcomes, and increased patient and visitor satisfaction. Gardens are most beneficial when they help patients achieve a sense of self-control, encourage social support, and offer opportunities for light movement and exercise. Purpose: The objective of this project is to develop a sustainable, evidence-based therapeutic garden designed to provide benefit to patients (a majority are likely to be pediatric and adult cancer patients), caregivers and visitors. Methods: Semi-structured interviews were conducted with key stakeholders between May and November, 2011. Feasibility of the project was discussed among public health scientists, the county community garden coordinator, master gardeners, the hospital architect, hospital facilities planning and engineering. A steering committee was formed to guide development and evaluation, and promote garden usage. Results: As an interdisciplinary and iterative process, discussion of the rooftop garden provided an opportunity for input from a variety of stakeholders. Structure and safety concerns lead to the decision to use portable containers (as opposed to permanent planters attached to the roof), the exclusion of permanent water fixtures, and the addition of "No Climbing" signs. Key stakeholders identified noteworthy uses for the rooftop garden including a place of respite for caregivers and patients, a place for gentle physical activity and play, a platform for cognitive and physical rehabilitation, a tool for behavior change and nutrition education, and a space that may facilitate improved communication between health care providers, patients, and caregivers. Discussion: The development of therapeutic places for respite within the health care environment can aid in improving health outcomes. With the expertise of members from the community, University, and hospital, the rooftop garden will be a reflection of key stakeholders that will directly benefit patients, their caregivers and perhaps even members of the health care team.

29	30
Are there differences in lifestyle factors between Mexican-American women with and without a family history of breast cancer? Kamrudin S., Clague, J., Wilkinson, A., Chang, S., Vernon, S., Bondy, M Purpose: To examine body mass index (BMI) and lifestyle factors in Mexican-American (MA) women with and without a family history (FH) of breast cancer (BC) and to determine whether they meet the American Cancer Society (ACS) Nutrition and Physical Activity Recommendations for Breast Cancer Prevention. Methods: Cross-sectional data from 9,779 MA women (n=281 with FH of BC and n=9,498 without FH of BC) enrolled in the Mano a Mano Mexican American Cohort Study at MD Anderson Cancer Center were analyzed. Ï‡2 analyses and t-tests were used to compare BMI and modifiable lifestyle factors (including physical activity (PA), alcohol, and smoking) among women with and without a first-degree relative with BC. BMI was also analyzed using the non-parametric Wilcoxon rank sum test. ACS guidelines recommend maintaining a healthy weight within normal BMI, engaging in moderate to strenuous PA 2.5 hours/week, and limiting alcohol consumption to ≤1 drink/day. The overall percentage of MA women meeting the ACS guidelines was computed and bivariate analyses compared ACS guideline adherence for women with and without FH of BC. Results: MA women with a FH of BC were older (45.6 years) than those without FH of BC (38.4 years) (P-value<0.001). Overall, all women had low levels of adherence with ACS PA (15.4%) and BMI (19.6%) recommendations for breast cancer prevention. MA women with a FH of BC had a significantly elevated BMI (mean 31.9 vs. 30.4) (P-value<0.001) and were also less likely to fall within the normal range for BMI (12.5% vs. 19.9%) (P-value=0.002) compared to those without a FH of BC. There were no significant differences in lifestyle factors between those with and without FH of BC; moderate to strenuous PA levels, alcohol consumption, and smoking were low. Conclusion: MA women with a FH were more likely to be obese and just as likely to engage in low levels of moderate to strenuous PA as women with no FH of BC. The risk of BC is doubled in women with positive FH and risk reduction behaviors may modify this significant increased risk.	Genetic Prostate Cancer Risk Assessment: Determining Knowledge, Attitudes and Translational Issues among Patients and Providers Birmingham, W., Agarwal, N., Bishoff, J., Kohlmann, W., Aspinwall, L., Dechet, C., Kinney AY Purpose: The strong association between family history and prostate cancer (PC) risk suggests a significant genetic contribution. Recent studies have found single nucleotide polymorphisms (SNPs) correlate with PC risk; however, uncertainty remains as to how to best incorporate this type of information into clinical decision-making. Currently SNP based genetic risk assessment testing is available directly to consumers and the public and providers are becoming more aware of the availability of this technology. There is a need to determine the optimal way to appropriately educate patients and providers and to incorporate this information to inform health care decision-making. Method: Using quantitative and qualitative methods in this ongoing study, we assessed knowledge, attitudes and behavioral intentions regarding SNP based genetic testing in first-degree relatives (FDR) of PC patients, aged 45-70 years. Focus groups were also conducted and surveys administered to primary care physicians and urologists to present specific information about these assessments as well as to determine physicians' current knowledge of and their attitudes toward using these assessments in clinical decision making. Results: Preliminary results indicate differences between patient and provider. Despite the limitations, most FDRs indicated they would get the SNP test while the majority of physicians indicated they would not order the test for their patients and did not think the information would be useful in patient care. FDRs preferred their physician interpret the SNP test, yet the majority of physicians indicated they did not feel confident in cancer genetics. Qualitative and quantitative information will continue to be collected and used to identify additional themes that emerge from the data as well as potential implications for behavioral interventions and/or clinical practice strategies. Conclusion: This study will provide an assessment of patient and physician attitudes toward SNP-based genetic risk testing and will be used to pursue future research on the use of SNP-based genetic testing to direct cancer screening, and use of evidence-based preventive strategies. We are currently recruiting participants and will present data from this ongoing study at the conference.

31	32
A Resource to Facilitate Use of National Surveillance Systems: A Pilot of Cancer Screening Behaviors Hamilton JG, Kobrin SC, Breen N, Breslau E, Klabunde C, Moser R P, Oh A, Patrick H, & Klein W M P The National Cancer Institute (NCI) supports surveys that collect population-based estimates of cancer screening and other behaviors. Data from these surveys help researchers to address questions related to behavioral patterns, trends, and geographic variation. These surveys also provide a wealth of behavioral, sociodemographic, and health care access correlates for researchers to explore. However, researchers may not take full advantage of these data because survey characteristics vary, and until now, no comprehensive resource existed to detail their differences. For this reason, NCI is conducting a project to catalogue the strengths and limitations of national surveys, beginning with a pilot of cancer screening behaviors and associated constructs (e.g., health insurance, health beliefs). This pilot focuses on 3 NCI-supported surveys with overlapping periods of data collection: the 2005 versions of the California Health Interview Survey (CHIS), Health Information National Trends Survey (HINTS), and National Health Interview Survey (NHIS). We compiled information about each survey: sampling strategy, pretesting, and administration; extent of geocoding; data access procedures and costs; and constructs associated with cancer screening. We documented all available measures of cancer screening behaviors, including items, response options, and respondent eligibility criteria. We also analyzed published studies (n=43) that used cancer screening data from the 2005 versions of CHIS, HINTS, and NHIS to describe the types of research questions that have been answered with each survey. Analyses indicate that across surveys, data were used to examine correlates of screening behaviors (58% of studies), to examine trends in screening over time (26%), and were used in conjunction with other data sources (e.g., as control cohorts, to compute cost-effectiveness models; 16%). By reviewing characteristics of these surveys and their resulting publications, we will provide researchers with a new tool for using and combining these surveys to understand cancer screening and address gaps in the literature. This successful pilot will guide us in similar analyses of surveys of other cancer prevention and control behaviors.	Factors Affecting Colorectal Cancer Screening Decision Stage Njoku A, Cocroft J, DiCarlo M, Denni, M, Sifri R, Myers RE Background: Factors explaining colorectal cancer (CRC) screening decision stage (SDS) (i.e., decided against or never heard of (DA/NHO), not considering or undecided (NCU), decided to do (DTD), or screened) are not well-documented. The analysis presented here seeks to address this gap in the literature. Methods: As part of a larger randomized, controlled trial, primary care patients aged 50 to79 completed a baseline survey on background characteristics, screening perceptions, and SDS. Respondents were randomized to a usual care control group, standard intervention (mailed screening kit), or tailored navigation (mailed screening kit and telephone contact). SDS was reassessed at navigation in the tailored navigation group. The primary reason for current SDS was identified. Reasons were grouped into 6 categories using triangulation and content analysis, and were classified as either a barrier or facilitator. Multivariable analyses were conducted to assess the association between reported barriers versus facilitators and SDS (<DTD versus >DTD). Results: Participants (n=242) tended to be: white (80%), female (67%), 50-59 years of age (69%), > HS education (56%), and living as a couple (64%). SDS at navigation was: DA/NHO (3%), NCU (9%), DTD (75%), and screened (13%). DA/NHO respondents (n=8) reported only screening barriers. Common barriers were fear of being diagnosed with CRC and concern about screening procedures. NCU respondents (n=22) reported more barriers than facilitators (73% and 27%, respectively). The most frequent barrier was the belief that screening is inconvenient. DTD respondents (n=181) reported fewer barriers than facilitators (13% and 87%, respectively). The most frequently cited facilitator was belief in screening efficacy. Screenees (n=31) also reported fewer barriers than facilitators (13% and 87%, respectively). The most frequently cited facilitator was perceived convenience of screening. Report of a screening facilitator was positively and significantly associated with SDS (OR=34.4, CI:11.4,104.2). Conclusion: Participants with a lower SDS tended to report screening barriers, while those with higher SDS tended to report screening facilitators. Specific types of screening barriers and facilitators differed across SDS categories.

33	34
Influence of Cancer Registry Source on Enrollment in the Family Cancer Risk Assessment and Education (CARE) Randomized Trial Simmons RG, Lee YC, Stroup N, Rogers A, Edwards S, Lowery J, Wiggins C, Hill D, Johnson C, Cress R, Williams MS. BACKGROUND: Cancer registries are commonly used to identify eligible study participants, but differences in recruitment protocols, including consent processes, allowed method of follow-up contact, and level of physician consent may influence recruitment outcomes. Our study examined differences in participation by registry source in a multi-site behavioral intervention trial that utilized a multi-level recruitment strategy targeting individuals at increased familial risk for colorectal cancer. METHODS: We examined participation rates at each of three levels of study recruitment to the Family CARE trial: 1) colorectal cancer cases contacted by eleven participating cancer registries; 2) colorectal cancer cases who agreed to provide contact information for their at-risk relatives; and 3) at-risk relatives who agreed to participate in the study. Cases and relatives were stratified by registry source. RESULTS: Registry Recruitment: Contact response rates differed significantly between registries, varying from 88.3%to 18.5%. Case Recruitment: A total of 4351 Family Contact Forms requesting relative referral were sent to cases, with an overall response rate of 52.7%. Response rates differed by registry source, from a high of 56.3% from one registry, to a low of 15.3%. Relative Recruitment: Of 2398 potentially eligible relatives, a total of 598 were deemed study eligible, with 496 of those completing randomization (82.9%). Overall, 15.6 cancer cases were contacted for every one eligible relative randomized to the study. However, this rate varied by registry, from a high of 77 to a low of 8 cases contacted for every one relative randomized. CONCLUSIONS: Participation rates varied significantly by registry source at all levels of the recruitment process. Factors influencing these differences may be due to differences in specific registry recruitment protocols, level of familiarity with the research institute conducting the study, and attitudes toward research participation in different geographic locales. Our findings may inform the design and implementation of recruitment processes in future cancer prevention trials utilizing cancer registry resources.	Patterns of Use of a Web-based Decision Tool for Prostate Cancer Screening: Effects on Decisional Outcomes Tomko C, Stern A, Ludin S, Kelly S, Taylor K As there are currently no universally accepted recommendations for men regarding prostate cancer screening (PCS), most medical organizations agree that PCS decisions should be made through shared and/or informed decision-making. We developed and evaluated an interactive, web-based decision aid for PCS to determine whether patterns of website use (assessed by electronic tracking) were associated with PCa knowledge, satisfaction with the screening decision, and decisional conflict. Method: Participants (aged 45-70) were primary care patients at two academic hospitals and a community based practice. Mean age was 57 yrs (SD=7), 36% were African American, and 91% had Internet access. Men completed 3 telephone interviews: baseline, 1-month, and 1-year post-baseline. These analyses include only the men who accessed the website and completed the 1-month assessment (N= 256/535; 47.9%). The website includes 5 sections, covering the continuum from screening to treatment, an interactive values clarification tool (VCT), and 8 video testimonials. Number of website sections viewed and total time spent were assessed via tracking software. Results: We conducted multivariate analyses, predicting outcomes at 1- and 13-months, adjusting for the baseline outcome, relevant covariates, and men's baseline preference regarding PCS. Number of sections viewed was positively associated with increased knowledge at 1-month ($F(3,250)=27.4$, $p<.001$) and at 1-year ($F(3, 235)=27.8$, $p<.001$). Similarly, total time spent on the website was positively correlated to increased knowledge at 1-month ($F(2,236)=3.7$, $p<.05$) and at 1-year ($F(2,217)=8.0$, $p<.001$). Compared to men who viewed only part of the website (1-3 sections), men who viewed all 5 sections of the website were more likely to be satisfied with their screening decision at 1-month (OR=2.3, 95%CI=1.03-5.34). Decisional conflict was not related to time spent. Conclusions: Detailed analyses of use of an interactive website suggested that greater use was associated with increased knowledge and more decisional satisfaction. Developing methods to increase individuals' engagement with websites may improve desired outcomes. Finally, men's baseline screening preference had implications for how men are impacted by the material.

35	36
Beliefs About Cancer Prevention Behaviors: Comparing Cancer Surviors to the General Public Kiviniemi, MT and Beehler, GP BACKGROUND: Encouraging healthier diet and exercise habits for cancer survivors is important for enhancing quality of life, reducing cancer recurrence, and reducing suffering from other diseases. Some have argued that surviving cancer may be a "teachable moment" for encouraging healthier behavior. This study examined how survivors differ from the general population in beliefs relevant to the teachable moment hypothesis. METHODS: Analyses were conducted using data from the 2007 Health Information National Trends Survey. Participants were cancer survivors (n=1,001) and individuals with no cancer history (n=6337). Participants reported beliefs about whether behavioral/lifestyle factors cause cancer, whether it is possible to prevent cancer, and the effect of exercise on cancer risk. RESULTS: Sampling weighted analyses were used to create population-representative estimates; analyses control for age, gender, race, education, and income. Relative to those without a cancer history, cancer survivors were less likely to believe that behavior/lifestyle causes cancer (slope=-0.097; p<.05) but also more likely to believe that it is possible to prevent cancer (slope=0.76; p<.05). There were no differences in beliefs about the role of exercise in cancer prevention (slope=0.008, ns). DISCUSSION: The findings suggest caution is necessary in seeing survivorship as a teachable moment, especially to the extent that the teachable moment is defined in terms of preventing recurrence. Belief that cancer is preventable and that behavior/lifestyle plays a role is a necessary precondition to the teachable moment hypothesis. Given the differences found here, the beliefs that survivors have concerning cancer prevention may need to be modified prior to behavioral interventions.	Prevalence & Correlates of Willingness to be Contacted Through a Hospital Cancer Registry among Breast & Colon Cancer Survivors Tiro JA, Carpentier MY, Melhado T, Apraku W, Argenbright K, Bartholomew LK, Savas LS, Vernon SW Background: Cancer registries are an important resource that can facilitate promotion of cancer prevention and control among the growing population of survivors. Registries have been underutilized for this purpose perhaps due to privacy concerns. Little is known about survivors' willingness to be contacted through registries. Objective: Examine prevalence and correlates of willingness to be contacted for research and health promotion interventions through a cancer registry among an urban population of breast and colorectal cancer survivors. Methods: All breast and colon cancer survivors diagnosed between 2005 and 2010 (N = 1,750; 1,510 breast and 240 colon) and listed in an academic medical center cancer registry were mailed a survey. Survivors were asked about their awareness of the state cancer registry, awareness of being listed in the registry, and whether they were willing to be contacted through the registry. Sociodemographic, cancer diagnosis, follow-up care, and genetic testing variables were also assessed. Response rate was 28.9% (29.9% breast, 22.1% colon); less than 2% of the sample opted out and less than 6% had incorrect addresses. Univariate and multivariate logistic regression models were conducted. Results: Willingness to be contacted was high (73.2%) even though only 16.2% were aware of the registry and 13.6% knew their information was in the registry. In univariate and multivariate analyses (latter controlled for cancer type and sex), age and education were negatively associated with willingness. Older adults (AOR age 50-60 v. age<50 = 0.42; 95% CI= 0.18-0.98) and those with less than a college degree (AOR less coll v. grad degree= 0.40; 95% CI= 0.21-0.76) were less willing to be contacted through the registry for recruitment into research studies. Conclusions: Our findings support the use of cancer registries to contact survivors and invite them to participate in research studies.

37	38
Notifying Study Participants of Increased Prostate Cancer Risk Due to Vitamin E Anderson, K, Hartline, J, Marrah, D, Harris-Talley, J, Goodman, P, Klein, E Purpose: To describe our procedures for participant and public notification of new study results. Methods: SELECT, the SELenium and vitamin E prostate Cancer prevention Trial, funded by the National Cancer Institute and managed by SWOG, was designed to see if one or both of these dietary supplements could prevent prostate cancer. SELECT opened in 2001 in over 400 study sites in the U.S., including Puerto Rico, and Canada and ended recruitment in 2004 with 35,533 participants. In 2008, we reported that neither study supplement prevented prostate cancer. The results also showed a non-statistically significant increase in prostate cancer risk for those men taking vitamin E alone. Participants were told what Study Supplements they were taking and to stop taking their Study Supplements. Starting in 2009 the study transitioned to annual follow-up by mail from the Coordinating Center (CC), known as Centralized Follow-Up (CFU). In 2011, with additional data and longer follow-up, we found that participants who took the study supplements of vitamin E (400 IU per day) and a placebo for selenium had a statistically significant (p=.008) 17% higher risk of prostate cancer than those who took two placebos. Summary: The updated results were published on October 12, 2011 in the Journal of the American Medical Association. The NCI prepared a press release and FAQs. The CC sent a letter from the study leadership to the CFU participants describing the recent results. The CC prepared instructions and materials to assist study sites who obtained Institutional Review Board approval to notify those participants who did not transition to CFU. The public website www.crab.org/select was updated with the results, links to the journal and other relevant information. Conclusions: We mailed letters to 17,583 CFU participants with 39 returned for bad addresses. Twenty five sites have sent letters to former participants. We have talked to196 current and former participants, most of whom either wanted to confirm their Study Supplement assignment or asked whether they should take a multivitamin. Seventeen participants have asked to join CFU, and no CFU participants have asked to withdraw. Based on the responses to date, our communication plan appears to have been successful.	Central Adiposity Attenuates Association between Regular Statin Use and Increased Number of Aberrant Crypt Foci in Humans Swede H, Rosenberg D, Rasool H, Devers T, Stevens R Purpose: Emerging evidence suggests that regular use of statin drugs might increase risk for colorectal cancer (CRC). This effect, however, is in stark contrast to data from animal studies. Further, it remains unclear if human studies adequately have taken into account potential sources of indication bias such as obesity and metabolic syndrome. We explored this question of confounding in a study of aberrant crypt foci (ACF), which are early changes in colonic tissue that may be pre-cursors to advanced neoplasia and have been used increasingly as time-efficient intermediate endpoints in CRC research. Previous studies from our group and others have shown that increased ACF number was associated with central obesity and several serum markers of obesity-related dysfunction. Methods: In a sample of 77 patients receiving screening colonoscopy who consented to undergo a second endoscopic study for the detection of ACF, we assessed the relationship between statin use and ACF number taking into account central adiposity, sex, and patient age. In Logistic Regression analyses, the two outcome categories were ≥10 ACF or 0-9 ACF; from a self-reported clinical survey, regular statin use (any) was defined as having taken >1 pill per week in the past 12 months with the referent group being patients who indicated having taken 0 pills in that time period; and, excess central adiposity was defined using the WHO sex-based risk cut-points for waist-to-hip ratio (> 0.90 for males and > 0.85 for females.) Results: We observed that regular statin users were almost three times more likely (Crude OR=2.81, 95% CI 1.03-7.65) to exhibit an increased number of ACF compared to non-users. This effect, however, was reduced and no longer statistically significant (Adjusted OR=1.51, 95% CI 0.45-5.04) in a model consisting of waist-hip ratio, age and sex. Conclusions: While our novel data suggest that the CRC risk associated with regular statin use might reflect, in part, the underlying reason for the prescribing of statin drugs, we cannot rule out an independent detrimental effect of statin use. Future studies should include specification of statin type and a wider range of potential confounders by indication such as serum lipid levels and markers of metabolic syndrome.

39	40
Quantifying Reactive Carbonyl Species Toward the Chemoprevention of UV-Induced Skin Cancer Williams JD, Alvarez I, Wondrak GT, and Stratton SP Ultraviolet (UV)-radiation is the most common etiologic factor for nonmelanoma skin cancer (NMSC) and there is evidence linking UV-induced oxidative stress to the formation of reactive carbonyl species (RCS) and the resulting protein-bound advanced glycation endproducts in skin. RCS, secondary reactive intermediates, are key mediators of procarcinogenic protein and DNA damage. It is hypothesized that UV-induced RCS in skin may be therapeutically targeted for the effective chemoprevention of NMSC. The discovery of chemopreventive agents is hindered by a lack of methodologies to evaluate the efficacy of potential RCS scavenging agents within physiologically relevant disease models. We developed new analytical methods to quantify RCS in human cultured skin cell models which provide means to characterize the intracellular levels of RCS generated by UV exposure and assess the efficacy of potential RCS scavenging agents. Two specific and sensitive methods using gas chromatography coupled to electron-ionization mass spectrometry (GC/MS) have been developed to quantify the UV-induced lipid peroxidation products malondialdehyde (MDA), glyoxal (GO), and methylglyoxal (Me-GO) in cultured human keratinocytes. The analysis of MDA is facilitated by derivatization with pentafluorophenylhydrazine (PFPH) to achieve stable MDA-PFPH adducts, while GO and Me-GO are derivatized with o-(2,3,4,5,6-pentafluorobenzyl) hydroxylamine (PFBOA) to form PFBOA adducts. Calibration curves constructed with reference standards extracted from spiked cell culture models show that all adducts can be detected in the picomolar range. Quantitative determination of RCS species extracted from UV-irradiated human keratinocytes is achieved by utilizing methyl-malondialdehyde (Me-MDA) as an internal standard for MDA and o-chlorobenzaldehyde as the internal standard for both GO and Me-GO. The developed methods provide powerful tools to assess the cellular damage induced by exposure to UV radiation. This is evidenced by our ability to quantitatively characterize the intracellular levels of RCS generated upon exposure to various doses of simulated solar light. These methods will be used to evaluate the efficacy of RCS scavengers as candidate agents for the chemoprevention of UV-induced skin cancer.	Development of the Breast Cancer Family-Based Intervention Trial (BFIT) Database A. Dubin-Rhodin, H. Greenlee, M.B. Terry, L. Reimers, L. Brafman, A.C. Aycinena, G. Kranwinkel, M. Alvarez, R. Sandoval, K.D. Cr Background: Breast cancer risk assessment and available interventions for prevention, such as chemoprevention and lifestyle modifications, are underutilized in the U.S. Female first-degree relatives (FFDRs) of breast cancer patients are a particularly relevant population to target for preventative measures given their increased breast cancer risk due to shared hereditary and environmental risk factors. Further research is needed to determine how knowledge about breast cancer, actual/perceived risk, and strategies for prevention are best communicated to high-risk women. Methods: Women with breast cancer diagnosed before the age of 70 were screened during routine follow-up visits at the Breast Oncology clinic at Columbia University Medical Center. They were queried about FFDRs with the following eligibility criteria: age >18 years, English- or Spanish-speaking, and unaffected by breast cancer. FFDRs are being approached to participate in the BFIT database to complete a survey collecting information on demographics, breast cancer risk factors, health literacy, breast cancer knowledge, perceived risk, information and support needs. Results: From Feb to Nov 2011, 527 women with breast cancer were screened, 455 were eligible, and 327 have consented to participate. Baseline characteristics of the breast cancer patients include median age: 53 (27-70); White/Hispanic/Black/Asian (%): 34/42/18/6 and 69% agreed to be recontacted. Among 912 FFDRs identified as potential participants in the BFIT database, median age: 51 (2-99); White/Hispanic/Black/Asian (%): 22/54/20/4 and Mother/Sister/Daughter (%): 18/56/26. Thus far, 38 FFDRs have been enrolled and accrual is ongoing. Conclusions: Using a novel family-based approach, the specific goals of the BFIT project are to: 1) collect data on recruitment and breast cancer risk factors in our clinic and community populations; 2) implement standardized clinical guidelines for breast cancer prevention in FFDRs, including risk-appropriate screening, genetic testing, chemoprevention, and lifestyle modifications; and 3) conduct a clinical trial in FFDRs of a clinic-based behavioral intervention vs. usual care to increase uptake of breast cancer prevention guidelines.

41	42
Population-based Recruitment of High Risk Women into a Randomized BRCA1/2 Counseling and Testing Trial: Does Rurality Matter? Campo, R.A., Jimenez, O., Pappas, L., Boucher, K., Herget, K., Gammon, A., Schwartz, M., Buys, S.S., Mandelblatt, J., Stroup, AN., & Kinney, A.Y. Background: Although genetic counseling is a critical component of the BRCA1/2 genetic testing process, rural areas experience disparities in access to clinical cancer genetic services. Rural or urban residence and other demographic factors were assessed as predictors of enrollment into the ongoing Risk Education & Assessment Cancer Heredity (REACH) population-based randomized trial. Methods: REACH assesses the safety and efficacy of telephone-based genetic counseling, compared to standard in-person counseling, for reaching and helping rural high-risk women make informed medical decisions. The target population is Utah women, ages 25-74 years, who meet consensus-approved recommendations for BRCA1/2 risk assessment/counseling. High-risk women are ascertained by the Utah Population Database. Then, the Utah Cancer Registry (UCR) makes initial contact to obtain study contact permission. Women who provide UCR consent are screened for eligibility by REACH staff and invited to participate. Multiple logistic regression analysis assessed independent predictors of trial enrollment. Results: To date, UCR has attempted to contact 3004 urban and rural cancer cases (23% rural; 5% Latino; 97% Caucasian; 89% breast & 11% ovarian cancer). 68% of women meeting the UCR eligibility criteria provided permission for REACH contact and 607 women were enrolled with a 64% response rate. The primary reason for ineligibility was previous BRCA1/2 testing and/or counseling (34%). Interestingly, 35% of urban residents had prior testing/counseling, whereas only 28% of rural residents had prior testing/counseling (p=0.03). Independent predictors of the decision to enroll were older age at UCR consent (odds ratio (OR)=1.03, 95% confidence interval (CI): 1.04,1.07) and younger age at diagnosis (OR=0.96; 95% CI: 0.94,0.98). Rural residence and cancer stage were not associated with the decision to enroll. Conclusion: The results suggest that rural residents are not utilizing BRCA1/2 testing/counseling at the same rate as urban residents. However, rural residence was not a significant predictor of trial enrollment. Instead, older age at UCR consent and younger age at diagnosis were associated with the decision to enroll.	Factors Affecting Decision-Making for Early Stage Prostate Cancer Treatment Options by African American and Underserved Men and Gillespie T, Petros J, Echt K, Lipscomb J, Britan L, Rowell J, Goodman M. Purpose: Prostate cancer (PCa) is the most common cancer diagnosed among US men, and ranks second in tumor site-specific mortality. African-Americans (AA) experience the highest rates of PCa mortality of any racial/ethnic group. Previous studies of mainly urban populations have reported significant differences in treatment received for PCa, as well as outcomes, based on race. The role of non-biologic factors, e.g. treatment selection, in these outcomes remains unclear. The objective was to examine factors that men and their significant others regard as important and influence informed decision making (IDM) about PCa therapies. Methods. This multi-center, national study (N=402) used mixed methods design to investigate IDM needs by men (N=204; 68% AA) with normal screening PSA results and their significant others (N=181; 65% AA) from 6 sites nationwide: 51% were from rural areas. In this sample, 39% reported a high school education or less; 23% had no health insurance; 37% were covered by Medicare or Medicaid; and 68% reported a household income level of $50,000 or lower. Data reported are from quantitative questionnaires completed by remote data entry and analyzed using chi-square test. Results are accompanied by two-sided p values. Results. In stating preferences for IDM, AA were more likely to be influenced by convenience, compared to Caucasians (CA). This difference was present in both men (57.6% vs 30.8%; p=0.0004) and women (65.0% vs 35.9%; p=0.0002). Compared to CA women, AA women reported being more influenced by out-of-pocket costs (47.9% vs 31.3%; p=0.0304); age of significant other (70.1% vs 53.1%; p=0.0230); significant other's opinion (91.5% vs 62.5%; p<0.0001); and prior familiarity with treatment option (54.7% vs 32.8%; p=0.0048). Women were more likely than men to be influenced by the physician recommendation (93.4% vs 84.3%; p=0.006) and their significant other's opinion (81.2% vs 73.5%; p=0.0410). Conclusions. IDM in prostate cancer often involves the patient, significant other, and physician. In this study of a predominantly AA, rural, and underserved population, there were few significant differences between races in factors affecting IDM. Lower socio-economic status overall and gender may play a greater role in treatment decisions.

