AMERICAN SOCIETY
of
PREVENTIVE ONCOLOGY

37th ANNUAL MEETING

PROGRAM & ABSTRACTS

March 9-12, 2013

The Peabody Hotel, Memphis, Tennessee

American Society of Preventive Oncology

37th Annual Meeting

President:
Peter Shields, MD
The Ohio State University

Program Co-Chairs:

Les Robison, PhD
St. Jude Children's Research Hospital

Graham Colditz, MD, DrPH
Washington University in St. Louis

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. Graham Colditz** and **Les Robison** for their extraordinary commitment in facilitating the development of the program for this meeting, and to the entire 2013 ASPO Program Committee for sharing their expertise and their valuable contributions to the program.

2013 Program Committee

Les Robison, PhD, Co-Chair
St. Jude Children's Research Hospital

Graham Colditz, MD, DrPH, Co-Chair
Washington University in St. Louis

Smita Bhatia, MD, MPH
City of Hope

Wendy Demark-Wahnefried, PhD
University of Alabama-Birmingham

Sue Gapstur, PhD
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Elena Martinez, PhD
UC – San Diego

Polly Newcomb, PhD
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The Ohio State University

Peter Shields, MD
The Ohio State University

Brian Sprague, PhD
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Amy Trentham-Dietz PhD
University of Wisconsin - Madison

Celine Vachon, PhD
Mayo Clinic

Erika Waters, PhD
Washington University in St. Louis

Margaret Wrensch, PhD
UC – San Francisco

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 CA177238)
The Ohio State University
Breast Cancer Research Foundation (BCRF)

American Cancer Society
In 2012, the American Cancer Society and American Society of Preventive Oncology announced 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.

Second Annual Calle/Rodriguez Minority Travel Awards for a Top-Ranked Abstract awardees:
Shaneda Warren Andersen, PhD, University of Wisconsin – Madison
Breast Cancer Susceptibility Loci in Association with Age at Menarche, Age at Natural Menopause and the Reproductive Lifespan

Bettina Drake, PhD, MPH, Washington University
Effects of Vitamin D and Obesity on Prostate Cancer Recurrence

Second Annual Electra Paskett Scholarship Travel Award for the Top-Ranked Pre- or Post-doctoral fellow:
Hazel B. Nichols, PhD, National Institute for Environmental Health Sciences
Hormonal risk factors for breast cancer and DNA methylation

EXHIBITORS

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

Breast Cancer Surveillance Consortium (BCSC)

The Breast Cancer Surveillance Consortium has the nation's largest longitudinal collection of mammography data from breast cancer screening in community practice. Our collaborative network of mammography registries is supported by a Statistical Coordinating Center and funded by the National Cancer Institute. The BCSC is a rich resource for population-based research.

Cancer Prevention Fellowship Program, National Cancer Institute, NIH

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.

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 11th, in Grand Salons D & E. The posterboards will be in place by Monday afternoon at 2pm. Please have your poster displayed by 5pm for judging purposes. The poster session and reception will be from 6pm – 8pm. Your poster must be removed by Noon on Tuesday afternoon.

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 Noon on Tuesday afternoon will be removed 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 38th Annual Meeting of the American Society of Preventive Oncology will be held:

March 8-11, 2014, at the Hyatt Regency Crystal City, Arlington, VA

SATURDAY, MARCH 9

3:00 pm – 7:00 pm
Skyway Room

Cancer Prevention & Control Associate Directors/Program Leaders Meeting - Part 1
(Invitation Only)
Organizers:
Peter Shields, MD, The Ohio State University and
Electra Paskett, PhD, The Ohio State University

SUNDAY, MARCH 10

8:00 am – 5:00 pm

Registration – *(Grand Ballroom Foyer West)*

8:00 am – Noon
Skyway Room

Cancer Prevention & Control Associate Directors/Program Leaders Meeting - Part 2
(Invitation Only)

10:00am – 1:00pm
Alonzo Locke Room

New Investigators Workshop (Invited Applicants Only)
Faculty:
Judith Jacobson, DrPH, Columbia University (organizer)
Deborah Glueck, PhD, University of Colorado – Denver
William Klein, PhD, National Cancer Institute
Joseph Neglia, MD, MPH, University of Minnesota

NIW Participants:

Cancer-related health behaviors and overweight/obesity among Mexicans in the United States, 1997-2011: Distinguishing the effects of arrival cohort and duration of residence
Georgiana Bostean, PhD, UCLA

Cervical cancer screening utilization among HIV-positive disadvantaged women
Faith Fletcher, PhD, MA, UT M.D. Anderson Cancer Center

A pooled investigation of circulating adiponectin levels and risk of multiple myeloma
Jonathan Hoffman, PhD, MPH, National Cancer Institute

Communication and treatment decision-making in prostate cancer: characterizing the experience of African American men
Nynikka Palmer, DrPH, MPH, Wake Forest University

Gene-specific promoter methylation as a biomarker of breast cancer risk in women with benign breast disease
Laura Reimers, MPH, Columbia University

Selecting efficient risk groups for breast cancer stratified screening strategies using genetic biomarkers
Brandy Ringham, MS, University of Colorado – Denver

The effect of online cancer risk assessment tools on cancer prevention behaviors: An evaluation of MD Anderson's Cancer Risk Check
Shelley Hovick, PhD, UT M.D. Anderson Cancer Center

SUNDAY, MARCH 10

Noon – 4:00 pm
Boardroom

Working Lunch Meeting of the ASPO Executive Committee

1:00 pm – 4:00 pm
Skyway Room

ASPO Junior Members Sessions
Publicly Available Databases for Cancer Prevention and Control Research
Chair: Hazel Nichols, PhD, National Institute of Environmental Health Sciences

Anne Kirchhoff, PhD – University of Utah (BRFSS)
Ann-Marie Meyer, PhD – University of North Carolina (SEER-Medicare)
Kathryn Royse, MPH, MSPH – University of Alabama-Birmingham (TCGA)
Brian Sprague, PhD – University of Vermont (BCSC)
Erika Waters, PhD – Washington University (NHIS)

Transitioning to Independence and Maintaining a Research Career in the New Funding Climate
Chair: Jessica Chubak, PhD, Group Health Research Institute

Melinda Irwin, PhD, MPH – Yale School of Public Health
Paul Jacobsen, PhD – H. Lee Moffitt Cancer Center
Linda Nebeling, PhD, MPH, RD – National Cancer Institute

SUNDAY, MARCH 10

2:00 pm – 4:00 pm
General Moorman

Meeting of NCI R25T Training Program Principal Investigators
Organizer: Shine Chang, PhD, MD Anderson Cancer Center

4:00 pm – 7:00 pm
Grand Salon A

OPENING SESSION OF THE ASPO GENERAL MEETING

ASPO Presidential Address
Cancer prevention on the personalized medicine examination table: Big issues and tough questions
Peter Shields, MD, Ohio State University

Joseph Cullen Awardee Address:
Using the 3 T's to address tobacco-related disparities
David Wetter, PhD, UT M.D. Anderson Cancer Center

Distinguished Achievement Award Address:
A call for sanity in cancer prevention research: We can't keep doing the same thing and expecting different results
Polly Newcomb, PhD, Fred Hutchinson Cancer Research Center

Symposium 1:
Transdisciplinary Research: Lessons and Future Directions
Chaired by Robert Hiatt, MD, PhD, UC-San Francisco

The concept of the transdisciplinary approach to science
Robert Hiatt, MD, PhD, UC-San Francisco

Building transdisciplinary research teams: lessons learned
Timothy Rebbeck, PhD, University of Pennsylvania

Lessons from the NCI: The added value of transdisciplinary science
Kara Hall, PhD, DCCPS, National Cancer Institute

The value of the transdisciplinary approach to solving problems in cancer control research
Sarah Gehlert, PhD, Washington University in St. Louis

7:00 pm – 8:00 pm
Grand Salon B

Networking Mixer (Junior/Senior Member Networking Event)

8:00 pm

Dinner on your own

MONDAY, MARCH 11

8:00 am – 9:30 am
Grand Salon B

Concurrent Breakfast Sessions

1) Special Interest Group Breakfast: Survivorship & Disparities
Co-Chairs: Anita Kinney, PhD, University of Utah, and
Electra Paskett, PhD, The Ohio State University

Update on cancer survivors in the United States: Implication for cancer care and research
Deborah Winn, PhD, National Cancer Institute

Community-based activities of the Deep South Network and potential impact on breast cancer mortality in a historically underserved population
Bradford Jackson, PhD, University of Alabama-Birmingham

Childhood cancer survivors and social security coverage: A report from the Childhood Cancer Survivor Study (CCSS)
Anne Kirchhoff, PhD, MPH, University of Utah

Disparities in cancer screening rates among sexual minority adults
Charles Kamen, PhD, University of Rochester

Cocinar Para Su Salud!: Effects of a culturally-tailored dietary intervention among Hispanic breast cancer survivors
Heather Greenlee, ND, PhD, Columbia University

8:00 am – 9:30 am
Grand Salon C

2) Special Interest Group Breakfast: International Cancer Prevention
Co-Chairs: Dejana Braithwaite, PhD, UC-San Francisco and
Karen Wernli, PhD, Group Health Research Institute

Childhood height and weight and thyroid cancer risk in the Copenhagen School Health Records Register Cohort
Cari Kitahara, PhD, National Cancer Institute

Prognostic factors of head and neck cancer: A multicenter study in Central and Eastern Europe
Mohammed Al-Temimi, MBChB, MPH, University of Utah

The impact of stressful life events on tobacco smoking prevalence in the French population: longitudinal findings from GAZEL
Sara L. Tamers, PhD, MPH, Harvard School of Public Health& Dana-Farber Cancer Institute

9:30 am – 10:00 am

Break

MONDAY, MARCH 11

10:00 am – 11:30 am
Grand Salon A

Concurrent Paper Session 1: HPV/Gynecologic Cancers
Chair: Andrew Olshan, PhD, University of North Carolina

Human Papilloma Virus vaccine knowledge and uptake among adolescent boys and girls in an Appalachian Ohio county
Madhav Bhatta, PhD, MPH, Kent State University

Parental and health care provider communication and adolescent HPV vaccination uptake in an Appalachian Ohio county
Lynette Phillips, PhD, MSPH, Kent State University

Adolescent AFIX: A public health systems approach to improving uptake of adolescent vaccines
Melissa Gilkey, PhD, MPH, University of North Carolina

Interactions between HPV 16 integration status and polymorphisms in the XRCC4 gene in cervical dysplasia risk
Michael Scheurer, PhD, Baylor College of Medicine

Overuse of Pap testing among older women and women with a hysterectomy
Deanna Kepka, PhD, MPH, University of Utah

Elevated serum calcium as a biological marker for ovarian cancer
Halcyon Skinner, PhD, MPH, University of Wisconsin – Madison

10:00 am – 11:30 am
Grand Salon B

Concurrent Paper Session 2: Mechanisms/Outcomes
Chair: Celine Vachon, PhD, Mayo Clinic

An efficient resource to accelerate research into the cause and prevention of breast cancer: The Love/Avon Army of Women
Leah Wilcox Eshraghi, MPH, Dr. Susan Love Research Foundation

Lifestyle factors and the risk of a second breast diagnosis after DCIS in the Wisconsin In Situ Cohort
Vicki McLaughlin, MS, University of Massachusetts Amherst

Hormonal risk factors for breast cancer and DNA methylation
Hazel Nichols, PhD, National Institute of Environmental Health Studies

Physical activity, tumor PTGS2 expression, and colorectal cancer survival: A Molecular Pathological Epidemiology (MPE) approach
Reiko Nishihara, PhD, Harvard University Medical School

A prospective study of circulating adipokine levels and risk of multiple myeloma
Jonathan Hofmann, PhD, MPH, National Cancer Institute

Immune reconstitution and risk of Hodgkin's lymphoma among a sample of HIV-infected male veterans
Marc Kowalkowski, MS, Baylor College of Medicine

MONDAY, MARCH 11

11:30am-Noon

Break

Noon – 1:30 pm
Grand Salon C

Best Hot Topic Papers: Cancer Epidemiology, Biomarkers and Prevention (CEBP)
(Box lunches provided)
Chair: Timothy Rebbeck, PhD, University of Pennsylvania

Breast cancer incidence rates in U.S. women are no longer declining
Carol DeSantis, MPH, American Cancer Society

The association of telomere length and cancer
Lisa Mirabello, PhD, National Cancer Institute

Obesity and thyroid cancer risk among U.S. men and women
Cari Meinhold Kitahara, PhD, National Cancer Institute

2:00 pm – 3:30 pm
Grand Salon A

Symposium 2: Cancer Survivorship: Second Cancers
Chaired by Smita Bhatia, MD, MPH, City of Hope Medical Center

Epidemiology of second cancers
Joseph Neglia, MD, MPH, University of Minnesota

Molecular pathogenesis of second cancers
Smita Bhatia, MD, MPH, City of Hope Medical Center

Screening for early detection and interventional strategies
Kevin Oeffinger, MD, Memorial Sloan Kettering Cancer Center

A pharmachologic intervention as a risk-reduction strategy
Melanie Palomares, MD, MS, City of Hope Medical Center

MONDAY, MARCH 11

3:30 pm – 4:00 pm	**Break**
4:00 pm – 5:30 pm **Grand Salon A**	**Symposium 3: Role of Risk Prediction in Cancer Prevention and Control** Chaired by Erika Waters, PhD, Washington University in St. Louis **Communicating personalized risk prediction data to laypeople: strategies, challenges, and opportunities** Erika Waters, PhD, MPH, Washington University in St. Louis **Looking forward: moving risk prediction into broader practice** William M.P. Klein, PhD, National Cancer Institute **Methods for risk prediction** Bernard Rosner, PhD, Harvard School of Public Health **Practical concerns related to the implementation and maintenance of an internet-based risk assessment tool** Hank Dart, MS, Washington University in St. Louis
5:30 pm – 6:00 pm **Grand Salon A**	**ASPO Business Meeting** (open to all) (see draft of ASPO Strategic Plan on pages 17-19 for discussion at Business Meeting)
6:00 pm – 8:00 pm **Grand Salon D & E**	**Poster Session and Reception** (dinner on your own) Presentation of Best Poster Awards Presentation of Electra Paskett Scholarship Award Presentation of American Cancer Society Travel Awards *The Poster Reception is sponsored in part by The Ohio State University Comprehensive Cancer Center – Arthur G. James Cancer Hospital and Richard J. Solove Research Institute*
8:00pm	**Dinner on your own**

TUESDAY, MARCH 12

8:00 am – 9:30 am
Grand Salon B

Concurrent Breakfast Sessions
Special Interest Group Breakfast: Behavioral Science & Health Communication
Co-chairs: Amy McQueen, PhD, Washington University in St. Louis and
Wen-ying Sylvia Chou, PhD, MPH, National Cancer Institute

New and emerging methods in behavioral science: Moving beyond buzzwords

8:00 am – 9:30 am
Grand Salon C

Special Interest Group Breakfast: Screening
Co-Chairs:
Mary Beth Terry, PhD, Columbia University Mailman School of Public Health and
Amy Trentham-Dietz, PhD, University of Wisconsin Carbone Cancer Center

How to leverage screening studies for primary prevention

Panelists:
Anna Giuliano, PhD, Moffitt Cancer Center
Ernie Hawk, MD, MPH, UT M.D. Anderson Cancer Center
Ellen O'Meara, PhD, Group Health Research Institute

9:30 am – 10:00 am

Break

10:00 am – 11:30 am
Grand Salon A

Symposium 4: Cancer Prevention and Control Among Hispanic Populations
Chaired by Elena Martinez, PhD, UC San Diego

Racial/Ethnic differences in HPV natural history and related cancers
Anna Guiliano, PhD, Moffitt Cancer Institute

Liver cancer in U.S. Hispanics: Epidemiology and outcomes
Hashem B. El-Serag, MD, MPH, Baylor College of Medicine

Genomics of racial disparities in childhood leukemia
Jun Yang, PhD, St. Jude Children's Hospital

Developing an outreach program in pediatric oncology in the U.S.-Mexico border: A twining model approach
Paula Aristizabal, MD, Rady Children's Hospital San Diego and UC-San Diego

TUESDAY, MARCH 12

11:30 am – 11:45 am
Grand Salon A

ASPO/BCRF Fellowship Presentation
Cancer stem cell markers a role for prevention
Rachel Atkinson, PhD, UT M.D. Anderson Cancer Center

Noon – 1:30 pm
Grand Salon B

Concurrent Lunch Programs (box lunches available)
1) ASPO Junior Member Lunch:
NCI Session on Career Development for Doctoral Students, Postdoctoral Fellows, and Junior Faculty
Chairs: Ming Lei, PhD, National Cancer Institute and
Susan Perkins, PhD, National Cancer Institute
Panel:
Elizabeth Jacobs, PhD, University of Arizona Cancer Center
Harvey Murff, MD, Vanderbilt-Ingram Cancer Center

Noon – 1:30 pm
Grand Salon C

2) Mid- and Senior Faculty Development Lunch
Cancer Prevention/Control Research: What are Study Sections Looking for?
Moderator: Peter Shields, MD, The Ohio State University
Panelists: Electra Paskett, PhD, (EPIC), The Ohio State University
Robert Klesges, PhD, (CHLP), St. Jude Children's Research Hospital
Cheryl Cox, PhD (NRCS), St. Jude Children's Research Hospital

2:00 pm – 3:30 pm
Grand Salon A

Concurrent Paper Session 3: Disparities
Chair: Wendy Demark-Wahnefried, PhD, University of Alabama-Birmingham

Contribution of health behaviors to the association between area-level socioeconomic status and cancer mortality
Theresa Hastert, MPP, Fred Hutchinson Cancer Research Center

Comorbidity affects mortality among African-American and White women with breast cancer after 28 years of follow-up
Monika Izano, MSc, University of California – San Francisco

The role of geography in low mammography screening rates and late-stage breast cancer diagnosis in Utah
Kevin Henry, PhD, University of Utah

The association of neighborhood poverty and driving time with colorectal cancer screening in a RCT of urban safety net patients
Sandi Pruitt, PhD, UT Southwestern Medical Center

Racial disparities in knowledge and attitudes related to HPV self-testing among women at risk for cervical cancer
Melissa Gilkey, PhD, MPH, University of North Carolina

Genetic and environmental predictors of serum vitamin D3 level in African Americans
Ken Batai, PhD, University of Illinois- Chicago

2:00 pm – 3:30 pm
Grand Salon C

Concurrent Paper Session 4: Colorectal Cancers
Chair: Les Robison, PhD**,** St. Jude Children's Research Hospital

Aspirin and colorectal cancer incidence and mortality by CTNNB1 expression: A Molecular Pathological Epidemiology (MPE) Study
Reiko Nishihara, PhD, Harvard Medical School

The impact of colonoscopy screening guidelines that incorporate precursors in the serrated pathway: a cost-effectiveness analysis
Andrea Burnett-Hartman, PhD, MPH, Fred Hutchinson Cancer Research Center

An innovative strategy to promote colorectal cancer screening among the underserved
Beti Thompson, PhD, Fred Hutchinson Cancer Research Center

Patterns of colorectal cancer testing in men and women newly eligible for screening
Karen Wernli, PhD, Group Health Research Institute

Predictors of colorectal cancer surveillance among radiation-treated survivors of childhood cancer
Casey Daniel, MPH, University of Alabama - Birmingham

Second cancer risk in colorectal cancer survivors: associations with body mass index
Todd Gibson, PhD, National Cancer Institute

3:30 pm

Conference Concludes

ASPO STRATEGIC PLAN – December 18, 2012 – DRAFT

VISION:
ASPO is the organization for accelerating progress towards cancer prevention and control

MISSION:
To foster the continuing development of investigators and other professionals involved in cancer prevention and control, and the exchange and translation of scientific information to reduce the cancer burden.

GOALS:
GOAL 1: CAREER DEVELOPMENT: Provide exceptional continuing career development to investigators and other professionals at any career stage to maximize their success.

Goal 1 Objectives:

1. ***Increase attendance at each career development workshop by 20% over the next 5 years, including increasing attendance at least 5% per year in years 1-3***
    a. Advertise to: Cancer Center Directors and Associate Directors and Program Leaders (for distribution to entire cancer center faculty), R25 lists, Career Development Award Lists (e.g., K07s, ACS MRSGs, Prevent Cancer Foundation, T32s, F32s, Komen Career Catalyst Research Grants, DOD career awards, NSF career awards), and state public health departments.
    b. Advertise in journals (e.g., CEBP, Cancer Prevention Research, Annals of Behavioral Medicine)
    c. Use social media (Twitter, Facebook, others)
    d. Enhance the impact of advertising, by messaging the specific topics and speakers for workshops/career-related meetings well in advance of the meeting

2. ***Continue existing and add 2 more career development workshops over the next 5 years.***
    a. For example, new workshops could involve networking events at the annual meeting, roundtable discussions, meet the expert sessions, mentoring marketplace, and/or events related to Special Interest Groups (SIGs)
    b. Offer additional career development workshops (e.g., target differing career levels, or specific topic areas, such as negotiation, recruitment, mentorship, etc.) on a rotating basis and/or adjacent to the main meeting
    c. Continue offering New Investigator Workshop at annual meeting
    d. Continue offering junior and senior member sessions
    e. Add a mid-career session

3. ***Achieve 90% or better scores at the highest level(s) of satisfaction on the evaluations of career development workshops.***
    a. Conduct annual meeting surveys to determine levels of satisfaction
    b. Identify ideas for future workshop topics/content from specific subgroup list-servs, etc. and share responses with Program Planning Committee and/or individual subgroups working on specific career development workshops (junior members group, AD/PL sessions, etc.)

4. ***Establish and maintain remote online communication for career development throughout the year.***
    a. Establish and implement one "webinar" (scientific content or professional development) at least every other year for the next 5 years
    b. Establish list-servs for specific groups within ASPO: Special Interest Groups, Junior Members, Mid-Career Members, Senior Members, Associate Director/Program Leader Members

c. Consider series of "round robin" conference calls around specific cancer-related topic. Calls should be highly-directed with specific end goals

5. ***Promote and offer on-going career development opportunities to enhance careers of diverse cancer prevention researchers***
    a. Establish networking sessions at annual meeting
    b. Establish at least 1 workshop for diverse members and others attending at the annual meeting
    c. Have at least 15% candidates from diverse backgrounds admitted to the New Investigator Workshop
    d. Maintain existing awards and establish new awards
    e. Develop and institute partnership opportunities other groups and associations to offer joint programming across each meeting or joint remote career development sessions

GOAL 2: EXCHANGE OF SCIENTIFIC INFORMATION: Provide forums for the ongoing exchange of scientific information.

Goal 2 Objectives

1. ***Increase participation at annual meetings***
    a. Increase attendance at annual ASPO meetings by 20% over the next 5 years, including increasing attendance at least 5% per year in years 1-3
    b. Increase attendance in each Special interest Group by 10% in each successive year convened
    c. Increase abstract submission at annual ASPO meetings by 20% over the next 5 years, including increasing submission by 5% per year in years 1-3

2. ***Improve satisfaction at annual meetings***
    a. Maintain mean scores at the highest level for overall meeting satisfaction, meeting content, and interdisciplinarity of the symposia. Potential strategies: conduct meeting evaluations and collect responses from at least half of registered attendees; establish and circulate defined criteria for evaluation of abstracts; consider whether some abstracts should be rejected; develop and institute a process for evaluating SIG activity/inactivity

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3. ***Improve use of the page/month allotment in CEBP for SIG group and other articles***
    a. Submit material in every month (i.e., have ASPO articles in every volume of CEBP)
    b. Include an article on the presidential address
    c. Initiate a call for papers to membership
    d. Increase the number of SIGs submitting articles
        - Include articles based on each breakfast session from the annual meeting every year
        - At least 4 SIGs write articles every year

4. ***Establish an interactive listserve to allow members to disseminate scientific information***
    a. Year 1: Establish and pilot test a listserve that features at least 1 post per month; Year 3: Features at least 2 posts per month; Year 5: Features at least 4 posts per month
    b. Provide regular email bulletin/digest/news blast

5. ***Establish electronic methods that reflect the science and effectively serve our members***
    a. Create a subcommittee that will be in charge of these endeavors and which will monitor them regularly and provide progress reports to the Executive Board.
    b. Pilot test Podcasts, Facebook, and Twitter
    c. Enhance the website

6. ***Conduct joint activities with other organizations, associations, meetings and the cooperative/network groups***

a. Explore opportunities for scheduling future ASPO meetings adjacent to other annual meetings or events of other organizations
b. Explore opportunities for conducting an ASPO-sponsored session at another professional meeting or provide venues for other organizations to sponsor sessions or fellows within ASPO annual meetings

GOAL 3: TRANSLATION OF SCIENTIFIC INFORMATION: Foster implementation and broaden dissemination of scientific discoveries.

Goal 3 Objectives:

1. ***Share the latest/greatest advances in cancer prevention and control with health care professionals, public health practitioners, and advocates via an annual ASPO workshop (perhaps offered in association with the annual meeting) to enhance understanding and stimulate action.***
   a. Increase participation of other groups (e.g., advocates, public health professionals, medical professionals) in ASPO. Strive for representation of 5%by disseminating invitations, and providing leadership opportunities.
   b. Conduct hot topics workshops directed toward these groups

2. ***Ensure that the annual meeting generates press coverage***
   a. Issue an ASPO press release each year
   b. Encourage authors of the top 3-5 abstracts to contact their institution's press/media staff to generate press releases

3. ***Promote ASPO's relationship and communication with key representatives from leading institutions involved in policy development and implementation.***
   a. Invite key representatives from agencies such as NIH, CDC, FDA, AHRQ, USPSTF, NGO's (e.g., Komen for the Cure, Avon, BCRF, C-Change) to participate in ASPO activities
   b. Partner with representatives from these agencies in educational or policy initiatives

4. ***Highlight one policy topic/year as a priority for a concerted, ASPO-led effort in education, dissemination, and/or adoption on the local, regional, state, and national levels across its leadership committees and members.***
   a. Engage ASPO membership in the nomination/prioritization process
   b. Develop a supporting document(s) such as a position paper, literature synthesis or meta-analysis, perspective, editorial, or commentary to be published in the most appropriate venue (e.g., CEBP, Am J of Preventive Med, etc.) by the ASPO executive committee annually

5. ***Encourage ASPO members to mobilize local/regional (e.g., cross-center) teams to implement and disseminate this priority within their institutions***

GOAL 4: SUSTAINABILITY: Enhance organizational and financial resources to maximize membership growth, retention and involvement.

Objectives

- Increase revenue by 35% over the next 5 years
- Maintain the current level of fellowships at ___ over the next 5 years
- Retain 95% of annual memberships each year
- Increase membership by 20% over 5 years
- Enhance diversity in membership and leadership (and think about how to measure this)

PAPER SESSION ABSTRACTS -- Monday, March 11, 2013

Session 1: HPV/Gynecologic Cancers

Madhav Bhatta, PhD, MPH

Human Papillomavirus Vaccine Knowledge and Uptake among Adolescent Boys and Girls in an Appalachian Ohio County

Bhatta MP, Phillips L, Frew S, Burns J, Cascarelli N

Background: Population-based studies of human papillomavirus (HPV) vaccine uptake among both adolescent boys and girls are limited. The purpose of this study was to examine middle and high school student knowledge and behaviors surrounding the HPV vaccine in a rural Appalachian Ohio county. Methods: Five questions regarding the HPV vaccine were added to 2012 Youth Risk Behavior Survey (YRBS) administered in an Ohio Appalachian county. The participants were asked whether or not they had heard of the HPV vaccine; been given the vaccine and, if yes, the number of shots received; and whether their health care provider and/or their parents had discussed the vaccine with them. The voluntary and anonymous survey was completed by a total of 1,300 adolescent boys and girls. Results: Of the 596 and 704 high school students who completed the survey, 51.9% were male and 48.1% were female, and 95% were white. Regarding whether they had ever heard of the HPV vaccine, 49.1%, 29.6%, 21.2% respectively reported 'yes', 'no', and 'don't know/not sure'. Girls were more likely to report having heard of the HPV vaccine than boys (56.7% vs. 42.19%; $p < 0.001$). In all, 19.5% and 24.5% of the participants indicated having their parents and a health care provider respectively having discussed the HPV vaccine with them. Girls were two times as likely to report having a parent discuss the HPV vaccine with them than boys ($P<0.01$). They were also almost three times as likely than boys to report a health care provider having discussed the vaccine with them ($p<0.01$). Overall, 11.4% boys and 21.3% girls reported having received at least one dose of the vaccine ($p < 0.001$). The HPV uptake rates among middle and high school boys and girls respectively were 9.2%, 13.2%, 14.4%, and 27.4%. Conclusion: The HPV vaccine knowledge, as well as parental and health care provider communication regarding the HPV vaccine, particularly with the boys, remains low among these rural Appalachian adolescents. The role of these two factors on the HPV vaccine uptake among this adolescent population needs to be further explored.