43	44
Black Women's Awareness of Breast Cancer Disparity and Perceptions of the Causes of Disparity Kaiser, K.; Cameron, K.A.; Curry, G.; Stolley, M. Purpose: Black women in the United States are 41 percent more likely to die of breast cancer than White women. In Chicago, Black women are 62 percent more likely than White women to die of breast cancer. Although the breast cancer disparity in Chicago has received considerable media attention, data on public perceptions of cancer disparity is lacking. Public knowledge of disparity is important for support of policies to increase health equity. This study explored 1) awareness of breast cancer disparities among Black women in Chicago; and 2) Black women's perceptions of the causes of breast cancer disparity. Methods: Four focus groups were held in Chicago in 2011 with Black women who had never been diagnosed with breast cancer. All groups were led by a female, Black moderator. Participants completed a brief survey about their mammography history and their views of breast cancer prior to the start of group discussion. Results: Thirty-five women participated in the focus groups. Participants ranged in age from 19 to 76, with a mean age of 43. In response to the survey question, "In your opinion, who is more likely to die from breast cancer?" 51% of the women believed all women to have the same chance of dying from breast cancer. The remaining forty-nine percent believed that Black women are more likely than White women to die from breast cancer. During the focus group discussions, the most common reason given for breast cancer disparities was a lack of cancer awareness among Blacks. Other commonly cited reasons included lack of regular screening among Black women, fear of cancer, and poor nutrition. Conclusions: A large proportion of women in this study were unaware of breast cancer mortality disparities. The lack of awareness is surprising given recent efforts in Chicago to publicize and reduce breast cancer disparity. Women who believed that disparities existed most often attributed them to a lack of cancer awareness among the Black community. Additional work is needed to confirm these exploratory findings; however, these findings speak to a need for more cancer information targeted to Black women. These data also suggest a need for future work to address women's fear of cancer and to educate the public about other causes of disparity.	Barriers to care reported among patients with cervical and breast abnormalities in the Ohio Patient Navigation Research Program Katz ML, Reiter PL, Young G, Paskett ED Purpose: To evaluate patient-reported barriers to care among patients with cervical and breast abnormalities in the Ohio Patient Navigation Research Program. Methods: Patients from 18 primary care and specialty clinics with the Ohio State University Medical Center and Columbus Neighborhood Health Centers with an abnormal finding were eligible for this group-randomized trial. Clinics were paired and randomized within pairs to usual care or patient navigation (PN). Navigators were not clinic-based, but followed the American Cancer Society-PN model where navigators mainly used phone contact from a non-clinic location. During conversations, the navigators documented patient-reported barriers, actions taken to address barriers, and the amount of time spent. We report data on 449 patients with cervical (n=170) or breast (n=279) abnormalities assigned to navigation arm clinics and who were reached and did not refuse navigation. Differences between patient groups were compared using t-test (demographics) and Fisher's exact test (barriers). Results: Patients with breast abnormalities were older than patients with cervical abnormalities (mean age: 53 vs. 36 years; $p<0.01$). Additionally, more patients with breast abnormalities were: married; had higher levels of education and income; owned their home; were retired, and had some form of health insurance than patients with cervical abnormalities (all $p<0.01$). The unique patient-reported barriers most commonly reported among cervical and breast patients were: communication concerns with providers (24% vs. 13%; $p<0.01$), perceptions and beliefs about tests or treatment (22% vs. 18%; $p=0.32$), and system problems with scheduling care (17% vs. 11%; $p=0.09$). Patients with cervical abnormalities also reported the following barriers more frequently than patients with breast abnormalities (all $p<0.05$): insurance (14% vs. 7%), employment issues (5% vs. 1%), co-morbidities (15% vs. 7%), not a priority (14% vs. 6%). Conclusions: Patients with breast and cervical abnormalities reported similar barriers to care; however, patients with cervical abnormalities reported the barriers more often. This may be due to the differences in key demographic characteristics and should be considered when planning future patient navigation programs.

45	46
Breast Cancer Mortality in Appalachia: Reversing Disparities Lengerich E, Yao N, Hillemeier M The purpose of the study was to determine the magnitude, trend, and disparities for breast cancer mortality in counties in Appalachia, a medically underserved region in all or parts of 13 states, compared to other counties in the continental US. Unique among major cancers sites, Appalachia has historically been reported to have lower rates of breast cancer mortality than other areas of the US. We analyzed 1969-2007 SEER mortality data and covariate data from the Area Resource File with weighted multivariate regression and exploratory spatial data analysis techniques. In particular, we assessed the temporal change in the disparity (difference) in breast cancer mortality rates. To eliminate potential confounding by race, we limited our analysis to white women, the predominate (84%) racial group in Appalachia. Overall breast cancer mortality rates decreased significantly ($p<0.05$), with a smaller decline in Appalachian counties (17.5%) compared to non-Appalachian counties in Appalachian states (30.5%), and compared to non-Appalachia counties (28.3%). These temporal changes were sufficient to reverse the substantial and historical mortality advantage for white women in Appalachia, such that by 2003-07, breast cancer mortality rates in Appalachia were higher than they were for the rest of the US. These temporal changes were consistent across age and rural/urban status. After accounting for poverty, rural/urban status, education, healthcare resources, and percentage white in the population, Appalachian status except for those in the Northern subregion was significantly associated with smaller reduction in breast cancer mortality rates. Lower levels of education, physician density, and percentage white in the population were also associated with smaller reductions in breast cancer mortality. This is the first study to report on breast cancer mortality rates among white women in Appalachia with data through 2007. We found the unique and historical cancer advantage in breast cancer mortality for white women in Appalachia has been reversed. Surveillance in Appalachia should be continued and interventions should address underlying mechanisms of breast cancer mortality, such as obesity prevention, early detection, and guideline-concordant treatment and survivorship care.	Gender Difference in Melanoma: implications for the roles of hormones and UV radiation in etiology Liu, F; Bessonava, L; Taylor, T, Meyskens, F, Anton-Culver, H Background: The incidence rate of melanoma continues to increase in the United States in the past several decades. Solar UV radiation is one of the demonstrated risk factors for melanoma and non-melanoma skin cancer; whether sex hormones or which ones play roles in melanoma development has been controversial. Methods: Using SEER17 Registry data, age-specific melanoma incidence rates were calculated and comparisons were made between male and female cases. Age-specific melanoma and non-melanoma skin cancer incidence rates were also calculated from Nordic Cancer Registry dataset as a validation and control for the US population. Results: At age 44 and younger, females accounted for more melanoma cases than males, with a peak difference at age 20-24 (RR=2.01), coinciding with the peak pregnancy age; but after age 45 (near menopause), the trend was reversed: males accounted for more melanoma cases. The bimodal gender difference was not observed in non-melanoma skin cancer which is known to be caused by solar UV radiation. Conclusions: Solar UV radiation may be a causative factor for melanoma at older age (>45 years), but gender-related issues including sex hormones, immune suppression and reactive oxygen species may play important roles in younger age melanoma. This study opens new areas for the study of melanoma etiology and prevention associated with exposures to development-associated hormonal changes and UV radiation.

47	48
HPV Vaccine Initiation among Community College Women: A Pilot Study Marchand, E., Glenn, B., & Bastani, R. Background: Women ages 18 to 26 have low rates of HPV vaccination (1,2), and ethnic disparities persist in vaccine initiation and completion (1-3). Understanding and increasing vaccine uptake for 18-26-year-olds is important, as risk for acquiring HPV increases during these years (4,5). Objectives: This pilot study assessed HPV vaccine initiation and its correlates in a sample of culturally diverse 18-26 year-old women recruited from a community college (CC) in Los Angeles. Research questions were: 1)What proportion of respondents has received at least one dose of the HPV vaccine, and does this proportion differ across ethnic groups? 2) What demographic, psychosocial, and health care-related variables are associated with vaccine initiation? Method: Participants were recruited using posted fliers, in-person recruitment, and word of mouth. An anonymous web-based survey was used to collect data. Results: Usable surveys were obtained from 182 women, 59% Latina, 32% African American, and 9% other; mean age 21.6 years. Of those who knew of the HPV vaccine (n=127), 52% had been offered the vaccine by a doctor and 39% had received at least one dose (n=49). Binary logistic regression was used to test the relationships of the following variables to HPV vaccine initiation: age, ethnicity, health insurance status, doctor recommendation for vaccine, trust of doctor, parent-daughter communication about sex, sexual experience, perceived severity of and vulnerability to HPV, and perceived vaccine safety. Of these, lacking a doctor recommendation was associated with not initiating the vaccine (OR=0.12, 95% CI=0.02-0.65, p<.001). A second binary logistic regression was run with only those who had a doctor recommendation (n=64) using a smaller set of predictors. Only perceived safety was associated with vaccine initiation (OR=3.51, 95% CI=1.06-11.61, p=.04). Discussion: Having a doctor's recommendation and perceiving the HPV vaccine to be safe were associated with vaccine initiation for this sample. Though the sample size was small, this pilot study focused on a diverse group not often included in health research. Future work will continue to examine these issues with larger samples of CC students.	The Role of Adiposity in Racial and Ethnic Disparities in Prostate Cancer Occurrence and Progression: A Systematic Review IK. Martin, L. Stayner, J. Wilder, A. Mahmoud, A. Murphy, V. Freeman Black men (AA) develop and die from prostate cancer (PCa) more than any other racial group. According to recent United States (US) statistics, PCa incidence and mortality rates in AA men are 1.6 and 2.4 times that of their White (WH) counterparts, respectively. Various biologic, behavioral, environmental, and social-contextual factors have been associated with persisting disparities in outcomes. However, it is not clear how body composition contributes to racial and ethnic disparities in PCa occurrence and course. Current reviews on the adiposity relationship have tended not to adequately address this. Therefore, we conducted a systematic review of the literature examining the role of adiposity in racial disparities in prostate cancer. The US National Library of Medicine PubMed database was searched for English articles published through October 1, 2011. Criteria for selection were: 1) an adiposity-related factor (BMI, WHR etc.) was an exposure of interest and related to PCa diagnosis, progression, or PCa-specific mortality; 2) focused on racial disparities in an adiposity association with PCa; 3) the participant sample included men of predominant African Ancestry (e.g. Black, African American, Ghanaian etc.); 4) and race-stratified, effect estimates for PCa occurrence, mortality, or progression were reported. Adjustment for race alone was not sufficient for inclusion in the review analysis. No reviews, editorials, or comments were included in the review; they were cited for background content. Many of the reviews on adiposity and PCa racial disparities focused on screening. The occurrence and outcomes articles often did not present race-specific effect estimates and simply adjusted for race. The available evidence suggests a unique role of adiposity (i.e. body size, and body fat distribution) in the risk of PCa occurrence, progression, differences in treatment efficacy, and PCa-specific death. Lack of studies with sufficiently large numbers of AA prohibited reporting of race-specific estimates in many studies, especially in molecular biology and genetics. Incidence, morbidity, and mortality are highest in AA men. Further research illuminating adiposity related targets for intervention and underlying mechanisms is crucial in this highly affected group.

49	50
Obesity and Triple Negative Breast Cancer in Minority Women Sexton KR; Wiggins S; Day RS; Franzini L; Vernon SW; Brewster AM; Bondy ML Purpose: Obesity is an epidemic in the United States, especially among Mexican-American and African-American women, but studies of obesity and breast cancer subtype have been conducted primarily in non-Hispanic whites. Both Mexican-American and African-American women have a higher proportion of the more aggressive triple negative subtype (ER-/PR-HER2-) compared to non-Hispanic whites, and obesity is associated with triple negative tumors (TNBC). We conducted a case-only study of Mexican-American and African-American women with breast cancer to examine the association between obesity and TNBC. Methods: We identified 357 Mexican-American and 387 African-American women with breast cancer in the ongoing ELLA Bi-National Breast Cancer and abstracted medical charts to classify tumors as ER+/PR+, HER2+, or ER-/PR-/HER2-. Epidemiologic risk factors were collected through an in-person interview, and weight and height were measured at the time of the interview. Weight/height at age 15 were self-reported, and adult weight gain from age 15 to diagnosis was calculated. Logistic regression was used to estimate odds ratios and 95% confidence intervals. Results: At the time of diagnosis, 47% and 61% of Mexican-Americans and African-American were obese, respectively (p=0.001). There was no association between obesity and TNBC overall (OR per kg/m2=0.98, 95% CI: 0.95-1.02) or when stratified by race/ethnicity or menopausal status. Further, there was no association between adult weight gain and triple negative disease overall (OR per 5kg=0.99 (95% CI: 0.93-1.06)) or when stratified by race/ethnicity or menopausal status. Conclusions: Obesity and adult weight gain were not associated with TNBC in Mexican-American and African-American women. These preliminary results are contradictory of those in non-Hispanic white women and suggest that the etiology of TNBC may differ by race/ethnicity. We are accruing additional cases and will update these underpowered analyses with a larger sample size to confirm these findings. It is important to identify biologic factors that may explain the differential effects of obesity between the races, and we plan to assess potential biologic factors in a future study.	Enhancing Minority Participation in Clinical Trials (EMPaCT) -- Preliminary Findings of the Patient-Level Needs Assessment Xu, J., Ahmed, S., Mbah, O., Wenzel, J., Saleem, H., Phelan, D., Brahmer, J., Ford, J. Purpose: The purpose of this study was to identify barriers and facilitators to therapeutic clinical trial enrollment among African American cancer patients who are clinical trial-eligible. Methods: Enhancing Minority Participation in Clinical Trials (EMPaCT) is a consortium of 5 institutions seeking to improve minority recruitment and retention in clinical trials. In the patient-level needs assessment at the Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins (SKCCC), we conducted 6 focus groups, each with 4-6 cancer patients (N=28). Participants were African American SKCCC patients diagnosed with lung, breast, prostate, or colorectal cancer within the past 5 years who had been offered clinical trial participation. Groups were divided into acceptors (N=10) and decliners (N=18). A semi-structured interview guide included questions assessing attitudes towards clinical trials, reasons for participation and non-participation, important information to share with patients and family members, clinical trial risks, and participant-identified issues. Digital recordings of group discussions were transcribed and analyzed qualitatively by both content and thematic analysis using NVivo 9.0. Results: Facilitators of cancer clinical trial participation included an overarching desire to improve treatment options for oneself and for future patients, and a desire to advance cancer knowledge. Barriers included concerns regarding unknown side effects, mistrust of medical research, and financial constraints (e.g., insurance status, loss of work time). Participants recommended communication strategies to improve clinical trial recruitment, including: who should recruit, optimal recruitment periods, and information to be presented to potential trial participants. The influence of family members and support networks was frequently identified as an important factor contributing to trial-related decision-making, especially refusal to participate. Conclusions: Multiple barriers prevent eligible minority patients from participating in clinical trials. Results from this study, along with participant recommendations, may be applied to the development of culturally-appropriate interventions to increase recruitment of African Americans in cancer clinical trials.

51	52
Racial differences in lifestyle factors among uninsured women screened for cancer on a mobile health unit Cartmell, K.B., Bryant, D.C., Carpenter, M.J., Ford, M.E., Cummings, K.M., Sterba, K.R., Wallace, K., Alberg, A.J. Purpose of study: For many malignancies African American (AA) women have higher incidence and/or mortality rates than European American (EA) women. Cigarette smoking, heavy alcohol drinking, less healthful diets, and more sedentary lifestyles are risk factors for cancer that could contribute to cancer disparities. Those of lower SES tend to have less healthful lifestyles and higher cancer rates. Thus, important clues to the potential origins of racial disparities may be gleaned by examining racial differences in lifestyle behaviors in low SES populations. Mobile health units (MHUs) commonly provide cancer screening for poor, uninsured populations; therefore, AAs and EAs served on a MHU may have similarly low levels of SES. The purpose of this study was to characterize the racial differences in lifestyle characteristics within a MHU population of poor, uninsured women screened for breast cancer. Methods: The Hollings Cancer Center MHU program provides cancer screening for medically underserved populations. Among n=674 uninsured clients (66.0% AA, 33.8% EA), we compared differences in the prevalence of current cigarette smoking, heavy alcohol drinking (2+ drinks/day), less healthful diets (0-1 fruit/vegetable serving/day), and sedentary lifestyle (<3 days of moderate exercise/week). Results: The mean ages were 52.2 (SD=8.4) and 50.8 (SD=7.6) among AA and EA women, respectively. Compared to AA women, EA women had a prevalence of current tobacco that was 2.12 times higher (p<.0001). Compared to AA women, EA women had a prevalence of heavy alcohol use that was 1.24 times higher; a prevalence of consuming <3 fruits and vegetables per day that was 1.04 times higher, and a prevalence of less than 3 days of moderate physical activity per week that was equal; with no statistically significant differences observed (p-values ranged from .49-.91). Conclusions: In poor, uninsured women ascertained via community outreach with a MHU, the major racial difference in lifestyle characteristics observed was that the prevalence of smoking was significantly lower in AA than EA women. Thus, with respect to the lifestyle factors examined, within a similarly low SES population EA women had a higher cancer risk profile.	Community outreach to intervene with medically underserved smokers via a Mobile Health Unit Cartmell, K.B., Bryant, D.C., Carpenter, M.J., Ford, M.E., Cummings, K.M., Biggers, S., Wynne, K.L., Alberg, A.J. Purpose of study: More and more, cigarette smoking has become concentrated in poor and underserved populations. Mobile health units (MHUs) commonly provide cancer screening for medically underserved populations who may not otherwise have access to smoking cessation services, and thus provide a novel outreach approach to reach underserved smokers. A MHU visit offers an opportunity to screen for smoking and counsel patients about smoking cessation. This approach has not previously been tested, and we present novel data on incorporating screening for smoking and a smoking quitline referral into a MHU cancer screening program. Methods: The Hollings Cancer Center MHU program provides cancer screening for medically underserved populations. A smoking cessation screening and referral service was implemented for smokers who came in for cancer screening. Current smokers were counseled to discontinue their tobacco use and offered referral to the state quitline, a free phone-based tobacco cessation counseling support system that also provides free nicotine replacement medications to low income smokers. Results: Of 1409 clients screened for smoking behavior on the MHU, 52% were African American, 16% were Hispanic and 63% were uninsured. Fifteen percent (n=202) of those screened self-identified as current smokers, 17% as former smokers and 67% as never smokers. Of current smokers, 45% were African American, 6% were Hispanic and 75% were uninsured. Sixty two percent were planning to quit smoking in the next 6 months, 82% had been previously advised by a doctor how to quit smoking, and 70% had never received assistance to quit smoking through formal evidence-based methods such as counseling sessions or use of medications. All 202 current smokers identified on the MHU received information about the quitline and were asked if they would accept proactive referral to the quitline service. Conclusions: This community outreach project pro-actively reached a large number of current smokers and provided them with cessation information and referral, suggesting this may be a viable strategy to reach a medically underserved population and to enhance the cancer preventive potential of MHUs. This approach merits further evaluation as a method to help reduce smoking-caused disparities.

53	54
Finding Connections: Reaching Underserved Women with Mammography- a 3 year experience Brooks, S, Hembree, T, Beache S, Ballard, D, Aschbacher, G, Shelton, B Purpose: To examine outcomes for women undergoing mammography screening with a mobile unit and medical outreach team. Methods. During the period 2008-2010 we screened 3923 women with a clinical breast exam (CBE) and/or mammography on our mobile unit equipped with digital mammography and an exam room. We conducted 599 events throughout the metropolitan region. Breast abnormality was defined as mammographic BIRAD codes 0 or 4-6 or evidence of immediate referral for diagnostic mammography based on breast exam. We examined: age, race, ethnicity, interval from last screening, presence or absence of a primary care physician (PCP), and insurance status. Statistical analyses: bivariate associations using Fisher's Exact test, and estimated adjusted odds ratios using logistic regression modeling with Wald chi-square p-values to assess overall risk factor effects. Results. During the period 65% were 50+ yrs. of age. Race: White 48.3%; 46.3% Black/African American, 5.4% other), and Hispanic (11.5%). Insurance status: 56% no insurance; 27% private; 8% Medicare; 7% Medicaid,2% missing. BiRads distribution was as follows: 1- 73.6%; 2-14.1%; 3-1.5%; 4-0.9%; 5-0.2%; 6-0.2%; 0-5.8%; missing -3.8%). Diagnostic follow up was required on 11.3% of subjects (with 16% requiring US, 1.6% requiring biopsy, and the remaining 82.4% requiring other diagnostic follow-up). Clinical and/or Bi-rad based abnormalities occurred with more frequency for: no PCP vs. having a PCP (OR=1.28; p=0.0148), and older women than in younger women (OR=1.19; p=0.0636). Thirty-one cancers were identified during the time period. Diagnosis at later stage was more common in Black/African American women than in White women (p=0.03). Conclusions. Age and not having a primary care physician were most predictive of breast abnormalities. In a racially and economically diverse population of women accessing screening on a mobile unit at community screening events we determined that at least one modifiable factor was associated with the occurrence of abnormalities. The multi modal approach of low cost/no cost provision of onsite access to a provider,screening and navigation is a successful model. This project funded in part with federal funds: NCI, NIH,Contract No. HHSN261200800001E.	Abstract withdrawn

55	56
Factors Confounding the Association of Insurance Status and Stage at Diagnoses of the Big Four and Four Screenable Cancer Sites Plascak J, Fisher J, Stephens J, Jean-Baptiste M, Sobotka H, Paskett E Purpose: To investigate the unique factors that confound the insurance status -- stage at diagnosis relationship among the four most common and four screenable cancer sites so as to inform the underlying mechanisms giving rise to the perceived late stage disparity by insurance type. Methods: All data were gathered from the population-based cancer registry of the State of Ohio -- a demographically, socially, and economically heterogenous population of the United States. Cases included all adults (at least 18 years) diagnosed between 1996 and 2008 with an invasive malignancy of the lungs and bronchus, colon and rectum, breast (female), prostate, cervix, oral cavity and pharynx, testes, or melanoma of the skin. Logistic regression, risk-factor modeling was utilized to estimate the odds of late stage (regional or distant) by cancer site between insurance levels while quantifying direction and magnitude of confounding by several demographic (age, race, sex, marital status) and diagnosis factors (year of diagnosis and reporting source). Results: Adjusted, estimated, and significant odds ratios (OR) of late stage for the uninsured, Medicaid recipients, and Medicare recipients (private = reference) by each cancer site ranged from 1.2-2.3, 1.2-2.0, and 1.0-1.5, respectively. Besides age, the most frequent factor confounding the insurance status - late stage relationship was marital status; attenuating at least one insurance type OR by at least 10% for all sites except cervical and colon and rectum. Besides age, marital status was the only confounder among those with lung and bronchus and testicular cancer. Race played a confounding role only in breast, oral and pharynx, and prostate cancers. Reporting source served as an independent confounder only for melanoma; attenuating the uninsured OR towards null. The vast majority of confounders were also significantly and independently related to late stage. The most commonly confounded insurance type was Medicaid. Conclusion: While insurance status is indeed related to late stage cancer diagnosis, each cancer site oftentimes has a unique set of confounders and independent factors. When considered separately, knowledge of these relationships may aid in developing cancer prevention interventions for each specific cancer type.	Compliance with ACS breast cancer prevention guidelines in high risk women Cloud AJ, Liao Y, Ferris JS, Terry MB. The American Cancer Society (ACS) currently provides guidelines for healthy lifestyle and prevention of breast cancer with respect to regular physical activity, alcohol intake, and maintaining a healthy weight. It is recommended that women engage in at least 30 minutes of moderate to vigorous physical activity on five or more days of the week. Women are encouraged to drink no more than one alcoholic beverage per day. Women are also advised to maintain a healthy weight throughout life by having a body mass index (BMI) less than 25 kg/m2. Women with at least one first degree relative are at a 2-fold increase in breast cancer risk. Despite this higher risk, evidence from the Sisters study (Spector et al. 2011) suggests that very few women in their study who all have a first degree relative with breast cancer meet these 3 recommended guidelines for breast cancer prevention. Specifically, only 4.5% of Black women and 12.7% of White women in the Sisters study met all three of the ACS guidelines in this population. We examined the compliance with ACS guidelines for nutrition and physical activity of unaffected White and Hispanic relatives of women with breast cancer within the New York site of the Breast Cancer Family Registry (BCFR). The New York site of the Breast Cancer Family Registry (BCFR) includes over 1,300 families at higher risk of breast cancer either because of their age at onset or because of having multiple affected family members. Examining only the unaffected women in the New York site of the BCFR, 49.5% (670/1353) of White women exercise â‰¥4 hours per week, 87.6% (1189/1358) consume less 1 alcoholic beverage or less per day, 66.6% (947/1422) maintain a BMI of 25 kg/m2 or less. 45.6% (195/428), 94.9% (424/447), and 41.1% (188/458) of Hispanic women are compliant with the respective categories. Overall, 30.6% of White women and 15.6% of Hispanic women meet all three ACS guidelines. These findings suggest that the majority of women at higher risk of breast cancer as a result of their family history do not report compliance with the ACS guidelines.

57	58
Breast Cancer Screening Disparities Among Ethnically Diverse Women in California: A Latent Profile Analysis Aldridge-Gerry, A. Purpose: The current study sought to identify variables that best predict women's breast cancer screening behaviors and to develop screening typologies for women in a large multiethnic sample (N = 15,130) from the California Health Interview Survey 2005 (CHIS, 2006). Methods: Variables of interest addressed the following themes: health behaviors, women's health, cancer history, health insurance, health care utilization, mental health, acculturation, racial discrimination, education, and socioeconomic status. Latent profile analysis (LPA: Lanza, Flaherty, & Collins, 2003) was employed to empirically derive and subsequently predict screening using each variable simultaneously to develop typologies of women. Post-hoc analyses using logistic regression were utilized to explain significant ethnicity by class interactions. Results: Findings revealed three substantive risk domains, Health, Stress, and Demographic, were significantly related to breast cancer screening. LPA revealed two classes, deemed Healthy and Health Risk, emerged significant for the Health domain. Health Risk class women engaged in more mammography screening, relative to Healthy class counterparts across all ethnic groups (ps < .001). In the Stress domain Minimal, Mild, Moderate, and Severe Stress classes emerged. Women reported more breast cancer screening in the Minimal and Mild Stress classes, comparatively to their Moderate and Severe Stress class counterparts (ps < .001). This relationship was significant in follow-up analyses for non-Hispanic white women. Descriptively, higher rates of African American women were in the Severe and Moderate stress classes relative to all other ethnic groups. Among the Demographic domain Minimal, Limited, Moderate, and Substantial Resource classes emerged. Women in the Minimal and Substantial Resource classes engaged in greater breast cancer screening (ps < .001) than Limited and Moderate Resource class women and this was replicated across ethnic groups. Conclusion: The current study portrays a rich constellation of variables that influence women's screening behaviors and suggests similar variables are important risk factors for poor breast cancer screening, despite ethnicity, among California women.	Preferences for a methylated DNA blood test for colorectal cancer among a multiethnic sample of screened and unscreened adults Taber JM, Aspinwall LG, Heichman KA, and Kinney AY. Purpose: To examine attitudes toward a new blood-based biomarker screening test for colorectal cancer (CRC) in a multiethnic sample of adults. Septin 9 (SEPT9) is 90% accurate for CRC and could reduce barriers to screening that contribute to disparities in uptake (Warren et al., 2011). Method: Adults aged 48-76 (n=100; 43% male; 56% screened) were recruited through community organizations, churches, and print advertisements for group discussions about CRC screening. Discussions were stratified by ethnicity (38% Caucasian, 31% African American, 31% Hispanic) and screening status. A moderator presented the procedure, accuracy, cost and recommended frequency of colonoscopy, sigmoidoscopy, and FOBT, followed by corresponding information about SEPT9. Following discussion, participants ranked their first two choices for CRC screening and listed positive and negative aspects of SEPT9. Results: SEPT9 was ranked highly (first choice, 58%; tied for first, 10%; second choice, 23%). Among unscreened adults, 100% of Caucasians, 64.3% of Hispanics, and 37.5% of African Americans ranked SEPT9 first or tied for first (Ï‡2(2)=13.01, p<.01); all other unscreened adults ranked colonoscopy first. Among screened adults, 45.8% of Caucasians, 82.4% of Hispanics, and 80% of African Americans ranked SEPT9 first or tied for first (Ï‡2(2)=4.78, p<.09); all other screened Caucasians ranked colonoscopy first. Positive aspects of SEPT9 were listed by 84% (ease and convenience, 59%; high accuracy, 50%; low cost, 48%; low discomfort, 28%; and lack of preparation, 28%). Caucasians were more likely to list convenience (79.0%) than African Americans and Hispanics (46.8% across groups); younger adults and those with higher education were more likely to list accuracy; and Caucasian and Hispanic adults were more likely to list cost (59.4% across groups) than African Americans (22.6%). Only 22% overall listed negative aspects of SEPT9 (e.g., that the test is not preventative, 6%; or is not covered by insurance, 6%). Conclusion: The Septin 9 test appeals to diverse adults eligible for CRC screening, including those who had never been screened, particularly in terms of convenience, accuracy, and cost. Future research should examine the basis for ethnic group differences in screening preferences.

59	60
Organizational Barriers and Facilitators to Cancer Screening at a Latino-serving Federally Qualified Health Center Martinez J, Jhingan E, Angulo A, Jimenez R, Thompson B, Coronado G. Background: Adherence to recommendations for breast, cervical and colorectal cancer screening is relatively low in Hispanic populations, compared to non-Hispanic Whites. Little is known about how the organizational context influences the delivery of cancer screening services in general, and even less is known about federally qualified health centers, where many low-income Latinos receive primary care. This organizational context is particularly important in our era of health care reform, as new policies strive to improve access to preventive care services. Objective: To explore clinic personnel- and organizational-level barriers and facilitators to cancer screening at a Latino serving federally qualified health center (FQHC).Methods: We conducted 18 semi-structured interviews with clinic personnel at four clinics of a Latino-serving FQHC in Washington State. Participants included physicians, nurses, medical assistants and care coordinators. Results: We describe the provider- and organizational-level context across the screening continuum; from the recruitment of patients to results reporting and documentation. Programs that provide funding for cancer screening were mentioned as important facilitators for recruitment of patients into screening programs. However, the complex application process for enrolling patients into these programs deters providers from recommending screening. Scheduling a separate visit for preventive care, and having non-medical staff recruiting and recommending screening services was thought to facilitate the delivery of cancer screening. Providing immediate on-site services was thought to be effective too. Lack of time and work overload were identified as barriers to recommending cancer screening. Contextual internal factors such as team characteristics and leadership support and external factors such as federal requirements for reporting screening and performance-based incentives for providing screening were also mentioned as facilitators to effective screening. Conclusions: To be successful in the implementation of cancer screening programs in clinics that serve predominantly Latino patients, it is crucial to address organizational barriers and facilitators along the many steps and interfaces across the cancer screening continuum.	Do Combinations of Similar Prognostic Factor Have Similar Effect on Breast Cancer Survival in Blacks and Whites? Xiaoxiao Lu, Donald Henson, Heather Young Background: Breast cancer is the most common cancer in women. The differences in clinical outcomes often are associated with racial/ethnic background. Although the prognostic factors are associated with cancer outcome, it may not be obvious whether a factor truly makes the same contribution to outcome in racial/ethnic groups. There is currently no study for integrating and comparing combinations of tumor size, lymph node status, histological grade, ER status and age in Black and White women. Objective: To conduct comparative survival analyses for breast cancer according to similar combinations of prognostic factors in black and white women. Methods: Breast cancer data were obtained from SEER Cancer Registry (1990-2000). An algorithm was created with the statistical programming language "R". Disease specific survival rates were calculated by the Kaplan-Meier method. Patients who were lost to follow-up or died from causes other than breast cancer were censored by the algorithm. Survival rates were compared by the log-rank test, and the level of significance set at $p < 0.05$. Results: Without including histologic grade and ER status, the effect of T and N alone on survival was evident, the survival rates decrease as increase in T and N among both black and white women. After 10 years, the proportion surviving among white women with grade 1 was 95%, whereas for grade 2 this decreased to 87%, and for grade 3 was 79%. For black women, the proportion surviving with grade 1 was 92%, for grade 2 was 74%, and for grade3 was 66%. When comparing increased grade with ER+ status, there was a decrease in survival among both black and white; however, the decrease in survival were more pronounced when considering increased grade with ER- status, with lowest survival overall evidenced in G3, ER- status. The survival rates of white women were always more favorable than blacks for any combinations of the five prognostic factors. Conclusion: The case fatality rate was always less favorable for black women than for whites when similar combinations of prognostic factors were compared.

61	62
Family history of breast cancer is associated with a decrease in blood global DNA methylation biomarkers Delgado-Cruzata L, Wu H, Liao Y, Tehranifar P, Santella RM, Terry MB Purpose: Previous studies have shown that a decrease in global DNA methylation levels in WBC has been associated with an increased risk of breast cancer. It has been hypothesized that DNA methylation might provide genetic risk information besides serving as a surrogate of lifelong environmental exposures. We investigated the association between global DNA methylation biomarker levels in white blood cells (WBC) and breast cancer family history in the New York site of the Breast Cancer Registry (NYBCR) Methods: We measured WBC levels of global DNA methylation biomarkers in 212 cancer-free family members from the NYBCR. We assessed Global DNA methylation as levels in repetitive sequences in LINE-1, Sat2 and Alu using Methylight, and also by pyrosequencing for LINE-1.. We used linear regression analysis to investigate the association between the number of 1st and 2nd degree relatives with breast cancer and DNA methylation levels. Results: LINE-1 DNA methylation levels measured by pyrosequencing were 1.2% (95 % CI -2.0, -0.3) statistically significantly lower in those individuals with two relatives with breast cancer when compared to those with only one relative with disease. A trend in decreasing DNA methylation levels was observed for both measurements with increasing number of family members with breast cancer leading to lower DNA methylation levels. For LINE-1, two relatives were associated with a decrease of -6.1% (95 % CI -19.1, 6.8) and three relatives with a decrease of -9.7% (95 % CI -25.3, 6.0). For Sat2, two relative were associated with a decrease of -1.2% (95 % CI -7.4, 5.0) and three relatives with a decrease of -2.4% (95 % CI -9.9, 5.0). However, the decrease was not statistically significant. No statistically significant associations or trends were observed for Alu DNA methylation levels and breast cancer family history. Conclusion: We observed lower global DNA methylation levels by increasing number of relatives with breast cancer. If replicated in larger studies, our findings suggest that global levels of DNA methylation may vary by extent of family history.	Genetic polymorphisms in NQO1 and SOD2, environmental exposures, and bladder cancer risk in Egypt Goerlitz D, Saleh D, Dash C, Abdel-Hamid M, and Loffredo C. Egyptian men have the highest incidence of bladder cancer worldwide, primarily due to tobacco smoke exposure and Schistosoma haematobium (SH) infection. We assessed the interaction between these exposures and functional polymorphisms in two genes involved in endogenous protection against oxidative stress, NAD(P)H:quinone oxidoreductase (NQO1) and superoxide dismutase 2 (SOD2), in a case-control study of bladder cancer in Egypt. Pathology-confirmed cases of urothelial (transitional) cell carcinoma (UCC, N=548) and squamous cell carcinoma (SCC, N=352) were recruited from three oncology centers in Egypt. Controls (N=810) were randomly selected from the general population. Data on socio-demographic characteristics, lifestyle behaviors, and medical history including SH, were obtained through an interviewer-administered questionnaire. Blood samples were obtained in 10-ml collection tubes and DNA was extracted from buffy coats. NQO1 rs1800566 and SOD2 rs4880 genotypes were determined using TaqMan allelic discrimination assays (Applied Biosystems). Multivariable logistic regression was used to assess UCC and SCC risk with smoking and SH after stratifying on genotype. Multiplicative gene-environment interactions were assessed by including a product term in the models. NQO1 and SOD2 polymorphisms alone were not directly associated with the risk of bladder cancer. Compared to non-smokers, current smokers with the "TT" genotype for SOD2 had a higher risk of SCC [OR (95% CI): 3.4 (1.2, 9.1)] than smokers with the "CC/CT" genotypes [OR (95% CI): 0.7 (0.4, 1.2)], Pinteraction = 0.13. Contrary to expectations, association of SH with UCC was stronger in participants with the "CC" genotype for SOD2 [OR (95% CI): 4.6 (2.5, 8.3)] as compared to either the "CT" [OR (95% CI): 2.0 (1.3, 2.9)] or "˜CC" [OR (95% CI): 1.6 (0.9, 2.6)] genotypes, Pinteraction = 0.03. Smoking-NQO1 and SH-NQO1 interactions were not significant for either UCC or SCC risk. In conclusion, we have observed gene-environment interactions between the SOD2 polymorphisms and the common risk factors for the most prevalent bladder cancer subtypes in Egypt.

63	64
Determinants of the adiponectin/leptin ratio in plasma and histologically normal breast tissue Llanos A, Dumitrescu R, Marian C, Makambi K, Freudenheim J, Shields P Purpose of study: The primary objective of this study was to determine the correlation between the adiponectin/leptin ratio (A/L) in the blood and breast as well as their determinants, in a cross-sectional study of women without breast cancer who underwent elective reduction mammoplasty. Methods: Heparinized plasma and surgically removed breast tissues (inspected and determined to be free of gross pathological abnormalities) were collected from study participants (N=155). Plasma and breast leptin and adiponectin were quantified by ELISA (R&D Systems, Minneapolis, MN). The coefficients of variation for all assays were ≤10%. The Wilcoxon rank sum and Kruskal-Wallis tests were used to evaluate differences in plasma and breast A/L by selected variables. Spearman correlation coefficients were used to assess the correlation between plasma and breast A/L. Multiple linear regression analysis was performed to identify determinants of the variability of A/L in plasma and breast. Results: Plasma and breast A/L were significantly higher in whites than African Americans (0.6 vs. 0.2 and 352.7 vs. 117.9, p-values <0.0001). Plasma and breast concentrations of A/L were highly correlated (r= 0.55, p <0.0001); however, in stratified analysis by race (controlling for BMI), this correlation only persisted in whites (r= 0.58, p <0.0001). There was an inverse association between plasma A/L and BMI (p <0.0001) and positive associations with education (p= 0.02) and income (p <0.0001). Plasma A/L was significantly higher in ever drinkers (p= 0.007) and former smokers (p= 0.04). There was also an inverse association between breast A/L and BMI (p <0.0001) and a positive association with income (p= 0.02). In multivariate analysis, race and BMI were the strongest independent determinants of A/L in both plasma and breast. Conclusions: The variation in A/L in both plasma and histologically normal breast tissue was determined by race and BMI. These data support the hypothesis that A/L may be an important biomarker for breast cancer risk. Additionally, there is emerging evidence suggesting A/L is a potential target for breast cancer prevention in susceptible populations, which warrants further study.	The association between IGF2 DNA methylation and the risk of breast cancer in the New York site of the Breast Cancer Family Registry Perrin M, Delgado-Cruzata L, Liao Y, Santella RP, Terry MB DNA hypomethylation of IGF2 DMR0 may be a more frequent occurrence in tumors than IGF2 loss of imprinting. It has been reported in some but not all studies that DMR0 DNA methylation is associated with colorectal cancer but not breast cancer risk. However, no study has examined this overall association with breast cancer in high risk women and fewer studies have examined whether age and race/ethnicity are associated with DNA methylation of DMR0 . We used sister sets discordant for breast cancer from 612 participants in the New York site of the BCFR. We assessed DNA methylation of DMR0 and LINE-1 through pyrosenquencing and DNA methylation of Sat2 and Alu using the MethyLight assay. Conditional logistic regression was used to assess the association between DMR0 methylation and breast cancer risk. In controls, generalized estimating equation (GEE) methods were used to determine the associations between DNA methylation of LINE-1, Sat2 and Alu, age at blood draw and race/ethnicity and DMR0 methylation. We found that increased DNA methylation of DMR0 was nonsignificantly associated with decreased breast cancer risk (≤39.15% ref; >39.15% & ≤42.09%, OR 0.79, p=.3; > 42.09% & ≤44.75%, OR 0.86, p= .6; > 44.75%, OR 0.99, p= .96). DNA methylation of LINE-1 but not Alu or Sat2 was significantly associated with DMR0 DNA methylation (β=1.64, p=.04; 3rd quartile compared to lowest quartile). Hispanic and other race/ethnicity were associated with decreased mean DNA methylation of DMR0 compared to non-Hispanic whites (β=-2.54, p = .02 and β=-1.96, p=.06 respectively). Age at blood draw was associated with mean DNA methylation of IGF2 DMR0 (Î²= -0.08, p= .002). Although there was no overall statistically siginificant association with DMR0, we did observe that DMR0 methylation may differ by race/ethnicity and decrease with increasing age. The results also indicate that DNA methylation of LINE-1 may be related to DNA methylation of DMR0. If replicated in larger studies, these results suggest that race/ethnicity and age are important factors to consider when examining DNA methylation of DMR0 and cancer risk. They also suggest that factors affecting global methylation may also impact IGF2 DMR0 methylation.

65	66
A Systematic Review of Differential Gene Expression in Cervical Intraepithelial Neoplasia Royse K., Sudenga S., Shrestha S. Purpose: To systematically review and summarize the results from published studies which examined differential gene expression in cervical intraepithelial neoplasia (CIN) and then group validated and significant genes by their functional and biological pathways to better understand lesion progression. Methods: A systematic literature research was performed on studies published in Medline until October 27, 2011, using various combinations of the following sets of keywords in Mesh: ("Cervical Intraepithelial Neoplasia") AND ("Gene Expression Profiling" OR "Gene Expression" OR "Gene Expression Regulation, Neoplastic"). The search and exclusion was conducted by two independent reviewers and was restricted to the following inclusion criteria: publication in English, non-reviews, evaluation of histologic specimens, quantitative or semi-quantitative measurements of gene expression, and no population treatment or specialized subgroups. All gene names were confirmed and assigned to HUGO Gene Nomenclature. Candidate genes that were differentially expressed in CIN compared to normal samples and significant (P<0.05) after validation were combined and analyzed using gene ontology. Results: The above search terms yielded 264 papers of which 130 were excluded from consideration after review of the abstracts, and of the remaining 134 papers 125 were excluded based on methodology. The remaining nine studies included in the analysis consisted of 240 specimens and 148 potentially significant genes. Microarray analysis was conducted in (4/9), RT-PCR in (3/9) and L-SAGE in (2/9). There was little overlap between genes discovered or analyzed between studies, but there were overlapping results in under-expression of LGALS7 in CIN compared to normal cells in two studies and GJA1 in two other studies. There were 61 differentially expressed genes selected for gene-ontology analysis which revealed various functional categories including cell-cell interaction and regulation. Conclusions: There was little overlap between genes represented in different studies; however there was significant heterogeneity in sample methodology and analysis. Additional research should be conducted to better assess the contribution of differential expression to CIN progression.	Telomere length, telomere maintenance genes, and family history of colorectal cancer Skinner H, Litzelman K, Engelman C, Gangnon R, Seo S, Johnson R, Cunningham J, Rider D, Thibodeau S, Petersen G, Boardman L Telomere length in peripheral blood leukocytes (PBLs) has been evaluated as a biological marker of cellular aging in humans, and shorter telomeres have been associated with higher risk for a variety of cancers, including colorectal cancer (CRC). We evaluated associations between telomere length and 4,476 tag single nucleotide polymorphisms (SNPs) in telomere maintenance genes among 887 people with young-onset CRC (diagnosed at age 60 or younger) and 1,902 non-cancer controls. Cases and controls were from the Colon Cancer Family Registry and the Mayo Clinic Biobank. Telomere length was measured in PBLs using quantitative real-time PCR. SNPs were selected for genes that were identified as homologues of genes related to telomere maintenance in laboratory studies and from published human studies. Associations between individual SNPs and telomere length were evaluated using linear regression under an additive genetic model. We further evaluated associations adjusted for potential confounders and stratified by sub-groups of age, smoking status, and family history of CRC. After adjustment for multiple comparisons, no statistically significant associations were observed between telomere length overall and any SNP, nor for subgroups of age or smoking. Among cases with a family history of CRC, three SNPs were associated with shorter telomeres (rs6905285, p=0.03; rs9472236, p=0.03; and rs4714772, p=0.03). In models adjusting for age, gender, age of mother at birth, and population structure, heterozygotes (AT) for SNP rs6905285 had telomeres 154 base pairs (bp) shorter and homozygotes (AA) 350 bp shorter than TT homozygotes. SNPs rs9472236 and rs4714772 were in tight linkage disequilibrium and treated as the same marker. The rs4714772 heterozygotes (CA) had telomeres 197 bp shorter, and the CC homozygotes had telomeres 408 bp shorter, than the AA homozygotes. We observed associations between telomere length in PBLs and SNPs in telomere maintenance genes among CRC cases with a family history of CRC. These results require validation in an independent sample and evaluation for functional significance, but indicate that some colon cancer risk among those with a positive family history may be attributable to variants in telomere maintenance genes.

67	68
Global DNA methylation profiles from mononuclear cell and granulocyte DNA Vin- Raviv N, Delgado-Cruzata L, Reynolds D, Fulton L, Gonzalez K, Santella R, Terry MB. DNA methylation measured in white blood cells is increasingly being used in studies of cancer susceptibility. Despite the increasing use of DNA methylation as a potential biomarker of cancer risk, little is known about global methylation profiles of different blood cell types and whether the source of the DNA matters when examining methylation profiles. Methods: Using biospecimens from The New York City Multiethnic Breast Cancer Project, we measured methylation levels using three repetitive elements (Sat2, LINE-1 and Alu) by Methylight, the luminometric methylation assay (LUMA) and LINE-1 pyrosequencing. We evaluated the correlation of these assays by mononuclear cell and granulocyte DNA in 116 women using peripheral blood. Results: When we compared the five assays by mononuclear cell and granulocyte DNA, we observed statistically significant correlations between LINE-1 pyrosequencing ($r=0.30$; $p=0.001$) and Sat 2 ($r=0.58$; $p<0.001$). We did not observe any correlation for the other assays of global methylation commonly used in epidemiology studies (Alu, LUMA). Conclusions: Our findings support differences in global DNA methylation levels by source of DNA for two commonly used assays in epidemiologic studies (Alu and LUMA). We observed more modest to moderate correlations between DNA methylation levels from granulocytes and monocytes for other commonly used assays (Sat2 and LINE-1). These results suggest the importance of reporting source of DNA for white blood cell DNA methylation studies.	The association between a genetic risk score and breast cancer risk is not modified by menstrual or reproductive risk factors S Warren Andersen, A Trentham-Dietz, R Gangnon, J Hampton, J Figueroa, M Garcia-Closas, H Skinner, C Engelman, B Klein, L Titus Breast cancer susceptibility loci discovered through genome-wide association studies (GWAS) may act in conjunction with one another or their effects may be modified by reproductive and menstrual risk factors. We evaluated 13 single nucleotide polymorphisms (SNPs) identified in GWAS for an association with breast cancer risk using data obtained from 1662 breast cancer cases and 1508 controls who participated in a population-based case-control study conducted in three U.S. states. Information on parity, breastfeeding, and ages at menarche, first full-term birth, and menopause was collected through a structured telephone interview. DNA samples were collected through the mail using an established mouthwash protocol. Odds ratios (OR) and 95% confidence intervals (CI) were calculated using logistic regression models and adjusted for age and state of residence. A weighted composite SNP score was created as the sum of the number of risk allele copies multiplied by the corresponding log odds estimate. Nonlinearity of the score was assessed by the inclusion of a quadratic term and interactions between the score and established reproductive and menstrual factors were tested by including a cross-product term in statistical models. We confirmed associations between rs13387042(2q35), rs4973768(SLC4A7), rs10941679(5p12), rs2981582(FGFR2), rs3817198(LSP1), rs3803662(TOX3) and rs6504950(STXBP4) with breast cancer risk. The composite score included these SNPs and was associated with increased breast cancer risk. Women in the highest quintile of the composite score had 2.2 fold increased risk when compared to women in the lowest quintile (95%CI:1.67-2.88). Women in the third and fourth quintiles also had increased risk (OR=1.52, 95%CI:1.15-2.02; OR=1.50, 95%CI:1.13-1.98, respectively). Significant interactions between the composite score and reproductive or menstrual factors were not observed ($p>0.14$) nor was the quadratic score term significant to the model ($p=0.85$). Evidence from this study does not support the hypothesis that established breast cancer loci act synergistically to increase risk more than the sum of individual risk alleles. Additionally it does not appear that reproductive and menstrual risk factors modify the associations between these SNPs and breast cancer.

69	70
Genomic methylation changes in peripheral blood mononuclear cell DNA and cancer status Wu, HC, Wang Q, Santella RM, Terry, MB Genomic DNA demethylation in peripheral blood cell DNA has been observed in individuals with cancer and is associated with risk factors for cancer. Despite these associations, little data exist on within-individual changes in genomic DNA methylation over time. Using information from 77 subjects with blood collected at 2 visits on average 8 years apart, we examined whether levels of genomic DNA methylation change with time and whether changes may be associated with selected cancer risk factors. We measured genomic methylation levels in peripheral blood mononuclear cells (PBMC) by the luminometric methylation assay (LUMA), MethyLight for Sat2 and pyrosequencing for LINE1. The mean and standard deviation (SD) of within-individual differences between LUMA, LINE1, and Sat2 over an average of 8.6 years were -0.3(7.8), 0.1(3.5) and 5.8(27.6), respectively. There were 19.5% and 13.0 % of individuals who decreased, or increased, respectively, by 10% or more in LUMA over time. About 3.9% of individuals who had LINE1 methylation decreased or increased more than 10%. For Sat2, 40% of individuals had increased and 26% had decreased methylation of more than 10%. Sat2 methylation increased over time with the Spearman correlation coefficient of r=0.24 (p=0.04). The degree of change in PBMC DNA methylation was inversely correlated with values of DNA methylation at baseline; that is, greater decreases were observed in individuals with higher baseline values of each assay. The Spearman correlation coefficients with baseline values were -0.53, -0.46 and -0.35 for LUMA, LINE1 and Sat2, respectively. In multivariable linear regression models, decreases in LINE1 over time were observed in those with cancer compared to those without cancer. These data, if replicated, suggest that decreases in DNA methylation over time are observed mostly in individuals with higher baseline values of genomic methylation.	Early Life Social Environment and Global DNA Methylation in Mid-life Tehranifar P, Flom J, Ferris J, Belessiotis Richards C, Cho Y, Gonzalez K, Santella R, Terry MB Early life social environment has been associated with adult risk of several cancer sites. Epigenetic modifications, including DNA methylation, have been associated with cancer risk and with early life exposures. Epigenetic changes may represent a plausible biological pathway linking social environment in early life periods to cancer in adulthood. We investigated whether indicators of social environment in utero, at birth and age 7 (e.g., family income, maternal education, family structure, maternal nativity) were associated with global DNA methylation levels in 90 women. We also assessed the potential confounding effects of other early life factors (e.g., maternal age and smoking at pregnancy, birth order) on the associations between early life social environment and DNA methylation. The early life data were collected prospectively from study participants' mothers during pregnancy and at postnatal and childhood visits. These data were supplemented by data collected from the participants as adults (e.g., ethnicity, family structure at age 13, educational attainment). Participants' blood samples (average age at blood collection=43 years) were used to measure methylation of repetitive elements (Sat2, Alu, LINE-1) in white blood cell. Low maternal education and family income at birth were associated with higher Sat2 methylation and single parent family at age 13 was associated with higher Alu methylation. In multivariable models, the associations between childhood family income and Sat2 and family structure at age 13 and Alu remained statistically significant (β=19.9, 95% CI: 0.5, 39.3 for lowest vs. highest childhood income; β=29.9, 95% CI: 8.2, 51.5 for single parent vs. both parents households). Adjustment for adult education reduced the associations between childhood income and Sat2, but did not affect the associations between family structure at age 13 and Alu. There were no associations between early life factors and LINE-1 methylation. Our preliminary findings suggest a link between early life social environment and global DNA methylation in midlife. These results merits further prospective investigations, and add to the growing evidence on early life influences on adult DNA methylation (e.g., prenatal famine and tobacco smoke exposure).