Lynette Phillips, PhD, MSPH

Parental and Health Care Provider Communication and Adolescent HPV Vaccination Uptake in an Appalachian Ohio County

Phillips LS, Frew S, Burns J, Cascarelli N, Bhatta MP

The purpose of this study was to examine the relationship between parental and health care provider communication regarding human papillomavirus (HPV) vaccine and adolescent HPV vaccine uptake in a rural Appalachian County in Ohio. Five questions regarding the HPV vaccine were added to 2012 Youth Risk Behavior Survey (YRBS) administered in one Ohio Appalachian county. They asked whether or not the participants had heard of the HPV vaccine; been given the vaccine and, if yes, the number of shots received; and whether their health care provider and/or their parents had discussed the vaccine with them. Because three outcome choices were given for vaccination (yes, no, and don't know/unsure), the generalized logit function was used to obtain odds ratios from logistic regression modeling, controlling for demographic and HPV vaccine knowledge variables. A total of 1302, predominantly Caucasian (95%), middle and high school students completed the questionnaire, of which 1273 (97.8%) answered the question about HPV vaccination status. Females (21.2%) were almost twice as likely to report having received at least one dose of the vaccine than males (11.4%). Students who had received at least one HPV shot also were much more likely to have had their health care provider (72.5%) or parent (59.0%) talk to them about the vaccine. Of those who had not been vaccinated, only 17.4% had heard about the vaccine from their health care provider, and only 12.8% had discussed it with their parents. When adjusted for age, race and gender, vaccinated students were over ten times more likely to have had a health care provider talk to them about the HPV vaccine (OR=10.5, 95% CI = 6.2-17.9) and were nearly four times more likely to have talked with their parents about the immunization (OR=3.7, 95% CI=2.3-6.1) than those who had not received at least one dose. These results reiterate the strong link between parental and health care provider communication and HPV vaccination uptake from the unique perspective of both female and male adolescents, showing the need for intervention programs to maximize these connections.

Melissa Gilkey, PhD, MPH	Michael Scheurer, PhD
Racial disparities in knowledge and attitudes related to HPV self-testing among women at risk for cervical cancer M. Gilkey, K. Galbraith, J. Smith, & N. Brewer	Interactions Between HPV 16 Integration Status and Polymorphisms in the XRCC4 Gene in Cervical Dysplasia Risk Scheurer ME, Amirian ES, Marquez-Do D, Adler-Storthz K, Follen M
Purpose. Mailed human papillomavirus (HPV) self-tests offer a way to encourage women to initiate the cervical cancer screening process without a clinical visit, thereby potentially eliminating a barrier to care. As little is known about the acceptability of HPV self-testing in women at higher risk for cervical cancer, we sought to assess how knowledge and attitudes related to the test varied by demographic characteristics including race. Methods. We conducted a telephone survey of at-risk women in North Carolina (n=213) who received HPV self-test kits by mail. Eligibility criteria included not having had a Pap test in over 3 years and reporting at least 1 of 4 indicators of economic hardship, such as being uninsured. We used multivariate logistic regression to identify correlates of HPV-related knowledge, perceived likelihood of cervical cancer, trust in HPV self-testing, and preference for self-testing versus Pap testing. Results. Most respondents were non-Hispanic black (54%) or white (33%), and few (14%) reported an annual household income over $20,000. Compared to white women, black women had lower HPV-related knowledge (OR=0.47, 95% CI, 2.24-0.91) and perceived lower cervical cancer risk (OR=0.42, 95% CI, 0.22-0.81). Overall trust in the HPV self-test was high with, for example, most women (98%) agreeing the test was safe. A minority of women preferred Pap testing (19%) or self-testing (6%), but most had no preference. Trust in or preference for the self-test did not vary by race. Conclusions. In our sample of under-screened, low-income women, acceptability of HPV self-testing was high across racial subgroups. Our findings suggest that HPV self-testing is a promising approach for expanding available screening modalities to reach at-risk women. Having more options for screening may be especially important for reaching black women whose knowledge and perceptions are less likely to support screening.	Human papillomavirus (HPV) is considered to be a necessary but not sufficient cause of cervical cancer. Why some women are able to clear HPV infection with no adverse effects, while others develop cervical dysplasia is unknown. Our group previously found that polymorphisms in the DNA repair gene, XRCC4 , were associated with HPV integration status, which in turn has been shown to be predictive of cervical cancer risk. This study sought to identify interactions between HPV 16 viral integration status and XRCC4 SNPs on cervical dysplasia risk, comparing women with no dysplasia to those with low-/high-grade squamous intraepithelial lesions. A total of 422 HPV+ women were selected from two large trials designed to evaluate optical technologies for cervical cancer. Genotyping was conducted using the Illumina Golden Gate platform. Using an unrestricted genetic model, logistic regression, stratified by viral integration status, was used to evaluate whether the effects of XRCC4 SNPs on cervical dysplasia risk were different among women with episomal HPV 16 compared to those with fully or partially integrated virus. Although integration status was differential across cervical cytology, the majority of participants (81%) had a mix of both episomal and integrated HPV, rather than fully integrated virus. Integration status seemed to modify the effect of XRCC4 rs1193693 on cervical dysplasia risk. Specifically, among women with integrated HPV 16, each additional copy of the variant allele conferred an increased risk of cervical dysplasia [OR for AG: 1.41, 95% CI: 0.81-2.46; OR for GG: 2.06, 95% CI: 1.16-3.65, compared to AA]. By contrast, among women with episomal HPV 16, XRCC4 rs1193693 had an inverse relationship with cervical dysplasia risk, although this was not statistically significant [OR for AG: 0.73, 95% CI: 0.15-3.60; OR for GG: 0.46, 95% CI: 0.11-1.93]. Our preliminary findings indicate that HPV integration status may be an effect modifier of the relationship between cervical cancer risk and certain XRCC4 SNPs. We plan to examine potential interactions between viral integration status and a number of other DNA repair gene polymorphisms in the near future.

Deanna Kepka, PhD, MPH	Halcyon Skinner, PhD, MPH
Overuse of Pap testing among older women and women with a hysterectomy Kepka D, Breen N, King J, Meissner H, Benard V, Roland K, & Saraiya M. Background As of 2012, leading national organizations have agreed on evidence-based recommendations for Pap testing. They recommended against Pap testing for women over age 65 years who have had adequate prior screening and are not at high risk and for women without a cervix following a hysterectomy who do not have a history of high-grade precancerous lesion or cervical cancer. Few studies have investigated overuse of Pap testing among US women. Methods A cross-sectional study was conducted using data from the 2010 National Health Interview Survey (NHIS). NHIS is a nationally-representative survey of the civilian non-institutionalized population of the United States that employs a random, stratified, multi-stage cluster sampling design. The survey is conducted annually using computer-assisted in-person interviewing. It includes sections on self-reported participant demographic characteristics, health status, and use of healthcare services. In 2010, the NHIS administered a Cancer Control Supplement with questions on cervical cancer screening, hysterectomy status, and timing of hysterectomy (n=12,320). All analyses account for the complex survey design of NHIS. Results Approximately 3/5 of women over age 65 years reported a Pap test in the past three years and nearly 2/3 of women reporting a hysterectomy also reported a recent Pap test since their hysterectomy. Adjusted proportions calculated using multivariate logistic regression models showed that among women over age 70 years, higher level of education ($p<.05$) and no hysterectomy ($p<.001$) were associated with receipt of a recent Pap test (received within past 3 years after age 65 years). Among women who have undergone a hysterectomy, younger age ($p<.001$), Hispanic and Black race/ethnicity ($p<.001$), higher income ($p<.001$), and private healthcare coverage ($p<.01$) were associated with receipt of a recent Pap test since hysterectomy. Conclusion Pap testing in average-risk women over age 65 years and in women who have undergone a hysterectomy is high despite past recommendations. Now that all leading national organizations have released new guidelines in 2012, improved efforts are needed to significantly reduce overuse of Pap testing in the future.	Elevated Serum Calcium As A Biological Marker For Ovarian Cancer Skinner HG, Schwartz GG Background: Biological markers useful for detecting ovarian cancer at early stages are urgently needed. Because a subset of ovarian cancers is associated with hypercalcemia (serum calcium greater than the normal reference range), we hypothesized that high-normal serum calcium levels might be associated with ovarian cancer in general. Methods: We examined associations between total and ionized serum calcium and ovarian cancer mortality in the Third National Health and Nutrition Survey (NHANES III) using Cox proportional hazard models. We then examined associations of serum calcium with incident ovarian cancer in a second prospective cohort, the NHANES Epidemiological Follow-up Study (NHEFS). Results: In NHANES III, eleven deaths from ovarian cancer occurred over 95,556 person-years of follow-up. After adjustment for age, height, body mass index, and cigarette smoking, the risk for fatal ovarian cancer increased 52% for each 0.1 mmol/L increase in total serum calcium (RH = 1.52, 95% CI 1.06 – 2.19) and 144% per each 0.1 mmol/L increase in ionized serum calcium (RH = 2.44, 95% CI = 1.45 – 4.09). Significant associations persisted after adjustment for established ovarian cancer risk factors including nulliparity and the never use of oral contraceptives. In the NHEFS, 8 incident ovarian cancers occurred over 31,089 person-years of follow-up. After adjusting for covariates, there was a 63% increase in the risk for ovarian cancer for each 0.1 mmol/L increase in total serum calcium (95% CI 1.14 – 2.34). Similar results were observed for albumin-adjusted serum calcium. Conclusions: These findings suggest that higher serum calcium may be a biomarker of ovarian cancer. This is the first report of prospective positive associations between indices of calcium in serum and ovarian cancer. These findings require confirmation in other cohorts.

PAPER SESSION ABSTRACTS - Monday, March 11, 2013
Session 2 –Mechanisms/Outcomes

Leah Wilcox Eshraghi, MPH	Vicki McLaughlin, MS
An Efficient Resource to Accelerate Research into the Cause and Prevention of Breast Cancer: The Love/Avon Army of Women Love, S. Background: It is well established that more research into the cause and prevention of breast cancer is needed. While studies are done in cell lines and lab animals, translation of findings to women is often delayed due to difficulty in recruitment. The Dr. Susan Love Research Foundation received a grant from the Avon Foundation for Women to form the Love/Avon Army of Women (AOW); an on-line recruitment resource designed to partner women with researchers in order to accelerate breast cancer research. Methods: Researchers submit a proposal to the AOW Scientific Advisory Committee. If a study is accepted, a mass e-mail describing the study procedures and inclusion/exclusion criteria is sent to the entire AOW database. Women sign up at www.armyofwomen.org to join and receive AOW e-mails about breast cancer research studies. Women self-select based on interest and study criteria, and undergo a secondary on-line screening before contact information is passed on to the researcher for the enrollment process. Results: Over 371,000 women have signed up, including survivors and women without a history of breast cancer, ranging from ages 18 to 100, representing all 50 US states and 49 countries. To date, the AOW has recruited for 70 studies. The diversity of the AOW members has proved beneficial for many studies, such as those needing to enroll racial/ethnic minorities, women of varying sexual orientations, or young survivors. A secondary goal of the AOW is to assist researchers new to research with human subjects. The AOW has successfully helped researchers cross the chasm, coaching them on what it takes to transition their research from animal models to human subjects. Conclusions: The AOW has proved to be a successful resource for scientists to accelerate accrual, expand the number and diversity of their subject population and to obtain exactly the type of specimens they need when they need it. This partnership between women and scientists has revolutionized research and accelerated efforts to eradicate breast cancer. The public is ready and willing to partner with the research community to find the answer to urgent clinical problems.	Lifestyle factors and the risk of a second breast diagnosis after DCIS in the Wisconsin In Situ Cohort McLaughlin V, Trentham-Dietz A, Hampton JM, Newcomb PA, Sprague BL Purpose: Certain tumor factors have been associated with increased likelihood of a second breast diagnosis after treatment for ductal carcinoma in situ (DCIS) breast cancer. However, little information exists on modifiable lifestyle factors that affect prognosis after DCIS and may be useful for survivors in reducing their risk of a second breast cancer event. Methods: We examined the longitudinal association between body mass index (BMI), physical activity, and alcohol intake and risk of a second breast diagnosis among 1,925 DCIS survivors first diagnosed in 1997-2006 and enrolled in the Wisconsin In Situ Cohort. Data were collected during biennial patient interviews and diagnosis information was validated via pathology report. BMI, physical activity, and alcohol intake were examined over time using Chi-square and ANOVA methods. Cox proportional hazards regression was used to estimate the risk of a second diagnosis after adjustment for patient, tumor, and treatment factors. Repeated measures were incorporated to make use of exposure measurements taken at each post-diagnosis interview. Results: Over an average of 6.6 years of follow-up, 162 second breast cancer diagnoses were reported. Significant trends of increasing BMI and decreasing physical activity were observed over time since diagnosis ($p<0.001$). For all women, a significant linear trend of increasing risk of a second diagnosis was found over increasing categories of post-diagnosis alcohol intake (p-trend 0.02). Among women treated with ipsilateral mastectomy, a reduction in risk was suggested with increasing post-diagnosis physical activity (HR 0.67, 95% CI 0.45, 1.02 for each additional hour/week). Among postmenopausal women, higher categories of post-diagnosis BMI were associated with increasing risk, although these results were of borderline significance (p-trend 0.09). Conclusion: This study is the first to examine the association of physical activity and alcohol intake with second breast diagnoses in an exclusively DCIS population. Our results suggest that DCIS survivors may reduce their risk of a second diagnosis by engaging in physical activity and reducing their alcohol consumption.

Hazel Nichols, PhD	Reiko Nishihara, PhD
Hormonal risk factors for breast cancer and DNA methylation Nichols H, Sandler D, DeRoo L, Xu Z, Taylor J Epigenetic modifications influence gene expression and have been implicated in the development of breast cancer. Few studies have evaluated breast cancer risk factors in relation to DNA methylation. We examined known reproductive and hormonal risk factors for breast cancer and epigenome-wide methylation patterns. Participants included 612 women enrolled in the Sister Study prospective cohort who did not have breast cancer. DNA methylation profiling was performed using an Illumina array at the NIH Center for Inherited Disease (CIDR) on DNA extracted from whole blood. Methylation data was obtained at single CpG site resolution for 27,578 CpG sites covering >14,000 genes across 23 chromosomes. Statistical analyses were performed using normalized methylation residuals from a linear model adjusting for age and experimental variables. Controlling for a false discovery rate of 5% ($q<0.05$), 1,452 methylation sites (1,220 in CpG islands) were differentially methylated in postmenopausal women compared to premenopausal women. Average methylation was increased at 1,040 sites and decreased at 412 sites. Gene ontology (GO) analysis suggested enrichment of several biological pathways including lobular involution. Among parous women, only 2 sites (1 CpG island) were differentially methylated among women with older versus younger ages at first birth. A single CpG site demonstrated lower average methylation values among long-term users of postmenopausal hormones compared to short-term users. No further statistically significant differences in methylation patterns ($q<0.05$) were observed according to age at menarche, parity, breastfeeding history, or postmenopausal hormone use. These data support the menopausal transition as an influential period for epigenetic modifications; few associations between DNA methylation and other classical reproductive and hormonal breast cancer risk factors were observed.	Physical Activity, Tumor PTGS2 Expression, and Colorectal Cancer Survival: A Molecular Pathological Epidemiology (MPE) Approach Yamauchi M, Nishihara R, Chan AT, and Ogino S. Purpose: Evidence suggests that energy balance in tumor microenvironment may influence systemic inflammatory status and cancer progression through its effect on prostaglandin biosynthesis. We examined whether the physical activity after diagnosis of colorectal cancer was associated with improved survival in PTGS2-positive colorectal cancer. Methods: Utilizing 605 stage I-III colon and rectal cancers in two prospective cohort studies, we assessed patient survival according to physical activity and tumor PTGS2 status. Cox proportional hazards regression was used to calculate multivariate hazard ratio (HR), adjusting for clinical and other tumor features (including microsatellite instability and BRAF and KRAS mutations). Results: Among patients with PTGS2-positive cancer, compared with the least active first quartile, the multivariate HRs were 0.30 (95% confidence interval [CI], 0.14-0.62) for the second quartile, 0.38 (95% CI, 0.20-0.71) for the third quartile, and 0.18 (95% CI, 0.08-0.41) for the fourth quartile of increasing physical activity ($P=0.0002$ for trend). In contrast, among patients with PTGS2-negative cancer, physical activity level was not significantly associated with colorectal cancer-specific survival ($P=0.84$ for trend). We observed significant interaction between physical activity and tumor PTGS2 status ($P=0.024$ for interaction). Conclusion: Post-diagnosis physical activity was associated with better survival among patients with PTGS2-positive colorectal cancer. This finding from molecular pathological epidemiology (MPE) suggests that PTGS2 may be a tumor biomarker that may predict stronger benefit from exercise in colorectal cancer patients.

Jonathan Hofmann, PhD, MPH	Marc Kowalkowski, MS
A prospective study of circulating adipokine levels and risk of multiple myeloma Hofmann J, Liao L, Pollak M, Wang Y, Pfeiffer R, Baris D, Andreotti G, Lan Q, Landgren O, Rothman N, Purdue M Purpose: Obesity is associated with an increased risk of multiple myeloma (MM), although the biologic mechanisms underlying this association are unclear. We conducted a nested case-control study in the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial to evaluate the hypothesis that altered circulating levels of adipokines, polypeptide hormones with pro- and anti-inflammatory properties secreted by adipose tissue, may partly explain the association between obesity and MM. Methods: We investigated whether circulating levels of leptin, total adiponectin, and high-molecular-weight (HMW) adiponectin are associated with MM among 174 cases and 348 controls in PLCO. Two controls were matched to each case on age at baseline, sex, race, date of phlebotomy, time of day of phlebotomy, and study year of specimen collection. Plasma adipokine concentrations were measured by enzyme-linked immunosorbent assay; overall coefficients of variation were ≤8.5%. Odds ratios (OR) and 95% confidence intervals (CI) were estimated using conditional logistic regression. Results: Inverse associations with MM were observed for total adiponectin (highest quartile vs. lowest: OR=0.49, 95% CI=0.26-0.93, P-trend=0.03) and HMW adiponectin (OR=0.44, 95% CI=0.23-0.85, P-trend=0.01). These associations remained after adjusting for body mass index (BMI), stratifying by sex, and restricting to cases diagnosed approximately eight years or more after blood collection. We observed a modest association between BMI and MM (OR per 5 kg/m2 increase=1.14, 95% CI=0.94-1.39), which was attenuated by approximately 40% after adjusting for adiponectin. Leptin levels were not associated with MM. Conclusions: These results suggest that higher circulating levels of adiponectin are protective against MM, and that adiponectin may play an important role in obesity-related myelomagenesis. This study is, to our knowledge, the first prospective investigation of circulating adipokines and MM. Our findings are particularly intriguing in light of recent evidence that host-derived adiponectin is tumor-suppressive and a potential novel therapeutic target for MM and associated bone disease.	Immune Reconstitution and Risk of Hodgkin's Lymphoma Among a Sample of HIV-Infected Male Veterans Kowalkowski M, Chiao E Purpose: In contrast to certain AIDS-defining cancers, the incidence of Hodgkin's lymphoma (HL) has increased since the introduction of combined antiretroviral therapy (cART). Although HIV-associated HL has been strongly linked to the Epstein-Barr virus, the causes for the increased incidence of HL in the cART era remain unclear. The aim of this study was to evaluate the effect of cART utilization and possible immune reconstitution inflammatory syndrome (IRIS), through monitoring the activity of immunologic measures (e.g., nadir CD4 prior to cART, recent CD4, percent of time with undetectable HIV viral load), on the incidence of HL among a sample of HIV-infected male veterans. Methods: We performed a retrospective cohort study utilizing data from the Veterans Affairs HIV Clinical Case Registry (VA-CCR) from 1985-2010. HL cases were identified using ICD-9 codes. Women were excluded due to low numbers. We also excluded individuals without identifiable CD4 or viral load measurement, no cART use, <90 days of follow-up, and prevalent HL cases occurring prior to or within 90 days of HIV diagnosis. We analyzed the relationship between immunologic measures associated with cART utilization and the incidence of HL, calculated in multivariable Poisson regression models adjusted for demographic and time-varying immunologic covariates. Results: The final sample included 31,596 cART users, contributing 288,968 person-years and 219 HL cases (IR=76 per 100,000 person-years). In multivariable regression models, the risk of HL was higher among veterans with recent CD4 <200 copies/cell (IRR=1.57, 95%CI=1.05-2.34) and between 200-350 copies/cell (IRR=1.68, 95%CI=1.17-2.40), compared to individuals with >350 copies/cell. Also, HL risk was increased among veterans within 1 year (IRR=2.38, 95%CI=1.60-3.53) and 1-2 years (IRR=1.89, 95%CI=1.27-2.82) after cART initiation, compared to >2 years. Conclusion: Recent CD4 counts <350 copies/cell were associated with an increased risk of HL among cART users. Additionally, risk of HL was increased in the 2 years directly following cART initiation. Findings indicate an EBV-associated IRIS may function in HL development in HIV-infected individuals.

PAPER SESSION ABSTRACTS -- Tuesday, March 12, 2013
Session 3 – Disparities

Theresa Hastert, MPP

Contribution of health behaviors to the association between area-level socioeconomic status and cancer mortality

Hastert T, Beresford A, White E

Background: Area-level socioeconomic status (SES) is increasingly recognized as an important predictor of health outcomes; however, its association with cancer mortality is not established. Moreover, mediators of the association between area-level factors and health outcomes are not well understood. The purpose of this study is to quantify the association between area-level SES and cancer mortality and to identify whether and to what extent behaviors mediate the association. Methods: We identified the census block groups of participants in the VITamins And Lifestyle (VITAL) Study cohort and constructed an SES index using data from the 2000 U.S. Census. Participants included 64,307 men and women ages 50-76 years with no history of cancer at baseline (2000-2002). Cancer deaths (n = 1,833) were tracked through the Washington State death file over 7.7 years of follow-up. We tested whether eight modifiable risk factors (body mass index (BMI), physical activity, dietary behaviors, alcohol, smoking, screening) mediated the association between area-level SES and cancer mortality. Results: Living in the lowest-SES areas was associated with 79% higher cancer mortality than living in the highest-SES areas (hazard ratio (HR): 1.79, 95% confidence interval (CI): 1.53, 2.10). Adding modifiable risk factors into the models explained 48% (95% CI: 23%, 73%) of the association. In models controlling for individual education and income, area-level SES remained associated with cancer mortality (HR highest- vs. lowest-SES areas: 1.40, 95% CI: 1.18, 1.66) and adding modifiable risk factors reduced the association by 46% (95% CI: 1%, 91%). Smoking, dietary behaviors, physical activity and screening mediated the largest proportion of the association, while alcohol use and BMI had little explanatory effect for the health disparities. Conclusions: Low area-level SES is associated with increased cancer mortality. This association persists after accounting for individual education and income and is partially mediated by smoking, physical activity, dietary behaviors and screening.

Monika Izano, MSc

Comorbidity Affects Mortality Among African-American and White Women with Breast Cancer After 28 Years of Follow-up

Izano M, Satariano WA, Ragland D, Moore DH, Tammemagi MC, Naeim A, Sehl ME, Hiatt RA, Rugo H, Braithwaite D.

Background: The effects of comorbidity on long-term outcomes and outcome disparities among women with breast cancer are not well-established. We hypothesized that higher comorbidity in the first months following breast cancer diagnosis is associated with increased risk of mortality after 28 years of follow-up, and that the association is stronger among African-American than white women. Methods: A total of 170 African-American and 829 white women aged 40-84 years were followed up to 28 years since breast cancer diagnosis in the Health and Functioning in Women (HFW) study. We used multivariable proportional-hazards models to prospectively examine the impact of the standard Charlson comorbidity score and a hypertension-augmented version of the Charlson score at 3 months following breast cancer diagnosis on the risk of mortality from all-causes, breast cancer-specifically and other causes. Results: Of 774 patients who died during the median follow-up of 11.3 years, breast cancer was the primary cause of death in 323 cases (41.7%). In covariate-adjusted models, a hypertension-augmented Charlson score of ≥1 was significantly associated with increased risk of all-cause mortality in all women aged 40-54 and ≥65 at breast cancer diagnosis respectively (HR=1.52, 95% CI 1.05-2.20 and HR=1.44 95% CI 1.15-1.80 respectively). The Charlson score of ≥1 was also significantly associated with other-cause mortality in all three age groups, with hazard ratios of 2.40 (95% CI 1.16-4.96), 1.64 (95% CI 1.02-2.64), and 1.65 (95% CI 1.26-2.16) for women 40-54, 55-64 and ≥65 respectively. A hypertension-augmented Charlson score of ≥1 was also significantly associated with other-cause mortality in all three age groups, with hazard ratios of 2.08 (95% CI 1.00-4.31), 2.19 (95% CI 1.26-3.80), and 1.73 (95% CI 1.20-2.49), for women 40-54, 55-64, and ≥65, respectively. Among women 40-54 years of age at diagnosis, the Charlson score and the hypertension-augmented Charlson score accounted for 66.7% and 71% of the racial differences in mortality, respectively. Conclusion: Higher comorbidity during the first year of breast cancer diagnosis is associated with poorer survival. Comorbidity may partially account for survival differences by race.

Kevin Henry, PhD	Sandi Pruitt, PhD
The Role of Geography in Low Mammography Screening Rates and Late-Stage Breast Cancer Diagnosis in Utah. Henry KA, Stroup NM, Kinney AY Purpose: Mammography screening rates in Utah have been lower than other states for nearly 20 years. We examine the role of geographic factors on mammography screening rates and late-stage breast cancer diagnosis in Utah. Methods: Mammography screening data from the 2008 and 2010 Utah Behavioral Risk Factor Surveillance System included Utah women aged 40-74 (weighted N=417,064). Utah Cancer Registry data included women 40+ years, who were diagnosed with breast cancer from 2004-2008 (N=6,500). Multilevel logistic regression was used to examine the association between measures of geographic access to mammography (travel time, geo access scores, rural/urban residence) and individual factors (age, race/ethnicity, insurance) and the odds of (a) not having a mammogram within the last two years and (b) being diagnosed with late stage breast cancer. Geo access scores are composite values based on the number of mammography facilities and the distribution of drive times. Results: Overall 32.7% (95%CI 31.1%-34.5%) of Utah women 40-74 reported not having a mammogram within the last 2 years and 31.3% of women aged 40+ were diagnosed with late-stage breast cancer. A disproportionate number 43.1% (95%CI 39.9%-46.3%) of women 40-49 did not have a mammogram within the last 2 years compared to women 50-74 (26.8% 95%CI 24.9%-28.7%). Geographic access measures were not associated with mammography screening and late-stage breast cancer diagnosis among women 40-74. Travel time was moderately significant for women living >20 minutes from a mammography facility compared to women living <5 min (OR= 1.23 95%CI 1.01-1.50),even after controlling for age, race/ethnicity, and insurance status. Women aged 50+ with low geo access scores had higher odds (OR=1.20 95%CI 1.04 1.37) of late-stage breast cancer diagnosis compared to women with high geo access scores. Conclusion: Geographic access may be a risk factor for late-stage breast cancer for specific segments of the population, who may benefit from targeted interventions to improve early detection. Future work should consider alternate geographic access measures and other potential sociodemographic or cultural barriers to screening in Utah.	The association of neighborhood poverty and driving time with colorectal cancer screening in a RCT of urban safety net patients Pruitt, S., Murdoch, J., Davis, R., Speer, A., Leonard, T., Gupta, S. Background The association between neighborhood poverty and colorectal cancer screening (CRCS) and healthcare proximity and CRCS is unclear. We examined associations between neighborhood poverty, driving time to clinic, and two CRCS modalities (at-home and in-clinic). Methods We geocoded addresses of patients drawn from a RCT of uninsured patients (n=5790, 97.0%), ages 54-64 and not up-to-date with CRCS in an urban safety-net in Tarrant County, TX. Patients were randomized to: 1) at-home: mailed invitation to complete enclosed fecal immunochemical (FIT) test; 2) in-clinic: mailed invitation to schedule no-cost colonoscopy; 3) usual care (opportunistic in-clinic offers to complete in-clinic colonoscopy, sigmoidoscopy, or barium enema, or at-home guaiac fecal occult blood testing (gFOBT). We calculated minutes of driving time from home to clinic using MapQuest's Open Document API Web Service and block group percent living in poverty using U.S. Census data. We created maps and fitted multinomial regressions to examine associations of driving time and poverty with receiving at-home (FIT/gFOBT) or in-clinic (colonoscopy, sigmoidoscopy, barium enema) tests within 1 year, controlling for study group, race/ethnicity, language, sex, and age. Results Median one-way driving time was 14.1 (IQR 10.0-19.3) minutes. Median poverty rate was 17.0% (IQR 7.5-29.3). In separate models, higher poverty and shorter driving time were associated with lower likelihood of in-clinic but not at-home tests. Due to a significant interaction between poverty and driving time for in-clinic testing (p<.001), we stratified (+/- median) by high/low poverty and long/short driving time. In high-poverty areas, those living farther away were more likely (RRR: 1.65; CI: 1.24-2.20) to test in-clinic. Among those living closer, those in high-poverty areas were less likely (RRR: 0.75; CI: 0.57-0.99) to test in-clinic. Discussion Uptake of at-home tests was not associated with driving time or neighborhood poverty but in-clinic testing was associated with an interaction between poverty and driving time. At-home tests may be a viable strategy for overcoming geographic and socioeconomic screening barriers.