71	72
Association of cruciferous vegetable intake with colorectal cancer risk Ashmore J, Lesko S, Miller P, Muscat J, Lazarus P, Hartman T The association between intake cruciferous vegetables and the risk of incident colorectal cancer was investigated in a large case-control study conducted in central and northeastern Pennsylvania including 1046 cases with histologically confirmed colorectal cancer and 1087 population-based controls. Diet was assessed through a modified food frequency questionnaire that included supplement use. Cases reported intakes prior to diagnosis while controls reported intakes at time of study. Odds ratios (OR) and 95% confidence intervals (CI) were estimated using unconditional logistic regression. Potential confounding factors including age, sex, total energy intake, body mass index (BMI), smoking, alcohol, and NSAID use were adjusted for in the model. The OR in the highest quintile of cruciferous vegetable intake (Q5) compared to the lowest (Q1) was 0.40 (95% CI = 0.30-0.54; P-trend <0.01). Higher levels of cruciferous vegetable intake showed greater effects in women than men, but both remained significant (Women - OR Q5 v. Q1= 0.27; 95% CI = 0.17-0.41; P-trend < 0.01; Men - OR Q5 v. Q1= 0.59; 95% CI = 0.39-0.89; P-trend = 0.01). Overall, our results indicate reduced incidence of colorectal cancer with higher cruciferous vegetable intake.	Flaxseed-derived omega-3 fatty acids and lignan reduce cell growth, inflammation and angiogenesis in men with prostate cancer Azrad M, Vollmer R, Madden J, Polascik T, Snyder D, Ruffin M, Robertson C, Moul J, Brenner D, Hardy RW, Demark-Wahnefried W. Background: In our previous phase II randomized clinical trial (RCT), men with prostate cancer were supplemented with 30g/day of dietary flaxseed, a rich source of lignan and alpha-linolenic acid (ALA), a precursor for eicosapentaenoic acid (EPA). As per our hypothesis, men in the flaxseed arms had significantly lower prostate cancer proliferation rates; however the mechanisms were unclear. The purpose of this study was to elucidate the anti-proliferative mechanisms associated with flaxseed by exploring the associations among physiologic fatty acid levels, lignan metabolite concentrations of enterolactone and enterodiol and tissue biomarkers from men enrolled in the RCT. Methods: One hundred sixty-one men, age 60 ± 8.57 years, were randomized to 1-of-4 groups: Control (n=41), Flaxseed (FS) (n=40), Low-fat (LF) (n=40) or FS+LF (n=40) for ~30 days prior to prostatectomy. Urinary lignan concentrations were determined before and after the intervention. Prostatic tissue fatty acids and expression of Ki67, NFkB and VEGF were determined in surgically-excised tumors following the intervention. A 2x2-design (FS versus non-FS) was used to determine differences between study-arms and Spearman's tests were used to assess associations between variables. Results: There were no between-group differences in prostatic tissue ALA levels but the FS arms had significantly higher EPA levels vs the non-FS arms (0.32±0.10 vs 0.19±0.06, p<.0001) suggesting that flaxseed-derived ALA was converted to EPA in vivo. Prostatic EPA was inversely correlated with NFkB expression in prostate-tissue (p= -0.341, p=0.011). The FS vs non-FS arms had significantly higher median change in urinary enterolactone (4,298 vs 1 ng/mg, p<.0001) and enterodiol (2687 vs 2 ng/mg, p<.0001) following the intervention. Urinary enterolactone was inversely correlated with prostatic tissue expression of Ki67 (p= -0.207, p=0.015) and tended to be inversely associated with prostatic VEGF expression (p= -0.143, p=0.106). Conclusion: The anti-proliferative mechanisms associated with flaxseed in men with localized prostate cancer appear to be partially mediated through the anti-mitotic and anti-angiogenic effects of enterolactone and the anti-inflammatory effects of in vivo conversion of ALA to EPA.

73	74
Dietary fat and protein intake and risk of non-Hodgkin lymphoma (NHL) Charbonneau B, Fredericksen Z, O'Conner H, Liebow M, Thompson C, Wang A, Slager S, Macon W, Call T, Habermann T, Cerhan J Purpose: Diets high in saturated fat and animal protein intake have been hypothesized to be associated with an increased risk of several cancers, but less data are available for NHL and particularly NHL subtypes including chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL), follicular lymphoma (FL), and diffuse large B-cell lymphoma (DLBCL). Methods: We evaluated this hypothesis in a clinic-based study of 602 NHL cases (218 CLL/SLL, 146 FL, and 105 DLBCL) and 1007 frequency matched controls. Usual diet was assessed with a 128-item food frequency questionnaire. Unconditional logistic regression was used to estimate odds ratios (OR) and 95% confidence intervals, adjusted for age, sex, residence, total energy, education, family history of NHL, body mass index, smoking and alcohol use. All pathology was centrally reviewed, and polychotomous logistic regression was used to assess NHL subtype-specific risks. Results: Intakes of total, animal or vegetable fat were not associated with risk of NHL. Saturated fat and cholesterol were not associated with risk, while trans-fat was positively associated with risk (OR=1.73, 95% CI 1.05-2.84 for highest vs. lowest quartile). Omega-3 (OR=0.55, 95% CI 0.34-0.88) and omega-6 (OR=0.50, 95% CI 0.30-0.81) were both inversely associated with risk. Total protein (OR=0.48, 95% CI 0.27-0.83) was inversely associated with risk, and this association was strongest for vegetable protein. When examining intake of specific foods, processed meat was positively associated with risk (OR=1.39, 95% CI 1.02-1.91), while there were no associations with total meat, red meat or dairy products. In contrast, seafood was inversely associated with risk (OR=0.67, 95% CI 0.48-0.94). For all of these associations, there was no evidence for subtype-specific heterogeneity (all p>0.10) and ORs were similar for each subtype. The only major exception was milk intake (p-heterogeneity=0.020), which was only associated with risk of DLBCL (OR=1.91, 95% CI 0.97-3.78). Conclusions: Diets high in trans fat and processed meats were positively associated with NHL risk, while diets high in omega-3 or -6 fatty acids and seafood were inversely associated with risk. There was little evidence for heterogeneity of risk for common NHL subtypes.	Tomato juice preserves performance status and decreases stool frequency in men with prostate cancer undergoing radiation therapy Datta M, Frizzell B, Taylor M. Introduction: Diarrhea & proctitis are frequently observed acute gastro-intestinal (GI) side effects of radiation therapy in men with prostate cancer. Even mild symptoms during treatment can affect performance status (PS) impacting quality of life. Lycopene, a naturally occuring phytochemical in tomato & tomato products has shown to decrease stool frequency in animals during radiation therapy (RT). We undertook this study to evaluate the impact of tomato juice on acute GI side effects (stool frequency/diarrhea & proctitis) & PS during RT in men with newly diagnosed localized prostate cancer. Methods: Seventeen men completed this randomized controlled pilot study. PS was assessed at baseline & then weekly, with the aid of the Eastern Cooperative Oncology Group (ECOG) criteria. Weekly assessment of proctitis was performed using the National Cancer Institute's Common Terminology Criteria for Adverse Events. Frequency of bowel movements was obtained from participants each week. At least 4 oz of tomato juice was administered daily to intervention group participants, starting two days before their first radiation dose & continued daily until the last day of treatment. Results: Participants in the control group had no PS deficits at baseline (score:0) compared with intervention group participants, where three participants had a baseline score of 1 & the rest had no deficits in PS. Control group participants reported worsening ECOG score within one week of treatment, while no change in PS was observed in the intervention group participants (Fisher's Exact Test; p = 0.015). Stool frequency increased in both control & intervention groups as treatment progressed, but intervention group participants reported fewer stools compared to control group participants for the first three weeks of treatment, compared to baseline. Although 40% of the control group participants had procitis grade 1-2 compared with only 25% intervention group participants, there was no statistically significant difference in the incidence of proctitis between groups. Conclusion: At least 4 oz of tomato juice administered daily preserved PS during treatment & decreased stool frequency for the first three weeks of treatment in the intervention group participants with prostate cancer undergoing external RT.

75	76
Obesity predicts prostate cancer incidence in a high risk cohort. Rundle, A., Neslund-Dudas, C., Tang, D., Jankowski, M., Kryvenko, O., Rybicki, B. Purpose: to determine whether obesity predicts prostate cancer incidence and tumor aggressiveness at diagnosis. Methods: at the Henry Ford Health System, a historical cohort of 6,692 men with a benign prostate specimen collected between 1990 and 2002. These men were followed up through the Henry Ford Health System medical records and the SEER tumor registry for prostate cancer incidence through July 2007. A case-control study (n=574 cases) was nested within this cohort with matching of controls to cases on duration of follow-up, (± 2 years), date of entry into cohort (± 2 years), race (African American or White), and type of biopsy specimen (needle biopsy or transurethreal resection of the prostate). Medical record data were abstracted to gather data on prostate cancer risk factors, prostate cancer screening practices, medical utilization and height and weight. A study pathologist verified that initial benign prostate samples were free of malignancy. Thus far, data from 454 case-control pairs have been abstracted and analyzed. Results: At the time of the time of cohort entry the mean BMI was 28 for cases and controls combined. After adjustment for age, race, prostate specific antigen (PSA) levels at the time of cohort entry, and family history, obesity at the time of cohort entry was associated with PCa incidence during follow-up (OR = 1.58, 95% CI 1.03, 2.41). After further adjustment for the number of digital rectal exams and PSA tests during follow-up the OR for obesity was 1.79 (95% CI 1.13, 2.84). Associations between obesity and prostate cancer incidence were similar for those with high- and low-grade tumors. Conclusions: among men in a cohort at high risk for prostate cancer, obesity was associated with a higher incidence of prostate cancer during follow-up.	Dietary Energy Density as a Risk Factor for Cancer Vernarelli, JA, Mitchell, DC, Rolls, BJ, Hartman, TJ Objective: The objective of the present study was to evaluate the association between consumption of an energy-dense diet and established risk factors for cancer, including body weight and measures of body fatness. Methods: Data from a nationally representative sample of 8,550 adults ≥18y who participated in the 2005-2008 National Health and Nutrition Examination Survey (NHANES) were analyzed. Dietary energy density (ED, energy per weight of food, kcal/g) was examined as a continuous and a categorical variable. Age- and sex-specific quartiles of ED were created to examine the relationship between ED and markers for obesity (including body mass index [BMI], waist circumference [WC], and C-reactive protein [CRP]). Analysis was conducted both with and without stratifying for smoking status. Results: ED was positively associated with obesity in both men and women in multivariate models. In men, there was a positive linear association between BMI and ED (P-trend = 0.04). In women, subjects in the highest quartile of ED had significant higher mean BMI than women in the lowest quartile of ED; however, the trend did not reach statistical significance (P-trend= 0.19). ED was not related to inflammatory markers (CRP) in either men or women (P-trend, 0.49). Smokers had significantly higher ED than non smokers (2.31 vs. 2.05, P<0.01), and we determined that smoking status modified the relationship between ED and weight status (P-interaction 0.03). Conclusion: Dietary ED was positively associated with established obesity-related risk factors for cancer in a nationally representative sample of US adults. Dietary energy density was note associated inflammatory markers. These findings support current cancer prevention recommendations to consume a diet low in ED.

77	78
Meat consumption, cooking methods and level of doneness and head and neck cancer risk in the PLCO study Wei M, Murtaugh M, Hunt J, Buys S, Gren L, Hashibe M. Purpose of study: To investigate the association between meat and fish intake, meat cooking methods and levels of doneness and head and neck cancer (HNC) risk in the Prostate, Lung, Colorectal, and Ovarian (PLCO) Cancer Screening Trial. Methods: Between 1993 and 2001, 154,900 subjects from across the United States were enrolled in the PLCO trial and were followed for at least 10 years. Participants who finished the baseline questionnaire and the dietary history questionnaire and had follow-up time were eligible for the study of dietary risk factors for HNC. Cox regression was used to estimate the hazard ratios (HR) and 95% confidence interval (CI), adjusting for age, race, sex, education, alcohol consumption, cigarette smoking and dietary energy intake. Results: Among the 101,379 eligible participants, 177 HNC cases were diagnosed between study entry and May 2011. We observed lean beef or steak intake was inversely associated with HNC risk (HR=0.81, 95% CI 0.67-0.98). We did not detect any association between processed meat or fish intake and HNC risk. Regarding cooking methods, pan-fried chicken intake with (HR=1.56, 95%CI 1.25-1.95) or without (HR=1.28, 95%CI 1.00-1.63) skin significantly increased HNC risk. However, consumption of chicken cooked by other methods, such as bake, grill or barbecue, broil or stew was not associated with HNC risk. Similarly, pan-fried pork chop intake was associated with an elevated risk of HNC (HR=1.22, 95%CI 1.04-1.43). No association between pan-fried steak intake and HNC risk was observed in this study. Concerning cooking levels of doneness, very well done pan-fried chicken intake (HR=1.43, 95%CI 1.17-1.74) was observed to be associated with an increased risk of HNC, while well done pan-fried chicken intake was not associated with HNC risk. Consumption of well-done pan-fried bacon was associated with increased HNC risk (HR=1.24, 95%CI 1.01-1.52) while just-done or very well done pan-fried bacon had no association with HNC risk. We did not observe any association between beef and pork with different levels of doneness intake and HNC risk. Conclusions: Our results suggest that lean beef or steak intake may be protective for HNC, whereas pan-frying, particularly to a high level of doneness, increases the risk of HNC.	S-equol producing status and breast cancer risk among postmenopausal women undergoing a physician recommended breast biopsy Virk-Baker MK, Barnes S, Krontiras H, Nagy TR Purpose: To assess S-equol producing status of postmenopausal women undergoing breast biopsy, and to evaluate association between S-equol producing status and biopsy outcome. Methods: Postmenopausal women undergoing breast biopsy who met the eligibility criteria of no soy allergy, no personal history of breast cancer, and no antibiotic therapy during the last three months were consented. The participants were given one soy bar per day for 3 consecutive days. Usual dietary intakes were assessed using the Block Food Frequency and the Soy Screen Questionnaires. Urine collected in the early morning of the fourth day was analyzed by multiple reaction ion monitoring mass spectrometer to quantify isoflavones and S-equol. Results: Of 392 women that underwent breast biopsy from June 2009 to May 2011, 228 met the inclusion criteria, 28 were not interested and the remaining 200 women (74 African Americans (AA) and 126 Caucasians (CA) were enrolled. The mean age (AA 60.1±1.1 vs. CA 60.5±0.8; p=0.77) and age at menarche (AA 12.7±0.2 vs. CA 12.4±0.1; p=0.35) were not statistically different. However, the AA women had significantly higher BMI (AA 33.9±0.9 vs. CA 28.6±0.6; p<0.0001), lower mean age at first pregnancy (AA 20.2±0.5 vs. CA 23.0±0.5; p=0.0002), and higher parity (AA 2.4±0.1 vs. CA 1.7±0.1; p=0.002) compared to CA. 55 subjects failed to provide urine and were excluded from further analyses. The urinary isoflavone analyses revealed 16% as S-equol producers (24 producers and 119 non-producers). The prevalence of S-equol producing status was lower among AA as compared to CA but was not statistically significant (AA 13% vs. CA 24%; p=0.34). There were no associations between S-equol producing status and ductal hyperplasia (OR 1.24; 95% CI 0.51 -3.02), or breast cancer (OR 1.44; 95% CI 0.53-3.89). Conclusions: We report for the first time, the prevalence of S-equol producing status of postmenopausal women undergoing a breast biopsy (16%), which is lower than previous reports of ~30% in general Western populations. No associations were observed for S-equol producing status and breast cancer risk in this population, however, the next step will be to analyze the associations between S-equol status and biopsy outcome in-relation to soy and Isoflavone intake.

79	80
Usual dietary intake of female breast cancer survivors compared to women with no cancer history: findings from NHANES, 2003-2006 Milliron B, Vitolins M, Tooze J Purpose: Poor dietary quality may exacerbate the already deleterious relationship between obesity and breast cancer recurrence and survival. Cancer survivors are encouraged to follow the recommendations for cancer prevention: choosing mostly plant foods, limiting red meat intake, and avoiding processed meat. However, estimating usual dietary intake data can be challenging as most individuals vary their intake daily and self-reported dietary intake measures are prone to measurement error. The National Cancer Institute (NCI) Method was developed to estimate the distribution of usual intake, compare intake between groups, and relate intake to health parameters. Using the NCI method, we report the usual intake of episodically-consumed foods among breast cancer survivors and respondents who have never had a cancer diagnosis, and compare their intake to women without a cancer diagnosis. Methods: Among 2773 women ages 34 y and older from the National Health and Nutrition Examination Survey (NHANES) 2003-2006, 101 reported a history of breast cancer; the comparison group included 2672 women of the same age group with no history of cancer. Dietary behavior information was collected through two 24-hour recalls and the quantities of the foods reported were translated into 32 food groups and subgroups using USDA's MyPyramid Equivalents Database (MPED). Usual intake of fruits, vegetables, whole grains, red meat, and processed meat were compared between breast cancer survivors and the comparison group using the NCI method. Results: There were no differences in servings of fruit, vegetables, whole grains or meat groups. Usual intake of most foods and nutrients among both groups is below the levels recommended by the 2010 Dietary Guidelines. Conclusion: Although obesity and diet quality are related to recurrence of breast cancer, the diet of breast cancer survivors is not significantly different from women with no history of breast cancer. There is opportunity for dietary intervention among these women to improve diet quality.	The association of perinatal and postnatal exposures with testicular cancer: a population-based case-control study in Utah Al-Temimi M., Fraser A., Lee Y.C., Rowe K., Rowley B., Daurelle M., Smith K., Richiardi L., Hashibe M. Objectives:The age-adjusted rates of testicular cancer have been increasing in the United States over the last four decades; however, the etiology of testicular cancer remains largely unknown. Our objective was to investigate the association of perinatal and postnatal factors with testicular cancer using a unique database that is established in Utah. Methods: The Utah Cancer Registry and the Utah Population Database (UPDB) were used to identify 1,058 patients diagnosed with invasive first primary testicular cancer in Utah (ICD 62.0, 62.1, & 62.9) between 1966 and 2008. All patients were born in Utah after 1943. Five male controls were matched to each case by birth year. Perinatal and postnatal exposures were abstracted from birth certificates and hospital records linked to UPDB. Conditional logistic regression was used to estimate odds ratios (ORs) and 95% confidence intervals (CIs) for perinatal and postnatal exposures and the risk of testicular cancer among adults and children. All ORs were adjusted on birth order, gestational duration, mother age, residence area, family size, and multiple birth status. Results: Non-seminomas were the only observed histology for testicular cancers diagnosed among children, while they represented 48.8% of adult cases. Among adults (992 cases â‰¥18 years old), we identified several perinatal factors associated with testicular cancer, including cryptorchidism (OR 9.65, 95% CI 2.39-38.87), feto-pelvic disproportion (OR 3.50, 95% CI 1.20-10.28), breech presentation (OR 2.71, 95% CI 1.39-5.24), increasing maternal age (OR 1.02, 95% CI 1.00-1.04), and multiple births (OR 3.02, 95% CI 1.08-8.40). Among children (66 cases <18 years old), the mother's history of recurrent abortion was associated with testicular cancer (OR 5.81, 95% CI 1.34-25.09), whereas weight gain of < 21 pounds (vs. 21-30 pounds) during pregnancy was found to be protective (OR 0.16, 95% CI 0.03-0.96). Conclusion: In our study perinatal exposures were found to be associated with testicular cancer among both age groups, however, none of the postnatal exposures studied(inguinal hernia, orchitis, infertility, hyperlipidemia, x-ray, and viral infections) was associated with testicular cancer. This result will help to further elucidate the etiology of testicular cancer.

81	82
BMI Change, HRT Use, and Risk of Colon Cancer in Postmenopausal Women Blake-Gumbs L, Chen Z, Thompson C, Berger N, Tucker T, Li L Purpose: A positive association of obesity and an inverse association of postmenopausal hormone replacement therapy (HRT) with risk of colon cancer have been well documented. We have recently reported a novel association of change in BMI throughout adulthood with colon cancer risk. In this study, we sought to further explore this association with respect to postmenopausal HRT use in a larger study population. Methods: We analyzed data on 1,647 postmenopausal women participating in an ongoing population-based case-control study of colon cancer. Results: In multivariate logistic regression models, we confirmed a previously reported statistically significant association of adulthood weight gain and increased risk of colon cancer in the overall study sample. Compared to those with <5kg/m2 change of BMI, those who reported moderate (5-10 kg/m2) and large (> 10 kg/m2) BMI changes between the 20s decades and time of recruitment had OR estimates of 1.47 (CI = 1.03-2.12) and 1.48 (0.92-2.39), respectively (p for trend = 0.06). For those with moderate and large BMI changes between the 30s decades and time of recruitment, OR estimates were 1.44 (1.02-2.03) and 1.56 (0.96-2.54), respectively (p for trend = 0.02). Stratified analyses for BMI changes occurring between the 30s decade and time of recruitment showed that the association is more pronounced in women without HRT use [ORs were 1.65 (0.99-2.73) and 1.69 (0.84-3.38), respectively (p for trend = 0.07)] than women with HRT use [ORs were 1.24 (0.76-2.01) and 1.54 (0.76-3.15), respectively (p for trend = 0.12)]. Similar patterns were observed for BMI changes between the 20s decade and time of recruitment. Tests for interactions were non-significant and likely due to limited power. Conclusion: Our results suggest that adulthood body weight gain increases risk of colon cancer in postmenopausal women who do not use HRT.	Promoting Colorectal Cancer Screening in Urban, Minority Populations Using Community Health Workers Sanchez M, Clarke Hillyer G, Jacobson J, Ashby-Thompson M, Adbul K, Espino C, Hepburn P, Neugut AI, Grann V. Background: The Research Recruitment and Minority Outreach (RRMO) is a shared resource of the Herbert Irving Comprehensive Cancer Center at the Columbia University Medical Center. The RRMO reaches out and educates members of our predominantly low-income Hispanic and African American community about cancer treatment, research, and prevention using partnerships with community-based organizations (CBOs) and training community health workers (CHWs). In 2010, we learned that relatively few clients in our community had been screened and few intended to be screened for colorectal cancer (CRC), the third most common cancer and third leading cause of cancer-related death in the United States. We intend to develop and test the comparative effectiveness of two interventions to educate members of our community about CRC screening. Methods: Building on our existing CHW training program, we will expand our CBO partnerships, and recruit and train additional CHWs. We will conduct focus groups in the CBOs to explore barriers and facilitators to CRC screening and develop two testable interventions that CHWs will implement with their clients. We will follow up with postcards and telephone calls and compare the two intervention groups with regard to demographic characteristics, proportion of clients who reported receiving CRC screening, and proportion intending to be screened in the future. Results will be disseminated to the community in our quarterly community newsletter, a report to the CBOs, and a press release to the local media. Results: Fifteen new CHWs will be trained. Barriers and facilitators to CRC screening identified through focus groups will provide the foundation for the development of two interventions. Each CHW will educate 20 clients (n=300) aged 50+ years about CRC screening. Conclusions: RRMO community health educators have provided training on breast, prostate, colorectal, and cervical cancer to 18 CHWs (each of whom had educated more than 10 clients) at 3 CBO partners. Empiric evidence supports the effectiveness of culturally sensitive community-based interventions in minority populations, and that linguistic and cultural concordance between educators and clients contributes to the success of programs utilizing lay personnel.

83	84
Effect of State Insurance Policies on Accrual to Cancer Control Trials Shellie D. Ellis, William R. Carpenter, Bryan J. Weiner Purpose: Since 1995, 35 states and territories have implemented policies requiring insurers to cover patient care costs in the context of clinical trials; however, evidence of the effectiveness of these policies is limited. This study assesses the impact of state insurance mandates on clinical trial accrual among community-based practices participating in the NCI Community Clinical Oncology Program (CCOP) which enrolls approximately one-third of all NCI cancer trials participants. Methods: We analyzed CCOP clinical trial enrollment over 17 years in 37 states, 12 of which implemented coverage policies, using fixed effects least squares estimation to determine the effect of state policies among community providers, controlling for state and CCOP differences in capacity to recruit. Results: Of 91 CCOPs active during this time, 23 were located in states affected by coverage mandates. Average recruitment per CCOP between 1991 and 2007 was 95.1 participants per year (SD = 55.8). CCOPs in states with a mandate recruited fewer participants (M = 90.0, SD = 57.8) than states without a mandate (M = 95.9, SD = 55.4), although the difference was not statistically significant. After adjusting for accrual trends over time, minority-based CCOP status, the number of physicians recruiting, the number of affiliated hospitals per CCOP, and state characteristics, treatment trial accrual among NCI-sponsored CCOPs in states that had implemented a coverage mandate, was not statistically different than accrual among CCOPs in states that did not implement a coverage mandate (β = 4.53, p = 0.587). Conclusions: Among states with CCOPs, state mandates did not appear to impart a benefit in terms of CCOP clinical trial accrual. State policies vary in strength, which may have diluted their effect on accrual. Nonetheless, policy mandates alone may be inadequate to increase participation in clinical trials in these states. Larger studies including all states are needed, as well as assessment of ancillary benefits the state mandates may have had.	Measures of Central Adiposity in Relation to Prostate Cancer Incidence and Mortality: a Prospective Cohort Study IK Martin, DR Rosenberg, VL Freeman, Y Park, A Schatzkin, ME Wright Obesity has been associated with higher risks of advanced prostate cancer and prostate cancer-specific mortality in several epidemiologic studies. However, the role of central adiposity, particularly waist circumference (WC), remains to be clarified. Associations of WC, hip circumference, and waist to hip ratio with risks of incident prostate cancer (overall and separately for localized and advanced disease) and prostate cancer-specific mortality were examined among 142,003 male participants, ages 50-71, in the NIH-AARP Diet and Health Study. At baseline, participants completed dietary, lifestyle, and medical history questionnaires that ascertained information on height and weight and hip and waist circumference. During up to 11 years of follow-up time, 12,165 prostate cancer cases (including 1128 advanced cases) were identified. During up to 13 years of follow-up time for mortality, 414 deaths with prostate cancer as the underlying cause were identified. Cox models were fit and adjusted for age, race, education level, physical activity, history of diabetes, family history of prostate cancer, and prostate cancer screening history. Waist circumference was inversely associated with prostate cancer incidence and positively linked to prostate cancer-specific mortality (relative risks and 95% confidence intervals for highest versus lowest quintile = 0.93 [0.88, 0.98] and 1.38 [1.03, 1.85], respectively). These findings were attenuated with additional adjustment for body mass index. Stratified analyses revealed suggestively stronger relationships between WC and prostate cancer mortality among men without a family history of prostate cancer, those with a personal history of diabetes, those with less than high school education, and among more physically active participants. Larger hip circumference was inversely associated with PCa occurrence (HR: 0.91[0.86, 0.97]), with no significant association observed for waist to hip ratio. In conclusion, larger WC was associated with increased risk of prostate cancer-specific death, although the association was not independent of body mass index. Our findings suggest the need to clarify the role of central adiposity in prostate cancer risk and mortality.

85	86
Does tubal ligation alter ovarian function and impact breast cancer risk? H.B. Nichols, L. A. DeRoo, G.E. Kissling, D.D. Baird, D. P. Sandler Tubal ligation, a permanent form of contraception for 20% of U.S. women ages 15-44, is disproportionally common among minority women and those with lower education. Menstrual disturbances and high hysterectomy rates among women with tubal ligation prompted the hypothesis that local inflammation and disrupted blood flow could affect ovarian function. Small decreases in ovarian steroidogenesis after tubal ligation could impact events decades later by advancing menopause and reducing breast cancer risk. We examined tubal ligation in relation to menopausal symptoms and breast cancer risk in the Sister Study, a national cohort of women with a sister diagnosed with breast cancer. Hazard ratios (HR) and 95% confidence intervals (CI) were calculated with multivariate Cox proportional hazards regression. Among 50,884 women ages 35-76 at enrollment, 15,020 reported tubal ligation (mean age at surgery=32.7 years). Overall, tubal ligation increased symptoms such as hot flashes (HR=1.08; CI: 1.05, 1.11) and postmenopausal status (HR=1.08; CI: 1.05, 1.11) by 8%. This finding was not explained by cessation of oral contraceptive (OC) use after tubal ligation. Among women who never used OCs, associations between tubal ligation, hot flashes and postmenopausal status were notably stronger (HR=1.93; CI: 1.31, 2.83 and HR=1.72; CI: 1.16, 2.57, respectively). During the ~4-year follow-up, 1,522 incident breast cancers were diagnosed. When comparing women who underwent tubal ligation alone to those who reported no gynecologic surgeries, tubal ligation was not significantly associated with breast cancer risk overall (HR=1.01; CI: 0.85, 1.20) or among ER+ tumors (HR=0.88; CI: 0.71, 1.10). However, among women who also reported having a hysterectomy, tubal ligation was associated with a 30% decrease in ER+ breast cancer (HR=0.70; CI: 0.52, 0.96). In our data, tubal ligation was associated with earlier hot flashes and entry into menopause among women who did not use oral contraceptives. Tubal ligation was associated with decreased breast cancer risk only in women who had a hysterectomy; one possible explanation may be that women with a history of tubal ligation undergo subsequent surgeries, such as hysterectomy with bilateral oophorectomy, at earlier ages.	A Descriptive Epidemiological Study of Lobular Carcinoma, an Uncommon Form of Breast Cancer Yu, A., Shah, A., Henson, D. Purpose: We conducted a descriptive epidemiology study of lobular carcinoma (LC), the second most common type of breast cancer in the U.S., constituting about 12% of all cases, and compared it with the pathogenesis of ductal carcinoma. Methods: A total of 86,846 cases of invasive LC (ILC) from women, aged 20 to 85, were obtained from NCI's SEER Program for the years 1973-2008 in the United States. There were 20,512 cases of LC in-situ (LCIS) and 66,634 cases of ILC. For comparison, 692,201 cases of IDC and 61,569 cases of ductal carcinoma in situ (DCIS) were collected. The analysis compared trends, age specific rates, log-log plots, age frequencies and relative survival rates. Results: From 1973-2008, the age-adjusted rate of LC progressively increased from 5.8 to 16.4/ 100,000 women. In an age frequency analysis of age versus rate, LCIS increased to 0.22/ 100,000 women at age 50, and then declined to 0.02/100,000 women at age 80. ILC increased to 0.11/100,000 women at age 50, and then plateaued after menopause but did not decline. Log-log plots revealed parallel curves between ILC and IDC in both pre-menopausal and post-menopausal age groups. At age 50, the age specific rate of LCIS increased to 11.3/100,000 women then progressively decreased. In contrast, the age specific rate of DCIS was 22.1/100,000 women at age 50 and continued to increase after menopause. Conclusions: At menopause, the incidence of LCIS decreases as a result of lobular involution of the breast. In contrast, DCIS continues to increase. ILC does not decline but plateaus suggesting that the initiation of LC occurs before menopause, but the tumor becomes clinically apparent only after menopause. Although morphologically different, parallel log-log plots and age frequency analysis suggest a similar pathogenesis for IDC and ILC even though epidemiological patterns are different.

87

Antibody-Drug Conjugates in the "Critical Path" of Oncology Drug Development

Bewry, N

In March 2004 the U.S. Food and Drug Administration (FDA) launched the Critical Path Initiative (CPI) to address challenges in the development of medical products and to promote scientific innovations. The development of targeted cancer therapies that home-in on cell surface antigens is among the list of the FDA's Critical Path Opportunities. Antibody-drug conjugates (ADCs) are a class of targeted therapy in oncology drug development that has gained increasing attention in recent years from pharmaceutical companies. Technological advancements leading to improvements in the design of ADCs have made them a promising therapeutic option in oncology drug development. ADCs combine the specificity of monoclonal antibodies to a cytotoxic payload drug to deliver and release the anti-cancer agent inside tumor cells. They are designed to provide selective killing of target tumor cells and to minimize their cytotoxic effects on normal tissues. Before being used in the treatment of cancer, oncology drug products undergo several phases of clinical trials. A growing number of investigational new drug applications (INDs) submitted by drug Sponsors to the FDA include ADCs as the investigational drug. The purpose of Phase I oncology trials in these INDs evaluate the safety, toxicities, pharmacokinetics of the ADC and determine the Phase II starting dose. Our analysis of 20 INDs containing ADCs submitted to the FDA between 2000 and 2011 reveal differences in the types of Phase I dose escalation strategies, as well as differences in the number of dose escalations utilized in determining the Phase II starting dose. Evaluating these strategies may lead to a more efficient Phase I dose escalations process and a better selection of the Phase II start dose for ADCs.

This research examines: 1) differences in the Phase 1 dose escalation strategies utilized for ADCs, 2) the number of Phase I dose escalations utilized in selecting the appropriate Phase II starting dose.

88

The Cognitive and Psychological Impact of *BRCA* Genetic Counseling in Before and After Definitive Surgery Breast Cancer Patients

Christie, J, Malo, T, Quinn, G, Lee, J, Vadaparampil, S

Introduction: Pretest genetic counseling (GC) referral may be delayed for recently diagnosed breast cancer (BC) patients who have not undergone definitive surgery for fear of adverse psychological outcomes. Research examining GC outcomes in BC patients based on definitive surgical status, however, is lacking. Purpose: The purpose of this prospective study was to examine pretest GC outcomes between BC patients grouped by surgical status: (a) before definitive surgery (BDS) patients, and (b) after definitive surgery (ADS) patients.

Methods: Sociodemographic and clinical characteristics were collected before GC, and data on all outcomes of interest were collected before and after pretest GC. Wilcoxon signed-rank tests were conducted to compare BDS and ADS patient reports of hereditary breast and ovarian cancer (HBOC) knowledge, cancer-related distress, and decisional conflict regarding genetic testing (GT) for BRCA 1/2 mutations before and after GC. Results: Of 103 BC patients, 87 reported having undergone some type of previous BC surgery, whereas 16 reported no previous surgeries. Analyses revealed that both BDS and ADS patients reported significant increases in HBOC knowledge between pre- and post- GC (mean change = +3.4, $p = .007$, and +2.8, $p < .001$, for BDS and ADS patients, respectively). Overall cancer-related distress showed a downward trend between pre- and post-GC for both groups, and was significant for BDS patients ($p = .041$). Reports of BDS patients trended toward overall and subscale-specific increases in decisional conflict; however, changes were not statistically significant. ADS patients reported decreases in overall decisional conflict that approached marginal significance ($p = .057$), with significant improvements in informed decision making (mean change = -12.2, $p < .000$; i.e., pretest GC yielded improved knowledge of benefits, risks, and side effects of available options). Conclusion: Results of this pilot study suggest that BDS and ADS patients respond relatively similarly to pretest GC, with the exception of effects on decision making. Examining reasons why BC patients who have yet to elect surgery may process and interpret messages about the pros and cons of undergoing GT differently than ADS patients warrants further investigation.

89

Deriving Clinically Meaningful Cut-Points for the Piper Fatigue Scale: Building a Case-Definition for Cancer-Related Fatigue

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Purpose. Fatigue is the most common and distressing symptom experienced by cancer survivors and frequently used as an outcome variable in clinical studies. To date, optimal cut-points on the Piper Fatigue Scale (PFS) have not been empirically defined. This study's aims were to identify clinically meaningful cut-points on the PFS that classify individuals as mildly, moderately, or severely fatigued and to characterize the association among these cut-points and decrements in health-related quality of life (HRQOL) in a population-based cohort of cancer survivors. Methods. Participants included 803 breast cancer survivors, stages I-IIIa, recruited from three SEER registries (New Mexico, Western Washington, L.A.) as part of the Health, Eating, Activity, and Lifestyle (HEAL) study. Patient-reported HRQOL data were collected ~3 years post diagnosis and included the PFS and SF-36. The PFS is a 22-item 0-10 numeric rating scale (higher scores=more fatigue). The SF-36 has eight subscales that range from 1-100 (higher scores=better HRQOL). Five cut-point models were explored to classify women on the PFS as none, mildly, moderately, or severely fatigued using multivariate analysis of variance (MANOVA) models.

Results. Analyses supported 2 similar cut-point models: A) none (0), mild (1-3), moderate (4-6), and severe (7-10) fatigue levels; and B) none (0), mild (1-2), moderate (3-5), and severe (6-10). In both models, women classified as having no fatigue had the highest functioning HRQOL scores (Physical Function, Bodily Pain, Mental Health, and Social Functioning). For every step increase in fatigue on the PFS (i.e., none, mild, moderate, severe), clinically meaningful decrements (>.5 standard deviation) in HRQOL scores occurred, supporting construct validity of the cut-points.

Conclusion. Given equivalent results, the first cut-point model is preferred because it is consistent with established thresholds for similar fatigue instruments and with conventions historically used for the PFS. Empirically-derived cut-points are informative for building a case-definition for cancer-related fatigue. Further research is needed to validate PFS cut-points as an eligibility criterion and responder definitions in clinical treatment trials for fatigue in breast cancer survivors.

90

Surgery Prior to Chemotherapy Affects Chemotherapy-Related Nausea

Trevino, L., Heckler, C., Esparaz, B., Dakhil, S., Moore, T., Roscoe, J., Morrow, G.

Nausea is one of the most a common side effects for patients undergoing chemotherapy. We conducted exploratory analyses, on a previously published intervention trial examining three antiemetics regimens for control of delayed nausea, to examine prior radiation and prior surgery, as possible risk factors for nausea during chemotherapy. Chemotherapy-naive patients (N=651) about to receive a treatment regimen containing doxorubicin (any dose) without concurrent radiotherapy or interferon therapy were randomized to receive either prochloroperazine (10 mg) every eight hours (n=219), prochlorperazine (10 mg) as needed (n=211), or a 5-HT3 receptor antagonist (n=221) as antiemetic treatment beginning on Days 2 and 3. All patients received a first-generation 5-HT3 receptor antagonist antiemetic plus dexamethasone on Day 1. Nausea was assessed four times daily on a 1 to7 scale for four days. Mixed linear modeling with the variables, time, study arm, previous treatment (i.e. surgery and/or radiation treatment), and mean-centered age were used to determine their effects on nausea severity during chemotherapy. Prior surgery was not related to nausea on Day 1 (surgery: adjusted M=1.80, SE=0.05; no surgery: adjusted M=1.74, SE= 0.13, p=0.14). Patients who had previous surgery (n = 565) reported greater nausea (adjusted M=2.51, SE=0.06) compared to patients who did not have surgery (n=86, adjusted M=1.86, SE=0.17, p=0.0003) on Day 3, F (3, 645) =4.91, p=0.002. Patients who had surgery also reported more severe nausea on Day 4 (adjusted M=2.09, SE=0.06) compared to patients who did not have surgery (adjusted M=1.57, SE=0.15), p=0.001. In addition, those who received 5-HT3 antiemetics and had previous surgery reported greater overall nausea (adjusted M=2.22, SE=0.07) compared to patients who received 5-HT3 antiemetics but did not have surgery (adjusted M=1.45, SE=0.24), F (2, 641) =3.44, p=0.03. The present study showed that patients who have had previous surgery may be more susceptible to delayed nausea during chemotherapy compared to patients that did not have surgery. The relationship between a history of surgery and chemotherapy induced nausea should be examined further as a possible risk factor for chemotherapy-related delayed nausea.

91	92
Clinical Outcomes of Intermittent Androgen Deprivation Therapy in Advanced Prostate Cancer: a Meta-Analysis Tsai H, Potosky A Purpose: To summarize the current empirical evidence regarding the efficacy of intermittent versus continuous androgen deprivation therapy (ADT) in advanced prostate cancer. Background: ADT is a widely used treatment for prostate cancer. Two ADT regimens are available, intermittent or continuous ADT. For advanced prostate cancer, intermittent ADT is an alternative palliative care approach that offers advantages such as delayed progression to hormone refractory disease, attenuated risk of ADT-induced adverse events and decrements in quality of life as well as reductions in cost. However results on clinical efficacy (survival) are inconclusive. Methods: We conducted a systematic search of several bibliographic systems (PubMed, EMBASE, and Web of Science databases) to identify all randomized clinical trials of intermittent and continuous ADT in advanced prostate cancer. Data extraction included information regarding survival outcomes (overall mortality and prostate cancer-specific mortality), trial designs, and participants' demographics. The summary of relative risk and 95% confidence intervals (CIs) were calculated using fixed and random-effects models. Results: Eleven trials were identified and six trials were excluded due to outcome of interest unavailable. A total of 2,402 patients with advanced prostate cancer was included in this analysis. Compared with continuous ADT, men who received intermittent ADT showed an equivalent risk of overall mortality (RR=1.05, 95%C.I.=0.90, 1.23) and prostate-specific mortality (RR=1.23, 95%C.I.=0.98, 1.52). This comparative efficacy did not vary between fixed- and random-effect models. Conclusions: Our meta-analysis of existing clinical trials suggested intermittent ADT has comparable clinical efficacy in terms of overall survival and prostate-specific mortality, compared with continuous ADT.	Marriage and Divorce in Young Adult Cancer Survivors Kirchhoff A, Yi J Purpose: We examined marital outcomes among cancer survivors diagnosed during early adulthood from the 2009 Behavioral Risk Factor Surveillance System (BRFSS) dataset. Methods: Eligible participants were currently ages 20-39 years. Of the 74,433 eligible, N=1,199 self-reported a cancer diagnosis between the ages of 18-37, were at least 2 years from diagnosis, and did not have non-melanoma skin cancer. The remaining 67,216 with no cancer history were controls. Using generalized linear models adjusted for age, gender, race and education we generated relative risks (RR) and 95% Confidence Intervals (95% CI) to examine the relationship of survivor status on indicators of being ever married, currently married and divorced/separated, and calculated adjusted proportions. Results are weighted by BRFSS survey design. Results: Survivors were older than controls (33.0[sd=5.3] vs. 30.0[sd=5.9]; p<0.001). Average time since diagnosis was 7.4 years. Cervical cancer was most common for females (45%) and non-Hodgkin lymphoma for males (20%). Survivors were marginally more likely to be ever married than controls (78% vs. 61%; RR=1.07, 95% CI 1.00-1.14), but currently being married did not differ (62% vs. 54%; RR=0.96, 95% CI 0.88-1.04). Among ever married participants, survivors were at an increased risk of being divorced/separated (17% vs. 7%; RR=1.80, 95% CI 1.46-2.23). The differences remained similar when restricted to divorces (11% vs. 4%; RR=1.72, 95% CI 1.33-2.21), but attenuated when we excluded cervical, testicular and thyroid cancers, which often require less intensive treatment (13% vs. 7%; RR=1.49, 95% CI 1.01-2.18). In adjusted proportions among ever married, more female survivors were divorced/separated (21%) compared to female controls (11%; p<0.001); however, male survivors (13%) and male controls (8%) did not differ significantly. Survivors ages 20-29 and 30-39 were at higher risk for divorce/separation (16% and 19%, respectively) compared to controls (9%, p=0.02 and 10%, p<0.001, respectively). Conclusions: A cancer diagnosis may strain marital relationships of young adult cancer patients. For younger couples, cancer may cause problems in sexual functioning and fertility or lead to increased financial stress, thus affecting marital stability.

93	94
Prognostic Effect of Her2 for Long-term and and Short-term Breast Cancer Recurrence Hu, Nan The purpose of the study is to evaluate the prognostic effect of the biomarker, Human Epidermal Receptor 2 (Her2), for breast cancer recurrence over a long period of follow-up time in a large follow-up study, namely Lifetime After Cancer Epidemiology (LACE). In LACE, 2, 267 women with diagnosed previous breast cancer were enrolled from two registries in California and Utah. The main end point of the study is the time to recurrence (subject to censoring). Cox proportional hazard model with time-varying coefficient is used to calculate the hazard ratio (HR) between Her2+ and Her2- arms over the 12 years of follow-up time. Clinical risk factors such as treatment. initial stage and node (+/-) were controlled for in the model. The average follow-up time is in LACE is 9.8 years, and 19% of the women got positive Her2 test results at baseline .The results indicate that HR comparing Her2+ and Her2- groups decreased over time and is finally went down towards the null (HR=1). We concluded that Her2 is prognostic for the short term breast cancer recurrence (recurrence within 5 years since diagnosis). For the rare long-term breast cancer recurrence, Her2 is not prognostic.	Late effects of Adolescent and Young Adult Survivors of Childhood Cancer (AYA) in Korea Yi, JH & Kim, MA Purpose: The study aims to examine what late effects are most frequently reported and the relationships between late effects and physical/mental functioning among the AYA survivors in Korea. Methods: Survivors who were diagnosed with cancer before 18, are currently between 15 and 40, and completed cancer treatment were recruited in Korea. We examined the frequencies of the reported late effects, and conducted independent t tests to examine the differences in the SF-8 Physical Component Summary (PCS) and Mental Component Summary (MCS), between those with and without late effects. Also, using multiple regression analyses, we tested the relationships between the number of late effects and PCS/MCS. Results: 131 males (58.5%) and 93 females (41.5%) participated in the study, and their mean age was 21.9 (SD = 4.8, 15-38). 159 survivors (71.9%) were diagnosed with hematological, 32 (14.5%) with solid or soft tissue, and 30 (13.6%) with CNS or brain tumors. Thirty-two survivors (14.5%) reported a cancer recurrence. The average age at diagnosis was 9.9 (SD=4.4), and the average time since diagnosis was 12.0 (SD=5.9, 2-29). About 73% reported at least one late effect. Growth issues (n = 95; 42.8%) ranked as the most frequently reported; followed by chronic fatigue 58 (26.4), vision (n = 45; 20.3%), learning or memory issues (n = 42; 18.9%), and weak bones (n = 37; 16.7%). The survivors with growth issues (t=2.771; df=178.568; p<.01), learning/memory issues (t=2.073; df=218; p<.05), and fatigue (t=4.052; df=216; p<.001) showed lower physical health than those without. The survivors with learning (t=2.681; df=218; p<.01) and fatigue issues (t=3.097; df=83.664; p<.01) showed lower mental health function than those without. The greater number of late effects that the AYAs reported was associated with the lower levels of physical (B=-1.663; beta=-.366; p<.001) and mental health function (B=-1.675; beta=-.241; p<.001) after controlling for gender, current age, age at diagnosis, recurrence, and cancer type. Conclusions: The AYA survivors are suffering from many late effects of cancer, which is a risk factor for poor physical and/or mental health function. Age-appropriate interventions to address these late effects are warranted.

95	96
Estimated Impact of Risk Factors Trends on Past and Future U.S. Noncardia Intestinal Gastric Adenocarcinoma Incidence Yeh J, Hur C, Schrag D, Kuntz KM, Ezzati E, Ward Z, Goldie SJ Purpose: Although U.S. gastric cancer (GC) incidence has declined in recent decades, >20,000 adults will be diagnosed with this cancer this year, and the majority will die of their disease. A better understanding of reasons for the decline may provide insights into preventive strategies. Using a mathematical simulation model, we estimated the impact of leading risk factors (e.g., Helicobacter pylori, smoking) on past and future gastric cancer rates among U.S. men. Methods: We used U.S. epidemiologic data on precancerous lesions and gastric cancer incidence to calibrate a Monte Carlo simulation model of noncardia intestinal gastric adenocarcinoma. The model simulates natural history, including the impact of risk factors on the precancerous process. Based on epidemiologic studies, we assumed that H. pylori increased the risk of developing gastritis and atrophy, while smoking increased the risk of existing precancerous lesions progressing to more advanced lesions. Birth cohort-specific risk factors were estimated from National Health and Nutrition Examination Survey (NHANES) and National Health Interview Surveys (NHIS) data. We projected GC incidence between 1985 and 2030 under various risk factor scenarios, and report age-standardized GC incidence for 5-year periods by calendar year. Results: Incorporating observed trends in H. pylori prevalence and smoking rates, age-standardized GC incidence decreased 29% (13.5 to 9.6 per 100,000) between 1985 and 2008, explaining over 50% of the decline observed by Surveillance, Epidemiology and End Results (SEER). If only H. pylori prevalence declined (and smoking rates remained constant at 1901-1905 birth year rates), GC incidence declined 22%. Similarly, if H. pylori prevalence remained constant at 1901-1905 birth year levels, smoking trends alone lead to an 11% decline in GC incidence. The model suggests that lower smoking initiation and higher cessation rates observed after the 1960s accelerated the decline in GC incidence by as much as 25%. With continued risk factor trends, GC incidence will decline an additional 27% between 2005 and 2030. Conclusions: Changes in H. pylori and smoking patterns have played an important role in the observed decline in GC incidence, and will likely lead to further declines.	The Interaction between Smoking Status and HAART Use on the Risk of Kaposi's Sarcoma (KS) in a Cohort of HIV-infected Men Luu HN, Amirian ES, Scheurer ME Background: Cigarette smoking has been reported as a protective factor against the risk of KS in several studies. However, the biologic mechanism of smoking in KS pathogenesis has not been fully defined. It is postulated that cigarette smoking might play a role in inflammatory cytokine production that lowers the risk of AIDS-associated KS. The introduction of HAART in 1995-1996 has contributed to a decline in incidence of KS, resolution of KS lesions in patients, and longer survival time for HIV-infected men with KS, etc. While the independent roles of smoking status and HAART on KS risk have been studied, their combined effects have not been examined. The current analysis aimed to determine whether there is an interaction between smoking status and HAART use on the risk of development of KS in a cohort of US HIV-infected men who have sex with men (MSM). Methods: We utilized a public dataset of 6,972 participants, obtained from the Multicenter AIDS Cohort Study, an on-going cohort study of HIV-infected and uninfected MSM. For the current analysis, we focused on the risk of KS in 3,458 men who were either HIV-seropositive at the beginning of or seroconverted during the cohort. Cox proportional hazards modeling was used to examine the relationship between current smoking status and HAART use on the development of KS. Covariates included in the model were age, race/ethnicity, employment, education, and number of lifetime sex partners. Results: While current smoking status and HAART use were independently associated with a lower risk of KS development (HR=0.80, 95% CI: 0.67-0.96, p=0.02 and HR= 0.19, 95% CI: 0.14-0.25, p<0.0001, respectively), there was no evidence of interaction on the multiplicative scale between current smoking status and HAART use in the risk of KS (pinteraction=0.33). However, when the results were stratified on HAART use, the protective effect of smoking was only present among those not on HAART (HR=0.78, 95% CI: 0.64-0.95, p=0.01). Conclusion: Our results suggest that the protective effects of cigarette smoking on KS may be limited to those not on HAART. To fully appreciate the impact that this finding might have on KS incidence among HIV+ populations, the biological mechanism of smoking in KS carcinogenesis needs to be elucidated.

97	98
What Muscle Structure and Function Variables Impact Mobility and Physical Activity in Older Cancer Survivors? Addison O, Marcus RL, Dibble LE, LaStayo PC. Purpose: The purpose of this study was to evaluate knee extension strength and tissue composition of the thigh to determine the relationship between these muscle factors and levels of mobility and physical activity in forty-four (male=14; female=30) older, (mean=74 years) individuals who were survivors of the most common cancers (lung, prostate, colon and breast). Methods: Knee extension force (N) was determined via a maximum voluntary isometric contraction and mobility and physical activity levels were determined using: a timed up and go (TUG); stair ascent (SA); stair descent (SD); a six minute walk (6MW) and average number of steps taken/day. MRI scans of cross sections of the thigh were used to determine average cross sectional area of intramuscular lean (IML) and intramuscular adipose tissue (IMAT). To determine the collective contribution of knee extension force and thigh muscle composition to mobility and physical activity, separate stepwise linear multiple regression models were used. The overall significance ($p<.05$), adjusted variance and part correlations were calculated for each model. Results: The multiple regression analysis of the 6MW revealed that the predictors as a group accounted for 40.2% of the variance in walk distance with only IML ($p<.001$) and IMAT ($p=.002$) contributing to the final model ($p=.002$). The part correlation of IML was 0.48 and -0.40 for IMAT indicating that lean explained 22.5% and IMAT explained 16.0% of the variance in the distance covered during the 6MW. Only IMAT was a significant predictor of steps/day ($p=.016$) and predicted 13.6% of the variance in steps/day. For SA ($p<.001$), SD ($P<.001$), and the TUG ($P<.001$) knee extension force was the only significant predictor variable accounting for 39.1% of variability in stair ascent, 37.3% of the variability in stair descent and 26.7 % of the variability in TUG time. Conclusions: Thigh IMAT and IML explains more of the variance in tasks of longer duration. IMAT was the only significant predictor of steps/day and appears to be a new and important muscle structure variable for mobility and physical activity tasks in cancer survivors. Interventions to improve mobility and physical activity should target IMAT in addition to IML and muscle strength.	Psychometric Tests and Item Reduction of Process of Change Questionnaire for Physical Activity Among Prostate and Breast Cancer Baum, G., Carmack, C., Tamez, E., Jones, M., Scruggs, S., Chang, M., Basen-Engquist, K. Purpose: To determine if the dimensions of the process of change (POC) scale developed by Marcus functions as hypothesized in prostate and breast cancer survivors. Methods: Confirmatory factor analysis (CFA) examined the fit of the full POC scale among breast and prostate cancer survivors. Exploratory factor analysis (EFA) was utilized to reduce the scale based on model fit. CFA was reapplied to confirm reduced scale in both populations. Modified model was then tested using the prostate cancer data. High standardized residuals (>2.5) or modification indices (>17) were used to examine for item cross loading or elimination of items. Chi-square difference tests determined invariance of modified model in both populations. Results: CFA for cognitive and behavioral processes in breast cancer survivors indicated a poor to moderate fit. The 3 fit statistics of full scale cognitive processes indicated poor fit (X2 of 279.7, 160 df, p=0.000, CFI of 0.92, and RMSEA of 0.07). The fit improved with reduced scale showing a decrease of X2 and RMSEA and an increase of CFI (X2 of 134.8, 94 df, p=0.004, CFI of 0.96, and RMSEA of 0.05). Similarly, the full scale behavioral processes also indicated poor fit (X2 of 334.2, 160 df, p=0.000, CFI of 0.83 and RMSEA value of 0.09) and an improvement was demonstrated after dropping 2 questions and adding error covariance estimates (X2 of 209.6, 138 df, p=0.000, CFI of 0.93, and RMSEA of 0.06). Poor fit of full scale using CFA was also found among prostate cancer survivors. Reduced scale of cognitive processes was confirmed using prostate cancer survivors data (X2 of 135.9, 93 df, p=0.000, CFI of 0.96, and RMSEA of 0.06). The fit for reduced behavioral processes scale was moderately good (X2 of 221.7, 136 df, p=0.000, CFI of 0.93, and RMSEA of 0.06). Unconstrained and constrained invariance tests for both cognitive and behavioral models yielded non-significance x2 values. Conclusion: CFA confirmed that the full scale poorly fit for both breast and prostate cancer survivors. EFA was then used to drop items to improve fit. CFA of the reduced scale is recommended due to significant improvement of the fit of cognitive and behavioral models.