Melissa Gilkey, PhD, MPH	Ken Batai, PhD
Racial disparities in knowledge and attitudes related to HPV self-testing among women at risk for cervical cancer M. Gilkey, K. Galbraith, J. Smith, & N. Brewer Purpose. Mailed human papillomavirus (HPV) self-tests offer a way to encourage women to initiate the cervical cancer screening process without a clinical visit, thereby potentially eliminating a barrier to care. As little is known about the acceptability of HPV self-testing in women at higher risk for cervical cancer, we sought to assess how knowledge and attitudes related to the test varied by demographic characteristics including race. Methods. We conducted a telephone survey of at-risk women in North Carolina (n=213) who received HPV self-test kits by mail. Eligibility criteria included not having had a Pap test in over 3 years and reporting at least 1 of 4 indicators of economic hardship, such as being uninsured. We used multivariate logistic regression to identify correlates of HPV-related knowledge, perceived likelihood of cervical cancer, trust in HPV self-testing, and preference for self-testing versus Pap testing. Results. Most respondents were non-Hispanic black (54%) or white (33%), and few (14%) reported an annual household income over $20,000. Compared to white women, black women had lower HPV-related knowledge (OR=0.47, 95% CI, 2.24-0.91) and perceived lower cervical cancer risk (OR=0.42, 95% CI, 0.22-0.81). Overall trust in the HPV self-test was high with, for example, most women (98%) agreeing the test was safe. A minority of women preferred Pap testing (19%) or self-testing (6%), but most had no preference. Trust in or preference for the self-test did not vary by race. Conclusions. In our sample of under-screened, low-income women, acceptability of HPV self-testing was high across racial subgroups. Our findings suggest that HPV self-testing is a promising approach for expanding available screening modalities to reach at-risk women. Having more options for screening may be especially important for reaching black women whose knowledge and perceptions are less likely to support screening.	Genetic and environmental predictors of serum vitamin D3 level in African Americans Batai K, Shah E, Ruden M, Newsome J, Agate S, Dixon M, Chen H, Hollowell C, Ahaghotu C, Murphy A, Kittles R Background: Cancer incidence and mortality rates are disproportionately higher among African Americans (AAs) compared to other ethnic groups in the U.S. due to a combination of genetic, biological, and environmental factors. The difference in serum vitamin D [25(OH)D] concentration among populations is suspected to account for a portion of cancer health disparities mainly because vitamin D has been shown to inhibit growth and induce apoptosis in several cancers. Serum levels of 25(OH)D are strongly influenced by skin pigmentation, genetic ancestry, age, BMI, and environmental factors such as sunlight exposure and diet. Here we tested if vitamin D pathway gene polymorphisms, sunlight exposure, skin pigmentation, season of blood draw, geography, vitamin D intake, and education were predictors of serum 25(OH)D concentration and/or vitamin D deficiency in AAs. Samples and Methods: Thirty-nine variants in GC, DHCR7/NADSYN1, VDR, CYP2R1, CYP27A1, CYP27B1, CYP3A4, and CYP24A1, including 19 variants identified in genome-wide association studies (GWAS), were genotyped in 651 AAs from Washington, DC and Chicago. West Africa Ancestry (WAA) was estimated using STRUCTRE from 105 ancestry informative markers. We performed linear and logistic regression analyses including WAA, age, season of blood draw, vitamin D intake, skin pigmentation as measured using reflectance (M-index), education, and geographic region. Results: Among the environmental predictors, season of blood draw and vitamin D intake were strongly associated with serum vitamin D levels ($P<0.001$). Eight SNPs, previously identified in GWAS (two in GC, five in CYP2R1, and one in DHCR7/NADSYN1), were associated with serum 25(OH)D levels and/or vitamin D deficiency. SNP rs2060793 in the CYP2R1 exhibited the strongest association with serum 25(OH)D levels ($P<0.001$). Conclusion: Both genetic and environmental factors affect serum 25(OH)D level and/or vitamin D deficiency risk in AAs. Impact: Increased attention is focused on the role of vitamin D in cancer risk. Our findings provide insights on the biological and environmental modifiers of serum vitamin D3 and will help guide future studies on the role of vitamin D in cancer in high risk populations such as AAs.

PAPER SESSION ABSTRACTS -- Tuesday, March 12, 2013
Session 4 – Colorectal Cancers

Reiko Nishihara, PhD	Andrea Burnett-Hartman, PhD, MPH
Aspirin and Colorectal Cancer Incidence and Mortality by CTNNB1 Expression: A Molecular Pathological Epidemiology (MPE) Study Sun R, Nishihara R, Qian ZR, Chan AT, and Ogino S. Purpose: Experimental studies showed that aspirin down-regulates the WNT/CTNNB1 (β-catenin) signaling pathway in colon cancer cells. We investigated whether aspirin use was associated with lower incidence and superior survival in nuclear CTNNB1-positive colorectal cancer. Methods: In two large prospective studies (the Nurses' Health Study and the Health Professionals Follow-up Study), we collected the information on aspirin use every 2 years from 1980 through 2008. We used Cox proportional hazards regression to compute the multivariate hazard ratio for incidence and mortality according to tumor CTNNB1 expression patterns. Results: During 28 years and 3,166,091 person-years of follow-up, we documented 931 incident cases of colorectal cancer with available CTNNB1 expression data. Regular aspirin use was associated with a significantly lower risk of CTNNB1-positive cancer (multivariate HR=0.65; 95% CI, 0.53-0.80), but not with the risk of CTNNB1-negative cancer (multivariate HR=0.84; 95% CI, 0.70-1.01). A formal test of heterogeneity of the association according to CTNNB1 expression status did not reach statistical significance (P=0.07). Regular aspirin use after diagnosis of colorectal cancer was associated with better colorectal cancer-specific survival among CTNNB1-positive tumor patients (multivariate HR=0.53; 95% CI, 0.30-0.95). In contrast, among CTNNB1-negative tumor patients, post-diagnosis regular aspirin use was not associated with colorectal cancer-specific survival (multivariate HR=1.06; 95% CI, 0.62-1.83) (P=0.04 for interaction test between aspirin use and CTNNB1 status). Conclusions: Regular aspirin use was associated with lower incidence of nuclear CTNNB1-positive cancer, and better survival among patients with nuclear CTNNB1-positive cancer. Our molecular pathological epidemiology (MPE) study revealed the anti-tumor mechanism of aspirin, which might prevent cancer incidence and mortality by inhibiting tumor initiation and/or progression in the WNT/CTNNB1-related carcinogenesis pathway.	The Impact of Colonoscopy Screening Guidelines that Incorporate Precursors in the Serrated Pathway: a Cost-Effectiveness Analysis A. Burnett-Hartman, P. Newcomb, D. Veenstra Background: In 2012, the U.S. Multi-Society Task Force on CRC published guidelines that include sessile serrated polyps (SSPs) as important new precursors to target during a screening colonoscopy. Previously, adenomas were the only polyp precursor targets of colonoscopy. Objective: The purpose of this study is to estimate the incremental cost-effectiveness ratio for colonoscopy comparing the new guidelines to the former guidelines. Methods: We developed a Markov model for CRC that included three pathways: 1) de novo from colonic epithelium without a polyp precursor, 2) through the adenoma-carcinoma sequence, and 3) through an SSP precursor. Then, we simulated the effect of screening colonoscopy on CRC incidence and mortality applying the new guidelines vs. the old guidelines in a hypothetical US cohort of 100,000 adults who began screening at age 50 and ended screening at age 75. Adults progressed through the model for 50 one-year cycles until death or age 100. Costs for CRC detection and treatment were estimated from a limited societal perspective using Medicare reimbursement data. We calculated the cost per life-year (LY) gained for the new CRC screening guidelines and the old guidelines compared to no intervention. Then we compared the two sets of guidelines to one another. Preliminary Results: CRC screening via colonoscopy in this hypothetical cohort of 100,000 adults using the old guidelines prevented 4,161 new CRC cases and 1,901 deaths. Implementing the new guidelines avoided an additional 452 CRC cases and 178 deaths. The old guidelines resulted in 0.064 LY-gained and an $800 increase in costs per person compared to the natural history of CRC with no intervention, with a cost-effectiveness ratio of $12,500/LY. The new guidelines resulted in 0.068 LY-gained and a $405 increase in costs per person compared to no intervention, with a cost-effectiveness ratio of $5,956/LY. Comparing the new guidelines to the old guidelines, the difference in LY-gained was 0.004, and the difference in costs was -$395 per person. Conclusion: CRC screening that includes evaluation of SSPs may be cost-effective, and potentially cost-saving, compared to prior guidelines.

Beti Thompson, PhD	Karen Wernli, PhD
An Innovative Strategy to Promote Colorectal Cancer Screening among the Underserved Thompson B, Briant K, Carosso E, Galvan A, Moya A, Espinoza N, Islas I, Ibarra G, Linde S. Background Reaching the underserved, especially those of limited English proficiency (LEP), is a challenge to researchers who are attempting to foster cancer prevention and control interventions. Translating or adapting materials into the language of LEP groups poses unique cultural problems and still may not be appropriate for people of low educational backgrounds. Our interventions focus on primarily monolingual Spanish speakers with less than a high school education. Methods To begin a discussion on the problems of CRC in this population, we purchased a large, walk-through inflatable colon complete with simulated polyps, cancer cells, and advanced cancers. In 2012, the colon was displayed at 45 health fairs and events in our targeted communities and almost 2500 individuals toured the colon. To assess the value of this approach, we conducted pre- and post-tests (interviews) of individuals who went through the colon. In addition, individuals who were 50 years of age or older, were asked if they would like to receive a fecal occult blood test (FOBT). Some 300 FOBT kits were distributed; and a local hospital analyzed the kits at no cost to the participants. Results Within a year, about 2500 people have walked through the colon. Almost 1000 completed pre- and post-tests on knowledge about CRC as well as intention to be screened for CRC. Significant advances in knowledge were seen (from a combined knowledge score of 0.395 (low) at pre-test to 0.869 (high) at post-test). Similar results were seen for intention to be screened (64.3% likely at pre-test and 75.8% likely at post-test). To date, of the 300 FOBT kits distributed, 222 (74%) were returned for analysis. Of those 7 were abnormal. Various sites in the community offered low-cost or free colonoscopies for follow-up of the abnormal tests. None of the colonoscopies detected a cancer. Discussion Reaching the LEP underserved in a way that does not require extensive reading is one way of satisfactory communication. Our experience indicates that a model that illustrates the information in a visual way is meaningful to this population. Further, the method of communication is innovative and appealing to the LEP population as is evidenced by the large numbers who wanted to tour the colon.	Patterns of colorectal cancer testing in men and women newly eligible for screening Wernli K, Hubbard R, Johnson E, Chubak J, Kamineni A, Rutter C Purpose: We evaluated patient characteristics associated with uptake and time to initiation of colorectal cancer tests in a population newly-eligible for screening (i.e., those turning 50 years). Methods: The study included 128,358 individuals who were members of an integrated care delivery system (Group Health) and enrolled on their 50th birthday from 1996-2011. We assessed receipt of colorectal cancer tests within 5 years of eligibility, and calculated the median time to first test. We examined patient characteristics associated with use of colorectal cancer tests overall using Cox proportional hazards models. Results: Stool-based tests were most commonly used, with uptake ranging from 35-40% of the cohort across the study period. The proportion of individuals initiating colorectal cancer testing via colonoscopy increased from 3% in members becoming eligible in 1996-1998 to 21% in 2005-2007. Time to first test varied across test types. Median time to the first test was 3 months shorter in members who chose stool-based tests (25.2 months) compared to those who chose colonoscopy (28.2 months) among members newly eligible in 2005-2007.However, we observed no temporal changes in median time to first test, conditional on test type. Characteristics associated with increased uptake included more recent enrollment at age 50 (e.g., 2008-2010: HR = 2.16, 95% CI 2.09-2.23) and Asian background (HR=1.08, 95% CI 1.05-1.11). Factors associated with reduced uptake included being a woman (HR=0.93, 95% CI 0.91-0.94), African-American (HR=0.95, 95% CI 0.91-0.99) or Pacific Islander (HR=0.86, 95% CI 0.76-0.96), diagnosed with diabetes (HR=0.88, 95% CI 0.85-0.91) and being moderately or severely obese (HR=0.83, 95% CI 0.81-0.85 and HR=0.75, 95% CI 0.73-0.77, respectively). Conclusions: Patient characteristics associated with initiation of colorectal cancer testing in a newly eligible population are similar to previous findings among all-age eligible adults. Further, while the time to the first test remained stable, there was an increase in colorectal cancer testing during the study period.

Casey Daniel, MPH	Todd Gibson, PhD
Predictors of Colorectal Cancer Surveillance among Radiation-treated Survivors of Childhood Cancer Daniel, C., Nathan, P., Oeffinger, K., Stratton, K., Leisenring, W., Whelan, K., Waterbor, J., Henderson, T., Armstrong, G., Krull, K., Robison, L., Kohler, C. Purpose: To identify predictors of adherence to colorectal cancer (CRC) surveillance guidelines among survivors of childhood cancer who received ³30 Gy radiotherapy to the abdomen, pelvis, or spine, and were 36 years or older at the time of last contact. Methods: We sought to identify predictors of self-reported CRC surveillance participation among 5-year survivors who completed the Childhood Cancer Survivor Study (CCSS) 2007 Follow-Up Questionnaire and met the criteria above. Univariate and multivariable generalized linear models with a log link and Poisson distribution were used to calculate relative risks (RR) with 95% confidence intervals (95% CI) for adherence to CRC surveillance guidelines (i.e., home stool blood testing and/or colonoscopy/sigmoidoscopy). Results: The mean age of 711 childhood cancer survivors eligible for the study was 44 years (SD=5.2 years). Among them, 231 (32.5%) reported ever performing home stool blood testing and 276 (38.8%) reported ever having colonoscopy or sigmoidoscopy. Of the 711 participants, 60 (8.4%) reported home stool blood testing in the past year (meeting screening guidelines for the general adult population) and 207 (29.1%) reported having a colonoscopy or sigmoidoscopy in the past 5 years (meeting surveillance recommendations for survivors of childhood cancer treated with radiation). In the multivariable analyses, factors associated with CRC surveillance were age 50 years or older (RR=2.4, 95% CI=1.9-2.9); having routine cancer follow-up visit within one year prior to questionnaire completion (RR=1.7, 95% CI=1.2-2.5); having a physical impairment requiring the assistance of others for routine activities of daily living (RR=1.7, 95% CI=1.2-2.2); and having discussed future cancer risk with a physician at their most recent follow-up visit (RR=1.3, 95% CI=1.1-1.6). Conclusions: More than 70% of survivors at risk for CRC were not screened as recommended. Indeed, unless a physician discussed their future cancer risk, most survivors were not screened until they reached age 50, the time at which CRC screening is recommended for individuals at average CRC risk. These findings underscore the need for education of survivors and their physicians regarding the heightened CRC risk following radiation.	Second cancer risk in colorectal cancer survivors: associations with body mass index Gibson T, Park Y, Robien K, Shiels M, Sampson J, Black A, Albanes D, Weinstein S, Beane Freeman L, Andreotti G, Purdue M, Berrington de Gonzalez A, Fraumeni Jr J, Curtis R, Morton L Purpose: Colorectal cancer (CRC) survivors, numbering almost 1.2 million in the United States, have elevated risk of second cancers compared to the general population, but few studies have investigated second cancer risk factors. Because overweight/obesity is an important risk factor for development of a first CRC, survivors may be particularly susceptible to the effects of bodyweight on cancer risk. Therefore, we performed the first large-scale examination of associations between body mass index (BMI) and subsequent cancer risk in CRC survivors by pooling individual-level data from five prospective cohort studies. Methods: Among 11,695 participants with first primary CRC, we harmonized data on BMI and other potential risk factors, and applied established multiple primary rules to identify second primary cancers. We used multivariable Cox regression models to examine associations between baseline BMI and risk of non-CRC obesity-related second cancers (post-menopausal breast, kidney, pancreas, esophageal adenocarcinoma, endometrium), adjusting for CRC stage and potential confounders. Additionally, we examined change in BMI and subsequent cancer risk in 4264 CRC survivors with follow-up BMI measured after CRC diagnosis. Results: Higher baseline BMI was modestly associated with increased risk of obesity-related second cancers (n=225) in CRC survivors (HR for BMI ≥ 25 versus BMI < 25 =1.32, 95% CI=0.98-1.80), which was similar to the association between baseline BMI and risk of the same group of first primary cancers in the overall pooled cohort (n=27,404 cases; HR=1.22, 95% CI=1.18-1.25). In the subset with post-CRC follow-up BMI, there was a suggestion of decreased second cancer risk for the 19% that reported a weight-loss of ≥2 BMI units compared to the 17% that reported a similar weight gain (HR=0.63, 95% CI=0.36-1.12). Conclusions: Excess bodyweight remains a modest risk factor for subsequent cancers in CRC survivors, although evidence does not suggest increased susceptibility compared to the general population. Additional research is needed to explore susceptibility to obesity-related carcinogenesis in cancer survivors, and to evaluate the impact of weight reduction on second cancer risk.

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Self-rated health (SRH) post-treatment and at six-months follow-up in women with breast cancer (BC) Chandwani, K.; Heckler., C; Carroll, J.; Mustian, K.; Cannon, M.; Wade, J.; Kirshner, J.; Inoue, Y.; Morrow, G. PURPOSE SRH measures general health status. It is related to mortality due to cancer. It is suggested as a potential tool for monitoring of health status of BC survivors. However, the information on SRH over the continuum of breast cancer experience is lacking. The purpose of this study is to characterize SRH in patients with BC without previous chemotherapy (CT) and/or radiotherapy (RT) in relation to cancer treatment and six-months thereafter. METHODS We conducted a secondary analysis of longitudinal data from a nationwide needs assessment study of cancer patients; we used the subset of women with breast cancer. Patients rated their perception of health status on a scale of 1-5 (1=excellent, 2= very good, 3=good, 4= fair, 5=poor) at baseline (prior to starting CT or RT), within two weeks of completion of therapy (RX), and at six months thereafter (FU). A mixed model analysis was conducted using a reversed SRH scale. RESULTS Data from 320 BC patients were analyzed. Mean age was 54.7 years (SD 11.7) and mean time since diagnosis was 0.27 (SD 2.3) years; the majority were Caucasian (93%), married (76%), had a Karnofsky performance score (KPS) of 90-100 (92%) and surgical treatment at study entry (98%); 34% had high school education or less. By RX 45% had received CT, 11% had RT, 40% had CT+RT, and 4% had neither. A significant decline in SRH (N=294) was observed over time (p=.029) with significant changes at RX (Mean SRH=3.39) and FU (Mean SRH=3.27) from baseline (Mean SRH=3.70), p<.001. Change from RX to FU was not significant (p=.13). A significantly lower SRH was seen in younger (p=.04), unmarried (p=.01), non-Caucasians (p=0.003), with high school or less education (p<.001), less time since diagnosis (p=.01, and lower KPS (p<.001). Significant interaction of time with KPS (p=.01) was observed, the association between SRH and KPS being weaker at later time points. CONCLUSIONS SRH in BC patients declined from just before beginning CT or RT until the follow-up at six months after treatment-completion. Young, unmarried, less educated, non-Caucasian women with lower performance reported a poor SRH. Further study of SRH is needed to identify potential areas for intervention to enable improved outcomes of cancer treatment.	Are online cancer risk assessment tools more effective than traditional approaches? Examining the effects of cancer risk check Hovick, S., Bevers, T., Irvin Vidrine, J., Jones, L., Peterson, S.K. Innovative health communication approaches are needed to educate the public about cancer risks. One approach has been the development of online cancer risk assessment tools that provide personalized risk information and recommendations based on information input by a user. A number of tools are now available, but efforts to evaluate them are lacking. We evaluated whether one tool, Cancer Risk Check (CRC), increased cancer risk perceptions and intentions to engage in preventive behaviors compared to non-interactive and non-personalized risk information. Participants comprised an online sample of 1,182 adults age 50 or above with no history of cancer. Participants completed a baseline assessment, viewed CRC or an online presentation, and then completed a follow-up assessment. No differences in risk perceptions or behavioral intentions were found between groups at baseline (p>.05). Using analysis of covariance, controlling for baseline, no differences in risk perceptions or physical activity intentions were found between CRC and control group at follow-up (p>.05). The CRC group had lower intentions than the control group to seek information (M=3.56 (SD=.90) vs. 3.69 (SD=.85), p<.05), increase fruit and vegetable intake (M=4.01 (SD=.82) vs. 4.12 (SD=.82), p<.01) and wear sunscreen (M=3.35 (SD=1.02) vs. 3.49 (SD=1.04), p<.01). Results suggest CRC was equally or, in some cases, less effective at increasing behavioral intentions than traditional communication methods.

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Syndemic Relationship between Diarrhea and Urination Changes to Radiotherapy Treatment Duration Peoples, A., Heckler, C., Roscoe, J., Kamen, C., Janelsins, M., Mustian, K., Tejani, M., Williams, J., Morrow, G. Radiation exposure to the pelvic region during radiotherapy (RT) may lead to gastrointestinal (GI) and genitourinary (GU) tract injury, as healthy fast-dividing cells in this region will also be affected by RT. This injury results in well-recognized symptoms such as diarrhea and urination changes in GU cancer patients. However, the association between these symptoms and such factors as treatment duration and their interdependence has not been yet examined. This area requires further investigation as diarrhea and urinary effects can persist, affecting quality of life, inducing associated psychological distress, thereby requiring intervention. The purpose of this study was to examine the effects of treatment duration on diarrhea and urination changes and determine any correlation between them. Further, we investigated the influence of these symptoms on feelings of distress. Analyses were performed on 250 GU cancer patients (mean age 67, 96% male) who underwent up to 8 weeks of RT treatment (mean total dose 54 Gy) and had completed a validated Symptom Inventory (SI). The SI scale ranged from 0 (no symptom) to 10 (as bad as you can imagine). Longitudinal linear mixed model analyses showed that there was an increase in diarrhea by 0.4 (SD=0.1; 95% confidence interval: 0.2–0.6; $p<0.001$) and an increase in urination changes by 0.34 (SD=0.07; 95% confidence interval: 0.2–0.5; $p<0.001$) per 2 weeks of treatment. In addition, a significant association was seen between diarrhea and urination changes with distress ($p<0.001$) across all weeks and the effects of diarrhea and urination changes on distress were multiplicative, not additive ($p=0.016$). This study indicates that diarrhea and urination changes increase in severity over the course of RT and lead to distress. The syndemic correlations uncovered in this study between diarrhea, urination changes, RT treatment duration, and psychological distress demonstrate the importance of developing interventions that are multi-targeted leading to better quality of life for GU cancer patients.	Exploring public discourse about obesity in social media: A mixed-methods approach Prestin A & Chou W Purpose: The escalating rate of obesity, a key cancer risk factor, has made obesity prevention a top public health and cancer prevention priority in the US. Recent efforts—policy changes, campaigns, interventions—have tapped into the Web 2.0/social media landscape; yet, to effectively leverage social media, we must better understand authentic, user-generated discourse on obesity across online platforms. This study describes current social media conversations about obesity through a mixed methods approach. Methods: Data were collected over 60 days through social media monitoring services, yielding 2.2 million public posts from a range of channels (e.g., Facebook, Twitter, blogs, forums). Key search terms were: “fat”, “overweight”, and “obesity/obese”. Data were categorized and quantitatively coded through Natural Language Processing machine-learning techniques, including descriptive statistics of keyword distribution across channels, bigrams of associated content words, and frequencies of the most commonly shared messages. To complement quantitative findings, qualitative discourse analysis was performed on select data excerpts to highlight emerging themes and sentiments representative of public attitudes and perceptions related to weight and obesity. Results: Twitter was the most common channel for weight-related discussion. Twitter and Facebook were dominated by negative and misogynist sentiment, pointing to weight-based stigmatization and cyberbullying. Further, posts containing derogatory humor about overweight persons were the most frequently shared Twitter content. In contrast, blogs and forums contained more nuanced and actionable comments, exchanges of social support, and in-depth conversation. Other prevalent themes included humor, acceptance, and education. Overall, individuals were blamed for weight problems much more frequently than were social or environmental factors. Conclusions: This study demonstrated an innovative approach to the documentation of attitudes and perceptions about obesity. The rampant stigmatization and bullying on social media suggests potential ways to reframe public discourse and inform the development of health promotion/obesity prevention.

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Self-Efficacy and Psychologic Distress in Early Stage Prostate Cancer Patients: A URCC CCOP Study. Tejani M, Kamen C, Peoples A, Saleh S, Atkins J, Moore D, Spiegel D, Mohile S and Morrow G Introduction: Prior research has shown that self-efficacy plays a significant role in patients' ability to cope with stress related to cancer diagnosis and treatment. In this secondary analysis of a national trial that tested a psychological intervention for prostate cancer patients, we report the association between patients' perceived self-efficacy ratings and their baseline mood. Methods: This analysis includes 317 men (ages 42-86, median 66 years) with early stage prostate cancer. Using Pearson's correlation coefficients, total score on the validated Stanford Emotional Self-Efficacy Scale (SESES) and its three subscales (emotional expression to others, SESES-C; cope with death and dying, SESES-D and ability to remain focused on present, SESES-F) were examined to determine a relationship with patient scores on the Profile of Mood States (POMS), a psychological rating instrument used to assess distinct mood states. Results: At baseline, there was a significant correlation between total self-efficacy ratings and patients' score on the POMS tension-anxiety subscale ($r=0.385$, $p < 0.0001$), depression-dejection subscale ($r=0.371$, $p < 0.0001$) and confusion-bewilderment subscale ($r=0.365$, $p<0.0001$). There was no correlation with the remaining POM subscales (anger-hostility, fatigue-inertia and vigor-activity). This association was strongest for items measuring patients' ability to remain focused on the present, SESES-F: for POMS tension-anxiety subscale ($r=0.469$, $p < 0.0001$), depression-dejection subscale ($r=0.455$, $p < 0.0001$) and confusion-bewilderment scale ($r=0.436$, $p < 0.0001$). Conclusion: Individuals with high self-efficacy are less likely to experience distressed mood and anxiety/depression. Tailored cognitive and behavioral interventions to increase self-efficacy, in particular the ability to remain focused, should be considered to improve mental health among cancer patients.	Impact of Perceived Stress and Appalachian Self-identity on Risky Sexual Behavior among Women in Appalachia, Ohio Ruffin M., Reiter P., Ferketich A., and Paskett E. Purpose: High rates of cervical cancer incidence and mortality exist in women residing in Appalachia, Ohio. Women who engage in risky sexual behavior are at an increased risk for contracting human papillomavirus (HPV), and subsequently developing cervical cancer. Therefore, our objective is to examine the relationship between socioeconomic status and risky sexual behavior among women residing in Appalachia, Ohio. Methods: Women aged 18 years and older were recruited in sixteen clinics throughout Appalachia Ohio. Upon enrollment participants were classified as cases (abnormal cervical cytology) or controls (normal cervical cytology). Self-administered surveys were collected. Results: Of the 703 study participants, 373 (53%) had complete sexual behavioral data and represent the focus of the analysis. Women who were younger (OR=2.18, p=0.06), had a low socioeconomic status (OR=3.01, p=0.02), were a current or former smoker (OR=5.33, p<0.0001), or had a high level of perceived stress (OR= 1.69, p=0.04) had significantly higher odds of partaking in high-level risky sexual behavior. Women who self-identified as Appalachian (OR=0.62, p=0.65), or were married or living as married had significantly lower odds (OR=0.34, p=.002) of partaking in high-level risky sexual behavior. Logistic regression model of risky sexual behavior found only current smokers (AOR=4.37, CI 2.16-8.82), former smokers (AOR=2.41, 95% CI 1.07-5.43), and individuals living as a married couple (AOR=0.32, 95% CI 0.14-0.72). Perceived stress and Appalachian self-identity confound the relationship between socioeconomic status and risky sexual behavior Conclusions: Perceived stress and Appalachian self-identity confound the relationship between socioeconomic status and risky sexual behavior. Smoking and marital status remain associated to risky sexual behaviors.

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Associations Among Family History of Cancer, Cancer Screening and Lifestyle Behaviors: A Population-based Study Bostean G., Crespi C., McCarthy W. Purpose Cancer mortality is largely preventable through modifiable risk factors and preventive screening, even among those at higher risk of cancer due to a family history. This study examined the associations between: (1) family cancer history and screening for colorectal and breast cancer; (2) family history and cancer preventive lifestyle behaviors; and, (3) cancer screening and lifestyle behaviors. Methods Data were from the 2009 California Health Interview Survey (n=12,603). Outcomes included screening for breast and colorectal cancer and six lifestyle behaviors identified in the World Cancer Research Fund cancer prevention recommendations. Multivariate logistic regression analyses, stratified by gender and race-ethnicity, examined associations. Predicted probabilities of cancer screening by family cancer history, race-ethnicity and sex were computed. Results Family history of cancer was associated with higher probability of cancer screening, especially for CRC, for most race-ethnic groups, but was largely unrelated to other lifestyle behaviors. Where family history was significantly related to lifestyle—e.g., physical activity among White and Latino males, smoking among White and Asian females—individuals with a family history had lower odds of adherence to recommendations than those with no family history. Greater overall adherence to lifestyle recommendations was associated with higher odds of up-to-date CRC screening among White and Asian males, and lower odds of CRC screening among Asian females (no significant association with BC screening); this relationship did not vary by family cancer history. Conclusions The fact that family history of cancer is not associated with better lifestyle behaviors may reflect shared behavioral risks within families. More research is needed to understand the association of family history of cancer with various cancer preventive behaviors, as well as why screening adherence is not uniformly associated with adherence to cancer preventive lifestyle behaviors.	Cocinar Para Su Salud!: Effects of a culturally-tailored dietary intervention among Hispanic breast cancer survivors Greenlee H, Gaffney AO, Aycinena AC, Koch P, Contento I, Karmally W, Richardson J, Lim E, Tsai WY, Crew K, Maurer M, Kalinsky K, Hershman DL PURPOSE: Cocinar Para Su Salud! (CPSS) is a culturally-tailored dietary intervention designed to increase fruit/vegetable (F/V) intake and decrease dietary fat intake among Hispanic breast cancer (BC) survivors. METHODS: Eligible women included those with a prior diagnosis of stage 0-III BC, completion of adjuvant treatment (hormonal therapy allowed), Hispanic and able to speak Spanish. At baseline, women completed three 24-hr diet recalls, detailed interviews, provided fasting blood and anthropometric measures. Subjects were randomized to: A) the control arm (dietary recommendation booklet for BC survivors), or B) the CPSS program, a 9-wk dietary intervention with nutrition education, cooking classes and food shopping field trips. Women are followed for 12 months. The primary outcome is change at 6 months in daily F/V servings and % calories from fat. RESULTS: Seventy women were randomized (n=36 control, n=34 intervention). Baseline characteristics: mean age 56.1 yrs (SD 9.6), mean time since diagnosis 3.5 yrs (SD 2.7), mean BMI 30.9 kg/m2 (SD 6.0), and 68% with annual household income <$15,000. At baseline, women reported average daily intake of 5.3 servings of all F/V (3.1 servings of F/V targeted by the intervention, which excluded legumes/juices/starchy vegetables/fried foods) and 27.7% of daily calories from fat. 62% of women in the intervention arm attended ≥7/9 classes. Retention rates were 96% at month 3 and 87% at month 6. At month 3, the intervention arm compared to controls reported an increase in mean servings of F/V per day (all F/V: +1.1 vs. -0.2, P=0.06; targeted F/V: +2.0 vs. +0.02, P=0.001) and a decrease in % calories from fat (-7.0% vs. -1.6%, P=0.01). Changes were maintained at month 6; the intervention group compared to controls reported an increase in mean servings of F/V from baseline (all F/V: +2.0 vs. -0.1, P=0.005; targeted F/V: +2.6 vs. +0.1, P=0.0001) and a decrease in % calories from fat (-7.3% vs. -4.5%, P=0.26). At month 6 there was a non-significant trend in the difference in weight change between the two groups (intervention arm -2.0 kg vs. control arm +2.4 kg, P=0.2). CONCLUSIONS: Cocinar Para Su Salud! is an effective program to improve short-term dietary behaviors among Hispanic BC survivors of low socioeconomic status.