99	100
Smokers'Physical Activity and Weight Changes following Successful Versus Unsuccessful Quit Attempts L Colbert, K Thraen-Borowski, K Gennuso, T Schlam, T LaRowe, M Fiore, T Baker This study examines whether smokers' ambulatory physical activity modifies weight change following a successful vs. unsuccessful quit attempt. Subjects (n=683) were participants in the Wisconsin Smokers Health Study, a randomized controlled trial comparing the efficacy of five smoking cessation pharmacotherapies. Both ambulatory activity (steps/day; assessed via pedometry) and body weight were measured at the time of the quit attempt and again one year later. Subjects were classified as quitters if they achieved biochemically confirmed 7-day point-prevalence abstinence at one year after the quit attempt. Measures included baseline steps/day, the mean of baseline and year one steps/day, and the change in steps/day from baseline to year one. Analysis of covariance was used to examine the effects of quitting, ambulatory activity, and their interaction on weight change across the one year period while adjusting for age, gender, baseline weight, education, income, cigarettes smoked/day, and caloric intake. The subjects were predominantly female (57%), and on average were 46 ± 11 yrs (mean ± SD), took 7544 ± 3606 steps/day at baseline, and gained 2.5 ± 5.4 kg over the one-year follow-up. Of those who quit, 87% gained weight. Ambulatory activity, including baseline, average, or change in steps/day, did not modify the association between quit status and weight change ($p>0.05$). Quitters gained significantly more weight than non-quitters (4.8 ± 0.3 vs. 1.0 ± 0.3 kg; $p<0.001$). Neither baseline ($p=0.44$) or average steps/day ($p=0.06$) were associated with weight gain, but a change in steps/day was ($p=0.002$), with the highest weight gain seen in those who decreased their steps/day from baseline to year one vs. in those who had consistently higher steps/day (4.9 ± 0.6 vs. 2.3 ± 0.3 kg). The data are consistent with previous reports showing that smoking cessation results in weight gain in most people. While ambulatory activity does not appear to modify quitting related weight gain, smokers should maintain their physical activity levels over time in order to avoid excess weight gain whether or not they quit smoking.	Walking and Recreational Activities Affected by Cancer-Related Fatigue in Older Cancer Patients Receiving Chemotherapy L. Sprod, S. Mohile, L. Peppone, M. Janelsins, G. Morrow, R. Khanna, A. Jacobs & K. Mustian Older cancer patients may suffer more from side effects of cancer treatment than younger cancer patients. Cancer-related fatigue (CRF) is a very common side effect and is hypothesized to impair quality of life by interfering with patients' abilities to perform activities of daily living (ADLs). PURPOSE: To describe the interference of CRF with ADLs in older cancer patients. METHODS: 287 patients 65 years of age or older (mean=72 yrs) with mixed cancer diagnoses were assessed on CRF and its interference with ADLs 7 days after their first 2 chemotherapy infusions as part of a large nationwide clinical trial conducted by the University of Rochester Community Clinical Oncology Program Research Base. The Multidimensional Assessment of Fatigue instrument (10-point Likert Scale; 1=Not at all to 10=A great deal) was used to assess CRF and interference with ADLs. Results are presented as means and standard errors (M+SE). RESULTS: Nearly half (145 of 287) of patients reported CRF at cycle 1 (5.67+0.16) and cycle 2 (5.20+0.17). During cycle 1, 59% of patients reported that CRF interfered with socializing (5.39+0.18), participating in recreational or leisure activities (5.34+0.28), household chores (5.32+0.18), and running errands (5.16+0.20). CRF interfered with walking in 56% (.04+0.20), cooking in 51% (5.17+0.20), bathing in 46% (6.11+0.25), dressing in 45% (6.04+0.26), working in 33% (6.51+1.02) and engaging in sexual activity in 28% (5.35+0.32) of patients. During cycle 2, CRF interfered with household chores in 54% (4.94+0.18), running errands in 53% (5.07+0.20), socializing in 52% (5.11+0.20), walking in 49% (4.73+0.20), participating in recreational or leisure activities in 47% (5.05+0.22), cooking in 44% (4.91+0.21), dressing in 43% (5.91+0.28), bathing in 42% (5.76+0.27), working in 26% (4.94+0.27), and engaging in sexual activity in 27% (4.54+0.28) of patients. CRF was significantly correlated with interference for all ADLs at cycles 1 and 2 (all $p<0.01$). CONCLUSION: CRF interferes with older cancer patients' abilities to perform ADLs, such as walking, dressing, bathing, performing household chores, running errands, participating in recreational activities and leisure activities, socializing, and engaging in sexual activity while receiving chemotherapy.

101	102
Body mass index, physical activity, and survival after endometrial cancer diagnosis: Results from the Women's Health Initiative Arem, H., Chlebowski, R., Stefanick M., Anderson, G., Wactawski-Wende, J., Sims, S., Gunter, M., Irwin, M.L. While high body mass index (BMI) and low physical activity have been associated with higher endometrial cancer incidence, to our review associations among BMI, physical activity and endometrial cancer survival have not been reported. To address this issue we analyzed survival following endometrial cancer diagnosis in 983 cases occurring in the 161,808 postmenopausal women followed for a mean of 11.11 years in the Women's Health Initiative (WHI) observational study and clinical trial. Over a mean 5.59 years from diagnosis to death or end of follow up, 163 total deaths were observed, 66 of which were due to endometrial cancer. In this case-only design, pre-diagnosis BMI and moderate- to vigorous-intensity physical activity (MVPA), measured on average 5.52 years before diagnosis, were explored in relation to survival using Cox regression, adjusting for WHI study components, age at randomization, race/ethnicity, age at first birth, age at menarche, oral contraceptive use, hormone replacement therapy use, diabetes, smoking status and alcohol use. Among these women with endometrial cancer, a pre-diagnosis BMI ≥35 (kg/m2) was associated with an all cause mortality hazard ratio (HR)=1.86 (95% CI 1.12-3.08, p=0.048) compared to a BMI of <25. A 5-unit increase in BMI was associated with a HR=1.17 (95% CI 1.03-1.33) for death due to all causes. For endometrial cancer-specific death the association between BMI ≥35 (kg/m2) and risk of death was even stronger, with the HR=2.96 (95% CI 1.31-6.69, p-trend=0.018). A 5-unit change in BMI was associated with an increased HR=1.25 (95% CI 1.03-1.52). In analyses controlling for BMI and other risk factors, MVPA was not associated with risk of total death or cause-specific death in women with endometrial cancer. Obesity, but not physical activity, was associated with mortality after endometrial cancer. Limitations in MVPA assessment may have affected the power to detect such an association.	Correlates of physical activity behaviors among young adult cancer survivors Valle C, Campbell M Purpose: Regular physical activity may improve quality of life and psychosocial well-being, as well as potentially prevent recurrence and enhance survival, among young adult cancer survivors. This study examined physical activity behaviors and their relationship with sociodemographic, health and psychosocial factors among young adult cancer survivors. Methods: Study participants were young adult cancer survivors, 21-39 years old, recruited primarily through community-based organizations and social media from April-August 2011. Young adult cancer survivors (n=86) completed a self-administered online questionnaire as part of a pilot randomized trial of a Facebook-based physical activity intervention aimed at increasing moderate-intensity physical activity compared to a self-help education condition. We analyzed baseline data using bivariate and multivariate linear regression models to identify sociodemographic, health and psychosocial variables associated with physical activity behaviors. Results: Most young adult cancer survivors (mean age=31.7, SD=5.1) were female (91%), white (91%), and had completed college or postgraduate education (78%). Over half of participants were actively employed (62%). Participants were survivors of 18 different cancer types (20% breast, 13% Hodgkin lymphoma, 12% thyroid, 9% non-Hodgkin lymphoma) and were on average 58.2 months (SD=44.0) postdiagnosis. Participants reported an average of 68.4 minutes (SD=77.0) of moderate-intensity physical activity per week and 5853 steps (SD=2485) per day. Older age (B=-0.39; p<0.007), being female (B=-4.39; p<0.04), and poorer self-rated health (B=-1.93; p<0.007) were inversely associated with physical activity scores. Higher self-efficacy (B=0.87; p<0.001) and greater self-monitoring behaviors (B=1.65; p<0.03) were significantly related to higher physical activity levels. Conclusions: Age, self-rated health and psychosocial factors were associated with physical activity levels among young adult cancer survivors. These factors may be important to consider when developing future behavioral interventions for young adult cancer survivors. Future research is necessary to understand how personal, psychosocial and environmental factors relate to physical activity in young adult cancer survivors.

103	104
Geographical Determinants of Risk-Appropriate Colorectal Cancer Screening Uptake Anderson AE, Henry KA, Merrill RM, Kinney AY Purpose: A large majority of colorectal cancers are preventable through appropriate use of colorectal cancer screening, specifically colonoscopy. Substantial evidence suggests that demographic, social, environmental, and individual-level factors influence colorectal cancer screening uptake in average-risk and increased-risk patients. Colorectal cancer screening rates also differ by geographic regions in the United States. However, no studies have examined the influence of geographical accessibility on utilization of risk-appropriate colorectal cancer screening. Methods: Using data from the 2010 Utah Behavioral Risk Factor Surveillance System, we assessed the influence of geographic proximity to colorectal cancer screening sites on adherence to risk-appropriate screening among urban and rural populations. Respondents with a family history of colorectal cancer were classified into three risk categories based on American Cancer Society guidelines. Travel time to screening sites from respondents' zip codes was calculated using the North American Association of Central Cancer Registries shortest path tool. We used Rural-Urban Commuting Area Codes to categorize respondents' zip codes as rural or urban. Multivariate logistic regression models were used to evaluate the relationship between travel-time and adherence to risk-appropriate screening guidelines. Results: Based on preliminary results, residents of urban areas in Utah were more likely to be up-to-date with risk-appropriate screening guidelines than those residing in rural areas (crude OR=1.59, 95% CI=1.35-1.87). Respondents with a slightly increased risk of familial colorectal cancer were also more likely to be adherent to screening guidelines than those with no family history of the disease (crude OR=1.85, 95% CI=1.31-2.62). Although not statistically significant, those with an intermediate to high risk of familial colorectal cancer were less likely to be up-to-date with screening guidelines than those with no family history of the disease (crude OR=0.92, 95% CI=0.64-1.32). Conclusion: Measurement of geospatial correlates, like travel-time and accessibility, facilitates identification of groups at risk of not being up-to-date with appropriate screening guidelines. Travel-time and geographic accessibility will continue to be analyzed to assess the influence of geospatial factors on colorectal cancer screening. Comprehensive results will be presented at the conference.	Temporal Trends in Colonoscopy from 1999-2008 in Young Adults with and without Family History of Colorectal Cancer: The Seattle Burnett-Hartman, A., Adams, S., Newcomb, P. Background: Overall incidence of colorectal cancer (CRC) is decreasing, but the incidence of rectal cancer under age 50 is increasing. Many reject the hypothesis that recent changes in colonoscopy use may contribute to this apparent increase, because CRC screening in the general population begins at age 50. However, use of colonoscopy to investigate gastrointestinal complaints may be increasing at all ages. Methods: To evaluate temporal trends in the use of colonoscopy in those < 50 years old, we determined the prevalence of prior colonoscopy among unaffected relatives of CRC cases and population-based controls, ages 18-49, enrolled in the Seattle Colon Cancer Family Registry from 1999-2008. At enrollment, participants completed a structured interview covering demographic characteristics, CRC risk factors, and medical history, including prior colonoscopy. The prevalence of prior colonoscopy was calculated separately for those enrolled 1999-2003 and those enrolled 2004-2008. The association between period of enrollment and prior colonoscopy was determined using adjusted logistic regression. Results: Our study population included 3,100 participants with a family history of CRC in a first-degree relative and 643 without a family history of CRC. Between 1999-2003 and 2004-2008, the crude prevalence of prior colonoscopy rose among all study participants from 16% to 28%. Among participants with a family history of CRC, it rose from 18% to 38% but was relatively constant in those without a family history (8% vs. 10%). Adjusted regression analyses supported these trends. Among participants with a family history, the odds of prior colonoscopy was 2.7-fold higher (95% confidence interval (CI): 1.8-3.7) for participants enrolled in 2004-2008 compared to those enrolled in 1999-2003. For those without a family history of CRC, there was no association between period of enrollment and prior colonoscopy (Odds ratio=1.6; 95%CI: 0.6-4.4). The difference in temporal trends according to family history of CRC was statistically significant (P-interaction=0.002). Conclusion: Our study suggests that in adults ages 18-49 with a family history of CRC, colonoscopy use increased from 1999-2008; however, there were no significant changes for those without a family history of CRC.

105	106
Comparing uptake of fecal occult blood tests for colorectal cancer screening: results from a randomized controlled trial J. Chubak, A. Bogart, S. Laing, B. Green Purpose: The goal of the study was to compare the uptake of three fecal occult blood tests (FOBTs) for colorectal cancer (CRC) screening: a 3-sample guaiac FOBT and two different fecal immunochemical tests (FIT). Methods: We invited 10,359 members of an integrated healthcare delivery system aged 50-74 and due for CRC screening to participate in a RCT of CRC screening. After consenting and completing a baseline survey, eligible participants (N=2237) were randomized to receive one of three mailed FOBTs: 3-stool guaiac-SENSA test (Hemoccult) requiring dietary restrictions, a 1-stool FIT (OC-MICRO®), or a 2-stool (InSure®) FIT. Neither of the FIT tests required dietary alterations. Participants were classified as adherent if they returned any FOBT within six months of the date the study cards were mailed to them. We conducted an intent-to-treat analysis, comparing uptake in the first six months across groups using Kaplan Meier estimates of the proportion screened, with inference based on the log-rank test across the three randomized groups. In a post-hoc analysis, we performed pair-wise comparisons of the three arms using log-rank tests with a Bonferroni correction to account for multiple comparisons. Results: The mean age of participants was 58 years, the majority was female (58%), and 18% were non-White. Participant characteristics, including attitudes toward CRC screening, education, employment status, and family history of colorectal cancer were balanced across the randomization groups. By six months after tests were mailed, FOBT uptake was: 70% (95% confidence interval [CI] 66%-73%) in the 1-stool FIT arm, 65% (95% CI: 61%-68%) in the 2-stool FIT arm, and 62% (95% CI: 59% to 69%) in the 3-stool gFOBT arm (logrank p-value for any difference <0.0001). Post-hoc pair-wise comparisons showed that uptake in the 1-stool FIT arm was significantly higher than in either of the other two arms. Conclusions: Completion of FOBTs was highest among persons mailed the 1-stool OC-MICRO® FIT compared to the 2-stool InSure FIT test or the 3-sample g-SENSA gFOBT test. Differences in uptake are likely attributable to the number of samples required, but may also be influenced by the required stool sampling methods or dietary restrictions.	Are Healthcare System Factors Associated with Cervical Cancer Screening Behaviors among Older, Urban Black Women? Coa, K., Phelan, D., Pollack, C., Garza, M., Bone, L., Wenzel, J., Shapiro, G., Johnson, L., Ford, J. Purpose of study: To determine whether healthcare system characteristics that are associated with being up-to-date with cervical cancer screening guidelines in a sample of older, black female Medicare beneficiaries. Methods: Baseline data were collected as part of the Cancer Prevention and Treatment Demonstration, a community-based randomized trial evaluating patient navigation as a strategy to improve cancer screening among black Medicare beneficiaries in Baltimore, MD. This study sample (n = 807) was limited to black females between the ages of 65 and 85 years and excluded women who reported having a hysterectomy. Being up-to-date with cervical cancer screening was defined as having a Pap test within the past 3 years. The main predictors of interest were knowledge of Medicare services, type of medical home (i.e., doctors office, clinic, emergency room, or outpatient department), patient-provider communication, and medical mistrust. First, bivariate analyses were conducted to examine the independent effects of these variables. Multiple logistic regression models were conducted to determine the effects of these variables after controlling for other factors. Results: In this sample, 73.9 % of participants (n=596) had been screened for cervical cancer in the past 3 years. After controlling for age, education, income, marital status, health status, and previous abnormal Pap test, only knowledge of Medicare services was associated with being up-to-date at the p<.05 level (p=.03). Adequacy of patient-provider communication was marginally significant in the adjusted analysis (p=.06). The odds of being up-to-date did not vary by type of medical home (p=.91) or medical mistrust (p=.64). Among participants who reported not being up-to-date, lack of physician recommending Pap screening was the most common reason cited (44.6%). Conclusions: Older, black women are at increased risk of cervical cancer incidence and mortality compared to their white counterparts. This sample had a high prevalence of being up-to-date with cervical cancer screening guidelines. Participants with higher levels of knowledge of Medicare services an increased odds of being up-to-date. There was also some indication that patient-provider communication influenced screening behaviors.

107	108
Characteristic profiles of women who never had a mammogram screening for breast cancer: a Behavioral Risk Factor Surveillance System Jean-Pierre, SE; Jean-Pierre, AR; Jean-Pierre, P. Background: Breast cancer (BraCa) is the most common tumor malignancy among women in the United States, with an estimated 230,480 new cases (30% of all cancer) and 57,650 deaths (15% of all mortality) for 2011. Early detection of masses or microcalcifications can facilitate timely treatment, which can increase survival. However, BraCa screening remains problematic for certain people because of issues related to lack of health care access, health status, socio-demographics, and lifestyle behaviors. Purpose: To examine the characteristic profile of women who reported that they never had a mammography. Methods: We examined data from 25,072 women who completed the Behavioral Risk Factor Surveillance System, one of the world largest telephone survey that tracks health risks in the United States. We conducted a logistic regression using a "No" response to the question 'Have you ever had a mammogram?" as the dependent variable. Independent variables (IVs) included: age, Body Mass Index (BMI), education, income, marital status, race (white vs. nonwhite), history of diabetes, high cholesterol risk factor, history of exercise, health care access, Health status, meet recommended physical activity, and smoking status. Results: Our analysis revealed a significant logit model (Wald Ï‡2(24) = 1146.54, p<0.0001). Age, education, income, Marital Status, high cholesterol risk factor, healthcare access, physical activity, and smoking status statistically significantly predicted participant's report of never having a mammogram for BraCa screening (all ps = 0.0001 to 0.03). Odds Ratio (OR) and 95% Confidence Intervals (CI) for the IVs were as follow: age (OR=4.59, CI=3.90-5.40), education (OR=0.75, CI=0.65-0.86), income (OR=1.33, CI=1.15-1.54), marital status (OR=0.48, CI=0.35-0.65), high cholesterol risk factor (OR=0.49, CI=0.44-0.55), health care access (OR=0.62, CI=0.52-0.74), physical activity (OR=1.24, CI=1.05-1.46), and smoking status (OR=0.64, CI=0.57-0.74). Discussion: Despite recent controversies, mammography and early BraCa detection may prove useful to increasing survival. Strategies to reduce screening disparities should be tailored to individual's demographics and access to health care resources.	Socio-demographic characteristics of individuals who never had a sigmoid or colonoscopy exam for colorectal cancer Jean-Pierre, SE; Jean-Pierre, AR; Jean-Pierre, P. Background: Colorectal cancer (CRC) is the third most common cancer among men and women in the United States, with an estimated 141,210 (Men=71,850; Women=69,360) new cases and 49,380 deaths (Men=25,250; women=24,130 women) for 2011. Although early detection and treatment can increase survival, CRC screening remains problematic for certain people because of lack of health care access, poor health status, diverse socio-demographics, and lifestyle behaviors. Purpose: To examine socio-demographic characteristics of individuals who reported that they never had a sigmoid or colonoscopy exam for CRC. Methods: We examined data from 15,546 individuals (Men=6,229; women=9,317) who completed the Behavioral Risk Factor Surveillance System, one of the world largest telephone survey that tracks health risks in the United States. We conducted a logistic regression using a "No" response to the question "Have you ever had a sigmoid or colonoscopy exam?" as the dependent variable. Independent variables (IVs) included: gender, age, Body Mass Index (BMI), education, income, marital status, race (white vs. nonwhite), history of diabetes, daily fruit serving, health care access, and smoking status. Results: Our analysis revealed a significant logit model (Wald Ï‡2(38) = 470.58, p<0.0001). Gender, age, BMI, education, income, smoking status, and health care access statistically significantly predicted participant's report of never having a sigmoid or colonoscopy exam for CRC (all ps = 0.0001 to 0.04). Odds Ratio (OR) and 95% Confidence Intervals (CI) for the IVs were as follow: gender (OR=0.88, CI=0.79-0.98), age (OR=2.04, CI=1.80 to 2.30), BMI (OR=1.17, CI=1.02-1.34), education (OR=0.66, CI=0.54-0.82), income (OR=1.41, CI=1.14-1.75), smoking status (OR=0.67, CI=0.58-0.78), and health care access (OR=1.16, CI=1.01-1.33). Discussion: CRC screening and early detection have been shown to increase the likelihood of survival. Yet, many people with modifiable risks factors and lack of health care access do not participate in screening, and generally present with late stage disease with lower chances for survival. Strategies to reduce disparities in CRC screening should be tailored based on individual's socio-demographics and access to health care resources.

109	110
Long-term disease-specific functioning among prostate cancer survivors and controls in the PLCO Cancer Screening Trial Kelly S, Luta G, Taylor K Purpose: Within the Prostate, Lung, Colorectal, and Ovarian (PLCO) Cancer Screening Trial, we evaluated the long-term disease-specific functioning among prostate cancer (PCa) survivors compared to non-cancer controls, the impact of PCa in the annual screening vs. usual care arms, and the PCa survivors' disease specific functioning across treatment modalities. Methods: PCa survivors who were 5-10 years post-diagnosis and non-cancer controls were randomly selected and frequency-matched on race, screening center, year of randomization, and trial arm. Weights were used to account for subject selection from five of the ten PLCO screening centers. Participants completed a telephone interview regarding current disease-specific functioning. Adjusted mean differences and 95% CIs were estimated using weighted linear regression models. Propensity score methods were used to balance groups with respect to demographic and medical characteristics. Results: Among the 1447 eligible subjects, 1043 (82%) participated: 529 PCa survivors (269 annual screening, 260 usual care) and 514 non-cancer controls (260 annual screening, 254 usual care). The average age was 75 years. PCa survivors had significantly poorer sexual ($p<0.0001$) and urinary function ($p<0.0001$) compared to non-cancer controls. Annual screening was not associated with long-term disease-specific outcomes: sexual function ($p=0.67$), urinary function ($p=0.62$), bowel bother ($p=0.40$), and hormone bother ($p=0.31$). Radiation therapy patients reported better sexual ($p<0.05$) and urinary ($p<0.0001$) functioning compared to radical prostatectomy patients, while patients who had received androgen deprivation reported significantly worse hormone-related symptoms than radical prostatectomy patients ($p<0.05$). Conclusions: Greater sexual and urinary dysfunction among PCa survivors compared to non-cancer controls suggests that dysfunction was due to treatment for PCa as opposed to comorbidities or aging. The lack of significant trial arm differences in dysfunction among survivors indicates that annual screening did not play a role in long term functioning. Persistent differences in clinically significant side effects between treatment modalities are particularly relevant for patients and clinicians when making treatment decisions.	Knowledge and Perceptions of HPV and Anal Cancer Among a Sample of HIV-Infected Men and Women Kowalkowski M, Mahadevan A, Chiao E Objectives: Advances in HIV therapy (e.g., HAART) have improved survival of HIV-infected individuals in the United States. Yet, this population continues to experience higher risk of mortality from non-AIDS defining malignancies (e.g., anal cancer). The aim of this study was to assess knowledge and perceptions regarding human papillomavirus (HPV), anal cancer, and screening in a heterogeneous sample of HIV-positive men and women. Methods: We present baseline data from a prospective cohort study initiated in Houston, Texas in 2010. Participants completed self-administered surveys containing demographic characteristics, co-morbid conditions, sexual history, treatment history, and disease-specific knowledge. Data were analyzed using Chi-square and Fisher's exact tests. Results: The median age of the 140 participants was 39 years (range=18-69). Participants were primarily male (83%), black (58%), and at least high-school graduates (70%). Greater than half reported no knowledge of HPV (55%), worst among older and less-educated participants ($p<0.05$). Almost half (43%) indicated that HIV did not increase one's risk for anal cancer, but approximately 90% strongly agreed anal cancer screening was important for HIV patients. Participants universally (99%) endorsed the importance of all cancer screening. Conclusions: Our findings suggest that individuals in this sample robustly support the significance of cancer screening. However, relevant HPV and anal cancer knowledge was deficient, particularly among older and less-educated participants. HIV-infected individuals are at higher risk of developing anal cancer and should receive more comprehensive education regarding HPV, screening, and anal cancer risk.

111	112
Association Between Anal Dysplasia and HPV Viral Load in HIV-Infected Men and Women in the Southwestern United States Kowalkowski M, Mahadevan A, Chiao E Objectives: Previous studies of HIV-infected populations have shown high prevalence of human papillomavirus (HPV) and anal dysplasia. However, most studies have been conducted in white males residing in the western United States and Europe. The aim of this study was to determine the prevalence of precancerous anal dysplasia and its association with HPV viral load in a heterogeneous sample of HIV-infected men and women. Methods: We present baseline data from a prospective cohort study initiated in Houston, Texas in 2010. Anal specimens were obtained for cytological analysis and HPV testing. Anal dysplasia was defined as low- or high-grade squamous intraepithelial lesions (LSIL/HSIL). The prevalence of abnormal cytology was examined, and multivariable logistic regression was used to determine the association between HPV viral load and anal dysplasia. Results: The median age of the 140 participants was 39 years (range=18-69). Participants were primarily male (83%), black (58%), heterosexual orientation (52%), and current smokers (60%). Nearly 20% reported injection-drug use. The prevalence of LSIL and HSIL was 31% and 8%, respectively. The median HPV viral load was 48,198 relative light units (intraquartile range=10,800-159,976). Logistic regression revealed HPV viral load in the highest quartile (OR=12.2; 95%CI=2.4-63.4) and CD4 count below 200/mm3 (OR=3.5; 95%CI=1.1-11.1) was associated with an increased odds of LSIL/HSIL. Conclusions: The prevalence of anal dysplasia in this sample was substantial. LSIL/HSIL was associated with HPV viral load and CD4 count. Our results identify HPV viral load as a potential biomarker for individuals at high risk of anal dysplasia and highlight the importance of diligent screening protocols for this diverse HIV-infected population. Further research is needed to confirm the utility of HPV viral load as a clinically useful biomarker.	Primary care providers' response to the USPSTF draft recommendations on screening for prostate cancer screening Craig E. Pollack, Elizabeth A. Platz, Gary Noronha, Gene Green, Nrupen A. Bhavsar, H. Ballentine Carter Purpose: The US Preventive Services Task Force issued draft recommendations against routine PSA-based screening for prostate cancer in October 2011. Primary care providers' views on the draft guidelines and their willingness to change clinical practice patterns in response remain unknown. Methods: We performed a self-administered survey of 141 primary care practitioners from a university-affiliated practice network in November 2011. The network includes primary care physicians, family practice physicians, internal medicine/pediatric-trained physicians, and nurse practitioners working in 26 practice settings. Results: The response rate was 88.7% (125 out of 141). Nearly half (49.1%) agreed or strongly agreed with the recommendations while 36.0% disagreed or strongly disagreed. Few providers (1.8%) said that they will no longer order routine PSA testing and 21.9% will be much less likely to do so. Both agreement with the recommendations and expectations as to how the recommendations would change practice did not significantly vary by provider, years since residency graduation, gender, or race/ethnicity. Even among those clinicians who agreed with the draft recommendations, less than half (41.1%) stated that they will either no longer order routine PSA screening or be much less likely to do so. Providers who were most likely to screen at baseline were least likely to believe the recommendations would strongly affect their practices (45.8% of providers who typically recommend PSA screening did not think the draft recommendations would change their screening behavior compared to 28.3% of those who typically let the patient decide, $p<0.001$). Providers identified multiple barriers to stopping routine PSA screening including patient expectations, lack of time to explain changes, fear of malpractice litigation, and discomfort with uncertainty associated with stopping screening. Conclusion: If finalized, the USPSTF recommendations may encounter significant barriers to adoption, even among those primary care providers who agree with the recommendations.

113	114
The "Welcome to Medicare" Visit: A Missed Opportunity for Cancer Screening among Women? Salloum R., Jensen G. Purpose: In 2005 Medicare began offering new beneficiaries a "Welcome to Medicare" physical examination. The annual Part B deductible was waived for this one-time exam, so a beneficiary's out-of-pocket expense was only 20% of the Medicare-approved amount. Prior to 2005 physical exams were not covered. The new benefit was expected to increase the demand for mammograms and Pap tests among women newly enrolled in Medicare, but there are few published estimates of its effects on the uptake of screening and prevention services. Methods: We studied the impact of the introduction of the benefit on the utilization of mammograms and Pap smear tests among women newly enrolled in Medicare. Using the 2001 - 2007 Medicare Current Beneficiary Survey (MCBS) Access to Care survey, linked with claims from the Cost and Use modules of the MCBS, we describe the utilization rates of mammography and Pap tests among women ages 65 and 66. Two multivariate logistic regression models were used to estimate the utilization of the screening tests, controlling for patient and market characteristics, and the year the benefit was introduced. Results: During the study period, mammography screening rates had been slowly increasing, while Pap screening rates remained flat. After adjusting for personal characteristics and market factors, the 2005 reform had non-significant trivial effects on the use of both screening tests. The lack of effects was due to very few women taking advantage of the new benefit. Conclusions: These findings raise questions about the potential efficacy of Medicare's new "Wellness Visit" benefit, introduced as a result of the 2010 Affordable Care Act. Although this new benefit is intended to increase the use of preventive care and cancer screening services among beneficiaries, our findings suggest it is unlikely to do so. The motivation of providers to increase cancer screening rates among Medicare beneficiaries should be further examined.	Colorectal Cancer Screening Male Navigation Program Villarreal, R.; Urbansky, K; Mika, V; Trevino, L Purpose: Through the University Health System (UHS) Colorectal Cancer (CRC) Screening Male Navigation Program, we have developed a successful model for increasing CRC screening among our indigent, Hispanic males age 50 and older. Annually, only 4% of this target population screens for CRC. Methods: Our program assures a reduction in the impact of CRC through the implementation of a multi-component, evidence-based intervention using open-access endoscopy, patient navigation, one-on-one patient education, escorted transportation for screening appointments, and colonoscopy services provided by a bilingual, Hispanic colorectal surgeon. The model uses a combination of culturally appropriate, social cognitive theory based techniques to educate patients, remove myths, and provide overall social support. System changes were made to remove organizational, financial, and other major barriers associated with colonoscopies. Program implementation required changes to workflow for the UHS endoscopy suite, pathology, admissions, billing, and referral departments. The process was designed to ensure effective navigation without disrupting organizational operations. Results: From September through November 2011, 71 Hispanic men were eligible for the program; 30 were not contacted, 36 agreed to participate, and 5 refused. Of participants, 32 (89%) completed colonoscopies. Roughly half of men completing the procedure had not kept previous appointments, and 38% had at least one polyp removed. These initial findings show the model is effective in addressing the embarrassment and fear that keeps Hispanic males from completing CRC screenings. Coordination of services through a Community Outreach Representative was a key element to eliminate system barriers, leverage resources, and provide patients with a positive screening experience. Conclusions: Access to cancer screening, treatment, and education are proven strategies in reducing premature deaths related to cancer. To change the current paradigms, persistent, creative system changes over time are needed to affect men's health. Our findings show cultural and gender appropriate navigation and medical services, combined with the removal of system barriers is an effective way to increase CRC screening rates.

115	116
Mammographic breast density and risk of incident ovarian cancer Wernli K, O'Meara E, Kerlikowske K, Miglioretti D, Muller C, Onega T, Sprague B, Yankaskas B, Cohen-Cline H, Buist D Purpose: Mammographic breast density is one of the strongest risk factors for breast cancer, yet it has not been investigated for ovarian cancer risk, despite a common etiology. Methods: We identified a cohort of 1,241,148 women aged 40-79 years who underwent mammography at the facilities participating in the Breast Cancer Surveillance Consortium from 1995-2009. BI-RADS breast density was ascertained by the interpreting radiologist from the mammography assessment. We used SEER or state cancer registries to identify 1,977 incident cases of hormonally-responsive epithelial ovarian cancer diagnosed within 5 years after mammography. Other personal characteristics were collected from a self-administered questionnaire completed at each mammography visit. We used Cox regression to estimate the effect of breast density on ovarian cancer risk (hazard ratios and 95% confidence intervals) across four levels of breast density, using a robust sandwich variance estimator to account for multiple measures per woman (mean 3.8 mammograms per woman). Results: Women who developed ovarian cancer were more likely than non-cases to be older, nulliparous, currently using hormone therapy, postmenopausal, and have a personal or family history of breast cancer and were less likely to be currently using oral contraceptives. Although greater mammographic breast density was associated with increased 5-year risk of hormonally-responsive epithelial ovarian cancer in models adjusted for age and stratified by study site, we found no association after adjusting for ovarian cancer risk factors. Compared to women with scattered fibroglandular densities, the adjusted hazard ratio for ovarian cancer associated with extremely dense breasts was 1.16 (95% CI 0.86-1.56). There was a non-significant suggestion of increased risk among women aged 40-49 and 50-59 with heterogeneously dense or extremely dense breasts compared to women with scattered fibroglandular breast density. Conclusions: We examined a promising risk factor in a large, population-based sample of U.S. women, but found that the association between mammographic breast density and ovarian cancer risk seems to be due to its association with other known risk factors.	Family History of Colorectal Cancer and Barriers to Colonoscopy Screening: Implications for Screening Promotion Wiseman KP, Woolf SH, Jones RM Purpose: Colonoscopy is recommended for individuals who have a family history of colorectal cancer (CRC); however, these high-risk people likely experience barriers to screening. Thus, it is important to examine colonoscopy barriers to better understand how colorectal cancer screening (CRCS) promotion could be enhanced among those at high-risk. Methods: In a cross-sectional study, 416 individuals (50-75 years) with a family history of CRC rated 21 colonoscopy barrier items on a 5-point scale, with higher scores representing greater barriers. Mean barrier scores were compared between respondents who were adherent to colonoscopy recommendations and those who were never screened taking into account oversampling. Analyses were stratified by age due to effect modification and adjusted for model-specific confounders (e.g., gender, education, income, insurance, other CRCS, etc.). Results: The top barrier for respondents ages 50-64 was not wanting to do the preparation. For 65-75 year olds, the top barrier was being worried about what the colonoscopy might find. Worry and anxiety barriers (e.g., afraid of having a colonoscopy, worried colonoscopy is painful) were more strongly endorsed among never screened compared to adherent respondents. Overall, never screened respondents had higher barrier scores than adherent respondents. In general, respondents, ages 65-75 years, had the highest barrier scores. Conclusion: Barriers exist among high-risk individuals with a family history of CRC and barriers differ by age group as well as by CRCS adherence status. The leading barriers for those with a family history of CRC are slightly different than those found among people who are at average-risk for CRC. Strategies for prompting CRCS need to target these barriers. Physicians are encouraged to provide specific information to patients based on age and previous screening status to reduce colonoscopy-specific barriers.

117	118
Harvest for Health: A Vegetable Gardening Intervention for Cancer Survivors Blair C, Swain A, Locher J, De Los Santos J, Affuso O, Glover T, Sharma A, Krontiras H, Busby J, Carley J, Lipsitz M, Demark W Cancer survivors are at increased risk for recurrent and second malignancies, cardiovascular disease, diabetes, and functional decline. Evidence suggests that a healthful diet and physical activity (PA) may reduce the risk of many types of chronic disease and ameliorate the effects of comorbidity. We conducted a pilot study in 12 cancer survivors (4 breast, 4 prostate, 4 childhood cancer) to assess the feasibility of a vegetable gardening intervention that paired cancer survivors with certified Master Gardeners from the Alabama Cooperative Extension. We hypothesized that survivors who participated in a gardening intervention would eat more fruits and vegetables (F&V), exercise more, and improve their quality of life (QoL). During the year, the survivor-Master Gardener dyads worked together to plan/plant 3 gardens, harvest/rotate plantings, and troubleshoot/correct problems. Data on diet, PA, and QoL were collected via surveys; anthropometrics and physical function were objectively measured quarterly. Change from baseline was evaluated via paired t-tests. Preliminary results suggest significant improvements in physical function, and non-significant increases in F&V consumption and PA among adult survivors. Compared to baseline, 6-month follow-up mean scores improved for the 30-second chair stand (14.7+2.8 to 16.5+3.3 stands; p=0.03), 8 foot Get-Up-and-Go (6.0+1.2 to 4.4+1.0 seconds; p=0.02), and 6-minute walk (2023+259 to 2295+404 feet; p<0.05). Further, an increase of â‰¥1 F&V servings/day and â‰¥30 minutes/week of PA was observed in 50% and 67%, respectively. For childhood cancer survivors the impact was not as great, although 75% showed improvement in 3 out of 4 functional tests, with less evidence for increased F&V intake (0%) or PA (50%). No improvement in QoL was observed for either adult or child cancer survivors; however, initial scores were high (max: 100; mean 83.6Â±15.0 and 79.0Â±11.9, respectively), thus leaving little room for improvement. Our proposed intervention is a novel strategy to improve F&V consumption, PA, and physical function, which could have great public health significance. We intend to develop a larger scale randomized controlled trial and expand the intervention statewide to a broad population of adult cancer survivors.	Long-term breast cancer survival in the United States Broderick C, Phillips L Purpose: Most survival statistics for breast cancer patients have only been calculated to five years. Now with longer average survival time and more data available, this study aims to fill a gap in the research regarding 15 year survival of breast cancer patients. Methods: Using Surveillance, Epidemiology, and End Results (SEER) program data collected from 1973-2007, we used SEERStat software to estimate relative survival rates using the life table method. The following were excluded from the analysis: male breast cancers, cases where breast cancer was not the first primary, cases that were identified through autopsy or death certificate only, cases with unknown race, cases with unknown survival time, Louisiana cases from 2005, and cases where the age at diagnosis was less than 20 years. After exclusions, 452,571 adult female breast cancers were available for analysis. Results: Overall ten and fifteen year survival rates were similar for stage I five year rates but for subsequent stages there is a continual decline. Blacks had lower survival rates for all ages and stages than whites. Conclusion: Now that sufficient data is available it is important to determine the longer term survival rates for breast cancer patients. This information can be used to further elucidate survival rate differences among subgroups.

119	120
Body mass index and colorectal cancer survival: a systematic literature review Burris J, Parekh N, Chandran U, Bandera E Background: Body adiposity is an established epidemiological risk factor for colorectal cancer risk. However, the role of body adiposity in colorectal cancer recurrence and mortality is unclear. Purpose: To evaluate the current epidemiological evidence on body adiposity and colorectal cancer recurrence and mortality. Methods: We systematically reviewed PubMed and bibliographies of epidemiological studies in the English language through July, 2011. Studies were included if they involved follow-up of colorectal cancer cases, the sample size was greater than 200 and if risk estimates for disease-specific mortality or recurrence in multivariable analyses were presented. Results: We identified a total of eight studies on colorectal cancer. Three studies evaluated body mass index (BMI) prior to diagnosis. These studies suggest a 15% to a 2-fold increased risk for colorectal cancer mortality or recurrence among obese participants. The results from the studies evaluating post-diagnostic BMI were equivocal. However, taken together obesity appears to increase colorectal cancer recurrence or mortality, with estimates ranging from 0.97-1.68. Conclusions: The current evidence is insufficient and inconclusive, but tends to support a relationship between obesity and colorectal cancer recurrence or mortality. However, these studies were not specifically designed to evaluate this issue and did not always adjust for important lifestyle factors such as smoking. Further research is necessary to examine the impact of higher body adiposity in the growing population of colorectal cancer survivors.	The associations of body mass index in relation to prostate cancer mortality: results from a systematic review Parekh N, Burris J, Chandran U, Bandera E Introduction: Prostate cancer (PCA) survivors have grown steadily in the past decade. Increased body fatness is hypothesized as a risk factor for PCA-specific mortality. Purpose: To evaluate the current epidemiological evidence on body fatness and PCA mortality. Methods: We systematically reviewed PubMed and hand-searched bibliographies through July, 2011. Studies were included if they conducted follow-up of PCA cases, the sample size was greater than 200, if risk estimates for disease-specific mortality or recurrence in multivariable analyses were reported and if they were published in English. Results: Of 326 abstracts a total of 6 studies met the inclusion criteria. Two studies evaluated PCA mortality in relation to pre-diagnostic body mass index (BMI). These studies suggest a 95% to a 2-fold increased risk of PCA mortality or recurrence. In the four studies that investigated post-diagnostic BMI, associations were mixed with risk estimates ranging from 0.9-1.64. Conclusions: Current evidence suggests that increased body adiposity may be a risk factor for PCA-specific mortality. However, the existing literature is insufficient and has several methodological issues. Furthermore, majority of the studies were not specifically designed to address this issue and did not adjust for important lifestyle factors. In conclusion, additional prospective cohort studies evaluating body fatness and body fat distribution among PCA survivors are warranted, in order to determine the impact of body fatness on PCA survival.

121	122
Longitudinal associations of leisure-time physical activity and prostate cancer mortality in the Third National Health and Nutrition Examination Survey (1986-2006) Parekh N, Lin Y, Craft L, Vadiveloo M, Lu-Yao G Purpose: The purpose of this study was to evaluate leisure-time physical activity (LTPA) in relation to prostate cancer mortality in a nationally-representative sample. Methods: Longitudinal associations between LTPA and mortality from prostate cancer was evaluated within the Third National Health and Nutrition Examination Survey (NHANES III;1988-1994; n=7791 men), with a mortality follow-up through 2006. Mortality status was ascertained through probabilistic record matching with the National Death Index. Seventy-two deaths from prostate cancer were accrued recorded the follow-up period. LTPA was self-reported, from which metabolic equivalents (METS) were computed. Level of LTPA was defined based on 1) METS and 2) activity type using standardized methods. Hazard ratios (HR) and 95% confidence intervals (95% CI) were computed for female cancer mortality using Cox proportional hazards models. All analyses were performed using SAS version 9.1 and SUDAAN version 10. Results: although not statistically significant, individuals who were vigorously active (based on type of activity), were 24% less likely to die of prostate cancer as compared to individuals who were not vigorously active, after adjusting for age (HR:0.76; 95% CI: 0.37-1.57) and 16% less likely to die or prostate cancer after adjustment for age, race, smoking status, and sex (HR:0.84; 95% CI:0.38-1.87). For individuals who were moderately and vigorously active (definition based on total METs expended per day) the HRs were <1: after adjusting for age, persons were 6% (HR:0.94; 95% CI: 0.38-2.36) and 39% (HR; 0.61; 95% CI:0.31-1.44) less likely to die of cancer if they were moderately and vigorously active respectively. Associations were non-significant and HR <1 after adjustment of other covariates. For participants that engaged in "any activity", there was a non-significant 27-21% decrease in risk for prostate cancer mortality. The HR for quartiles 2, 3 and 4 were <1 as compared to quartile 1 of METS, although not statistically significant. Conclusions: Non-significant protective trends have also been observed for prostate cancer mortality in this population. However, further research is needed on intensity and duration of physical activity before public health recommendations can be made.	Primary care provider evaluation of cancer survivorship care plans Dittus K, Sprague B, Pace C, Dulko D, and Geller B Introduction: In 2015 the Commission on Cancer will require survivorship care plans for cancer survivors. The content of a care plan felt to be valuable to Primary Care Providers (PCPs) has been inadequately explored. Methods: Care plans were developed by mid level providers and given to breast and colorectal cancer patients and their PCPs at an urban and rural cancer center. The PCP received a survey to assess the care plan. If PCPs did not respond a reminder email was sent. The survey asked PCPs to evaluate the components of the care plan and whether the plan improved understanding about follow up care. Barriers to delivering cancer survivor care were also assessed. Results: Fifty five surveys were sent and 32 returned for a response rate of 58%. Over 70% of PCPs felt the care plans were easy to understand and addressed appropriate topics. However, 16% disagreed that the care plan helped them understand their role in facilitating survivorship care and 13% disagreed that they understood how they would share responsibility with the oncologist. Twenty one percent disagreed that the length was appropriate. The majority of PCPs agreed that the detail of the content areas were sufficient but there were statistically significant differences between PCPs near the academic center and the clinical cancer center with PCPs near the academic center more likely to agree that they understood the monitoring for late and long term effect and cancer recurrence. The most common barrier to providing follow-up care was insufficient knowledge of cancer survivor issues with 65% considering this a barrier. Discussion: PCPs felt the survivorship care plans were understandable and included adequate detail. However, fewer felt that the length was correct. While understanding about several aspects of survivor care and follow up was expressed, PCPs continued to have less understanding of their role in facilitation of care. In the US there is not a clear time to transfer care to a PCP. Rather patients often continue to see both a PCP and an oncologist. As a result the responsibility for many aspects of survivorship follow up is unclear. Insufficient knowledge of cancer survivor issues was the most commonly identified barrier to providing follow-up care.

123	124
Cancer survivors grouped by self-reported needs Geller B, Vacek P, Flynn B for the Steering Committee of the Cancer Survivor Community Study The goal of this study was to identify and describe cancer survivors who report a high, moderate or low number of needs. We surveyed 1668 cancer survivors two to 16 years after their diagnosis concerning 53 needs in 5 domains: 1. Access to care and services; 2. Information; 3. Emotional, social and spiritual issues; 4. Physical issues and; 5. Economic and legal issues. For each domain we computed a score by summing the number of needs checked and dividing it by the total number of needs in the domain. We then multiplied this value by 10, so the scores for each domain have a possible range of 0-10, with 0 corresponding to no needs and 10 indicating that all needs in the domain were checked. Cluster analysis was used to group survivors based on their needs scores for the five domains. We employed a hierarchical clustering procedure that assessed the average linkage between groups in terms of the squared Euclidean distance and identified three main clusters. The clusters show a consistent ranking across all five need domains and can be interpreted as reflecting low, medium and high levels of cancer survivor need. In the medium-need group, nearly all survivors had at least one need relating to access to care (98%), information (100%), and emotional, social and spiritual (96%). All survivors in the high-need group had at least one need in every domain except economic and legal issues, where 82% indicated they had one or more needs. Survivors who were in the high needs group also were more likely to indicate that those needs were not met. The high needs group was significantly more likely to be younger and female, and both the high and medium needs groups were more likely to be working and have a larger household than survivors in the low needs group. More survivors in the medium and high need groups had breast cancer, and those in the high needs group were more likely to have been diagnosed with multiple cancers. The high needs group was also more likely to have stage 2 and 3 cancers and to have received multiple treatments. We conclude that there are clearly groups of survivors who report more needs and more unmet needs than others. Health and social service providers can use this information to design programs to identify and meet the needs of cancer survivors.	Associations of demographics, chemotherapy-induced neuropathic pain (CINP), and psychological distress with sleep disturbance Gewandter J, Heckler C, Mohile S, Kirshner J, Flynn P, Morrow G Between 30% and 40% of patients receiving certain chemotherapeutic agents develop CINP. People who are in pain often report sleep disturbance (SD). This secondary analysis was performed to determine if demographic characteristics, severity of pain, and psychological status were associated with perceived pain interference with sleep or general SD. The University of Rochester Cancer Center Community Clinical Oncology Program recruited 461 cancer survivors with neuropathic pain for a 6-week pain intervention trial. Subjects were 88% white and 71% female, with a mean age of 61 years. Survivors had a variety of cancer diagnoses, with breast cancer being most common (40%). Significant decreases in pain were reported in both the placebo and intervention groups after 6 weeks. For the purposes of this analysis, groups were collapsed and assessed together. Multiple linear regression analysis was performed to identify characteristics associated with perceived pain interference with sleep and general SD. Independent variables included gender, age, education, race, marital status, pain severity, and hospital anxiety and depression scale (HADS) score. Separate models were performed using baseline values or change scores (week 6 - baseline). At baseline, pain severity ($p < 0.0001$), HADS ($p < 0.0001$), female gender ($p = 0.041$), and non-white race ($p = 0.0002$) were independently associated with perceived pain inference with sleep (adjusted r2 (r2) = 0.2299). The same variables were associated with general SD except for non-white race ($p = 0.3$) (r2 = 0.2045). Changes in pain severity ($p < 0.0001$) and HADS ($p = 0.0067$) as well as non-white race ($p = 0.0014$) were associated with changes in perceived pain interference in sleep (r2 = 0.2165). Changes in pain severity ($p < 0.0001$) and HADS ($p = 0.0082$) were associated with changes in general SD (r2 = 0.1050). In conclusion, pain severity, HADS, pain interference with sleep and general SD are highly correlated and track together over time, suggesting that these symptoms are interrelated. Further, after accounting for pain severity, in this cohort non-white participants rated their pain interference with sleep higher than whites. Future research should investigate interventions that target these clustered symptoms simultaneously.

125

Determinants of Breast Cancer Survival in a Multiethnic Population

Maskarinec G, Conroy SM, Pagano IS, Gotay CC, Issell BF, Kolonel LN

Purpose. Ethnic differences in breast cancer survival are a long-standing concern; obesity and soy intake are possible factors responsible for disparities. This presentation will summarize studies in Asian Americans and Native Hawaiians and show results in 2 ethnically diverse populations: the Multiethnic Cohort (MEC) and a pattern of care and outcomes (POCO) study.

Methods. The MEC analysis included 3,842 women aged ≥50 years at cohort entry who completed an extensive baseline questionnaire and were diagnosed with breast cancer during follow-up. The POCO study consisted of 382 studied breast cancer patients recruited from hospitals in Honolulu. Information on tumor characteristics, treatment, toxicity, and chronic conditions was abstracted from medical records. For both studies, vital status data were obtained through linkages with the Hawaii Tumor Registry. Cox regression was applied to estimate hazard ratios (HR) and 95% confidence intervals (CI).

Results. During 6.2±3.8 years of follow-up, 376 deaths from breast cancer were observed in the MEC. Breast cancer survival for Japanese and Native Hawaiians did not differ significantly from survival in Caucasians. Mortality due to breast cancer was higher in obese than normal weight women (HR=1.45; 95%CI: 1.05-2.00), but overweight did not affect survival. The obesity effect on breast cancer-specific mortality was similar across ethnic groups. Soy food intake was unrelated to breast cancer survival (HRT3 vs T1=1.03; 95%CI: 0.71-1.50) with non-significant differences by ethnicity. In the POCO study, 43 deaths from breast cancer had occurred after 13.2±3.7 years of follow-up. In a multivariate model, ethnicity was not a significant predictor of breast cancer survival. As in the MEC, obesity, but not overweight, at diagnosis was associated with worse breast cancer-specific survival (HR=2.99; 95%CI: 1.22-7.33). Conclusions. Compared to earlier reports, ethnic differences in breast cancer survival between Native Hawaiians, Asian Americans, and Caucasians have declined and were not significant in the 2 studies presented here. In agreement with the literature, no adverse effects of soy intake were observed, but weight control appears to have beneficial effects on breast cancer survival across ethnic groups.

126

Patient satisfaction with breast and colorectal cancer survivorship care plans

B Sprague, K Dittus, C Pace, D Dulko, B Geller

Cancer survivors face several challenges following the completion of active treatment, including uncertainty about long terms effects of treatment and confusion about the coordination of follow-up care. To address this, the Institute of Medicine recommended in 2005 that all cancer patients receive a care plan summarizing their treatment and plans for follow-up. We evaluated patient satisfaction with care plans delivered to stage 0-3 breast cancer patients and stage 2-4 colorectal cancer patients who had recently completed treatment at two clinics in Vermont. A total of 81 patients were enrolled, including 63 with breast cancer and 18 with colorectal cancer. Care plans were developed using software created by the Journey Forward program, which included a summary of the patient's diagnosis and treatment, a schedule for follow-up tests, information on late- and long-term effects of cancer treatment, information on secondary cancer prevention, and a list of national and local health promotion resources. The care plan was delivered to and discussed with each patient by a mid-level practitioner during a scheduled one hour care plan visit at the clinic. Telephone interviews were conducted with the patients approximately two months after the care plan visit to assess benefits and problems with the care plan. To date, 54 patients (67%) have completed a study interview. Overall satisfaction with the care plan was high: 78% of all patients were very or completely satisfied, and 98% would recommend a care plan to others. Overall satisfaction did not vary according to type of cancer (p=0.86). More than 90% of patients reported that the care plan was important in helping them understand which follow-up tests are needed and what late- and long-term effects of their cancer treatments are possible. In contrast, only 44% of patients reported that the care plan helped them understand the role of their primary care provider in survivorship care. Similarly, only 54% reported that the care plan helped them understand how their primary care and cancer doctors will work together. These results indicate that future efforts to improve survivorship care plans should focus on delineating the specific roles of the primary care provider and oncologist in the provision of survivorship care.