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SEEDS (Sisters Educated in Emergency Departments): Improving Mammography Screening for African American Women Hatcher-Keller, J., Allison, P., Dignan, M., Moser, D., Rayens, M., & Schoenberg, N. The purpose of this presentation is to provide an overview of Sisters Educated in Emergency Departments (SEEDs), a series of projects aimed at promoting mammography for African American women who visit the ED for non-urgent care. Findings from three studies are presented: 1) a mixed methods study examining factors that influence screening mammography use among African American women who use the ED for non-urgent care, the barriers and benefits to screening. In-depth interviews and surveys were conducted with 39 African American women who had presented to the Emergency Department of a University hospital with non urgent complaints 2) focus group interviews to evaluate the culturally tailored breast cancer educational materials developed as a result of project one, for African American women. The focus groups were used to determine cultural acceptability, readability, and applicability for the targeted population. 3) Randomized controlled trial involving assigning women to one of three arms, motivational interviews, tailored brochures, or control. Women are recruited, enrolled, and the intervention delivered while they wait for non urgent care in the Emergency Department. The RCT is currently in progress and more than 70 of the targeted 120 women have been enrolled. The outcome variable is receipt of mammogram and follow-up occurs at 3 months post enrollment. Future implications will be discussed, including the development of a projects designed to examine the implicit biases of mammography technicians and promote mammography in other vulnerable populations while they wait for care in the ED.	Disparities in Cancer Screening Rates among Sexual Minority Adults C. Kamen, K. Mustian, A. Peoples, M. Tejani, G. Morrow, O. Palesh The current study sought to examine disparities in different types of cancer screening between sexual minority (i.e., lesbian, gay, and bisexual) individuals and their heterosexual counterparts, accounting for demographic factors. We analyzed data from sexual minority men/women (n = 237/243) and an approximately 1:3 matched sample of heterosexual men/women (n = 670/699), matched on age, race, and education level. Data were collected as part of the Behavioral Risk Factor Surveillance System survey in 2006 and 2008 in California. Using Pearson Chi-squared analyses, we compared rates of colon cancer screening between sexual minority and heterosexual groups in both sexes; rates of cervical and breast cancer screening between groups in women; and rates of prostate cancer screening between groups in men. Results indicated a disparity in colon cancer screening between sexual minority and heterosexual men, with sexual minority men more likely to endorse having been screened via colonoscopy (61.2% vs. 47.3%, $\chi 2=10.32$, $p=0.001$). A disparity existed in rates of colon cancer screening between sexual minority and heterosexual women in length of time since last fecal occult blood test, with sexual minority women more likely to report that their last screening had been 5 or more years ago (16.4% vs. 4.4%, $\chi 2=18.34$, $p=0.001$). Finally, a disparity existed in rates of receiving Pap smears to screen for cervical cancer between sexual minority and heterosexual women, with sexual minority women less likely to endorse having received a Pap smear (93.3% vs. 96.4%, $\chi 2=40.06$, $p=0.044$). No disparities were found in rates of breast and prostate cancer screening (all p's > .05). These results indicate that disparities do exist in screenings for colon and cervical cancer among sexual minority groups, even accounting for demographic factors via a matched sample. While screening rates may be higher in gay men, low rates and long delays in screening among lesbian women highlight the need for specific prevention and screening messages targeted to this population. These messages may emphasize risk for cervical cancer among all women to encourage screening via Pap smears among lesbian women specifically.

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Gender disparities in mode of detection: Men are more likely than women to report a screen-detected colon cancer. Rauscher G, Brewer K, Parsons J, Calhoun E, Ferrans C PURPOSE: Utilization of colorectal cancer (CRC) screening for early detection is low overall and slightly lower in women than in men. We sought to examine whether there were gender differences in the mode of colon cancer detection in the Colon Cancer Patterns of Care in Chicago study. METHODS: Newly diagnosed men and women were ascertained at 7 facilities in Chicago, Illinois (two public, two private non-academic, and three academic institutions). Patients were eligible if: diagnosed with a first primary invasive colon cancer between the ages of 30 and 79, nH White or nH Black; and residents of Cook or collar counties. The study response rate was 55%. Patients (N=168) were interviewed using computer-assisted, personal interviewing procedures on the prior screening, diagnosis and treatment as well as a broad range of social and attitudinal constructs. Patients were asked to choose which of the following statements (abbreviated) most closely reflected the discovery of their colon cancer: (1) problems or symptoms with my colon or bowel, so I went to the doctor; (2) other problems, not with my colon or bowel; (3) not having any problems with my colon or bowel; got a test or procedure as a routine check; (4) follow-up colonoscopy, because prior colonoscopy found polyps or growths. Screen-detection was defined as responses 3 or 4 vs. 1 or 2. RESULTS: Men were more likely than women to report screen-detection (39% vs. 18%, p=0.004). After adjusting for age, race, health insurance, and facility of diagnosis, men were still 16 percentage points more likely than women to report screen-detection (adjusted percentages were 36% vs. 21%, p=0.03). Additional models adjusting for socioeconomic, attitudinal, health care access and utilization, prior screening, and medical history variables had little impact on the disparity. CONCLUSION: Men are more likely than women to report a screen-detected colon cancer, a critically important finding given that early detection leads to greatly improved chances of cure. Given roughly equal screening in men and women, the underlying causes of this gender disparity are unclear but could be rooted in undiscovered gender differences in tumor biology or processes of care.	Differences Between Primary Care Physicians and Oncologists in Initiating Advance Directives in Older Adults Bashari D, Sharma R, Wijeyakuhan N, Butt S, Frankenthaler M, Akerman M, Kline M, Nouryan C, Wolf-Klein G. BACKGROUND: Malignancy is the second leading cause of death in the United States among older adults. Yet, less than 40% of patients admitted to oncology units have advance directives (ADs) completed upon admission. This study explores the attitudes, experiences, and role of primary care physicians (PCPs) versus oncologists as catalysts of AD discussions in advance care planning with their older adult patients. METHODS: Anonymous survey of PCPs (internists and family practitioners) and oncologists practicing in both inpatient and outpatient settings at seven New York hospitals. Descriptive statistics were calculated and comparisons between groups were performed using the chi-square test for categorical responses. RESULTS: Of the 214 surveys collected, 187 (87%) were completed by PCPs and 27 (13%) by oncologists. Most physicians (58% PCPs, 63% oncologists) reported feeling “comfortable” or “extremely comfortable” discussing ADs. When asked who should initiate AD discussions, 90% of PCPs felt that they should be the initiators, while only 12% of oncologists agreed. Conversely, 3% of PCPs felt that oncologists should initiate AD discussions while 88% of oncologists felt that they should be the initiators ($p < 0.0001$). When PCPs and oncologists were questioned on the best timing of AD discussions, both groups felt that discussions occur “too late” or “much too late” (78% and 77.8% respectively). A majority of PCPs (57.2%) would initiate an ADs discussion in cancer patients at any stage of malignancy compared to 22.2% of oncologists ($p < 0.0007$). Indeed, 57.5% of PCPs believed that the appropriate time to initiate a discussion is in “early / localized” stages of cancer, compared with only 14.8% of oncologists ($p < 0.0001$). CONCLUSION: Whereas both PCPs and oncologists seem to agree with the need to initiate an ADs discussion, there is a striking dichotomy between practitioners with regard to the best timing. Improved communication between PCPs, oncologists, and their mutual patients may lead to earlier initiation of AD discussions and ultimately better medical care for older adults with cancer and their families.

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Is shared decision-making associated with patient outcomes? A systematic review. Shay, LA; Lafata, JE Shared decision-making (SDM) between patients and physicians has been suggested as an optimal approach to making health care decisions and has been endorsed by the National Cancer Institute. Most patients prefer to be actively involved in decision making and the trend for this preference has increased over time. Despite widespread advocacy for SDM, the empirical evidence regarding its effectiveness to improve patient outcomes has not been systematically summarized. The objectives of this systematic review are to describe the patient outcomes that have been studied in relation to SDM and to identify under what clinical and measurement contexts SDM is associated with patient outcomes. Pubmed was searched for English-language articles published through December 31, 2011with the words shared decision making in the title or abstract. Articles reporting the association between SDM and at least one patient outcome were included. The search yielded 2,136 articles, with 31 meeting the inclusion criteria. In total, 71 outcomes were assessed: 29 proximal, 28 intermediate, and 14 health-related. 45 outcomes were assessed in the context of cancer care, 12 in cardiovascular care, 6 in mental health care and 8 in another clinical area. The majority (n=47) of outcomes were measured via patient report, but 17 used observer-coding, and 7 used physician report. In total, 34% of assessments found a statistically significant and positive relationship between SDM and the outcome. Among proximal measures 48% (14 of 29) were positively associated with SDM, compared to 32% of intermediate (9 of 28), and 7% of health-related (1 of 14). The proportion of significant associations was greatest among assessments using patient reports (43%) and substantively less among observer-coded (24%) and physician reports (0%). Strikingly few formal evaluations have been conducted between SDM and patient outcomes. Furthermore, regardless of the clinical context or measurement used, these evaluations more often than not have not found a significant and positive relationship between SDM and a patient outcome. Although there are strong ethical and interpersonal reasons to advocate for SDM, our findings illustrate the continued uncertainty surrounding SDM as a mechanism to improve patient outcomes.	Preliminary Outcomes of an Informed Decision Making Intervention about Prostate Cancer Screening Among Prostate Cancer FDRs Davis S, Sutton S, Patel M, Vadaparampil S, Meade C, Rivers B, Tores-Roca J, Heysek R, Spiess P, Pow-Sang J, Jacobsen P, Gwede C Introduction: First degree relatives (FDRs) of men diagnosed with prostate cancer (PCa) are at increased risk for developing the disease. In light of the ongoing screening controversy, FDRs may face difficulty making decisions about screening. We developed and tested a targeted decision aid to engage FDRs in making informed decisions about PCa screening. This abstract presents preliminary results regarding the effects of this intervention on knowledge, decisional conflict, worry, and satisfaction with decision. Methods: Data were collected at baseline and 4 weeks post intervention from 85 Black and White FDRs aged 40-70. Men were randomly assigned to 1 of 2 decision aid conditions: a general CDC decision guide booklet alone (not previously tested with this population) or the CDC decision guide booklet and a newly developed DVD targeted specifically for FDRs. Results: Seventy-five men provided baseline and follow-up data. The average age was 53 (SD=9.0); the majority were White (84%), married or living with partner (73%), educated beyond high school (84%), employed full-time (65%), and had prior PSA test (69%). No significant differences were found between intervention conditions in demographics, other baseline characteristics, or outcomes of interest. However, for both intervention conditions, there was a statistically significant decrease in decisional conflict ($p<.001$) and increase in knowledge ($p<.001$). Furthermore, greater increases in knowledge ($p<.02$) and decreases in decisional conflict ($p<.06$) were observed in younger FDRs. Conclusion: Group differences in decisional conflict and knowledge were not observed in this sample, perhaps because all men received some PCa education and the sample had high educational attainment. It is possible that men with lower educational attainment could benefit more from a targeted intervention that includes a video. This study highlights that both decision aids (general and targeted) can play an important role in increasing knowledge and decreasing decisional conflict among FDRs, particularly those who are younger. Recruitment of Blacks continues to facilitate exploration of racial differences.

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Impact of Telephone vs. In-Person Delivery of BRCA Genetic Counseling/Testing on Subsequent Use of Support Services Vanhusen, L., Feeley, L., Kelley, S., Nusbaum, R., Peshkin, B.N., Butrick, M., Graves, K., Valdimarsdottir, H., Schwartz, M.D. As genetic testing becomes increasingly central to the practice of oncology, the provision of individual in-person genetic counseling becomes less feasible. In a randomized non-inferiority trial of telephone delivery of BRCA1/2 counseling and testing, we found that telephone delivery was as effective and less expensive as standard care. However, it is possible that women who have not had the opportunity for in-person genetic counseling might be more likely to seek additional support. The purpose of this study was to examine whether receiving telephone genetic counseling/testing was prospectively associated with increased use of support services. Eligible participants were women ages 21-85 enrolled in a randomized control trial of telephone counseling (TC) vs. standard counseling (SC). After completing a pre-randomization interview (measuring demographics, psychosocial variables, risk perception, and cancer knowledge), 514 participants were randomized to TC or SC. At a 12-month follow-up, we measured self-reported use of support services related to genetic testing. Overall, 35 (13.6%) of TC participants vs. 39 (15.4%) of SC participants (p=0.55) utilized group, in-person, or internet support during the follow-up period. Bivariate predictors of using support were: age, cancer distress, perceived stress, quality of life, BRCA1/2 test result, and personal cancer history (all p-values <.01). To identify independent predictors, we included these variables in a backwards logistic regression. The final model revealed that women most likely to pursue additional support were younger (OR=0.74, 95% CI=0.6-0.9), more distressed at baseline (OR=1.2, 95% CI=1.1-1.4), previously affected with cancer (OR=6.4, 95% CI=2.9, 14.4) and received a positive BRCA test result (OR=3.5, 95% CI=1.8-7.2). These results suggest that telephone BRCA1/2 genetic counseling does not lead to increased use of support services, which provides further evidence for the cost effectiveness of telephone delivery. Regardless of mode of delivery, those most likely to require ongoing support are younger more distressed patients who have been diagnosed with cancer or receive a positive BRCA test result.	To screen or not to screen? Can Patient-Centered cancer counseling increase motivation in individuals at increased colorectal cancer risk Birmingham, W., Boonyasiriwat, W., Schwartz M., Edwards, S., Kinney, A. Purpose: Cancer screening increases the likelihood of detecting certain cancers early when they may be curable, yet screening for colorectal cancer (CRC) is less than optimal in individuals at increased familial risk. Effective patient-centered communication (PCC) interventions that incorporate effective behavior change techniques may advance individuals along the stage of change continuum. Health care professionals, including genetic counselors (GC), are a trusted source of health care information regarding cancer risk and preventive recommendations. Effective PCC in a cancer risk assessment and behavior change counseling context may increase intention to screen in at-risk individuals. Methods: To determine the influence of patient-reported PCC on intention to get colonoscopy in at-risk individuals we examined screening intention following a theory-based personalized telephone-based risk assessment and behavior change intervention delivered by GCs to 86 men and 132 women aged 34 to 74 (M age, 50; SD = 9.1). Participants were all at increased familial risk for CRC and non-adherent with screening guidelines at study baseline. At one month post-intervention, using an adapted version of the Street et al. (2007) Patient-Centered Communication questionnaire we assessed participants' views of GCs' informativeness, use of supportive communication and engagement in partnership building, and intention to screen. Results: Subscale scores were combined to produce a total PCC score. Data were skewed and a median split was used to categorize PCC scores as high and low. Participants indicated their intention to have colonoscopy within the next 6 months and responses were dichotomized as "intend to screen" or "do not intend to screen". Analysis indicated those who rated their GC with low PCC scores were significantly less likely to indicate intention to have colonoscopy screening following intervention [χ^2 = 8.55, df=1, p=0.004]. Conclusion: Ineffective PCC can inhibit intention to screen. Interventions aimed at advancing at-risk individuals along the stage of change continuum may be more effective when using patient-centered communication.

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Mediators of Change in Stage of Adoption Following Two Colorectal Screening Interventions Christy, S., Wang, H., Perkins, S., Tong, Y., Champion, V., Skinner, C., & Rawl, S. The purposes of this randomized trial were to: 1) compare effects of two CRC screening interventions on forward movement in stage of adoption from baseline to six months post-intervention and 2) identify mediators of movement in stage of adoption. African-American primary care patients who were non-adherent to CRC screening recommendations were randomized to receive either a computer-delivered, tailored CRC screening intervention (n=286) or a non-tailored print brochure (n=309). Outcome variables included stage movement for fecal occult blood test (FOBT), colonoscopy, and either test. Potential mediators examined included changes in CRC knowledge, changes in CRC health beliefs (perceived benefits, perceived barriers, self-efficacy, and perceived risk), and patient-provider discussion of CRC screening. Logistic regression was used to examine stage movement from baseline to six months and to identify mediators of intervention effects. All analyses controlled for demographics and baseline stage of adoption. Compared to patients who received the non-tailored print brochure, those who received the computer-delivered, tailored intervention had 74% greater odds of demonstrating forward movement in stage of adoption for FOBT (OR= 1.74, 95% CI: 1.15-2.64). When testing mediation, significant predictors of FOBT forward stage movement included change in FOBT barriers scores (OR=1.71; 95% CI=1.13-2.59), change in CRC knowledge scores (OR=1.68; 95% CI=1.08-2.60), and having had a patient-provider discussion about CRC screening (OR=1.62; 95% CI=1.05-2.51). However, the intervention effect remained significant in all models (ORs ranging from 1.62 to 1.71). Forward stage movement for colonoscopy was observed in both the computer and brochure groups (44% vs. 42%, respectively, p= ns). Findings suggest that the tailored intervention, reducing barriers, increasing knowledge, and stimulating patient-provider discussions each promoted movement toward action for FOBT screening. Mediation was not evident. Research is needed to examine methods to further advance colonoscopy stage movement and mediators of colonoscopy stage movement among African-American primary care patients.	Measuring Staff Activation for Breast Cancer Screening in Women with Intellectual Disability Wilkinson J, Wildanah N, Bowen D Background: Women with intellectual disabilities (mental retardation) have high rates of breast cancer mortality and low rates of regular mammography. Approximately half of all women with intellectual disabilities live in residential settings with 24 hour support (group homes). Researchers have noted that the health literacy and cancer screening behaviors of direct support workers (the staff who work in group homes) are both poor. We developed a measure called the Staff Activation Measure (SAM), adapted from the Patient Activation Measure, to assess the capacity and readiness of direct support workers to assist disabled women with breast cancer screening. Methods: The SAM was developed through adaptation from the Patient Activtation Measure and piloted in two groups of support workers: a staff group at a multidisciplinary residential center in Tennessee that is a national model for care of people with disabilities, and a staff group at a residential services vendor outside of Boston, MA. Results: 40 direct support workers participated in the pilot. The total mean score on the SAM (out of 45) was 33.0 (SD 5.9). Questions regarding mammography were scored a point lower on average (on a scale of 1-5) than questions about general health, indicating decreased confidence on the part of support workers regarding their ability to successfully assist disabled women with mammography. Conclusion: The SAM is a new instrument that appears to capture the activation of staff members to assit with cancer screening in disabled patients. Preliminary results indicate that staff members are less confident and activated regarding breast cancer screening when compared with general health.

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Differences between hereditary and sporadic colorectal cancer survivor ratings of satisfaction with their health care providers Burton-Chase A, Peterson S, Amos C, Frazier M, Lu K, Lynch P, Rodriguez-Bigas M, You N, Yuan Y, Gritz E Purpose of the study: We compared survivors with Lynch syndrome (LS) and sporadic colorectal cancer (CRC) on multiple domains of patient satisfaction with their health care providers. Methods: We examined differences in health care provider satisfaction ratings between LS (n=75) and sporadic CRC survivors (n=66). Eligible patients were diagnosed with CRC at least 6 months prior to study enrollment; LS survivors had confirmed mismatch repair gene mutations. Sporadic and LS CRC patients were matched on age, sex, cancer stage, race/ethnicity, and time since diagnosis. Four subscales of the Primary Care Assessment Survey were used to measure provider satisfaction: Overall Care, Personal Aspects of Care, Provider Knowledge, and Trust. The Trust Subscale scores ranged from 0-5; all other subscale scores ranged from 0-6. Results: Most participants were female (53%), in a committed relationship (83%), white (91%), had completed at least high school (87%), had children (87%), and were currently employed (59%). LS patients reported significantly lower levels of satisfaction with the care they receive from their providers for overall care (4.9 vs. 5.5), personal aspects of care (5.0 vs. 5.4), and provider knowledge (4.5 vs. 4.8). The groups did not differ on the trust subscale (3.7 vs. 3.9), however LS patients rated their providers lower on the single trust item (8.4 vs. 9.2 on a 0-10 point scale). For individual survey items, a greater proportion of LS CRC survivors reported scores that were poor, fair, or good than sporadic CRC survivors. Specifically, they report a significantly higher percentage of lower ratings on when to seek further care (30% for LS vs. 16% for sporadic), advice and help in making decisions about care (23% vs. 5%), knowledge of entire medical history (41% vs. 24%), and knowledge of what worries you most about your health (64% vs. 40%). Conclusions: LS CRC survivors report significantly lower levels of satisfaction across multiple domains of health care provider ratings than sporadic CRC survivors. These findings may indicate a gap in communication between LS patients and their providers that should be addressed in future research.	Young Adult Cancer Survivors: Health Behaviors and Related Discussions with Healthcare Providers U. Ilozumba, C. Berg, N. Esiashvili, E. Stratton, & A. Mertens Long-term survival for pediatric cancer has increased to nearly 80%. The increasing incidence and decreased mortality from pediatric cancer has resulted in a growing population of survivors at risk for health problems and early mortality, often in young adulthood. This is a vulnerable population for addressing health-compromising behaviors. We examined health behaviors and recent interactions with healthcare providers regarding health behaviors among a sample of 102 young adult survivors of childhood cancers identified from medical records of a Southeastern cancer center. We then conducted qualitative interviews with a subset of 30 survivors and 20 healthcare providers (e.g., pediatric oncologists, nurse practitioners). Our survey sample was on average 22.22 (SD=3.21) years old, 50% female, and 19.4% being Black. In the past 30 days, 14.0% had smoked cigarettes, 11.1% had used marijuana, and 59.2% had used alcohol, with 22.2% reporting binge drinking. These rates were lower than documented in a sample of young adults in the same region. However, nearly a quarter (24.0%) was sedentary. Predictors of engaging in positive health behaviors included greater health-related locus of control and social support (p's<.05). Regarding interactions with healthcare providers during their last clinic visit, 59.0% were asked about smoking, 56.0% were asked about alcohol use, 46.5% were asked about illicit drug use, 70.0% were asked about nutrition, and 71.7% were asked about physical activity. Qualitative interviews with the young adults indicated that participants were rarely told about the specific need to engage in positive health behaviors for pediatric cancer survivors. Moreover, participants indicated that, while these factors were sometimes assessed, minimal intervention was delivered. Similarly, healthcare provider interviews indicated that, while many assessed or discussed tobacco use and weight-related factors, these assessments were not systematically done, and little support for interventions existed within their organizations. Thus, increased infrastructure and resources to support healthcare providers in their tertiary cancer prevention efforts are needed.

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Identifying a potential 'teachable moment' around lifestyle behaviors for long term cancer survivors: Perspectives of the clinic K.Smith, K. Coa, A. Klassen, L. Caulfield, L. Shockney, K. Helzlsouer, A. Baker Purpose: To explore clinical perceptions of healthy lifestyle promotion in the care of post-treatment cancer survivors Methods: Qualitative interviews were conducted with 32 members of cancer care teams (10 oncologists, 5 surgeons, 6 primary care providers, 7 nurses, as well as dieticians, social workers and patient navigators) from two clinical settings (one academic and one community). Interviews focused on how diet is addressed in survivorship care and attitudes towards promotion of dietary change. Interviews were audio recorded, transcribed and analyzed thematically. Results: Most clinicians saw value in promoting healthy behavior among their survivor patients. However, there were varying perspectives on the optimal time to promote lifestyle changes and on the role of different provider types. Some thought that behavior change should be discussed during treatment, while others believed that it should not be addressed until after completion. Several emphasized the importance of hearing behavior change messages multiple times and from multiple providers to motivate and sustain change. The majority identified someone else as more appropriate to provide details about healthy diet or effective intervention strategies. Oncologists presented both lack of time and lack of expertise as barriers to addressing diet with their patients. Primary care providers were often mentioned in relation to handling dietary concerns, although they too cited barriers to care provision. In general, clinicians did not feel that they had access to important expert resources (e.g., dieticians, programs). Conclusion: While many clinicians perceive value in promoting behavior change in cancer survivors, there is currently a lack of the necessary clinical capacity and support structure. This work is not seen as within the remit of any core member of the current cancer care team, nor are resources for nutrition expertise easily identified. Intervention strategies should address these gaps.	Tobacco use history and attitudes among current smokers and recent quitters with head and neck cancer Weaver K, Sterba K, Goins J, Alberg A, Carpenter M, Josephs-Finlay K, & Tooze J Tobacco use is associated with poor outcomes after head and neck cancer (HNC). To inform cessation programs, we examined tobacco use and barriers and facilitators of cessation among HNC surgical patients. We compared current smokers (n= 28) and recent quitters (quit < 6 months, n=14) from a larger study of tobacco use among HNC patients recruited from two southeastern cancer centers (66.7% male; 73.8% white; 57.5% Stage IV). Presurgery demographic characteristics (gender, age, race, education, stage), tobacco use (other tobacco products, time to first cigarette, length of use) and barriers, facilitators (cessation aids, concern about health effects, household smoking) & cessation program interest & preferences were compared using Fisher's exact tests and t-tests. The racial/ethnic distribution differed between quitters and smokers (50% of quitters and 85.7% of smokers were white, p<.05). There were no significant differences in smoking history but there was a trend towards greater use of other tobacco products by smokers (18.5% vs 0%, p=.15). Only 32.4% of smokers and 25.0% of quitters used pharmacotherapy during the past quit attempt; very few used counseling (both p> .05). Smokers were more likely than quitters to live with other smokers (64.3% vs 28.6%) and or in a home where smoking was permitted (75.0% vs 21.4%, both p <.05). In both groups >70% were very concerned about the health effects of cigarettes p=.72)); smokers who were very concerned were more likely to have high confidence they could quit compared to those who were not very concerned (70.0% vs. 25.0%, p=.04) and to have a strong intent to quit in the next month (70.0% vs. 14.3%, p=.02). Of smokers, 80.7% reported interest in a cessation program and the majority (>50%) preferred to participate in person at the cancer center or by mail. The most common barriers among smokers were cravings (89.3%), loss of a way to handle stress (53.6%), pharmacotherapy cost (53.6%), others smoking (50%) & anxiety (50.0%). HNC quitters and continued smokers were similar in many respects, but differed on household smoking. Interventions for these patients should employ empirically-supported cessation strategies that emphasize health effects and address common barriers and other tobacco use.