127	128
Head and Neck Cancer Health Care Providers' Preferences and Attitudes about Survivorship Care Sterba K, Zapka J, Day T, Shirai K, Patten R, Garrett-Mayer E The long-term consequences of head and neck cancers and their treatments are substantial and can significantly impact patient and caregiver quality of life. To plan feasible survivorship care intervention strategies for head and neck cancer patients and caregivers at the end of treatment, we examined the preferences and attitudes of head and neck cancer health care providers at a regional cancer center. We conducted a cross-sectional quality improvement study (N=34 multi-disciplinary clinical team members) using self-administered or online questionnaires to assess preferences concerning the timing, methods and content of a survivorship care program, as well as self-efficacy concerning the provision of survivorship care. The majority of participants (77%) believed their patients experienced the most significant physical challenges immediately or in the month following primary treatment conclusion. Forty percent of participants believed their patients experienced the most significant emotional challenges over the 6 months following treatment conclusion. Participants commonly rated the following strategies as extremely or very important for inclusion in a survivorship program: provision of a written care plan (97%), an efficient IT documentation system (82%), and designation of a nurse with special training (77%). Major barriers to implementing a program included time (63%), staff shortages (59%), and lack of reimbursement for education and counseling services (53%). Finally, most clinicians felt extremely or very confident about talking with their patients about late and long-term treatment effects (58%) but felt less confident about their abilities to assess and manage psychosocial concerns (40% were only somewhat or not at all confident). This study represents the first step to shaping a feasible, sustainable head and neck cancer survivorship program within the organizational context of an active clinic service. Results have highlighted staff development needs and provided direction for the refinement of intervention strategies and timing. Participants felt that a comprehensive survivorship program was key to meet the specialized needs of head and neck cancer patients and their caregivers.	Association analysis of five candidate genes with serum 25-hydroxyvitamin D and mortality risk in breast cancer survivors Villasenor A, Carlson C, Ballard-Barbash R, Hutter C, Bernstein L , Baumgartner K, Baumgartner R, McTiernan A, and Neuhouser M Higher vs. lower circulating 25-hydroxyvitmain D (25(OH)D) may decrease mortality risk in breast cancer survivors, but few studies have examined whether genetic polymorphisms in genes known to be associated with vitamin D metabolism are associated with breast cancer prognosis. We genotyped 47 tagging single-nucleotide polymorphisms (tagSNPs) in five Vitamin D metabolism genes (vitamin D 24-hydroxylase (CYP24A1), vitamin D(3) 25-hydroxylase (CYP27A1), vitamin D activating enzyme 1-Î±-hydroxylase (CYP27B1) vitamin D binding protein (GC), and vitamin D receptor (VDR)) in a multi-ethnic cohort of 660 women with incident breast cancer and approximately 11 years of follow-up. Serum 25(OH)D concentrations were assayed using RIA from stored blood collected 3 years post-diagnosis. Vital status was ascertained from the Surveillance, Epidemiology, and End Results (SEER) registries and medical records. We used linear regression analysis to examine the association of individual tagSNPs with log-transformed serum 25(OH)D. Using an additive genetic model in analysis stratified by racial-ethnic group and adjusted for age, BMI, blood draw season, disease stage, treatment, and study site, two tagSNP in the GC gene were significantly associated with modest increases in serum 25(OH)D: rs12512631 variant G allele (β=0.097, P = 0.001) and rs7041 variant C allele (β=0.199, P <0.001) compared to common T allele. Following permutation-based correction, to adjust for multiple testing, these two tagSNPs remained statistically significant (adjustedP =0.03 and adjustedP = 0.002, respectively). TagSNPs rs12512631 and rs7041 were then assessed for association with survival; using a dominant model, rs7041 genotype TC+CC was associated with a decreased mortality risk (HR=0.59; 95% CI, 0.39-0.89) in multivariable models stratified by racial-ethnic group, compared to TT genotype. Similarly, rs7041 genotype TC+CC vs. TT was associated with a decreased risk of breast cancer-specific mortality, though not statistically significant (HR=0.65; 95% CI, 0.38-1.12). No association was observed for tagSNP rs12512631 using a dominant model. Our data suggest that genetic polymorphism in the GC gene may play a role in breast cancer prognosis in breast cancer survivors.

129	130
Health Status of Cancer Survivors Living in the Rural US Weaver K, Case D, Lu L, Geiger A The goal of this study was to utilize a representative public health survey, the National Health Interview Survey (NHIS), to estimate the proportion of adult cancer survivors who reside in rural areas of the US and to describe their health status relative to urban survivors. We used data from the NHIS (2006-2010), an annual in person survey of 30-40,000 households that provides a representative sample of the US civilian, non-institutionalized population. Adults with a self-reported history of cancer, excluding non-melanoma or "other" skin cancers, comprised the survivor sample. Self-reported health was assessed via a single global health question derived from the SF-36, "Would you say your health in general is excellent, very good, good, fair, or poor?". Psychological distress was assessed via the Kessler K-6 with a cut point of 6. Five conditions (hypertension, heart disease, stroke, diabetes, and lung disease) were summed to create a non-cancer comorbidity score. We defined rural using 2003 US census metropolitan area definitions. We used weighted analyses to account for the complex survey design, including the score test for demographic differences and logistic regression for health outcomes. Of the 7,804 cancer survivors, 20.8% resided in rural areas. Rural survivors were more likely than urban survivors to be non-Hispanic, White (p<.001), have less education (p<.001) and lack health insurance (p<.001). Rural survivors were more likely to report fair or poor health [OR=1.6,1.39-1.84], elevated levels of psychological distress [OR=1.52,1.29-1.79], ≥2 non-cancer comorbidities [OR=1.24,1.1-1.41], and unemployment due to health reasons [OR=1.91,1.58-2.31]. Adjustment for sex, race/ethnicity, age, marital status, education, income, insurance, time since diagnosis, and number of cancers, attenuated but did not eliminate rural-urban disparities observed in fair/poor heath [OR=1.24,1.03-1.48) and unemployment due to health=[1.73, 1.36-2.21]. Rural-urban differences in psychological distress and non-cancer comorbidities were no longer significant. Rural cancer survivors are at greater risk for a variety of poorer health outcomes, even many years after their cancer diagnosis, and should be a target for interventions to improve their health and well-being.	Long-Term Care Following Prostate Cancer Treatment: Findings from the Prostate Cancer Follow-Back Study Yassine M, Berenji M, Garlinghouse C, Northouse L, Copeland G, Demers R, Wei J Purpose: To evaluate patterns of continuation care provided to prostate cancer survivors after completion of treatment. Methods: 7,763 prostate cancer survivors diagnosed from 1985-2004 were identified through the Michigan Cancer Registry. The survey included questions on (i) demographics (ii) diagnostics and treatments (iii) quality of life, (iv) side effects, and (v) informational needs. Descriptive statistics were tabulated to identify factors associated with the receipt of preventive care once prostate cancer treatment had concluded. Logistic regression analyses were conducted to (i) assess whether diagnostic tests for prostate cancer, Prostate-Specific Antigen (PSA) and Digital Rectal Examination (DRE), were performed and (ii) ascertain the significant predictors associated with knowledge of the "watchful waiting" paradigm for surveillance of prostate cancer. Results: The survey mailing yielded a 36.8% response rate. 88.1% of the survivors reported having a PSA test since diagnosis of prostate cancer, with 93% of them having it done at least once per year. 98% of survivors described that their primary care physician had ordered the test. 60.6% of survivors recalled having a DRE examination performed since diagnosis of prostate cancer, with 73.3% of them having the evaluation done at least once per year. 71% of survivors reported that their primary care physician had performed this evaluation, compared to 75% of urologists and 83% of oncologists. Between 83%-95% of survivors reported that their healthcare provider did not refer them to general supportive services and hence did not seek them out. 43.7% of the survivors knew what "watchful waiting" was, but only 7.1% chose to follow the paradigm. Age and race were significant predictors of whether PSA test was performed, as well as whether a survivor had knowledge of "watchful waiting." Conclusions: Prostate cancer treatment is often associated with long-lasting side effects such as impotence and incontinence. Along with PSA values, clinicians must assess post-treatment distress long after treatment has ended to identify when supportive care is needed. Prompt attention to psychosocial concerns may preserve or restore valued relationships and prevent onset of future anxiety or depression.

131	
Tobacco smoke exposure, inflammation and steroid hormones in women of reproductive age Chung SH, Makambi KH, Soldin OP Background: Tobacco smoke exposure in women heavily influences cancer, certain pregnancy outcomes and is associated with infertility, preterm delivery, stillbirth, low birth weight, and sudden infant death syndrome. Objective: This study aimed to examine whether cigarette tobacco smoke exposure is associated with inflammation and steroid hormone levels. Methods: Serum C-reactive protein (CRP), an acute inflammatory marker, was measured in 293 healthy, non-pregnant women of reproductive age (18-45). Associations between CRP levels and various hormones (cortisol, aldosterone, thyroid-stimulating hormone, estrone, and progesterone) were also explored. Serum concentrations of CRP were determined using an immunoturbidimetric high sensitivity CRP (hsCRP) assay, and serum hormone and cotinine levels were measured by isotope dilution tandem mass spectrometry (LC/MS/MS). Results and Conclusions: A significant, positive correlation between hsCRP and cotinine levels was observed suggesting that smoking intensity plays an important role in inflammation. Age and BMI may also be associated with changes in hsCRP levels in women of reproductive age. No correlation was seen between hsCRP and levels of any of the examined hormones. Further studies examining the inter-relationships between hsCRP and sex hormone levels in women are essential in determining the role of inflammation and cancer in women's health.	


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The OSUCCC – James celebrated a remarkable amount of support in 2011. Les and Abigail Wexner and The Limited Brands Foundation gave $100 million to Ohio State, the largest individual gift in University history. A $100 million grant from the U.S. Department of Health and Human Services will fund a new radiation oncology center. The annual Pelotonia cycling event also raised more than $13 million for cancer research at Ohio State.

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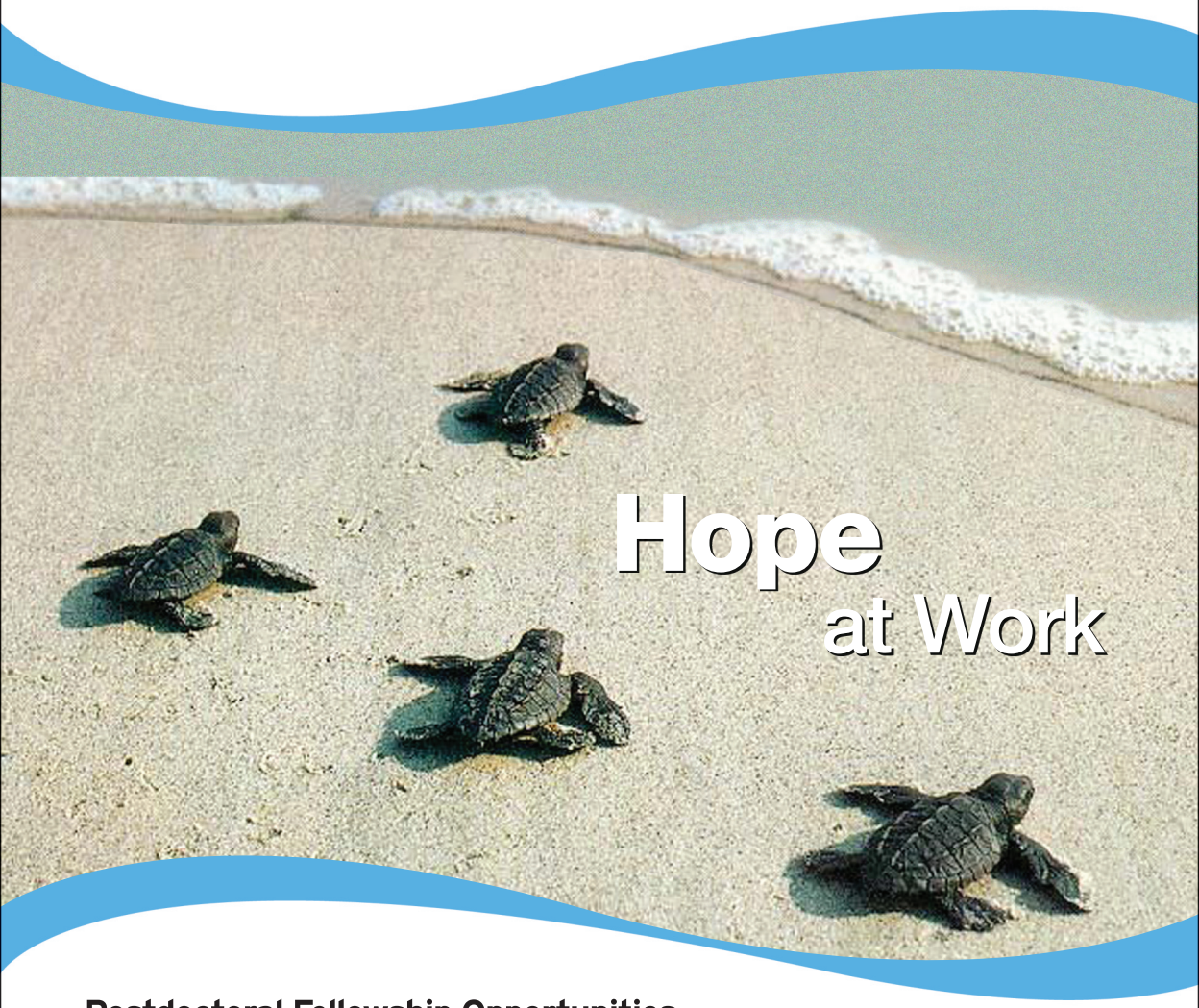
- *Smokefree en Español* — translated Smokefree.gov Web site, featuring smoking cessation content
- Updated version of the Automated Self-Administered 24-Hour Dietary Recall (ASA24™) tool
- Redesigned Health Information National Trends Survey (HINTS) Web site
- Interactive maps of DCCPS-awarded grants in the United States and internationally, including a breakout of ARRA-funded projects
- *Cancer Prevalence and Cost of Care Projections* Web site, with estimates through the year 2020 for multiple cancer sites
- *Research to Reality (on Cancer Control P.L.A.N.E.T.),* an online community of practice that links cancer control practitioners and researchers and provides opportunities for discussion, learning, and enhanced collaboration
- *Energy Balance Research at NCI*, including specific initiatives, research and training resources, and funding opportunities
- *Comparative Effectiveness Research (CER)* Web site, including funding information and resources
- DCCPS *Activities in Global Health* Web site
- Webinar series on dietary measurement error
- *SEER-Medicare Health Outcomes Survey (SEER-MHOS) Linked Database*, with guidance on obtaining and using the data files
- *Small Area Estimates for Cancer Risk Factors & Screening Behaviors*, model-based estimates for states, counties, and health service areas using combined survey data



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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 care-giver, family and hope.

We are inviting applications to our NCI funded R-25T post-doctoral training programs in Behavioral Oncology, directed by Dr. Paul Jacobsen, and in Molecular & Genetic Epidemiology, 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 recommendation. Appointees must be citizens or non-citizen nationals of the United States (U.S.), or must have been lawfully admitted to the U.S. for permanent residence. We are 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.

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 Nancy.Paradise@Moffitt.org for the Molecular & Genetic Epidemiology Program. Additional information may also be found at **www.moffitt.org/postdoctoraltraining**.

MOFFITT CANCER CENTER

Leading the Way
in Cancer Prevention Education and Training

MD Anderson Cancer Center Division of Cancer Prevention and Population Sciences

Recognizing Outstanding Leaders and Trainees

Susan Peterson, Ph.D., M.P.H., associate professor in Behavioral Science, is recognized as the 2011 Leading Mentor in Cancer Prevention.

Shine Chang, Ph.D., professor in Epidemiology and director of the Cancer Prevention Research Training Program, is recognized for her 2011 appointment to the UT Academy of Health Science Education.

2011 Outstanding Trainees in Cancer Prevention

Allison Burton, Ph.D., an R25T postdoctoral fellow, studies cancer survivorship in Lynch Syndrome and its impact on patients and families. She is mentored by Drs. Susan Peterson and Ellen Gritz in Behavioral Science.

Maria Chang, M.P.H., an R25T predoctoral student conducting research under the mentorship of Dr. Karen Basen-Engquist in Behavioral Science and Dr. Joya Chandra in Pediatrics. Her project is titled *"Using a multidisciplinary approach to promote healthy eating and physical activity for adolescent survivors of central nervous system tumors via technological means."*

Funding Opportunities in Cancer Prevention

Duncan Family Institute Fellowship in Cancer Prevention Research

The Duncan Family Institute is seeking candidates for the Mentored Junior Faculty Fellowship in Cancer Prevention. The fellowship provides mentoring and financial support for instructors seeking career paths in cancer prevention research.
For more information visit the website at **www.mdanderson.org/duncanfamilyinstitute.**

The University of Texas MD Anderson Cancer Prevention Research Training Program prepares health scientists and clinicians to assume leadership roles as research investigators in the field of cancer prevention and control. This multi-disciplinary training is accomplished through specific graduate courses, a seminar series and participation in ongoing peer-reviewed, mentored research.

- **NCI-Funded Summer Research Program in Cancer Prevention** is a 10-week program (June 4-August 10) open to undergraduate and graduate students. Open to U.S. citizens and permanent residents only.
- **NCI R25T Predoctoral and Postdoctoral Fellowships** are multi-year awards for multidisciplinary, mentored cancer prevention research training. At least two mentors from complementary disciplines are required. Applicants must be enrolled in or have completed a doctoral degree program in appropriate health sciences disciplines and be U.S. citizens or permanent residents.
- **NIDA R25T Predoctoral and Postdoctoral Fellowships** are multi-year awards for innovative mentored research in statistical genetics of addiction. Applicants with backgrounds in quantitative sciences with an interest in addiction research are encouraged to apply.
  The fellowship is open to visa holders.

Visit the website at **www.CancerPreventionTraining.org** for more information.

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

HUNTSMAN CANCER INSTITUTE UNIVERSITY OF UTAH

UNIVERSITY OF UTAH COLLEGE OF NURSING

Faculty Position Available

e Cancer Control and Population Sciences Research Program at Huntsman Cancer Institute (HCI) and the College of Nursing at the iversity of Utah seek a tenure-track investigator. The ideal candidate will have the opportunity to develop and direct a transdisciplinary search program focused on reducing cancer disparities. Knowledge and experience in community-engaged research and work with nority or other underserved populations (e.g., rural or frontier) are required. Experience working with Latinos and/or Native Americans is eferred.

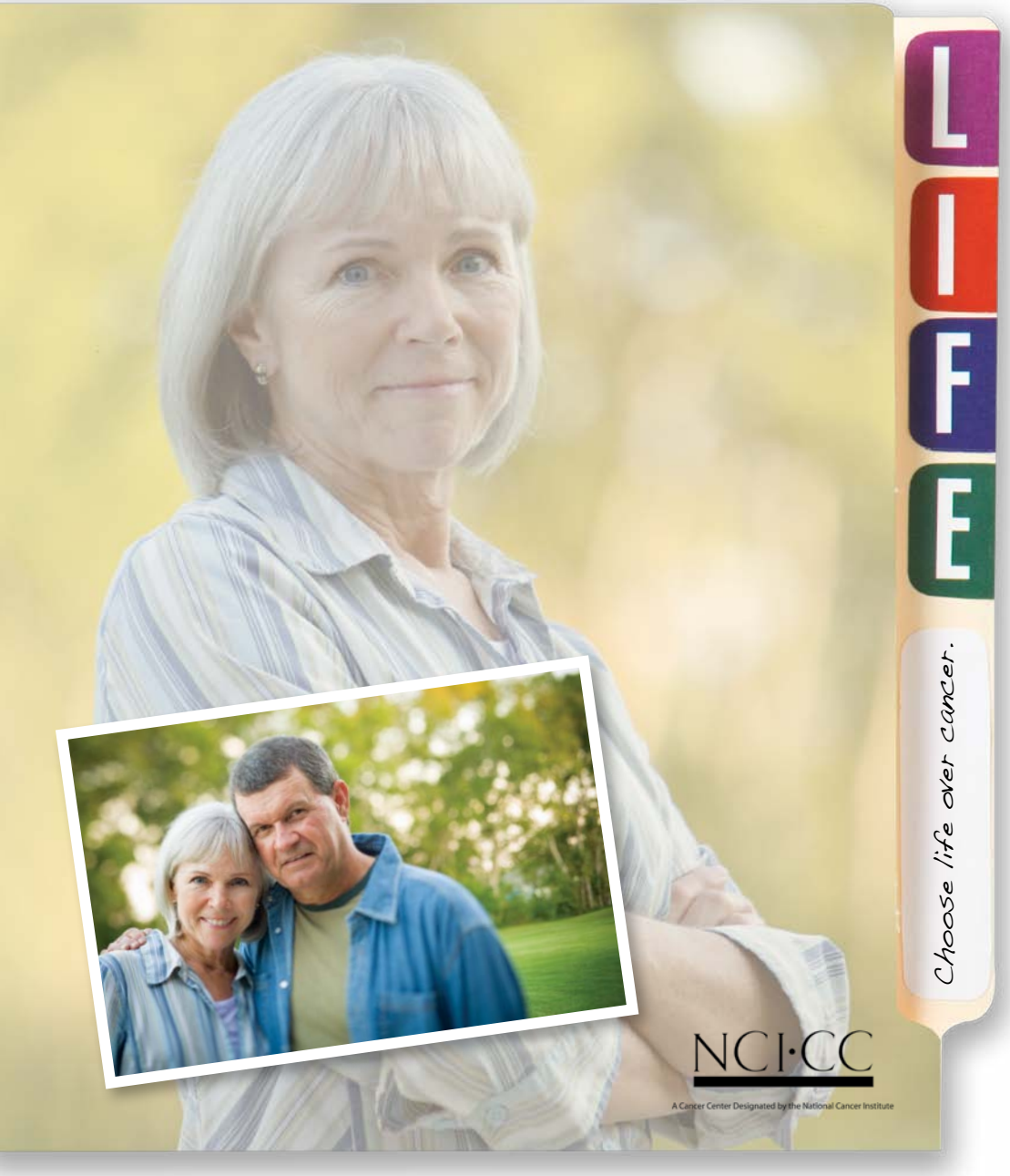
e College of Nursing has a long and distinguished history of excellence in nursing and gerontology education, research, and practice. The llege awards baccalaureate degrees to traditional and second-degree students as well as registered nurses. Graduate education offered the College of Nursing includes Master of Science, Doctor of Nursing Practice (DNP), and Doctor of Philosophy degrees. We also offer rtificates and a Master of Science degree in gerontology. The Emma Eccles Jones Nursing Research Center occupies the top floor of our novated building.

CI, an NCI-Designated Cancer Center, offers substantial opportunities for multidisciplinary collaborations in a highly collegial environment th potential for growth. Available resources include a Cancer Wellness Center, statewide SEER cancer registry, electronic health records d access to patients from Huntsman Cancer Hospital and Clinics, and links to statewide cancer and other health record data sources. dditional resources for disparities researchers include the following: Study Design and Biostatistics Center; Microarray and Genomic nalysis; Utah Population Database (a genealogic database); statewide Education and Research Outreach to Native American, Latino, and her underserved populations; Tissue Resource and Applications Core; Community Engagement; and Research Informatics.

e selected candidate will be expected to establish an independent, extramurally funded, research program and work across disciplines to llaborate with other Cancer Center investigators. He or she must also contribute to the educational mission through teaching and advising aduate students. Individuals holding a doctorate in nursing, public health, behavioral science, or other health-related discipline with additional ining or postdoctoral experience in research on cancer disparities are encouraged to apply. Interested candidates should apply online by bmitting curriculum vitae, statement of research interests, and three letters of recommendation at http://utah.peopleadmin.com/postings/9560.

e University of Utah values candidates who have experience working in settings with students from diverse backgrounds, and possess a strong commitment to improving cess to higher education for historically underrepresented students.

e University of Utah is an Equal Opportunity/Affirmative Action employer and educator. Minorities, women, and persons with disabilities are strongly encouraged to apply terans' preference. Reasonable accommodations provided. For additional information: http://www.regulations.utah.edu/humanResources/5-106.html.



Choose life over cancer.

Your best hope for a proper diagnosis, effective treatment, and sustained quality of life lies in the hands of a team of cancer specialists at the CTRC, the only NCI-designated Cancer Center in South Texas. Here, the highest levels of excellence in cancer research and quality of care is the standard of care.

At CTRC, we work hard every day to help you and your family choose life over cancer.

www.CTRC.net • (210) 450-1000

UT Medicine
CTRC
Health Science Center San Antonio

New Endowed Chair in Cancer Epidemiology
Comprehensive Cancer Center
University of Alabama at Birmingham

The University of Alabama at Birmingham Comprehensive Cancer Center, along with the Department of Epidemiology in the School Public Health, is seeking candidates for the endowed *Caldwell Marks Chair in Cancer Epidemiology*.

The existing strong collaborative research and clinical environment at the University of Alabama at Birmingham provides a synergy and a multidisciplinary environment conducive to developing outstanding research programs in a variety of areas that contribute to the primary risk or progression of cancer. Specific areas of investigation could include environmental, occupational or behavioral exposures, immune factors, or genetics (epigenetics, mitochondrial genetics, and/or the identification of major gene or phenotype modifying genes) pre-disposing to cancer or cancer progression.

A package to build a program of research in cancer epidemiology will be provided that includes resources to attract additional multiple junior to mid-level recruits. . The UAB Comprehensive Cancer Center (www.ccc.uab.edu) has approximately $100 million in annual direct extramural funding, six major research programs, fifteen shared facilities, and four SPOREs. In addition, UAB hosts a variety of multidisclipinary centers, such as the Nutrition and Obesity Center, the Heflin Center for Genetic and Genomic Research, the Minority Health & Health Disparities Research Center, the Diabetes Research Center, and the Center for Clinical and Translational Sciences. The Department of Epidemiology (http://www.soph.uab.edu/default.aspx?id=16) has 24 faculty and a large NIH-funded program in genetic epidemiology and works closely with the Section of Statistical Genetics in the Department of Biostatistics (http://www.soph.uab.edu/ssg/).

The endowed chair is a tenure or tenure-earning position with salary and rank commensurate with the candidates' qualifications. Nominations and applications should include full curriculum vitae and names and addresses of at least three references and should be submitted to:

Caldwell Marks Chair in Cancer Epidemiology

Donna K. Arnett, PhD
Chairman, Search Committee – Cancer Epidemiology
University of Alabama at Birmingham
1530 3rd Avenue South, Webb 419
Birmingham, AL 35294-3360

The University of Alabama at Birmingham is an Affirmative Action/Equal Opportunity Employer. UAB is especially interested in candidates who contribute to the diversity and excellence of our academic community through their research, teaching and/or service.

Postdoctoral Fellowships

Computational Genomic Epidemiology of Cancer

Program Director: Robert C. Elston, Ph.D. Associate Director: Li Li, MD, Ph.D.

CASE WESTERN RESERVE UNIVERSITY | CASE COMPREHENSIVE CANCER CENTER

Program Features:

- Career development toward independent funding
- Personal research projects mentored by nationally recognized faculty
- Competitive salaries and research seed money
- Outstanding research facilities at Case Western Reserve University, University Hospitals Case Medical Center, and Cleveland Clinic **Applications currently being accepted for positions starting August 1st, 2012 To apply and for more information visit:** http://cancer.case.edu/training/computational genomics **Call:** 216.844.5375 or **Email:** lyn.haselton@case.edu

****ASPO Attendees:** Associate Director Li Li, MD, Ph.D., will be onsite throughout the meeting to meet with you. **If interested, please contact him at 216.224.5752**

Applications from women and underrepresented minorities are encouraged.

THE UNIVERSITY OF ARIZONA

NOW SEEKING APPLICATIONS FOR 2013!

Postdoctoral Fellowship in Cancer Prevention and Control

The Cancer Prevention and Control (CPC) Program at The University Arizona Cancer Center (UACC) is seeking applications for postdoctoral research trainees to be appointed in 2013. The positions are funded through a R25T grant from the National Cancer Institute (NCI). Individuals from the health professions, biomedical, and behavioral sciences are trained to become leaders in the field of cancer prevention and control via formal coursework, seminar series, workshops, conferences, and interactions with mentors.

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

Reasons to apply for the R25T Postdoctoral Fellowship:

Top-level Scientists

The opportunity to conduct research within a team of leading CPC scientists with extensive training and mentoring experience.

Individualized Research

Our flexible, specialized curriculum supports development of independent research projects in fellows' areas of interest.

Multidisciplinary

A diverse experiential environment provides transdisciplinary collaboration across academic departments, statewide, nationally and internationally.

NCI-designated Cancer Center

The UACC is one of forty NCI-Designated Comprehensive Cancer Centers. One of six with NCI Specialized Programs of Research Excellence (SPORE) for gastrointestinal cancers and for lymphatic cancers.

Visit us online at:

www.azcc.arizona.edu/academics/cpc-fellowship or contact the R25 Program at R25Program@azcc.arizona.edu

THE UNIVERSITY OF ARIZONA CANCER CENTER

Dedicated to Care.
Dedicated to a Cure.

UW Health
University of Wisconsin
Carbone Cancer Center
uwhealth.org/cancer