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The efficiency of tobacco use counseling with current smokers El-Shahawy, O; Shires, D; Elston-Lafata, J Purpose: Since 2000, the US Department of Health and Human Services (USDHHS) has advocated for targeted tobacco use counseling based on smokers' willingness to quit. We evaluate physician adherence to these recommendations. Methods: Eligible subjects were primary care physicians and patients in a southeast Michigan health system between 2007—2009. Audio-recordings were used to capture patient-physician office visit discussions among current smokers (N=90) and their physicians (N=44). Recordings were transcribed and coded using structured coding forms. For current smokers willing to quit, the guideline recommends offering cessation assistance (CA), and not motivational counseling (MC). For current smokers not willing to quit, the recommendation is for MC, and not CA. We report the proportion of current smokers for whom smoking status and willingness to quit were assessed, the proportions receiving at least one type of CA or MC by willingness to quit, and the proportion receiving neither. Result: 93% (n=84) of current smokers had tobacco use assessed and 86% (n=77) had willingness to quit assessed. Among those with willingness to quit assessed, 66% (n=51) expressed a willingness to quit. Among these, 92% (n=47) were appropriately offered CA, however 80% (n=41) received MC and 8% (n=4) received neither. Among those not expressing a willingness to quit (n=26), 81% (n=21) were appropriately offered MC; however, 65% (n=17) received CA and 19% (n=5) received neither. In total, 24% (n=22) of current smokers were offered neither CA nor MC. Conclusions: Via combined failures to address smoking status or deliver indicated CA or MC, missed opportunities continue to exist for tobacco use counseling in primary care practice: almost a quarter of current smokers failed to receive guideline recommended tobacco counseling. Furthermore, although at least one aspect of recommended tobacco use counseling was commonly offered, it was frequently accompanied by additional non-recommended strategies. Physicians can potentially assist more smokers and improve the efficiency of their counseling by following the USDHHS Clinical Practice Guideline for Treating Tobacco Use and Dependence.	What are the reactions of diverse US smokers when graphic warning labels are affixed to their cigarette packs? McQueen, A., Caburnay, C., Kaphingst, K., Thompson, V., Tovar, M., Waters, E., & Kreuter, M. Purpose: Many studies have investigated individuals' reactions to graphic cigarette warning labels as experimental stimuli or after implementation of regulations (outside the US), but none have simulated real-world exposure to graphic warning labels among US smokers. Method: Using targeted recruitment strategies, we recruited participants to complete an iPad-administered survey of cognitive and affective reactions to 9 graphic warning labels proposed by the FDA for cigarette packs. A subgroup of adult smokers with at least a half-pack of cigarettes in their possession was recruited into a study with 2-, 4-, and 6-day follow-up phone interviews. A block-randomized warning label (graphic vs. standard) was affixed to the participants' pack(s) of cigarettes and additional stickers of the same label were provided for the week. Results: 120 of 200 planned participants have completed the first follow-up. Participants (age M=34, SD=12) were 58% male, 31% African American, 53% White, and 38% had less than a high school education. At the first follow-up: A median of 2 packs were used and 92% reported affixing stickers on all packs used. Most recalled the warning label (95%) despite only 44% reporting noticing the label every time they opened the pack. Some reported label avoidance: ever covering up the label (23%) or keeping it out of sight (40%). Family (59%) and friends (45%) noticed the label on participants' packs. Effects of the labels included: thought twice about smoking (75%), thought about harms (79%), thought about quitting (71%), and (even momentarily) stopped smoking (30%), but no one wanted to smoke more. Any label avoidance was only associated with more thoughts about quitting (OR=2.46; p=.04). Conclusions: Most participants complied with having warning stickers on their cigarette packs and some reported active avoidance of labels, which does not seem to reduce their effects. Next steps will be to explore any differences by sociodemographics, type and personal relevance of assigned label, and changes over time. Qualitative data is expected to provide additional insights. Results may provide the FDA with evidence of the benefits of graphic cigarette warning labels.

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Lack of modulation of serum and breast biomarkers by high dose Vitamin D supplementation in women at high risk for breast cancer Fabian C, Kimler B, Petroff B, Zalles C, Hursting S, Nydegger J, Phillips T, Metheny T Previously, we had observed that ~50% of women at high risk for development of breast cancer had serum levels of 25-hydroxyvitamin D [25(OH)D] considered deficient (< 32 ng/ml). Low 25(OH)D levels have been implicated as a risk factor for development of various cancers. We conducted a pilot trial of breast cancer risk biomarkers expressed in breast epithelial cells acquired by random periareolar fine needle aspiration (RPFNA) to see if high dose vitamin D supplementation would favorably modulate these biomarkers. Thirty pre-menopausal women at high risk for breast cancer, with 25(OH)D levels below 30 (median 24, range 7-29) ng/ml, had breast tissue harvested by RPFNA in the follicular phase of the menstrual cycle before and after a 6-month intervention with vitamin D3 (30,000 IU weekly, provided by BTR Group, Inc.). Specimens were evaluated for tissue risk biomarkers including cytomorphology, proliferation (Ki-67), and mRNA levels (qRT-PCR). Additional blood and frozen breast tissue was reserved for assessment of hormones, adipokines, cytokines and gene expression. All but three subjects completed study and were evaluable for modulation of biomarkers. Only five subjects reported Grade 2 side effects; the intervention was well-tolerated. No statistically significant modulation was observed for cytologic evidence of atypia (48% pre- and post-study), Masood score (median of 14 pre- and post-study), number of epithelial cells recovered (median of 1,000-5,000 pre-study and 500-999 post-study), and Ki-67 expression (median of 2.3% pre-study and 1.6% post-study). With the exception of decreases in IGF1 and progesterone (p£0.012) there was no modulation of serum hormones and growth factors. For either serum or RPFNA specimens, there were no consistent modulations in a panel of adipokines, cytokines, and growth factors assayed by Luminex®. High dose supplementation with vitamin D3, while well-tolerated in healthy pre-menopausal women, was associated with only minimal evidence of modulation of tissue or blood biomarkers. This suggests that factors other than simply circulating levels of 25(OH)D may be responsible for any possible influence on risk for development of breast cancer.	A metabolomics approach to characterize nipple aspirate fluid biomarkers;potential for new breast cancer chemoprevention targets Miller J, Tredwell G, Keun H, Thompson P,1 and Chow H Purpose: The components of nipple aspirate fluid (NAF) are constantly secreted, metabolized and re-absorbed by the epithelial lining of the ductal/alveolar system within the breast. With the improved understanding of the molecular heterogeneity of breast cancer and advances in more sensitive 'omics' technologies, NAF from healthy subjects poses a viable biologic to mine for novel, minimally invasive early detection and cancer surrogate biomarkers. Methods: We characterized metabolomic profiles in NAF and plasma from healthy pre (N=4) and postmenopausal (N=4) women participating in an early phase biomarker study. NAF and plasma metabolomics profiles were acquired using gas chromatography mass spectrometry (GC-MS). Metabolites were identified using the NIST chemical library. Exploratory comparative analyses between pre and postmenopausal women and NAF and plasma were conducted. Results: There were 40 metabolites identified in NAF and 44 in plasma. Overall, there were 15 metabolites observed in NAF that were not observed in plasma. Metabolite classes were predominantly amino acids, fatty acids, sugars, and some TCA cycle intermediates in both NAF and plasma. Profiles were highly reproducible (83% of metabolite CV's<20%) by GC-MS. Microbial metabolites, benzoic acid and oxalic acid were present in NAF but were not detectable in plasma. Additionally, the procarcinogenic polyamine, putrescine, was present in NAF but was not detectable plasma. Interestingly, in NAF, maltose was on average 50-fold higher, with valine and citric acid 2-fold higher in premenopausal women than postmenopausal while postmenopausal women had 3-fold higher cholesterol. Further characterization of metabolite profiles and determination of their potential relationship to breast cancer is ongoing. Conclusions: To our knowledge, this is the first metabolomic profile of NAF. These preliminary data suggest that the biological information contained in NAF is distinct from plasma. Further, pre and post-menopausal women appear to also have different metabolite compositions. Further characterization of the contents of NAF from both pre and postmenopausal women using larger sample sizes is warranted for the ultimate goal of identifying novel targets for the chemoprevention of breast cancer.

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Challenges of Recruiting Native Alaskans to a Nationwide Colorectal Cancer Prevention Study Cook E, Anderson K, Zell J, Brown P Alaska Natives (AN) are diagnosed with colorectal cancer at over twice the rate of Alaska whites. Between 2003 and 2007, the colorectal cancer (CRC) incidence rate was 9% lower in American Indians/Alaska Natives (AI/AN) than in non-Hispanic whites, however, there are significant regional differences among AI/AN. For example, CRC incidence rates among AI/AN living in Alaska are 5 times higher than AI/ANs living in the SW. Since there is little data related to cancer risk reduction among the AN population, enrolling AN to colorectal cancer prevention trials is needed. S0820 is a Phase III, double blind, placebo-controlled trial of eflornithine and sulindac to prevent recurrence of high risk adenomas and second primary colorectal cancers in patients with Stage 0-III colon cancer. The pre-specified recruitment goal for AI/AN is 20 of 1,340 patients nationwide. S0820 is scheduled to open in early 2013. Accrual strategies include contacting leaders in the field of colon cancer disparities in AN to develop inroads into the AN health care community, working with the Alaska Native Tribal Health Consortium, a statewide nonprofit health service operated by the AN people for health services to 229 tribes in Alaska, and contacting physicians at the Virginia Mason Medical Center, a hospital in Seattle, WA that also cares for AN. We will also work with the local IRBs, provide culturally competent written materials, and allow shipment of drug to remote locations. Funds to assist with patient transportation and drug shipment are being requested. Barriers to recruiting AN to this study include: the lengthy 8-year trial period, a lack of research infrastructure at some sites, and sociocultural barriers with regards to the cultural distinctiveness of individual tribes. Since half of AN people live in rural and not easily accessible remote communities, transportation to the clinical site and drug shipment must be arranged. Conclusion: Recruitment of AN to S0820 requires a targeted approach. Much of the work must be initiated prior to trial activation with additional financial resources allocated. More information on resources and accrual status will be available for a poster presentation.	Will Transitioning from Paper to Web-based Data Collection be Successful in an Aging Male Study Population? Yee M, Hartline J, Goodman P, Darke A, Crowley J PURPOSE: Describe the challenges of moving from paper to electronic-based data collection in an aging male population (age 55 to 98) of 17365 men from the Selenium and Vitamin E Cancer Prevention Trial (SELECT). METHODS: SELECT Centralized Follow-up began in 2009 and was conducted for 22 months via mailed health questionnaires. Funding for mailed questionnaires was eliminated in May 2012. SELECT has a secure website that allows participants to submit contact and health information, but use of the site has been lower than expected. We hope to encourage participants to submit their follow-up data via web. Based on participant feedback, we are simplifying the logon process and updating website content more frequently. When the enhancements are functional, a letter and email promoting the site will be sent to all participants. Reminders will be mailed/emailed to participants who have not completed a recent online questionnaire. 10649 participants have an email address on file and are assumed to be familiar with the web. We are targeting this group to submit data online. We will collect data by phone for men unwilling or unable to use the website. RESULTS: 88% of participants completed the mailed questionnaire in the first year and 81% in the second (partial) year. Our goal is to significantly increase the number of web-entered questionnaires. We expect challenges in achieving similar rates for web entry in this demographic. The enhanced website and simplified logon process will launch in early 2013. Results and participant feedback as of February 2013 will be available for presentation. CONCLUSIONS: Maintaining contact with aging participants is challenging due to possible economic, social and health condition changes. Compared with mailing questionnaires, electronic methods would seem to be frugal and efficient ways to engage participants. Future funding may rely on increased use of web data collection. However, greater familiarity and comfort with online communications are associated with younger age groups than the men in SELECT. If we are successful in increasing use of the website, we may add social and mobile media to encourage participants to stay in contact.

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Using Small Molecules for Treatment of Neurodegenerative Disorders and Cancer in South Africa Matsebatlela TM, Gallicchio VS, Rice CD Small molecules and trace elements provide a promising hub of resourceful agents in treatments of neurodegenerative diseases and cancer. One such molecule is 3,4-Dihydroxybenzohydroxamine (Didox). Didox is a simple, synthetic antioxidant and one of the most potent ribonucleotide reductase inhibitors, revealing an antitumor effect in several experimental studies. We have examined the effect of didox on the induction of oxidative stress in Raw 264.7 murine macrophage cell line. Using the Griess Reagent Assay, we showed that didox inhibited LPS-induced nitric oxide production without inducing cell death in these cell lines. The MTT assay assay revealed that cell viability was maintained and this was confirmed with Flow Cytometric evaluation using Propidium Iodide exclusion and Annexin-V FITC labels. Didox also inhibited LPS-induced H2O2 production as assessed with dihydrodichlorofluorescein diacetate (CM-H2DCFDA) and this was confirmed using Fluorescence Microscopy Analysis. Didox also prevented the effect of Buthionine Sulfoxamine (BSO) and PMA-induced H2O2 production in the cell lines and protected tributyltin-induced cytotoxicity in a dose dependent manner. Moreover, using the sandwich ELISA assay, we showed that Didox dose-dependently inhibited LPS-induced IL-6 production in Raw 264.7 cells. Didox also inhibited PCB126-induced cytotoxicity and H2O2 production in Raw cells. Using the Real-time PCR system, we showed that Didox inhibited LPS-induced mRNA expression of iNOS, IL-6, IL-1, NF-KB 1(p105), NF-KB p65, Macrophage inflammatory proteins (MIP-1A and B), Caspases 1 and 8, and proapototic protein Bax. In addition, Didox inhibited both PMA and LPS-induced phagocytosis aof FITC-labeled beads. These results suggest that the pharmacological action of Didox is due to its potent anti-oxidative effects and anti-inflammatory effects, and that these actions are mediated via inhibition of the NF-KB pathway. Didox may therefore play a major in managing disease conditions exacerbated by of LPS-induced oxidative stress in macrophage-mediated inflammation.	Effect of Acute Smoke Exposure on Lung Inflammatory Cell Populations in Prostacyclin Synthase Transgenic Mice Wagh A, Hudish T, Friedman M, Redente E, Johnson M, Dwyer-Nield L, Keith R Purpose: To evaluate the effects of murine pulmonary prostacyclin synthase (PGIS) overexpression on lung inflammatory cell populations after acute smoke exposure as a mechanism by which prostacyclin (PGI2) and PPAR-γ agonists prevent lung cancer. Rationale: Prior studies have shown that transgenic mice that overexpress prostacyclin synthase (PGIS Tg+), the enzyme that facilitates conversion of PGH2 to PGI2, are protected from developing lung tumors in multiple murine models, including tobacco smoke exposure. Prostacyclin exerts these effects through the PPAR-γ receptor, and overexpression of PPAR-γ protects against lung tumorigenesis in mouse models as well. Hence, the use of Pioglitazone (a thiazolidinedione medication for type 2 diabetes that stimulates PPAR-γ) is currently being investigated in a clinical trial as a lung cancer chemopreventive agent. The effects of PGIS over-expression or treatment with a PPAR-γ agonist on the tumor microenvironment will be evaluated. Methods: In this study, 8 week old FVB/n (wild type and PGIS Tg+)mice were exposed to ambient air or cigarette smoke in a smoking chamber for 5 days (6 hours/day with an average of ~ 60 mg/m3 total suspended particulate). Mouse lungs were harvested 18 hours after the last exposure and digested with collagenase. Inflammatory cells were evaluated by flow cytometry. Results 1. 1. Lung CD8+ lymphocytes were differentially increased in PGIS Tg+ mice after smoke exposure. 2. Lung CD4+ lymphocyte populations decreased after smoke exposure in both wild type and PGIS Tg+ mice. Conclusions: Acute exposure to cigarette smoke markedly alters the inflammatory cell component of the lung. PGI2 production and Pioglitazone exposure may exert their chemopreventive effects by critically altering the inflammatory cell populations of the lung. Current studies will include inflammatory cell population evaluation after chronic 6 week exposure, 22 week exposure, and subsequently after the completion of a 42 week experiment.

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Area of Residence and Racial Disparities in Breast Cancer Survival Akinyemiju T; Soliman A; Johnson N; Altekruse S; Welch K; Banerjee M; Schwartz K; Merajver S Purpose: To investigate the effect of county-level healthcare access as well as individual and county-level socioeconomic status on breast cancer survival disparities between black and white women using a unique, population based dataset. Methods: Data from 1,796 women (1,580 whites and 216 blacks) diagnosed with breast cancer between 1973 and 2003 from 60 counties in the US were obtained from the Surveillance Epidemiology and End Results, the National Longitudinal Mortality Study (NLMS) dataset, and the Area Resource File (ARF). Healthcare access variables were obtained from the ARF, and were defined as the availability (per capita) of healthcare professionals, healthcare facilities and mammography clinics. Breast cancer data was obtained from SEER and individual SES variables for SEER cases were obtained through linkage with NLMS data. Cox Proportional Hazards models were constructed using robust sandwich estimates for the covariance matrix to account for clustering within counties. Three sequential Cox models were fit for breast cancer survival and all-cause survival; adjusting for demographic variables, adjusting for demographic and clinical variables, and the third adjusting for demographic, clinical and county-level SES and healthcare access variables. Results: In unadjusted analysis, black women had a 53% higher likelihood of dying of breast cancer and 32% higher likelihood of dying of any cause ($p<0.05$) compared with white women. Adjusting for demographic variables explained away the effect of race on breast cancer survival (Hazard Ratio, 1.40; 95% CI, 0.99-1.97), but not on all-cause mortality. The racial difference in all-cause survival disappeared only after adjusting for county-level variables (Hazard Ratio, 1.27; CI, 0.95-1.71). Conclusions: Area of residence is an important contributor to survival. Improving equitable access to healthcare for all women in the US may help eliminate survival disparities between racial and socio-economic groups.	Racial/Ethnic Diversity in Pediatric Oncology Clinical Trial Enrollment at Rady Children's Hospital San Diego (RCHSD) Aristizabal P, Singer J, Schiff D and Martinez ME Background. In the United States, more than 12,000 children ages 0-21 are diagnosed with cancer each year. Over the past few decades, survival rates in pediatric oncology have improved dramatically, as a result of the successful enrollment of approximately 70% of the cases in clinical trials. However, recent studies have shown a substantial decrease in enrollment in clinical trials in pediatric oncology and significant underrepresentation among Hispanics, young blacks and adolescents. Purpose. The aim of this study was to assess rates of clinical trial participation by age, sex, cancer type, and Hispanic ethnicity at RCHSD. Methods. Data from newly diagnosed cases in 2010 at RCHSD were collected and sub-grouped by race/ethnicity, age, sex, and cancer type (solid or liquid). Clinical trials were divided into 3 groups: Biology, Treatment, and Registry. Significant differences by subgroup were assessed using chi-square tests. Results. There were 124 cases included in the study. When analyzing race/ethnicity, only comparisons between Hispanics and Non-Hispanic Whites (NHWs) were assessed. Fifty percent of the population was Hispanic, whereas 28% were NHWs. The overall participation rate in clinical trials was 45%. Our analysis revealed significant underrepresentation among Hispanics (35%) when compared to NHWs (59%) in treatment protocols ($p=0.021$). Enrollment into solid malignancy protocols for all racial and age subgroups was significantly underrepresented (18%) when compared to liquid malignancy (50%) for all protocols ($p=0.038$). Additional underrepresentation occurred in enrollment in a biology protocol among Hispanics compared to NHWs (46.5% vs. 60.5%), although the results did not reach statistical significance. Conclusions. Participation in clinical trials at RCHSD is low overall. Underrepresentation in clinical trial participation was observed for Hispanics and solid tumor protocols. Our results support previous findings and help identify underrepresented subgroups that may benefit from targeted attention. Further characterization of these subgroups at RCHSD will continue with analyses including additional years of study.

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Special Population Research for Epidemiology Students Soliman, A., Chamberlain, R. We will describe the development, implementation, and evaluation of an academic program to motivate and educate public health MPH and PhD students to pursue careers in cancer epidemiology research in special populations in the United States and in developing countries. The authors have directed this ongoing program for the past 6 years with support of an NCI R25E grant. To achieve this objective, the following specific aims are: 1) recruit and select MPH and PhD students to fill 10 summer positions in developing countries or U.S. minority communities each year; 2) provide a core curriculum in the spring and fall semesters adjacent to their summer field research experience to prepare students for summer field research; 3) maintain and increase the pool of faculty mentors; and 4) maintain and enhance the process and outcome evaluation, and long-term tracking. We are seeking to disseminate this program, all or in part, to other educational institutions by developing partnerships.	Prostate Cancer Screening Informed Decision Making: A Qualitative Study of Primary Care Providers at a large urban safety-net hospital Dreyfus, D, Greenwood, NW, Souza, R, Andry, C, Wilkinson J In 2011, the Massachusetts Department of Public Health (MDPH) and Comprehensive Cancer Prevention and Control Program (MCCPC) performed a survey identifying provider's tendency to perform informed decision making during an appointment with men. While evaluating the surveys, these organizations found a lack of information on informed decision making in high risk men, such as men of African descent (Odedina et al., 2009). To identify decision making amongst patients and providers in this population, the MDPH contracted with a large safety net hospital, noting this hospital had a population of almost 70% who were from racial and ethnic minority populations. As such, many of the primary care clinicians had a high percentage of men of African descent as patients. The objective of this study was to assess whether PCPs discuss the advantages and disadvantages of prostate cancer screening with their patients, to learn how and why PCPs discuss the advantages and disadvantage of prostate cancer screening with their patients, to identify if screening was different if the patient was a higher risk patient of African descent, and to obtain additional information on the views of PCPs on the benefits and barriers related to prostate cancer screening. Internal and family medicine physicians as well as nurse practitioners were interviewed utilizing a semi-structured interview guide. The clearest finding was that each provider screened men differently for prostate cancer based on their understanding of the literature. Seventeen percent chose not to offer prostate cancer screening to low risk individuals based on the US Preventive Services Task Force guidelines. Of the providers interviewed who offered prostate cancer screening to low risk individuals, if the patient asked what the provider recommended, fifty-five percent recommended against prostate cancer screening. Twenty-four of providers reported they would not change their recommendations based on the patient's race, although one provider changed his opinion over the course of the interview. Based on the interviews and focus group discussion it is clear that PCPs at a hospital with a large number of high risk men would welcome standardized prostate cancer screening guidelines and SDM tools.

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No Maryland county left behind: Geographic disparities Bischoff C and Kanarek N Recent Maryland cancer planning, funding and consensus building efforts and prior screening for breast and cervical cancer have successfully reduced mortality rates and racial disparities over time. Nevertheless geographical disparities among Maryland counties have not been examined. Assessment of racial disparities has been accomplished using the Index of Disparity. To evaluate geographic disparities and whether every county is improving regardless of its size we suggest utilization of coefficient of variation (CV), skewness and kurtosis. We investigated geographic disparities in county cancer mortality over three time periods and between Maryland and the five adjacent states. Methods Using data from CDC WONDER, we assessed county breast (female), colon/rectal, lung, and prostate (male) cancer mortality CV, skewness, and kurtosis relative to a priori critical values. Results Maryland counties showed a CV consistent with adjacent states' counties. In both geographic areas breast and colon/rectum, CV was below 0.25. Skewness among Maryland counties was not significant in any time period or any site except prostate cancer, significant only during 1994-98. Only adjacent states' counties exhibited statistically significant skewness and kurtosis for each cancer site at some time. Conclusions With statewide funding since 1990, Maryland has eliminated geographic disparities in breast and colon/rectum cancer but continues to exhibit borderline lung/bronchus and significant prostate disparities but not – skewness and kurtosis in 2004-2008. We suggest that absence of skewness and kurtosis may be another indication of county disparities reduction.	Diagnosis to first surgery delay after community diagnosis of NSC lung cancer and survival N Kanarek, C Hooker, L Mathieu, H-L Tsai, Charles M. Rudin, J Herman, M Brock Purpose of study: "Rush to surgery" among patients with worse symptoms, delays related to morbidity, and inclusion of patients with advanced disease have produced a mixed picture of importance of time to treatment to survival of non-small cell lung cancer (NSCLC). This study assessed the contribution of diagnosis to first surgery interval to survival among patients diagnosed in the community with early stage NSCLC. Methods: A Johns Hopkins Hospital patient cohort (N=174) diagnosed and treated between 2003-09 were followed through 2011. Diagnosis to first surgery interval was examined overall; as two segments, referral interval and treatment interval; as short and long intervals <=42 days, and >42 days); and as a continuous variable. Our primary end point was overall survival since first surgery. Results: Cox method hazard analysis revealed older age at diagnosis, stage IIB, large or unknown tumor size, and length of diagnosis to first surgery interval predicted worse survival HR=1.04 (CI 1.00-1.09). Multiple socio-demographic factors were not predictive of survival or interval length. Notably, no significant threshold of time to surgery was observed. Conclusions: Shorter time from diagnosis to first surgery appears to be an important factor boding well for survival among early stage NSCLCs diagnosed in the community and treated at a cancer center. Finding no threshold for the length of delay, unnecessary delays are to be avoided. Though one institution's experience, the findings have biological plausibility as lung cancer's doubling time is 2-5 months. We must understand the reasons for delay better in order to address what is a survival disparity for community diagnosed individuals. Patient preferences (75% of long intervals were diagnosed October-December, p<0.01) may factor in. Also, delay may result from patient or physician nihilism – lung cancer is brought on through the patient's own bad behavior or the physician believes the diagnosis is a death sentence. Interval to surgery among breast cancer patients is significantly shorter than those with lung cancer observed here, supporting the case that NSCLC is prone to delay. New studies should examine the reasons for referral delay.

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Are we overestimating the effect of neighborhood context on cancer outcomes? Stephen J Mooney, Catherine A Richards, Andrew G Rundle Purpose: Numerous studies have reported disparities in cancer screening, treatment, and mortality in relation to neighborhood factors. For example, living in a Census tract with a higher proportion of residents in poverty has been associated with increased breast cancer mortality after controlling for individual-level factors. Tract-level poverty is an aggregation of household poverty status as derived by the Census Bureau from self-reported income, which may be erroneous. We explored the effect of aggregating erroneous individual-level data for use in multi-level studies of cancer disparities. Methods We conducted simulation studies using mixed models to relate neighborhood contextual measures derived from Census data to an individual level outcome variable, varying the extent of non-differential misclassification/measurement error in the underlying Census measures. We assessed the effect of this error on the regression parameter linking neighborhood context to individual-level outcomes. Results: When using neighborhood contextual variables expressed as the proportion of residents possessing a trait (e.g. % of residents living below the poverty line), non-differential misclassification in the individual-level measures biases the regression parameter estimate for the contextual variable away from the null to 1/(sensitivity + specificity - 1) times its true value. For neighborhood contextual variables expressed continuously (e.g. median household income), non-differential measurement error in the Census data does not bias the regression parameter estimate. Conclusions: When neighborhood contextual measures created through the aggregation of individual data are used, the effect of measurement error in the individual data depends on the specification of the contextual variable. Bias away from the null always occurs for contextual variables expressed as a proportion when measurement error in the data from individuals is non-differential. Disparities in cancer outcomes found using proportion measures of neighborhoods might be overstated.	Language Acculturation, Breast Cancer Risk Factors, and Tumor Marker Profile in the Ella Binational Breast Cancer Study Nodora J., Garcia R., Thompson P., et al. Purpose: The aim of this study is to assess the association between language acculturation and established breast cancer risk factors and tumor marker profile among Mexican-American (MA) women and comparing these to women residing in Mexico. Methods: We examined risk factors and tumor marker profile in 574 Mexican and 511 MA women with a history of invasive breast cancer who were participants in the Ella Binational Breast Cancer Study. An 8-item language-based acculturation measure based on Marin and Gamba's Bidimensional Acculturation Scale (BAS) was used to classify MA women as English-dominant (n=121), bilingual (n=294), and Spanish-dominant (n=196). Logistic regression was used to assess associations between language acculturation and individual breast cancer risk factors and the following tumor markers: estrogen receptor (ER) status, human epidermal growth factor receptor 2 (HER2) positivity, and triple negative breast cancer (TNBC). Results: After adjustment for age and education, compared to women residing in Mexico, English-dominant MAs had a significantly higher odds of having a family history of breast cancer (OR=2.16; 95% CI,1.22-3.82), having an earlier age at menarche (<12 y) (OR=1.96; 95% CI, 1.22-3.15), being obese (BMI >30 kg/m2) (OR=2.45; 95% CI, 1.54-3.92), and a significantly lower odds of having a first full term pregnancy at age 30 or older (OR=0.49; 95% CI, 0.25-0.99), and breastfeeding (OR=0.13; 95% CI, 0.08-0.22). After adjustment for age, English-dominant women were significantly less likely to have ER negative tumors (OR=0.47; 95% CI, 0.29-0.76) compared to Mexican women. A non-significant inverse association for TNBC was shown for English-dominant vs. Mexican women (OR=0.66; 95% CI, 0.36-1.21) and no association was shown for HER2+ tumors. Conclusions: Women with higher English language acculturation had a worse risk profile and less ER negative tumors than their counterparts residing in Mexico. These findings support the notion that specific breast tumor subtypes in a population arise from differences in reproductive factors and that these in turn are influenced by factors such as acculturation and country of residence.

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Do Better-Rated Navigators Improve Patient Satisfaction with Cancer-Related Care? Schrad, R; Winters, P; Patierno S; Warren-Mears V; Clark J; Wells K; Post, D; LaVerda, N; Van Duyn, MA; Fiscella, K; Rosen, S; Dudley, D; Freund, K; Paskett, E; Raich, P; Roetzheim, R; Jean-Pierre, P.	Breast cancer subtypes and previously established genetic risk factors: A Bayesian approach O'Brien KM, Cole SR, Bensen JT, Engel LS, and Millikan RC
Background: Patient navigation has emerged as a promising strategy for addressing racial-ethnic and socioeconomic disparities in cancer-related care. However, little is known about the impact of patients' perception of the quality of navigation. We examined the impact of better-rated navigators on patients' satisfaction with cancer related care. Methods: The sample included 1,382 adults (84.3% with abnormal cancer screening and 15.7% with confirmed cancer diagnosis) who received patient navigation. We defined better-rated navigators as those scoring in the top quartile of mean scores on the Patient Satisfaction with Interpersonal Relationship with Navigator (PSN-I) scale. We defined patient satisfaction based on scores in the top quartile of the Patient Satisfaction with Cancer-Related Care scale. We controlled for patient and site characteristics using stepwise logistic regression analyses. Results: Among patients with abnormal screening, having a better-rated navigated was associated with higher satisfaction with cancer-related care ($p<0.05$). After controlling for other bivariate predictors of satisfaction (e.g., age, race, income, and household size), navigation by better-rated navigators was associated with a greater likelihood of having higher patient satisfaction (Odds Ratio [OR]: 4.26, 95% Confidence Interval [CI]: 2.73-6.65). African Americans and men showed significantly greater satisfaction when navigated by better-rated navigators ($p < .0371$ and $p < .00001$, respectively). Similar findings between better-rated navigators and patient satisfaction with cancer-related care were observed for those with diagnosed cancer (OR: 4.59, 95% CI: 2.60-8.12). Conclusions: Patients navigated by better-rated navigators reported higher satisfaction with their cancer-related care. Benefits are greater for African Americans and men.	Gene expression analyses indicate breast cancer is a heterogeneous disease with at least 5 subtypes. Despite growing evidence that these subtypes are etiologically distinct, few studies have investigated whether they have divergent genetic risk factors. To help fill in this knowledge gap, we examined the association between breast cancer subtypes and previously established candidate gene and genome-wide association study hits utilizing white and African-American women in the Carolina Breast Cancer Study. We used Bayesian polytomous logistic regression to estimate odds ratios and 95% posterior intervals for the association between each of 83 single nucleotide polymorphisms (SNPs) and 5 breast cancer subtypes. Subtypes were defined using 5 immunohistochemical markers: estrogen receptors (ER), progesterone receptors (PR), human epidermal growth factor receptors 1 and 2 (HER1/2) and cytokeratin (CK) 5/6. Several SNPs in TNRC9/TOX3 were associated with luminal A (ER/PR+, HER2-) or basal-like disease (ER-, PR-, HER2-, HER1 or CK 5/6+), and one SNP (rs3104746) was associated with both. SNPs in FGFR2 were associated with luminal A, luminal B (ER/PR+, HER2+), and HER2+/ER-, but not basal-like disease. We also observed subtype differences in the effects of SNPs in 2q35, 4p, TLR1, MRPS30, MAP3K1, ESR1, CDKN2A/B, ANKRD16, ZM1Z1, MYEOV, and TP53, and race and subtype differences in the effects of SNPs in CDKN2A/B, 8q24, TNRC9/TOX3, and LSP1. With this analysis, we provide evidence that genetic risk factors for breast cancer vary by subtype and further clarify the role of several key susceptibility genes.

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Community-based activities of the Deep South Network and potential impact on breast cancer mortality in a historically underserved population K. Singh, B. Jackson, R. Ojha, M. Fouad, E. Patridge, S. Bae INTRODUCTION Implemented in 2000, the Deep South Network (DSN) is an ongoing community-based participatory research program designed to improve cancer outcomes through activities such as screening promotion in a historically underserved population of Alabama and Mississippi. We aimed to assess potential temporal changes in overall and stage-specific 5-year mortality of Black female breast cancer cases who reside in the 12 Alabama counties targeted by the DSN. METHODS We used data from the University of Alabama-Birmingham Comprehensive Cancer Care Center (UABCCC) Tumor Registry, which comprises all cancer cases treated at UAB Health Systems, to identify Black females from DSN-targeted counties diagnosed with breast cancer between January 1993 and December 2005. This study period allowed a minimum 5-year follow-up for each case. Stage at diagnosis was defined according to the Surveillance Epidemiology and End Results (SEER) Historic Staging criteria to facilitate cross-period comparisons. We assessed overall and stage-specific 5-year mortality among cases pre-DSN (January 1993-December 1999) and post-DSN (January 2001-December 2005). RESULTS For DSN-targeted counties, we identified 348 Black females diagnosed with breast cancer pre-DSN and 330 post-DSN. Overall 5-year mortality decreased from 36% (95% confidence limits [CL]: 31%, 41%) pre-DSN to 33% (95% CL: 27%, 38%) post-DSN. Changes in 5-year mortality was greatest for stage II disease (pre-DSN: 67%, 95% CL: 36%, 97%; post-DSN: 57%, 95% CL: 20%, 94%). In addition, the median age at diagnosis decreased from age 57 years pre-DSN to age 55 years post-DSN. CONCLUSIONS Our results suggest modest decrease of 5-year mortality among Black females diagnosed with breast cancer in DSN-targeted counties of Alabama since the program's inception. Nonetheless, this decrease could be partially explained by lead-time bias given younger age at diagnosis after the program was implemented. Alternatively, the observed mortality declines could be underestimated if early-stage cases are treated locally, and thus never captured in the UABCCC Tumor Registry. Continued assessment of outcomes would be useful for assessing the impact of the DSN.	Avoiding Sparse Data Bias: An Example from Gynecologic Oncology Fernandez, N. & Mulla, Z. Objective: To review the use of three statistical techniques that can be employed when analyzing sparse data. Methods: A cross-sectional prevalence study was conducted using an incidence file from the Texas Cancer Registry covering the years 1995 through 2006. The records of women who were diagnosed with primary ovarian carcinosarcoma, a rare malignancy with poor survival, were extracted. The exposure variable was race: white patients were compared to black patients. The dichotomous outcome was the presence of distant metastasis at the time of the diagnosis. Given the small sample size and the unbalanced nature of the outcome, we performed the following three types of analyses as alternatives to ordinary logistic regression using SAS 9.3 software: Bayesian logistic regression (Monte Carlo sample size of 30,000), exact logistic regression, and logistic regression using penalized maximum likelihood estimation. The race odds ratios (OR) were adjusted for age. Results: A total of 52 women with carcinosarcoma primary to the ovary were included (47 white, 5 black). The prevalence of distant metastasis was 66% and 60% in the white and black patients, respectively (crude OR, whites compared to blacks: 1.29). None of the adjusted ORs were statistically significant. The adjusted race OR from the Bayesian analysis (1.16) was closer to the null value of 1 than the ORs from the exact logistic model (1.24) and penalized model (1.31). Conclusions: The most common statistical tests and models encountered in clinical and public health research depend on "large-sample" approximations. However, there are situations in which the minimum number of subjects required is not reached and hence ordinary logistic regression is not appropriate. In these situations it is beneficial to adopt an alternative strategy such as performing a Bayesian analysis, fitting an exact logistic regression model, or using penalized maximum likelihood estimation.

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The Protective Effect of Marriage on Stage at Diagnosis and Survival in Women with Cervical Cancer El Ibrahimi S, Moonie S, Pinheiro PS Background: It has been shown that married women benefit from earlier detection and better prognosis than unmarried women for most common cancer types. However, this association has not been well studied for cervical cancer (CC). The purpose of this study is to determine if differences exist in terms of CC stage at diagnosis and survival according to marital status. Methods: This population-based study included 44,558 women diagnosed with CC between 1995 and 2009 identified from the Surveillance, Epidemiology and End Results (SEER) 18 registries. Multiple logistic regression was used to examine the odds of being diagnosed with CC at an advanced vs. localized stage controlling for age, race/ethnicity, diagnosis period, SEER registry, and histology. Cox Proportional Hazards modeling was used to assess the impact of marital status on CC survival. Results: After adjustment for patient demographic and clinical characteristics, single [aOR=1.38, 95% CI: 1.31-1.45], separated/divorced [aOR=1.38, 95% CI: 1.30-1.47], and widowed women [aOR=1.38, 95% CI: 1.28-1.49] were more likely to be diagnosed at an advanced stage than married women. Adjusted hazard ratios for age, race/ethnicity, diagnosis period, SEER registry, stage at diagnosis, and histology revealed a significant disadvantage in CC survival for unmarried women compared to married women. Single [aHR=1.27, 95% CI: 1.22-1.33], separated/divorced [aHR=1.23, 95% CI: 1.17-1.23], and widowed women [aHR=1.24, 95% CI: 1.19-1.31] were at increased risk of death from CC in relation to their married counterparts. Conclusion: This study confirms the protective effect of marriage both in terms of cancer stage at diagnosis and survival. Our findings suggest that the social, financial and emotional support that marriage offers may improve the odds of early detection of CC and favorable prognosis. Interestingly, the protective effect of marriage seems to be more pronounced at the level of prevention (leading to earlier diagnosis), rather than survival of CC. Further studies are warranted to assess the protective effect of marital status on CC relevant to prevention versus survival when insurance information is available and accounted for statistically.	Assessing Progress in the Burden of Cancer Mortality, 1985-2005 Soneji S, Beltrán-Sánchez H, Sox H Background: Mortality rates from non-cancer diseases have consistently declined resulting in longer life expectancy and more years of life to develop cancer. Additionally, historically stagnant cancer mortality rates call to question how much investments in cancer prevention, screening, and treatment have achieved. We assess progress against the population-level burden of cancer mortality since 1985, jointly considering changes in cancer and non-cancer mortality rates. Methods: Annual breast, colorectal, lung, and prostate cancer mortality rates from patients aged 40-84 years in Surveillance, Epidemiology, and End Results registries, 1975-2005. Burden of cancer mortality as measured by average person-years of life lost due to cancer. Assess progress in the cancer mortality burden by distinguishing changes in average person-years of life lost due to cancer resulting from changes in cancer-specific and all other-cause mortality rates. Results: Over time, population cancer mortality rates fell, causing reductions in the burden of leading cancers. Yet, decreasing non-cancer mortality rates partially offset this progress by increasing life expectancy, which allowed more time for cancer to develop and be diagnosed. We determine that between 1985-1989 and 2000-2004 decreasing male lung cancer mortality rates reduced lung cancer burden by 0.33 years while declining all other-cause mortality rates raised it by 0.23 years. Other cancers showed similar patterns. Conclusions: We quantify contributions of cancer and non-cancer mortality rates on the burden of cancer mortality, thereby revealing more accurately contributions of cancer prevention, detection, and treatment on progress against this population-level burden. Thus, we find sustained progress in reducing the burden of cancer mortality since 1985-1989.

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Sedentary lifestyle, obesity and risk of colorectal neoplasia among the medically underserved in South Carolina Wallace K., Bogle P., Blankenship B., Caldwell R., Jones K., Kinard N., Stinson M., Bearden J., Dunn J., France G., Hedegis P., Hoffman B., Seabrook M., Alberg A., Berger F. The medically underserved (MU) have a higher incidence of colorectal cancer (CRC). Few studies have investigated risk factors for adenomas, precursors to most CRC, in the MU population, and none have studied whether this risk differs by physical activity level, obesity and polyp type. To address this gap, we analyzed data from patients participating in the South Carolina Colon Cancer Prevention Network colonoscopy based screening study, a multi-center statewide program to provide navigated assisted colonoscopy to MU persons. Eligible subjects were asymptomatic, between the ages of 45 (for African Americans) or 50 (Caucasian) and 64 years of age with no history of screening colonoscopy. At study entry, patient height and weight was measured and they completed a questionnaire. Using generalized linear regression, we estimated risk ratios and 95% confidence intervals (CI) as measures of the association between sedentary behavior, obesity and risk for one or more adenomas, advanced adenomas, or hyperplastic polyps (HP) after adjusting for age, sex, race, and smoking status. We also assessed the interaction between sedentary behavior and obesity on the risk of different types of polyps. Of the 112 total patients, 39.3% had ≥1 adenoma, 19.4% had ≥1 advanced lesion, and 18.8% had ≥1 HP. Time spent sitting per day was positively associated with risk of adenoma (p =0.03) and advanced lesions (p=0.001), but not hyperplastic polyps. Obesity was not independently associated with risk of polyps, but there was an interaction among those with a sedentary lifestyle who were also obese compared to non-obese on the risk of any adenoma (p=0.03) or advanced lesion (p=0.15). Among obese patients, for each 5-hour increase in sitting hours per day there was a 2.11 (95% CI 1.28-3.49) increased risk of adenoma and 4.95 (95% 1.65-14.85) risk of advanced lesions. Among non-obese patients, there was no increase in risk of adenoma (RR 0.92; 95% CI 0.52-1.63) but the suggestion of increased risk of advanced adenoma (RR 1.94; 95% CI 0.98-3.82). Our results suggest that a sedentary lifestyle especially among the obese is an important risk factor for CRC neoplasia among the MU.	Self-Sample Human Papillomavirus Testing among Underscreened Latina Immigrant Women as a Triage Method for Cytology Montealegre J, Mullen P, Jibaja-Weiss M, Scheurer M Introduction: The incidence of cervical cancer (CC) has decreased dramatically in the U.S. since the widespread adoption of cytology-based screening. However, the effectiveness of such programs is limited by screening non-attendance. Self-sample human papillomavirus (HPV) testing with clinic-based cytology follow-up targeted to screening non-attendees (i.e., women who never or sporadically attend for Pap testing) may be a strategy to increase the population coverage of CC screening programs. Here we evaluate self-sample HPV testing (self-HPV) among Latina immigrant screening non-attendees in Harris County, Texas. Methods: Participants (n=100) were recruited at a healthcare linkage program at the Mexican Consulate in Houston. Women ≥ 21 years were eligible if they had not had a Pap test in the past 3 years and were currently covered or eligible for coverage by the county's indigent healthcare program. Participants received an instructional brochure and self-collected a cervical sample in a restroom on-site using a cytology broom. Samples were sent to a commercial laboratory for HPV testing. High-risk (HR) HPV-positive women were navigated to the county healthcare system for cytology. Pre- and post-test attitudes toward self-HPV were assessed through an interview. Results: Most participants reported that the instructions were easy to understand (98%), that the self-sampler was easy to use (83%), and that they would be willing to use self-HPV on a regular basis (91%). Almost 70% considered self-HPV to be more convenient than a Pap test and 87% considered it less stressful. Nineteen women (19%) tested positive for HR-HPV. To date (3 weeks post-completion of fieldwork), 47% of HR-HPV positive women have made an appointment and/or obtained a Pap test. Conclusions: Our results indicate that self-HPV is an acceptable method of CC screening among Latina immigrant screening non-attendees. Additionally, our early follow-up data suggest that women who test positive for HR-HPV will subsequently attend for cytology. Thus, this approach addresses critical barriers to screening, including inadequate access to healthcare and modesty concerns, and may be an effective way to increase CC screening in this population.

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Age Disparity in Time-dependent Survival of Malignant Breast Cancer: A population based Study using SEER Data Hu N and Murtaugh M The purpose of the study is to evaluate the age disparity in survival and their interaction with follow-up time when adjusting for stage, histology, race, marital status and socio-economic status among women with diagnosed breast cancer (BC) using the population based Surveillance, Epidemiology, and End Results (SEER) data. We analyzed two cohorts of women in this study. One cohort includes 467,459 women with BC diagnosed between 1988 and 2003 from 19 SEER registries, and another cohort has 332,232 women diagnosed from betwwen 2004 and 2009. The primary outcome of this study is the time to death due to breast cancer. In order to investigate the age disparity for BC specific survival, we classify the cohorts into three groups based on their age at BC diagnosis: 39 or younger, 40-49, and 50 or older. The 5-year survival rates for the above three groups are 82.0, 88.1 and 87.4%, respectively, among women diagnosed between 1988 and 2003, and the rates are 86.3, 91.0 and 88.1%, respectively, for women diagnosed between 2004 and 2009. Although age disparity for BC specific survival has been intensively studied in previous literature, few have focused on the survival trend over the time since BC diagnosis. Hence, in this study we particularly focused on the survival probability among different age groups and their interaction with time since BC diagnosis. Kaplan-Meier analysis and Cox proportional hazard model with age, age-time interaction, and other risk factors was used to investigate age disparity in BC specific survival. Significant difference in BC specific survival was found among the three age groups: women 39 and younger had a better survival than women in the other two groups for the first 1.5 years. After 1.5 years since diagnosis, women 39 and younger had much poorer survival. Women between 40 and 49 had similar survival trajectory with those 50 and older after the first 2 years since diagnosis. Significant interaction between age and time since BC diagnosis was found in the crude model and models separately adjusting for stage, grade, race, marital status, and socioeconomic status ($P<0.001$ for both cohorts and all models). This implies that time course is an important factor we need to consider in studies of age disparity in BC specific survival.	The Impact of Early Life Socioeconomic Position on Breast and Lung Cancer Risk and Mortality: a Systematic Review Monika Izano, David H. Rehkopf, Grace Kim, Min-Lin Fang, Robert A. Hiatt, Dejana Braithwaite PURPOSE: Consistent with life-course theory, socioeconomic position (SEP) in early life has been linked to several chronic disease outcomes. We conducted a systematic review of the literature to determine the quality and strength of evidence relating SEP in early life with breast cancer risk and mortality in women, and lung cancer risk and mortality in both men and women. METHODS: PubMed and Web of Science were searched to identify cohort studies that evaluated the impact of at least one early life SEP indicator, as defined by household income, parental occupation or education, on the risk and/or mortality from lung or breast cancer in adulthood. RESULTS: We identified two and five cohort studies that focused on breast cancer risk and mortality respectively, as well as one and eight studies of lung cancer risk and mortality respectively. Reports of the association between early life SEP and breast cancer risk were inconsistent: one study found no association while a second study reported a positive association. Four out of five studies that evaluated the association of early life SEP and breast cancer mortality found no association while the fifth reported a positive association. A study evaluating the impact of early life SEP on lung cancer risk reported no association. Of the eight studies that evaluated the association between early life SEP and lung cancer mortality, four found no association and the remaining four reported a positive association but three of these did not adjust for smoking. CONCLUSIONS: We found no definitive support of an association between early life SEP and the risk and mortality from breast and lung cancers. We urge further studies on this topic with a more comprehensive assessment of SEP and adjustment for SEP in adulthood alongside other relevant covariates in demographic, behavioral and clinical domains.

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Alcohol Consumption, Genetic Variation in Alcohol Dehydrogenase Genes and Risk of Clear Cell Renal Cell Carcinoma Cannon A, Arnold M, Rivera S, Andorfer C, Kachergus J, Diehl N, Parker A. INTRODUCTION: An inverse association between alcohol consumption and risk of renal cell carcinoma (RCC) is well reported in the literature. Despite this, no investigators have explored the potential for effect modification of this association by genetic variations in enzymes that metabolize alcohol. Motivated by this, we conducted a pilot investigation of the role of genetic variation in the alcohol dehydrogenase genes (ADH) as an effect modifier of the association of alcohol and RCC risk. METHODS: We analyzed data on 121 RCC cases and 121 controls. Cases were prospectively collected as part of our Renal Registry in the Department of Urology. Controls were recruited through the Family Medicine and frequency matched to cases on age, gender and state of residence. We collected detailed risk factor data (self-report questionnaire) as well as a DNA sample on cases and controls. We utilized Sequenome analysis to determine presence of published SNPs in the ADH gene cluster (ADH1-ADH7). We employed logistic regression with interaction terms as well as stratified analyses to evaluate effect modification by genetic variants in the ADH gene cluster on the association of alcohol consumption and RCC risk. RESULTS: Compared to non-drinkers, those that consumed alcohol above the median experienced a lowering in RCC risk (OR=0.80; 95% CI 0.5 to 1.43). We observed evidence of interactions with 6 SNPs in the ADH gene (p-values from 0.05-0.2). As an example, in stratified analysis, the inverse association strengthened in those without the minor allele present at rs1154454 in ADH7 (OR=0.56; 95% CI 0.3 to 1.0; p=0.08) while evidence of an increased in RCC risk was noted among those with the minor allele (OR=2.14; 95CI 0.8 – 5.7; p=0.1). Adjustment for age and gender did not alter our results. CONCLUSION: Our pilot data suggest that specific variants in the ADH gene cluster may modify the reported protective effect of alcohol consumption on RCC risk. Given the possible implications for improving our understanding of the biology of this association and informing prevention, future investigations that analyze a larger sample size and examine additional variants are warranted.	Genetic variation in apolipoprotein (Apo) E may be associated with aggressive prostate cancer (PCa) Ifere, G., Azrad, M., Desmond, R., Demark-Wahnefried, W. and Nagy, T. Purpose of Study. We investigated whether the dysfunctional apo ε2 and ε4 alleles could be used as prognostic and predictive molecular biomarkers of aggressive PCa. Methods. We determined cholesterol levels in the plasma and SNP (rs429358 and rs7412) in apoE genes from genomic DNA of 89 non-statin treated prostatectomy-awaiting PCa patients. Associations between plasma cholesterol and related SNPs and indices of aggressive PCa were explored. Results. The ε3/ε3 genotype had the highest (50.6 %) prevalence, while the ε2/ε2 genotype had the least (2.2 %). A remarkable % (5.6%) also carried a “rare” apo ε genotype. The remaining % prevalence was shared by genotypes bearing the dysfunctional alleles. None of the samples carried the ε2/ε4 genotype. There was a higher frequency of the homozygous ε3 allele among whites than in blacks (ε3/ε3:55.4% vs 37.5 %, p <0.001). However, blacks had higher frequencies of the ε2 and ε4 genotypes (ε2/ε2: 4.2% vs 1.5 %; ε4/ε4: 8.3% vs 1.5%; ε2/ε3: 16.7 % vs 13.8%; ε4/ε3: 25.0% vs 23.1%; p-values<0.001). There was no significant difference (p > 0.36) in the mean total plasma and LDL cholesterol levels of all the genotypes; although a moderate, though non-significant correlation (r = 0.75, p = 0.09) between the mean cholesterol levels of the respective genotypes and the risk of high grade disease (Gleason scores) was observed. In contrast, there was a moderate, though non-significant negative correlation (r = - 0.65 p = 0.16) between the mean cholesterol levels of the corresponding genotypes and mean PSA values. However, the ε2/ε2 had the least mean cholesterol level while the rare genotypes had the highest. Unexpectedly, 100 % of the samples with the ε2/ε2 and the rare genotype had PSA levels of 4 or higher, in contrast to 66 % of the ε4/ε4 genotypes. Conclusions: The absence of the ε2/ε4 genotype hinders our ability to assess how it deregulates cholesterol clearance and aggressive cell growth. The high mean PSA level of the ε2/ε2 genotype suggests it is associated with the disease-associated alleles. The very high PSA and cholesterol levels of the rare apoE genotypes suggest it may be a potential biomarker for high grade PCa.

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15-Hydroxyprostaglandin Dehydrogenase (15-PGDH) Genetic Variants Modify NSAID Use-Colon Cancer Risk Association Zhengyi Chen, Cheryl L. Thompson, Stephen Fink, Martina Veigl, Sanford Markowitz, Li Li Purpose: 15-PGDH is a novel colon cancer suppressor and a metabolic antagonist of cyclooxygenases (COX). We have recently identified 9 SNPs in the 15-PDGH gene associated with tissue expression of 15-PGDH and colon cancer risk. Here we examine the hypothesis that these putative functional SNPs in 15-PGDH modify the effect of NSAID use on risk of colon cancer. Methods: We genotyped the SNPs in 1,950 Caucasians (809 colon cancer cases and 1,141 controls) participating in a Kentucky SEER Registry population-based incident case-control study. NSAID use and other lifestyle risk factor information were collected using self-administered questionnaires. Summary of Results: In multivariate logistic regression analyses controlling for age, gender, education, income, smoking, and BMI, we found evidence for statistically significant interactions of three SNPs (rs11724251, rs2555639, and rs2555622) with NSAID use. For rs11724251, comparing to those with AA genotype, regular NSAID users with AG and GG genotypes had OR estimate of 0.54 (CI = 0.35-0.02) and 0.44 (CI = 0.25-0.77), respectively (p for trend < 0.01); For rs2555622, comparing to those with AA genotype, regular NSAID users with AC and CC genotype had OR estimate of 0.69 (CI = 0.46 – 1.04), and 0.51 (CI = 0.26 – 0.97), respectively (p for trend = 0.03); For rs2555639, comparing to those with TT genotype, regular NSAID users with TC and CC genotypes had OR estimate of 1.44 (CI = 0.95 – 2.17) and 1.77 (0.97 – 3.24), respectively (p for trend = 0.04). Conclusion: Our data suggest genetic variations in 15-PGDH influence the effect of NSAID use on colon cancer development.	Autoimmunity and Cancer may be linked through the Aire gene Oliveira E; Macedo C; Collares C; Sakamoto-Hojo E; Donadi E; Passos G The regulation of negative selection of thymocytes during the induction of self-tolerance in the thymus is dependent on genes expressed by medullary thymic epithelial cells (mTECs). In these cells, the transcription factor autoimmune regulator (Aire) regulates the expression of a large set of peripheral tissue antigens (PTAs), which represent the diverse tissues and organs. Due to the diversity of genes controlled by Aire, this phenomenon then has been termed “promiscuous gene expression” (PGE). In addition, evidence showed that thymomas (a tumor originated from thymic epithelial cells) express Aire at low levels compared to normal thymus. This suggests that Aire deficiency might have an oncogenic impact on the development of thymomas. In addition, thymomas patients can develop autoimmune diseases being myasthenia gravis (MG) the commonest. Accordingly, we raised the hypothesis that in addition to PTAs genes, Aire could controls genes associated to carcinogenesis. We initially used siRNA to knockdown Aire by in vivo electro-transfection of the thymus of BALB/c mice. Aire mRNA levels from medullary thymic epithelial cells (mTECs) was accessed by qRT-PCR and Aire protein by immunofluorescence microscopy. Aire-siRNA reached medullary thymic epithelial cells (mTECs) down-regulating Aire mRNA and Aire protein levels. To explore the effect of Aire knockdown over the transcriptome, we used the whole functional genome Agilent microarray method allowing determining the modulation of a variety of PTA genes as well as the cancer associated p53 and Vegfa and Vegfb genes. After Aire knockdown, p53 gene was down-regulated while the two Vegf family members were up-regulated. Noteworthy, down-regulation of p53 favors tumorigenesis and up-regulation of Vegf favors angiogenesis. Two essential processes for cancer progression in the thymus. Moreover, PTA genes AchR, Títin and RyR, which represent muscle autoantigens, and therefore associated to immunologic autoreactivity found in MG were up-regulated. These results show that expression of Aire is a link between cancer and autoimmunity and might represent a key molecular target in controlling these diseases in thymus.

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Breast cancer susceptibility loci in association with age at menarche, age at natural menopause and the reproductive lifespan. S Warren Andersen, A Trentham-Dietz, RE Gangnon, JM Hampton, JD Figueroa, HG Skinner, CD Engelman, BE Klein, LJ Titus, KM Egan, PA Newcomb Purpose: Genome wide association studies have identified common single nucleotide polymorphisms (SNPs) associated with breast cancer risk. Many of these SNPs have an unknown biologic significance. Hormonal risk factors may mediate the relationships between these loci and breast cancer risk. We explored the relation between breast cancer susceptibility loci and menstrual factors using data from two population-based studies. Methods: In the first dataset, composed of 1328 women ages 20-74 years without a breast cancer diagnosis who participated in an established population-based study conducted in three U.S. states, we used linear regression to assess the associations between 13 previously-identified breast cancer loci with age at menarche, age at natural menopause and the reproductive lifespan. The reproductive lifespan is defined as the time between age at menarche and age at natural menopause, excluding time for pregnancy, oral contraceptive use and lactation. A polygenic risk score created as the sum of the number of risk allele copies in the SNPs was also evaluated for an association with menstrual traits. Significant results were then evaluated in the second dataset comprised of 1353 women ages 43-86 years recruited as part of a cohort study based in Beaver Dam, WI. Results: Polygenic score and 13 loci were not associated with either age at menarche or reproductive lifespan. Two SNPs were associated with age at natural menopause; each increase in the number of copies of the minor allele (A) of rs17468277 (CASP8) was associated with a 1.12 year decrease in age at natural menopause (p=0.02). The minor allele (G) of SNP rs10941679 (5p12) (p=0.01) was associated with a 1.01 year increase in age at natural menopause, although these results were not replicated in the follow-up study (p=0.14 and 0.98, respectively). Conclusions: We did not find evidence to support the hypothesis that breast cancer susceptibility loci are related to menstrual factors.	Flavonoid-gene interactions and breast cancer Bradshaw P, McCullough L, Teitelbaum S, Steck S, Fink B, Xu X, Ahn J, Ambrosone C, Crew D, Terry M, Neugut A, Chen J, Santella R, Gammon M We previously reported an inverse association between flavonoid intake and breast cancer incidence, which has been confirmed by others; but no studies have considered simultaneously potential interactions of flavonoids with multiple genetic polymorphisms involved in biologically-relevant pathways (oxidative stress, carcinogen metabolism, DNA repair, and one-carbon metabolism). To estimate interaction effects between flavonoids and 13 polymorphisms in these four pathways on breast cancer risk, we used population-based data (N = 875 cases and 903 controls) and several statistical approaches, including conventional logistic regression and semi-Bayesian hierarchical modelling (incorporating prior information on the possible biological functions of genes), which also provides biologic pathway-specific effect estimates. Compared to the standard multivariate model, the results from the hierarchical model indicate that flavonoid-gene interaction estimates are attenuated, but more precise. In the hierarchical model, we observed elevated biologic pathway-specific effects, comparing the average effects for the deleterious alleles compared with the average effects of the beneficial alleles, involved in DNA repair [Odds Ratio = 1.27; 95% confidence interval (CI) = 0.70, 2.29], but the CI was wide. Based on results from the semi-Bayesian model, breast cancer risk may be influenced jointly by flavonoid intake and genes involved in DNA repair, but our findings require confirmation.

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Association between polymorphisms in vitamin D-related genes, plasma 25-hydroxyvitamin D levels, and breast cancer risk Reimers L, Crew K, Santella R, Steck S, Terry M, Hershman D, Shane E, Cremers S, Dworakowski E, Teitelbaum S, Neugut A, Gammon M Purpose: We previously reported an inverse association between circulating vitamin D levels and breast cancer risk. Here we evaluated associations between plasma 25-hydroxyvitamin (25-OHD) and 35 single nucleotide polymorphisms (SNPs) in vitamin D-related genes in relation to breast cancer risk. Methods: Using a population-based case-control study on Long Island, NY, we investigated polymorphisms in genes encoding the vitamin D receptor (VDR, including FokI, ApaI, BsmI, and TaqI), 1a-hydroxylase (CYP27B1), 24-hydroxylase (CYP24A1), and vitamin D binding protein (GC). We obtained blood samples from 1,026 incident breast cancer cases diagnosed in 1996-1997 and 1,075 population-based controls. Plasma 25-OHD was measured in batched, archived specimens by Diasorin radioimmunoassay and genotyping was performed by Taqman assays. Wilcoxon rank-sum test was used to compare median differences in plasma 25-OHD by genotype. We used logistic regression to estimate odds ratios (ORs) and 95% confidence intervals (CI) for breast cancer risk. Results: Among the VDR SNPs, the TaqI polymorphism was associated with decreased breast cancer risk (CT+TT vs. CC; OR=0.80, 95% CI=0.67-0.95). Women with homozygous variant genotype (TT) for rs7299460 had significantly decreased risk of breast cancer (OR=0.73, 95% CI=0.55-0.97), while homozygous variant carriers for rs4760674 and rs6823 had significantly increased risk (OR=1.32, 95% CI=1.01-1.73 and OR=1.33, 95% CI=1.03-1.71, respectively). SNPs in CYP27B1, CYP24A1, and GC were not associated with breast cancer risk. Plasma 25-OHD levels were lower for the minor allele for VDR (rs7299460, p<0.01; rs4760674, p=0.04), CYP24A1 (rs66022999, p=0.004; rs2762939, p=0.02), and GC (rs7041, p<0.01; rs4588, p=0.004). We observed significant statistical interactions for breast cancer risk only between VDR SNPs, FokI (p=0.05), rs2544038 (p=0.03), and rs2408876 (p=0.02), and plasma 25-OHD. Conclusions: Our findings indicate that breast cancer risk is associated with specific vitamin D-related SNPs, which suggests, vitamin D for breast cancer prevention may be most beneficial for select genetic subgroups.	Sleep Duration and Breast Cancer Severity Rao S, Khawaja A, Li L, Thompson C Purpose: Although emerging evidence suggests that short sleep duration is associated with an increased incidence of breast cancer, little has been done to explore the relationship between sleep and cancer aggressiveness. We recently showed that sleep deprivation is also associated with a higher OncotypeDX score, a marker of likelihood of recurrence in breast tumors, and in this study, we further evaluate the relationship between sleep duration and breast cancer aggressiveness. Methods: Medical records of 972 breast cancer patients participating in a larger case control study were reviewed for tumor stage, Modified Bloom-Richardson grade and hormone receptor status. All patients that enrolled were asked about average sleep duration in the two years prior to diagnosis, as well as other lifestyle factors. Univariate and multivariate statistics were performed to assess the association of sleep duration with these markers of aggressiveness, and were repeated stratified by menopausal and hormone receptor status. Results: Short sleep duration, defined as less than 6 hours of sleep per night on average, was significantly correlated with higher grade breast cancer, particularly in post-menopausal women (p=0.026). This association remained significant after adjustments for age, BMI, alcohol consumption, smoking and physical activity (p=0.029 among everyone and p=0.021 among post-menopausal women). A non-significant association was found between sleep deprivation and stage as well as ER and HER2 receptor status. Conclusion: We found a modest association between short duration of sleep and higher grade and stage breast cancer in post-menopausal women. Further work needs to be done to validate these findings and identify the biological cause for this association.

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Human Papillomavirus (HPV) Type Distribution in Diverse Settings of Sociodemographics Luu HN, Adler-Storthz K, Dillon LM, Follen M, and Scheurer ME Background: Human papillomavirus (HPV) is a necessary cause of cervical cancer. Current HPV vaccines target 4 genotypes (6, 11, 16, and 18) with an estimated cross protection of 70%. Determining HPV genotypes across age and racial/ethnic groups is important for an HPV vaccination program, particularly in diverse and limited-resource settings. Methods: We analyzed 309 cervical specimens from a cohort of non-pregnant women (in both screening and diagnostic settings) from three clinical centers in the United States and Canada. HPV genotyping was performed using the Linear Array HPV Genotyping Test (Roche), which detects 37 HPV genotypes. We performed logistic regression (for binary outcome variables-any genotypes, oncogenic genotypes, non-oncogenic genotypes, HPV 58, and HPV 16/18) and multinomial logistic regression (for polytomous outcome variable- negative/single/multiple infection) to determine the relationship between infection with HPV genotypes wand related sociodemographic variables. Results: More than 27% of all specimens had multiple HPV infections with 6 genotypes being the most detected in a single specimen. HPV 16 and 58 had the highest prevalence (14% and 13%, respectively). HPV 58 was highest among African American women (19.6%) and in women aged 40-49 (14.9%). Asian populations had high prevalence of infection with HPV 16, 51, and 58 (25%, 15.6%, and 18.8%, respectively). Women age ≤29 years old had higher risk than women ≥50 years old of infection with both HPV oncogenic, non-oncogenic genotypes and single/multiple infection. Women with dysplasia had higher risk of infection with HPV (i.e., oncogenic, non-oncogenic genotypes and single/multiple infection) than women with normal histologic results. African American women had higher risk than white women of HPV 58 infection (OR=2.50, 95% CI: 1.00-6.24). Asian women were more likely to be infected with multiple HPV genotypes than white women (OR=4.61, 95% CI: 1.34-15.81). Conclusions: Our findings suggest that more HPV genotypes should be included in future HPV vaccines, particularly if they are to be more effective among non-white populations. Further studies on HPV natural history, particularly the duration of clearance of oncogenic HPV genotypes, in older women are also warranted.	Rapid increase in body mass index (BMI) during adulthood is associated with earlier onset of breast cancer Azrad M, Blair C, Powel L, Sedjo R, Rock C, Demark-Wahnefried W Introduction: Adult weight gain is associated with increased risk for postmenopausal breast cancer. The purpose of this study was to explore whether the rate of adult weight gain was associated with earlier onset of disease among early stage breast cancer survivors. Methods: Data on lowest adult body weight and weight at time of diagnosis were obtained from participants in the Exercise and Nutrition to Enhance Recovery and Good health for You (ENERGY) study, a multi-site randomized controlled trial aimed at reducing body weight in over weight and obese breast cancer survivors. One hundred twenty-one participants from the Birmingham, AL site were included in the analyses. The annual increase in body mass index (BMI) from lowest adult BMI to BMI at diagnosis was calculated. Quartiles of the change in BMI were determined with quartile 1 representing women with the lowest change in BMI and quartile 4 representing women with the greatest change in BMI over time. Using analysis of covariance (ANCOVA) with age at breast cancer diagnosis as the dependent variable, least squares means (LSM) for each quartile was estimated after adjusting for race and menopausal status at diagnosis. Results: Overall, the lowest adult BMI was 21.8 ±0.30 at age 27.8 ±0.85 years, and BMI at breast cancer diagnosis was 30.9 ±0.49 at age 52.4 ±0.88 years. The increase in BMI each year until breast cancer diagnosis across the quartiles was 0.26 ±0.16; 0.45 ±0.16; 0.63 ±0.16; and 1.68 ±0.16. The LSM for age at breast cancer diagnosis across quartiles were; 55.0 ±1.76, 51.3 ±1.67, 49.5 ±1.58 and 47.8 ±1.46 (p for trend <0.001). Significant differences in LSM were observed for quartile 1 versus quartile 3 and quartile 4 ($p<0.05$). Conclusions: Data from this exploratory study suggest that breast cancer survivors who had significantly higher increases in BMI throughout adulthood developed breast cancer earlier in life than women who gained weight less rapidly. These findings suggest that excessive weight gain in adulthood may accelerate neoplastic progression resulting in earlier onset of disease. Future studies with larger sample sizes are needed to confirm these findings.

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Efficacy of calcium and vitamin D supplementation in maintaining BMD during androgen deprivation therapy for prostate cancer Datta M and Schwartz G Background: Androgen deprivation therapy is the mainstay of treatment for men with advanced prostate cancer. However, an unintended consequence of androgen deprivation is loss of bone mineral density (BMD). Consequently, supplementation with calcium and/or vitamin D in these men is advocated by many lay and professional groups. Methods: We reviewed guidelines for calcium and vitamin D supplementation and conducted a systematic review of clinical trials of calcium and vitamin D supplementation on BMD in men with prostate cancer undergoing androgen deprivation therapy. We used the "before-after" data from trials evaluating the effect of drugs such as bisphosphonates on BMD in men with prostate cancer in which calcium and/or vitamin D was used as the control/comparison group. Results: The effects of supplementation with calcium and/or vitamin D on BMD vs. no supplementation have never been tested in these men. However, results from the "before-after" data of 12 clinical trials show that at doses commonly recommended, 500-1000 mg calcium and 200-500 IU vitamin D supplemented daily, men undergoing androgen deprivation therapy lose BMD at the lumbar spine, total hip and femoral neck. Conclusion: The doses of calcium and vitamin D supplements that have been tested (500-1000 mg calcium and 200-500 IU vitamin D per day) are inadequate to prevent loss of BMD in men undergoing androgen deprivation therapy. In light of the evidence that high levels of dietary calcium and calcium supplement use are associated with increased risks of cardiovascular disease and of advanced prostate cancer, intervention studies should evaluate the safety as well as the efficacy of calcium and vitamin D supplementation in these men.	Effects of Vitamin D and Obesity on Prostate Cancer Recurrence Drake B, Kibel A, Alpers D, Colditz G PURPOSE: To assess the effects of obesity and vitamin D on prostate cancer recurrence. METHODS: We conducted a 1:1 matched case-control study within a prostate cancer prospective cohort (N=300; 150 cases and 150 controls). The prospective cohort recruits, enrolls and processes data for all 1,903 participants, including 294 biochemical recurrences. Clinical, sociodemographic and nutritional data have also been collected for each participant. For each of the 150 cases of prostate cancer recurrence, 1 control was selected through incidence density sampling from the pool of prostate cancer patients who have not recurred and are still alive at the time the case experiences a prostate cancer recurrence. Matching was made on age at diagnosis (within 2 years), date of blood draw (within 3 months), and race/ethnicity. BMI was used to measure obesity on a categorical scale (obese: BMI > 30 kg/m2 vs. non-obese: BMI < 30 kg/m2) and a continuous scale. Vitamin D assays were performed on stored serum from the prospective cohort. Data analyses additionally controlled for education, marital status, family history of prostate cancer, smoking status, dietary calcium, grade and stage of prostate cancer. RESULTS: Higher levels of BMI, as a continuous variable, were significantly associated with prostate cancer recurrence (HR=1.21; p=0.008) and lower serum vitamin D levels were also significantly associated with prostate cancer recurrence (HR=1.19; p=0.022). CONCLUSIONS: This pilot study has provided evidence in the associations between vitamin D and obesity on prostate cancer recurrence.

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Weight gain, insulin-like growth factor-I, and exogenous hormone use among postmenopausal women Jung S., Chang S., Vitolins M., Hursting S., and Paskett E. Purpose: While weight gain, insulin-like growth factor-I (IGF-I) levels, and excess exogenous steroid hormones are putative cancer risk factors, the interconnected mechanisms have not been fully characterized. Furthermore, published studies of the associations between the circulating IGF-I levels, weight gain, and hormone use are inconsistent. Our study was to investigate the relationships between IGF-I levels and weight gain among postmenopausal women while accounting for reproductive hormone use. Methods: We conducted a cross-sectional study of 801 postmenopausal women who enrolled in an ancillary study of the Women's Health Initiative Observational Study at Baylor College of Medicine and Wake Forest University School of Medicine from February 1995 to July 1998. The relationships between serologic factors and weight gain were analyzed using multivariate proportional odds logistic regression. We used the molar ratio of IGF-I to IGF binding protein-3 (IGFBP-3) (IGF-I/IGFBP-3) or circulating IGF-I levels adjusting for IGFBP-3 as a proxy of free IGF-I. Concentrations of serologic factors were expressed as quartiles. Results: IGF-I and IGF-I/IGFBP-3 were inversely related to weight gain in general. Among the obese group, the third quartile (Q3) of IGF-I was less likely to gain weight (>3% from baseline) than was the first quartile (Q3: OR=0.46, 95% CI: 0.21-0.96). Among the normal weight group, Q2 and Q3 of IGF-I/IGFBP-3 were 70% less likely than Q1 to gain weight (Q2: OR=0.30, 95% CI: 0.14-0.61; Q3: OR=0.32, 95% CI: 0.13-0.77). Among current estrogen users, Q3 of IGF-I and IGF-I/IGFBP-3 had 0.5 times the odds of maintaining or gaining weight relative to losing weight, or gaining weight relative to losing or maintaining weight, compared with Q1 (Q3 of IGF-I: OR=0.56, 95% CI: 0.32-0.96; Q3 of IGF-I/IGFBP-3: OR=0.51, 95% CI: 0.29-0.90). The relationships between serologic factors and weight gain were not different when leptin was replaced with body mass index as a modifying factor. Conclusions: Weight gain was not consistent with increases in IGF-I levels among the postmenopausal women; thus, further studies are needed to elaborate the mechanisms behind these findings.	Childhood height and weight and thyroid cancer risk in the Copenhagen School Health Records Register Cohort Kitahara CM, Michael Gamborg M, Berrington de González A, Sørensen TIA, Baker JL Background: Taller stature and obesity in adulthood have been associated with increased risk of thyroid cancer, but the role of growth and adiposity in childhood has not been directly examined. We conducted the first study to prospectively assess measured childhood height and body mass index (BMI) in relation to thyroid cancer risk. Methods: Height and weight measurements were available at ages 7-13 years for over 320,000 schoolchildren born in Copenhagen between 1930-1989. These data were linked with the Danish cancer registry for incident thyroid cancers from age 15+. Hazard ratios (HRs) and 95% confidence intervals (CIs) were calculated for total and papillary thyroid cancer according to age-, sex-, and birth cohort-specific height standard deviation scores (SDSs; 1-SDS increase=5.1-7.8 cm), computed to account for increasing height across birth cohorts, and by BMI SDSs (1-SDS increase=1.10-3.49 kg/m2), based upon an internal reference. Models were stratified by 5-year birth cohorts. Results: Between 1968-2010, 171 women and 64 men were diagnosed with thyroid cancer. Positive associations were observed between height and thyroid cancer risk in females; these were stronger at younger ages (per 1-SDS increase, HR at age 7=1.27, 95% CI:1.09-1.48; HR at age 12=1.14, 95% CI:0.98-1.34). For males, positive associations were observed for height with no apparent trend by age (HRs per 1-SDS increase ranged between 1.26-1.40). BMI at ages 7-13 was not significantly associated with total thyroid cancer risk in either females or males, though BMI at each age was significant positively associated with risk of papillary thyroid cancer in males (HRs per 1-SDS increase ranged between 1.45-1.57). Conclusions: Taller childhood height may increase thyroid cancer risk in adulthood, and greater BMI during childhood may increase risk of papillary thyroid cancer in men. Childhood may be a susceptible period during which height or body weight has an influence on thyroid cancer development.

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Cancer risks related to Arsenic waste in Georgia Mirtskhulava M., Chokheli M., Chirakadze A., Zaridze K. The purpose of the study was to determine the negative impact of arsenic waste on human health in the regions of Georgia, where industrial waste are disposed and not conserved. The research was carried out in Lechkhumi-Ambrolauri region and in Lower Svaneti – Lentekhi district of Georgia. Both Regions remains the potential threat of industrial waste exposure for region's ecology and health of local population even after the closure of industrial business. Survey design comprised the comparison analysis of areas exposed by arsenic and those, where industrial waste was not found. Oni region, which is remote from the disposals of arsenic industrial waste was under the target. The survey was conducted by using the method of Cohort Study; The survey information data was collected and created database for analysis. The Main results gained after statistic analysis showed the following: • On health self-assessment ''very good'','' good'' and'' average'' positively answered 70% of the exposed population and 76.5% – of the non-exposed population. And "very poor" health condition marked 4.8% of the exposed population and 2.3% - of the non-exposed ones. • Selected families from exposed and non-exposed areas who were interviewed on the relative risk of death of family members at exposed areas was RR = 1,4 (1,26-1,57) P-values - 0,0000001); This indicator confirms the hypothesis that population have a high incidence of death related to cancer, skin diseases and skin tumors. Other Findings and survey data shows that various skin diseases, allergies, respiratory, endocrine, Castro-intestinal and nervous system diseases are more frequently in the population living in the areas form arsenic exposure that those living in non-exposure spots. We think that research expansion will give us an opportunity to find correlation between the health status distribution, particularly research tumor and skin cancer high prevalence and impact of environmental exposure. Survey analyses was done under the assistance of Syracuse University Master student K. Zaridze.	Routine cardiac assessment for childhood cancer survivors: impact of guidelines on heart failure risk and overall survival Yeh JM, Nohria A, Diller L Purpose: Childhood cancer survivors face elevated risks for cardiac mortality, with congestive heart failure (CHF) responsible for up to half of all cases. Follow-up guidelines recommend routine cardiac assessment every 1 to 5 years, depending on diagnosis age and treatment, and angiotensin converting enzyme inhibitors (ACEI) may reduce CHF risk. We sought to estimate the potential impact of routine cardiac assessment to detect asymptomatic left-ventricular dysfunction (ALVD) and ACEI treatment to reduce CHF incidence and improve overall survival. Methods: Using a decision-analytic approach, we synthesized the best available data to model the clinical course of CHF in a cohort of patients similar to those in the Childhood Cancer Survivors Study (CCSS). We used a decision analytic model to project lifetime CHF risk and average per-person life expectancy (LE) associated with interval-based cardiac assessment. Compared to no asessment, we estimated the incremental benefit of an echocardiogram every 1, 2, 5 and 10 years. Test performance and CHF incidence were from the CCSS, while a broader range of data were used to establish baseline assumptions, including: 1) ALVD progresses to CHF after a median interval of 5.9 year and 2) ACEI treatment for ALVD (detected by echocardiograms) reduces CHF risk (RR=0.67) and cardiac mortality (RR=0.85-0.89). Results: For a cohort of 5-year childhood cancer survivors (diagnosis age=10), the average per-person LE was 3.0 years less compared to the general population. Gain in LE from cardiac assessment ranged from 0.1 (0.2%) to 0.2 years (0.4%) depending on assessment frequency. Assuming no cardiac assessment, the expected CHF-related mortality was 19.1%. Routine echocardiogram reduced lifetime CHF risk by more than 8%, but more frequent assessment provided progressively smaller incremental benefits. For example, compared to no cardiac assessment, performing an echocardiogram every 5 years reduced lifetime CHF risk by 11.4%. In comparison the incremental benefit of an echocardiogram every 1 year was much smaller (1.9%). Conclusions: Recommended follow-up guidelines for cardiac assessment potentially improve overall survival for childhood cancer survivors, though with decreasing marginal returns with more frequent screening.

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Childhood Cancer Survivors and Social Security Benefit Coverage: A Report from the Childhood Cancer Survivor Study (CCSS) Kirchhoff A, Kuhlthau K, Leisenring W, Warner E, Armstrong G, Oeffinger K, Robison L, Park E Background: Supplemental Security Income (SSI) and Social Security Disability Insurance (SSDI) are the federal programs that provide disability benefits. SSI is for those with limited income and is not based on prior work history. SSDI pays benefits to individuals who worked and paid Social Security taxes. The high level of unemployment among childhood cancer survivors suggests that many may receive these benefits. We evaluated a subset of survivors and siblings, within the CCSS cohort, to determine prevalence of SSI and SSDI coverage and experiences with coverage denial. Methods: A random sample of survivors (N=698) and siblings (N=210) ages ≥22, evenly selected from age strata (18-30, 30-39, 40+), completed a health insurance survey between March 2011-March 2012. Using multivariable generalized linear models to generate relative risks (RR) and 95% confidence intervals (95% CI), we determined whether survivors were more likely to have ever been covered by SSI or SSDI. Models accounted for familial correlation, and were adjusted for gender, age and race. Results: Mean age was similar for survivors (37.3, sd=8.2) and siblings (37.8, sd=9.6; p=0.44). Gender and race did not differ. The most common diagnoses were leukemia (37%) and central nervous system (CNS) malignancy (15%). Survivors reported having received SSI (14.6%) and SSDI (9.8%) more often than siblings (2.5%, p<0.001 and 4.8%, p=0.03, respectively), yet had also been denied SSI (8.2%) and SSDI (6.8%) more often than siblings (<1% each; p's<0.001). In multivariable analyses, survivors were more likely to ever have SSI (RR 5.74, 95% CI 2.37-13.94) and SSDI (RR 1.96, 95% CI 1.03-3.74) compared to siblings. Survivors of CNS malignancy (RR 6.13, 95% CI 3.35-11.22), bone cancer (RR 5.38, 95% CI 2.53-11.43), and leukemia (RR 2.69, 95% CI 1.46-9.95) faced elevated risks of ever having either SSI or SSDI coverage compared to siblings. Conclusions: Childhood cancer survivors receive SSI and SSDI more often than siblings but are also more likely to experience denial. These programs may play an important role in easing survivors' financial burden, but further research is required to assess the longitudinal impact on survivors.	Childhood cancer survivors' body mass index Warner E, Fluchel M, Wright J, Boucher K, Stroup A, Kirchhoff A Purpose: Determine whether adult childhood cancer survivors face a greater risk of being underweight or overweight/obese compared to a population-based comparison cohort. Methods: We utilized two linked population-based datasets: the Utah Cancer Registry and Utah Population Database. We included all cancer survivors diagnosed ages ≤21 years (N=1430) and a comparison cohort (N=6227) matched on birth year and gender. We limited analyses to participants aged ≥18 at the time of study. Most recent BMI was calculated from drivers' license height and weight data available from 2000-2010. Outcomes were underweight (BMI ≤18.5) and overweight/obese (BMI≥25) compared to normal weight (BMI 18.5-24.9). Multivariable generalized estimating equations were used to calculate relative risks (RR) and 95% confidence intervals (CI) of the BMI outcomes for survivors compared to the comparison cohort. All models were adjusted for year and age at which BMI was measured. Results: Age at BMI differed slightly between survivors (28.7 years, SD=8.0) and the comparison cohort (29.4 years, SD=8.45) (p=0.01). Average age at cancer diagnosis was 12.8 (SD=6.3), and the most common cancer was lymphoma (19%). Survivors were slightly more likely to be underweight compared to the comparison cohort (RR 1.02, CI 1.00-1.05). No significant difference existed between survivors and the comparison cohort for being overweight/obese. When diagnoses were examined by gender, female Wilms tumor survivors were more likely to be underweight (RR 1.24, CI 1.06-1.46) compared to females in the comparison cohort. Male central nervous system malignancy (CNS) survivors had a higher risk of being overweight than the comparison cohort (RR 1.11, CI 1.01-1.22), and female leukemia survivors were at a higher risk of being overweight (RR 1.10, CI 1.01-1.21). Conclusions: In our population-based study, childhood cancer survivors had a moderately higher risk for being underweight compared to an unaffected comparison cohort. Female Wilms tumor survivors were more likely to be underweight, while male CNS and female leukemia survivors face higher risks for being overweight/obese. Targeted nutrition and exercise interventions are essential for the growing childhood cancer survivor population.

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A prospective analysis of anthropometric measures, physical activity and risk of multiple myeloma in three large cohorts Birmann BM, Lee I-M, Rosner B, Giovannucci E, Buring JE, Colditz GA Adult obesity is a known risk factor for multiple myeloma (MM), but the roles of younger adult body size, other anthropometric measures and physical activity (PA) are less clear. To more broadly explore anthropometric measures and PA in MM etiology we conducted prospective analyses of 486 incident MM cases that were identified over 4,598,505 person-years of follow-up in the Nurses' Health Study, Health Professionals Follow-up Study and Women's Health Study cohorts. We defined World Health Organization categories of current and young adult BMI, sex-specific quartile of current and young adult weight and height, and cumulative average MET-hours of PA at baseline and in each follow-up cycle through 2008. We obtained cohort-specific hazard ratios (HR) and 95% confidence intervals (CI) from Cox proportional hazard models stratified on age and follow-up period to assess the relation of each exposure with MM risk and test for linear trend. We used random-effects models to compute summary HRs across populations and test for heterogeneity by cohort. We did not observe significant heterogeneity by cohort in any meta-analysis. We noted positive associations with MM for current BMI (30+ v. <23 kg/m^2, summary HR=1.5, 95% CI=1.1-2.1; p-trend=0.07), young adult BMI (25+ v. <23 kg/m^2, HR=1.3, 95% CI=0.9-1.7; p-trend=0.15) and quartile (Q) of current weight (Q4 v. Q1, HR=1.4, 95% CI=1.0-1.8; p-trend=0.05). Current (HR_{30+}=1.3) and young adult BMI (HR_{25+}=1.2) had somewhat attenuated HRs when mutually adjusted for one another. Height and PA were not associated with MM risk. These findings suggest that not only current but also earlier-life obesity confers an increased risk of MM. Null results for height suggest that physiologic sequelae of increased adiposity may comprise part of the mechanism beneath the likely causal BMI-MM association. BMI is also a risk factor for monoclonal gammopathy of undetermined significance (MGUS), a premalignant condition that precedes all MM diagnoses. Studies to identify the biologic mechanisms by which BMI influences MM risk and their role in MGUS progression to MM may offer opportunities for prevention or early detection of this lethal cancer.	Association between self-reported depression and screening colonoscopy participation Calderwood A, Bacic J, Kazis L, Cabral H Purpose: Despite the efficacy of colonoscopy and other screening modalities for colorectal cancer (CRC), approximately 45% of the US population remains unscreened. Depression is prevalent and affects preventive health behavior, yet only a few studies have evaluated the relationship between depression and CRC screening, yielding conflicting results. The purpose of this study was to determine the impact of self-reported depression on participation in screening colonoscopy. Methods: A cross-sectional analysis of the 2009 Medical Expenditures Panel Survey (MEPS), a nationally representative survey of the US civilian, non-institutionalized population. Subjects were survey respondents aged 50-75 without a history of colorectal cancer or inflammatory bowel disease. The primary independent and outcome variables were self-reported depression and up-to-date screening colonoscopy, respectively. Other co-variates included patient demographics, health insurance status, body mass index, diabetes, co-morbidities, having a usual care provider, and utilization of healthcare. Results: In our sample of 6787, 836 (12%) had depression and 60% reported having an up-to-date screening colonoscopy. A slightly higher percentage of depressed individuals compared to non-depressed individuals reported being up-to-date with screening colonoscopy (64% vs. 58% respectively, P=0.01) The odds of having a current colonoscopy in multivariable logistic models was 1.3 times higher for those individuals with depression compared to those without depression (OR = 1.3; 95% CI = 1.1, 1.7). Conclusions: In the general US population, depression may not be a risk factor for under-utilization of CRC screening and equal effort should be expended to encourage CRC participation regardless of the presence of depression.

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Comparison of guaiac-based fecal occult blood (gFOBT) and fecal immunochemical testing (FIT) to screen for colorectal cancer Clarke Hillyer G, Schmitt KM, Freedberg D, Kramer RA, Su Y, Neugut AI. PURPOSE: To compare colorectal cancer (CRC) screening behaviors and outcomes with gFOBT (1998-2006) and FIT (2006-2010) in a community-based program serving uninsured patients in Northern Manhattan. METHODS: We conducted a retrospective record review of individuals aged ≥50 years who received fecal-based CRC screening at the Northern Manhattan Cancer Screening Program between 1998-2010. Those with household income ≤250% federal poverty level, no medical insurance coverage, at average risk for CRC, and who were not up to date with CRC screening were considered eligible for screening. We examined demographic factors, test results, diagnostic follow-up of positive testing, colonoscopic findings , and adenoma detection rate by test type. To assess long-term screening adherence, the mean number of days between tests per patient and the mean number of tests/patient was calculated. RESULTS: A total of 7,710 patients completed 11,881 CRC screenings (7,266 gFOBT, 4,615 FIT) between 1998 and 2010. Patients were predominantly female (82.2%), Hispanic (45.2%), foreign-born (88.5%) and young (48.6% 50-54 years) at first age of screening through the program. More than 77% of positive gFOBT and 84.2% positive FIT tests were followed by colonoscopy. Cancers detected/year was comparable with each test type (0.67 gFOBT vs. 0.5 FIT) but more adenomas and non-neoplastic findings (inflammatory bowel disease, hemorrhoids and diverticular disease) were detected following positive FIT compared to gFOBT (31.1 vs. 28.6%, 67.2 vs. 64.3%, respectively). On average, patients completed 2.6 gFOBTs at 1.3 year intervals compared to 3.1 FITs every 1.5 years. CONCLUSIONS: Fecal-based CRC testing is an acceptable modality with which to screen individuals in our urban community. Findings suggest that, among low-income, primarily Hispanic women, more pre-cancerous adenomas were detected following positive FIT and patients more often completed rescreening with FIT compared to gFOBT. Further research to assess the utility of FIT vs. gFOBT in other vulnerable populations is warranted.	Applying the transtheoretical model to a cervical cancer screening intervention in Appalachian women Krok J, Oliveri J, Katz M, Young G, Tatum C, Paskett E. Cervical cancer incidence and mortality rates are disproportionally higher among women in Ohio Appalachia. This study sought to describe the changes in the TTM stage of change and reported barriers among Appalachian women before and after participation in an individualized lay health advisor (LHA) intervention designed to improve cervical cancer screening rates. The intervention included 2 in-person visits, 2 phone calls, and 4 postcards about cervical cancer and recommended screening. Descriptive statistics, Fisher's exact test, McNemar's test, and logistic regression analyses were used to analyze the self-reported and medical record review data. The mean age of the sample was 43.7 years and 95% of the participants identified themselves as White. Of the 143 women enrolled in the LHA intervention, 47% had forward stage movement after the intervention, 45% stayed the same, and 8% had backward stage movement. The most common reported barriers to cervical cancer screening were forgetting to make an appointment (45%), not having enough time to be screened (43%), and not being able to afford it (30%). Logistic regression analyses found that unemployment (OR= 4.89, p=0.008); lower SES (OR=2.94, p=0.04); and lower income (OR=3.60, p=0.01) were associated with being in the action/maintenance stage at visit 1. Women who were unable to afford a Pap test (OR=0.41, p=0.04), and whose doctor didn't recommend the test (OR=0.17, p=0.002) were less likely to be in the action/maintenance stage at visit 2. Being embarrassed (OR=0.34, p=0.04), and nervous and afraid about having a Pap test (OR=0.33, 0.04) were also less likely to be in the action/maintenance stage at visit 2. Being unable to afford a Pap test was significantly associated with not having the test in the last 12 months (OR=0.39, p= 0.02). Understanding the stages of change related to cervical cancer screening practices and reported barriers among this vulnerable population can provide useful information to Appalachian women, clinicians, and researchers. The study information can also inform researchers and clinicians of this population's readiness for change and how to set realistic goals for stage progression and tailor interventions accordingly.

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Navigation Intervention of the Cancer Prevention Demonstration Project in the Intermountain West: Updated Results Lee YCA, Burt R, Marsh S, Rupper RW, Alder SC Purpose: A 4-year demonstration project focused on patient navigation to facilitate cancer screening and appropriate care among rural American Indians (AIs) in the Intermountain West enrolled in Medicare Parts A and B, aiming to improve the survival of colon, cervical, breast, lung, and prostate cancer patients. Methods: AIs were recruited from tribal lands in the Intermountain West. Patient navigation was compared to standard education using a geographically-based cluster randomized design to assess whether it will improve cancer screening, cancer knowledge, and health care satisfaction. During September 2006-December 2010, the baseline, annual, and exit questionnaires were used to assess demographic characteristics, cancer screening history for cancer, barriers to adherence to screening guidelines, cancer knowledge, general health status, and access to care. Results: Out of 1804 patients recruited, 1744 were eligible for the initial screening to collect baseline information. Annual follow-up data were collected from 593 of 815 participants in the navigation group and 635 of 929 in the education group. The exit survey was completed for 528 participants in the navigation group and for 658 participants in the education group. Chi square tests and multivariate logistic regression models were used to compare categorical data between the patient navigation and education groups. Compared to the education group, a higher proportion of the patient navigation group reported having had blood stool test done (OR=1.75; 95%CI 1.28, 2.40). However, such an impact was not observed for the other screening tests. Overall, the belief in chance of survival to be at least good if cancer is detected early improved more among the navigation group (75.49% to 85.68% for navigation; 79.38% to 82.54% for education). Conclusions: The results suggest that navigation's impact on belief could be detected sooner than on behavioral changes. The observed limited improvement in screening behaviors may have been due to inadequate follow-up time and challenging barriers for screening access.	The Role of Shared Decision Making in Influencing Use of Prostate-Specific Antigen Testing for Prostate Cancer Screening Among Men Jun Li MD, PhD; Zahava Berkowitz, MS; Thomas B. Richards, MD, MPH; and Lisa C. Richardson, MD, MPH Background: Little is known about how shared-decision making (SDM) is being carried out between men 70 years and older and their health care providers and how their conversations influence prostate-specific antigen (PSA) testing. Our study aimed to describe the use of SDM key elements and assess their associations with PSA-based prostate cancer screening in this older male population. Methods: We used data from the 2005 and 2010 National Health Interview Survey (NHIS) to estimate the age-specific prevalence of PSA-based screening. Using logistic regression modeling on the 2010 data, we assessed the associations of PSA testing with each SDM key element and other demographic and health-related characteristics. Results: Age-specific prevalence of PSA testing was similar in 2005 and 2010. In 2010, 44.1% of men aged 70 years and older had PSA testing. Over 70% of them reported not having had discussions about both advantages and disadvantages. Multivariable analyses showed that PSA-based screening was positively associated with discussions of advantages only ($P < 0.001$) and with discussions of both advantages and disadvantages ($P < 0.001$) compared with no discussion. However, discussion of neither disadvantages nor scientific uncertainties was associated with PSA testing. Conclusion: More than 40% of older men underwent PSA testing and the majority of them did not engage in SDM. Efforts are needed to increase physicians' knowledge of and adherence to PSA-based screening recommendations. Additional research about the nature, context, and extent of SDM and about patients' knowledge, values, and preferences regarding PSA-based screening is warranted.

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Differences in Mammographic Density Decline over Time in Breast Cancer Cases and Women at High Risk for Breast Cancer Work ME, Reimers LL, Quante AS, Crew KD, Whiffen A, Terry MB Introduction: High absolute breast density and increased breast density over time are strongly associated with breast cancer risk, and breast density generally decreases with increasing age. We examined mammographic density data from members of the Women At Risk High-Risk Registry at Columbia University Medical Center (WAR), a cohort defined as at high risk for breast cancer due to family history of breast cancer, history of lobular carcinoma in situ, and/or benign breast disease, to determine changes in their breast density over time. Methods: Within the WAR cohort of 1598 women, we conducted a nested case-control study of 66 incident cases of invasive breast cancer and 70 women without cancer, matched on age and time between first and second mammogram. For each participant, we collected two mammograms (for the cases, both mammograms occurred before cancer diagnosis), to examine differences in absolute density, percent density, and change in density between cases and controls. The average time between first and second mammogram was 4.6 years for both cases and controls, with a range of between 1 and 15 years. Results: Using linear regression with change in percent density as the outcome, and time between first and second mammogram as the independent variable, we found that among women without breast cancer, density decreased as time between first and second mammogram increased (β= -2.15, p=0.005). In contrast, there was no overall change in density among the cases associated with time between first and second mammogram (β= 0.69, p=0.39). In an ANCOVA comparing the slopes of the regression lines, the slopes were significantly different for cases versus controls (p=0.009). Conclusion: In a cohort of women at high risk for breast cancer, breast density does not decrease as time between mammograms increases, for women who go on to develop breast cancer. For women who do not develop breast cancer, breast density decreases significantly over time.	Cross-Sectional & Longitudinal Associations between Light-Intensity Physical Activity & Physical Function among Cancer Survivors Blair C, Morey M, Desmond R, Sloane R, Snyder D, Cohen H, Demark-Wahnefried W Purpose: While moderate-vigorous intensity physical activities (MVPA) confer the greatest health benefits, evidence suggests that light-intensity activities are also beneficial, particularly for older adults and individuals with moderate-severe comorbidities. Cross-sectional and longitudinal associations between light-intensity physical activity and physical function were examined in elderly cancer survivors, who are at increased risk for age- and treatment related comorbidities, including accelerated functional decline. Methods: The analysis included 641 breast, prostate, and colorectal cancer survivors (54% female) aged 65 and older who participated in a 1-year, home-based diet and exercise intervention designed to reduce the rate of physical function decline. Pre- and post-intervention physical activity and function were assessed via the CHAMPS questionnaire, the SF-36 physical function subscale (PFS) and the Late Life Function and Disability Index basic and advanced lower-extremity function (LEF) subscales. ANCOVA was used to compare means of physical function across levels of PA intensity (low-light (LLPA): 1.0-2.0 METs; high-light (HLPA): 2.1-2.9 METs; MVPA: ≥3.0 METs). Results: After adjustment for age, sex, BMI, comorbidities, symptoms, and MVPA, increasing tertiles of baseline light-intensity activity were associated with higher scores for all 3 measures of baseline physical function (all p-values <0.005). Associations were stronger for HLPA than for LLPA. Compared with survivors who decreased or remained stable in MVPA and HLPA at the post-intervention follow-up, those who increased in HLPA, but not MVPA, reported higher physical function scores (LSMeans (95% CI): SF-36 PFS: -5.58 (-7.96, -3.20) vs. -2.54 (-5.83, 0.75), p=0.14; basic LEF: -2.00 (-3.45, -0.55) vs. 0.28 (-1.72, 2.28), p=0.07; advanced LEF: -2.58 (-4.00, -1.15) vs. 0.44 (-1.52, 2.40), p=0.01). Conclusions: Our findings suggest that increasing light-intensity activities, especially HLPA, may be a viable approach to reducing the rate of physical function decline in individuals who are unable or reluctant to initiate or maintain adequate levels of moderate-intensity activities.

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Parental Factors Related to Dietary and Physical Activity Behaviors in Survivors of Childhood Central Nervous System (CNS) Tumors Santa Maria, D., Chang, M., McCurdy, S., Chandra, J., Markham, C., and Basen-Engquist, K. Purpose: Survivors of childhood central nervous system tumors (SCCNST) are 3 times more likely to have ≥ 1 adverse health issues in comparison to their cancer-free siblings. Maintaining a healthy diet and adequate physical activity (PA) may mitigate the risk of adverse health outcomes. Research has shown that parenting factors are important determinants of childhood cancer survivor adjustment. Since little is known regarding the role of parental factors in dietary and PA behaviors post cancer treatment, we examined parental factors that may influence dietary and PA behaviors among SCCNST. Methods: We conducted a secondary qualitative data analysis of 9 group interviews [4 groups of SCCNST aged 12-18 who were at least 6 months off treatment without relapse (8), 4 groups of mothers (8), and 1 group of health care providers (4)] from a study evaluating weight management needs of SCCNST. The first two authors independently coded the transcripts in ATLAS.ti using thematic content analysis to organize responses and summarize themes. Results: We identified 3 main themes: Parenting style, parent-child connectedness, and food and physical activity environment. The majority of the parents (~63%) adopted an authoritative parenting style related to diet and PA behaviors while some (~25%) adopted a permissive parenting style. Families reported high levels of parent-child connectedness. A positive food and PA home environment with parental modeling was highly endorsed by adolescents as an important component for promoting healthy diet and adequate PA behaviors. Conclusions: The reported high levels of parent-child connectedness may hinder peer relationships. Parents may need to develop the skills needed to model healthy eating and adequate PA behaviors and promote positive food and PA home environment. More mixed method research is needed to evaluate how and why parents utilize various parenting styles to manage diet and PA behaviors in child/adolescent survivors of SCCNST. Understanding parental factors (i.e. parenting style) related to dietary and PA behaviors may benefit development of family-based healthy lifestyle interventions, particularly for SCCNST.	Prognostic factors for lung cancer in Central Europe Hashibe M, Boffetta P, Szeszenia-Dabrowska N, Lissowska J, Foretova L, Bencko V, Fabiánová E, Janout V, Brennan P, Lee YCA Purpose. The purpose of the study is to investigate prognostic factors including clinical and lifestyle factors among lung cancer patients in Central Europe. Methods. We followed up 1,340 lung cancer patients recruited in a multi-center case–control study conducted during 1998–2002 in the Czech Republic, Poland, and Slovakia. We linked the lung cancer patient data with vital statistics, cancer registry data, and/or medical records to assess survival status and treatment. Results. Higher risks of death among lung cancer patients were observed for older patients (HR=1.45, 95%CI=1.17-1.80 for >70 years vs. <50 yrs), and for men (HR=1.22, 95%CI=1.06-1.40 for men vs. women). The five-year survival was 14.3% for women and 9.8% for men. Subjects with lower education levels had higher risks of death, though a dose-response trend was not observed. In terms of clinical factors, stage was the strongest predictor of lung cancer survival (p for trend<0.001). Grade and histology were important prognostic factors, but after adjustment for other clinical factors such as stage they were not strongly associated with survival. History of alcohol drinking or cigarette smoking was not associated with differences in lung cancer survival. There was a suggestion of a higher risk of death for individuals who were overweight at age 20 compared to individuals with normal BMI (18.5 – 24.9 kg/m2), but a clear dose-response trend was not detected (p for trend=0.0741). High fruit and vegetable intake prior to cancer diagnosis and family history of cancer were not correlated with the risk of death. Conclusions. Similar to the lung cancer survival differences in other geographic regions, women in Central Europe had higher survival compared to men. Among clinical factors, stage was the strongest predictor of survival. There were suggestive associations between lower education, being overweight and a higher risk of death among lung cancer patients.

77	78
Survivorship Care in a Changing Environment--Physician Specialty Perspectives Zapka J, Sterba K, LaPelle N, Armeson K, Burshell D, Ford M. Purpose: This formative study 1) explored physicians' (primary care, oncology, surgery, gastroenterology) attitudes and practices in providing surveillance care to colorectal cancer (CRC) survivors and 2) discussed implications in the context of professional and policy changes and norms. Methods: We conducted 20 key informant interviews and administered a survey guided by the national NCI and ACS Survey of Physician Attitudes Regarding the Care of Cancer Patients (SPARCCS). Inquiry domains included care recommendations, guideline adherence, perceived survivor needs and barriers, role of specialties and preferred models of care. Findings: Substantial differences in CRC surveillance were observed in perceptions, opinions and practices among specialty groups. Oncologists and surgeons felt best prepared to manage post-treatment care when compared to others. Views on the multi-level factors which impact quality care were dissonant. For example, despite general agreement about guidelines, physicians reported tailoring care based on a variety of factors (e.g., patient expectations, litigation concerns, inter-specialty communication, practice context such as medical records and clinic type, and access to specialties in rural areas). Other factors included professional trends (e.g. genetics and patient centered care) and policy, notably reimbursement. Conclusions and Implications: While the survivorship literature emphasizes a shared care model during CRC surveillance care, this study highlighted dissonance in perspectives among MD specialties, suggesting need for flexible models of care. In addition, all physicians reported deviation from guidelines in order to tailor care. Each physician's role in survivorship care will continue to change due to evolving practice certification requirements, rapidly changing science in cancer, and the challenges of overseeing care of elders with co-morbid conditions. This formative investigation demonstrated the challenges of operationalizing the precepts of patient centered care, balancing comparative effectiveness approaches, medical homes and accountable care expectations and designing interventions to improve quality.	Smoking status and symptom burden in head and neck cancer patients at clinic presentation Sterba KR, Tooze JA, Garrett-Mayer E, Day A, Alberg T, Carpenter M, Tetrick L, Weaver K Tobacco use is a primary risk factor for head and neck cancer (HNC) and is likely to have detrimental effects on cancer care outcomes. We examined demographic and symptom differences by smoking status in HNC patients presenting for surgery. Individuals with HNC (N=104, 83% White, mean age=59) were recruited at two southeastern cancer centers. Participants completed questionnaires before surgery assessing smoking status, sociodemographic characteristics and symptoms (depression and HNC-specific). Participants were categorized as never (n=23), former (quit > 6 months prior, n=39) or current/recent (n=42) smokers. Differences by smoking status group were explored using ANOVA or Fisher's exact tests for continuous and categorical variables, respectively. To further evaluate relationships between symptoms and smoking status controlling for demographic and clinical variables, linear and logistic regression were used for continuous and categorical symptoms, respectively. Marital status, health insurance and financial challenges differed by smoking status ($p<.05$). Current/recent smokers were more likely to be unpartnered and have financial challenges and less likely to have private insurance than former and never smokers. Smoking status was not associated with depression but was associated with other symptoms in models controlling for age, race, education and cancer stage. Current/recent smokers had increased speech problems ($p=.003$) and more recent weight loss ($p=.03$) than other groups. They also had increased swallowing problems ($p=.02$) and concerns about social contact ($p=.02$) compared to never smokers. Finally, both current/recent ($p=.04$) and former ($p=.04$) smokers reported more recent pain killer use compared to never smokers. Current and recent smoking HNC patients in this study had the highest symptom burden at clinic presentation for surgery when compared to former and never smokers. They also tended to have fewer resources (partner support and financial). Future studies should explore the potential benefits of addressing the unique needs and symptoms of smokers at clinic presentation and consider the development of interventions emphasizing the effects of quitting on patient symptom experiences.

79 - T	80 - T
Smoking and Colorectal Cancer Risk by Tumor Genetic and Epigenetic Subtypes: A Molecular Pathological Epidemiology (MPE) Study Nishihara R, Chan AT, and Ogino S. Purpose: It remains to be investigated whether smoking is associated with colorectal carcinogenesis through specific epigenetic or genetic alterations, or abnormal protein expression. We comprehensively examined the influence of smoking on colorectal cancer risk by specific tumor molecular features, including epigenetic status (CpG island methylator phenotype [CIMP]), genomic instability (microsatellite instability [MSI]), oncogenic mutations (BRAF, KRAS, and PIK3CA), and tumor protein expressions (DNA methyltransferase-3B [DNMT3B], TP53, PTGS2 [cyclooxygenase-2], FASN, and CTNNB1 [b-catenin]). Methods: Follow-up of 134,204 individuals in two U.S. nationwide prospective cohorts (Nurses' Health Study [1980-2008] and Health Professionals Follow-up Study [1986-2008]) resulted in 1,292 incident rectal and colon cancers with available molecular data. Duplication method Cox proportional hazards model was used to calculate multivariate hazard ratio (HR) for developing a specific subtype of tumor according to smoking status. Results: Compared with never smokers, smoking of ≥40 cumulative pack-years was associated with increased risks for specific molecular types of colorectal cancer. Multivariate HRs are 2.12 for CIMP-high cancer (95% confidence interval [CI], 1.48- 3.03), 2.27 for MSI-high cancer (95% CI, 1.56-3.31), 2.00 for BRAF-mutated cancer (95% CI, 1.37-2.92), 1.37 for KRAS-wild-type cancer (95% CI, 1.12-1.68), 1.30 for PIK3CA-wild-type cancer (95% CI, 1.07-1.58), 1.33 for TP53-negative cancer (95% CI, 1.05-1.69), 1.37 for PTGS2-positive cancer (95% CI, 1.09-1.73), 1.36 for FASN-positive cancer (95% CI, 1.07-1.73), and 1.35 for CTNNB1-negative cancer (95% CI, 1.04-1.74). The influence of smoking significantly differed according to status of CIMP (P=0.001 for heterogeneity test of CIMP-low vs. CIMP-high) and MSI (P=0.0003 for heterogeneity test of MSS vs. MSI-high). There was no statistically significant differential association of smoking with other molecular subtypes. Conclusion: This molecular pathological epidemiology (MPE) study suggests that smoking might primarily cause epigenetic alterations, which lead to oncogenic mutations in colonic cells.	A Prospective Study of Smoking Habit and Risk of Synchronous Colorectal Cancers Nishihara R, Chan AT, and Ogino S. Purpose: Etiologic exposures that promote synchronous colorectal cancers (2 or more primary carcinomas simultaneously identified in one patient) remain uncertain. Based on the molecular pathological epidemiology (MPE) studies showing the association between smoking and epigenetic changes, and the association between epigenetic changes and synchronous colorectal cancers, we tested the hypothesis that cigarette smoking increased the risk of synchronous colorectal cancers through DAN methylation. Methods: During follow-up of 134,644 participants in two prospective cohorts, the Nurses' Health Study and the Health Professionals Follow-up Study, we identified 1,890 colorectal cancer cases with the available information on synchronous or solitary tumors diagnosed from 1982 through 2008. Smoking status was assessed using updated information every 2 years. We examined the differential risks of developing synchronous colorectal cancers vs. solitary colorectal cancer by using duplication-method Cox proportional hazards regression. Results: Compared with never smokers, current smokers experienced a higher risk of synchronous colorectal cancers (multivariate HR=6.01; 95% CI, 2.31-15.7). In contrast, current smokers did not experience elevated risk of solitary cancer (multivariate HR=1.02; 95% CI, 0.87-1.20), and the risk by smoking was significantly higher for synchronous cancers than for solitary cancer (P=0.001 for heterogeneity). In addition, the association between cumulative pack-years smoked and colorectal cancer risk differed significantly by tumor synchronicity status (synchronous vs. solitary) (P=0.003 for heterogeneity). Compared with never smokers, smokers with 40 or more pack-years showed a greater risk for synchronous cancers (multivariate HR=4.58; 95% CI, 1.82-11.57) than for solitary cancer (multivariate HR= 1.23; 95% CI, 1.07-1.41). Conclusion: Cigarette smoking is associated with an increased risk of synchronous colorectal cancers.

81 - T	82 - T
Molecular Pathological Epidemiology (MPE) Study of Aspirin Use and Colorectal Cancer Risk According to BRAF Mutation Status Nishihara R, Giovannucci E, Fuchs CS, Chan AT, and Ogino S. Purpose: Randomized controlled trials have demonstrated that aspirin use reduces the risk of colorectal cancer. Based on the experimental evidence which implicates a role of RAF kinases in upregulation of PTGS2 (cyclooxygenase-2), we tested the hypothesis that the influence of aspirin on cancer risk differed by mutation status of the BRAF oncogene, a member of the RAF kinase family, in colonic cells. Methods: We collected biennial questionnaire data on aspirin use from 1980 through 2008 in the Nurses' Health Study and the Health Professionals Follow-up Study. Duplication-method Cox proportional hazards regression was used to compute the hazard ratio (HR) and 95% confidence interval (CI) for the risk of colorectal cancer according to BRAF mutation status. Results: Among 127,865 individuals, with 3,166,091 person-years of follow-up, we identified 1,223 incident colon and rectal cancers with available molecular data. Compared with aspirin non-users, lower risks of BRAF-wild-type cancer were observed in aspirin users of 6-14 tablets per week (multivariate HR=0.67; 95% CI, 0.53-0.84) and users of >14 tablets per week (multivariate HR=0.42; 95% CI, 0.24-0.72). In contrast, no significant association was observed for BRAF-mutated cancer risk regardless of aspirin dose (multivariate HR=0.92; 95% CI, 0.56-1.54 for users of 6-14 tablets per week and multivariate HR=1.11; 95% CI, 0.50-2.45 for users of >14 tablets per week). The association of aspirin dose with cancer risk significantly differed by BRAF mutation status (P= 0.004 for heterogeneity). Conclusion: This molecular pathological epidemiology (MPE) study found that regular aspirin use was associated with lower risk of BRAF-wild-type colorectal cancer, but not with BRAF-mutated cancer risk. Our result suggests that BRAF-mutant colonic cells may be less sensitive to the anti-tumor effect of aspirin.	Family History, Dietary Folate and Alcohol, and Colorectal Cancer Risk According to LINE-1 methylation level Nishihara R, Giovannucci E, Fuchs CS, and Ogino S. Purpose: Family history of colorectal cancer (CRC) is associated with a higher risk of colorectal cancer which exhibits aberrantly low DNA methylation in long interspersed nucleotide element-1 (LINE-1), a well-known indicator of global DNA methylation status. We examined whether the dietary intake of folate and alcohol modified the association between family history and CRC risk according to LINE-1 methylation level. Methods: Using the Nurses' Health Study and the Health Professionals Follow-up Study (with 134,079 individuals and 3,184,415 person-years of follow-up), we prospectively examined the interaction between family history and dietary intake of folate and alcohol in relation to CRC incidence. To integrate measurement of risk attributable to low folate and high alcohol intakes, we generated a composite folate/alcohol risk score (2 to 6) by summing folate score (1 to 3; highest to lowest tertile) and alcohol score [1 (0 g/day); 2 (0.1-15 g/day); 3 (>15 g/day)], and then dividing into 3 groups [2-3 vs. 4 vs. 5-6 (lowest to highest risk)]. Duplication-method Cox proportional hazards regression was used to compute the hazard ratio (HR) and 95% confidence interval (CI) for the risk of CRC. We excluded possible Lynch Syndrome cases by eliminating CRC cases with high microsatellite instability. Results: Among people with family history, high folate/alcohol risk score was associated with higher risk of LINE-1 methylation-low CRC (multivariate HR=3.05; 95% CI, 1.83-5.08), compared with people without family history who had low folate/alcohol risk score. Among people with family history, lower folate/alcohol risk score was associated with a lower risk of LINE-1 methylation-low CRC (P=0.039 for trend). In contrast, among people without family history, we did not observe a significant trend across categories of folate/alcohol risk score (P=0.18 for trend). The statistical interaction between family history and folate/alcohol risk score did not reach significance. Conclusion: This molecular pathological epidemiology (MEP) suggests that, among people with family history of CRC, dietary intake of folate and alcohol might modify the risk of LINE-1 methylation-low CRC.


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Dr. Polly Newcomb
Recipient of the
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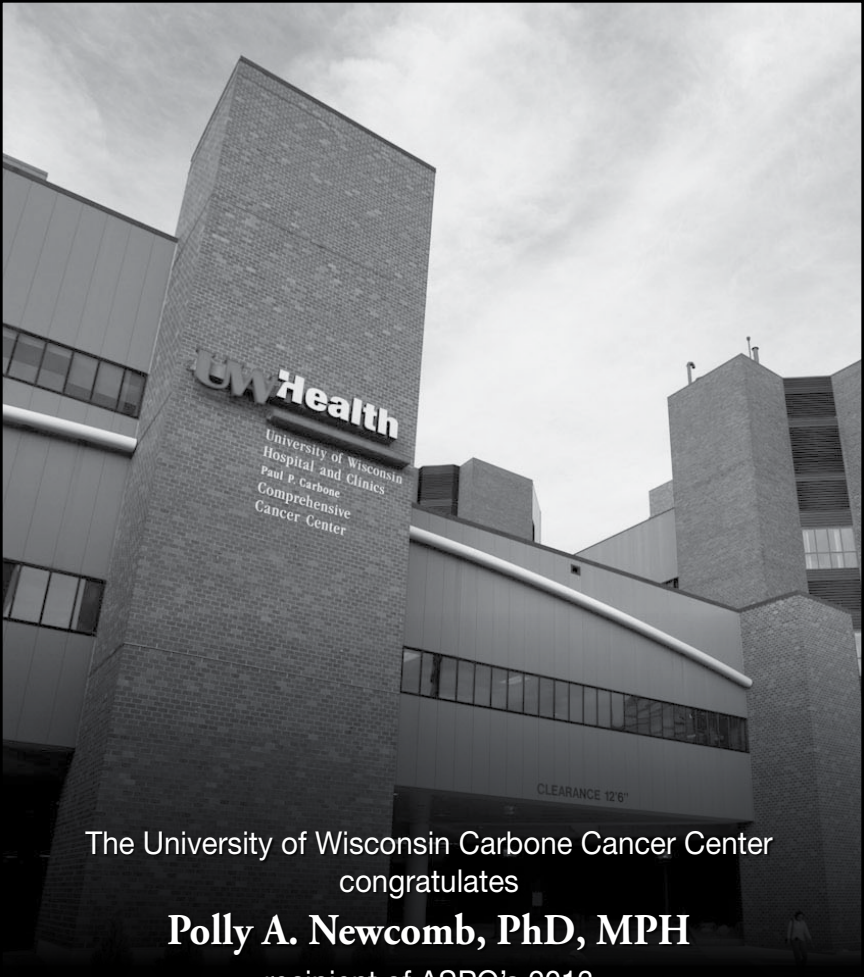

The University of Wisconsin Carbone Cancer Center
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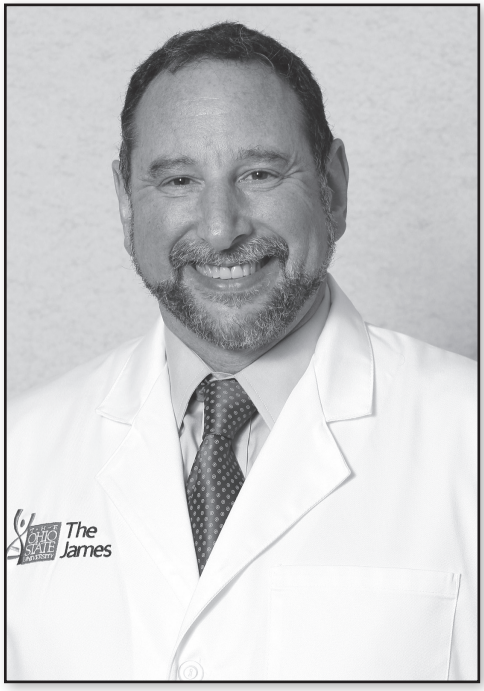
Salutes Peter Shields, MD, for his leadership and service to the American Society of Preventive Oncology



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Congratulations to David W. Wetter, Ph.D.

Professor and Department Chair of Health Disparities Research
Cullen Trust for Health Care Chair
The University of Texas MD Anderson Cancer Center

Awarded the *2013 Joseph W. Cullen Memorial Award for Excellence in Tobacco Research*

The Division of Cancer Prevention and Population Sciences at MD Anderson Cancer Center congratulates David W. Wetter, Ph.D., professor and founding chair of the Department of Health Disparities Research, on being named the 2013 recipient of the Joseph W. Cullen Memorial Award for Excellence in Tobacco Research.

Dr. Wetter is a leading translational researcher in addictive and cancer-related behaviors, in particular tobacco use, its public health impact and the development and evaluation of theoretically-based interventions. Specific research foci include developing models of addictive and cancer risk behaviors and translational research to implement and disseminate interventions in real world settings. Dr. Wetter's research spans the continuum from cells to society and focuses on high-risk and underserved populations, with a major focus on low socioeconomic status individuals, minorities, and women.

His extensive professional service includes chairing the Community Level Health Promotion study section at the National Institutes of Health, the Cancer Forum of the American Public Health Association and several annual meetings of the Society for Research on Nicotine and Tobacco, contributing to the 2000 Report of the Surgeon General on Reducing Tobacco Use, scientific consultancy for the U.S. Public Health Service tobacco treatment guidelines and membership on the editorial board for Health Psychology.

We honor him for his many contributions as a researcher and leader as well as his relentless dedication to eliminating tobacco use and smoking and the harms they cause.

Other current leadership positions include:

- Associate Director for Health Disparities Research, Cancer Center Support Grant (Minority and Women Clinical Trials Recruitment Program, Patient Demographic Initiative), MD Anderson
- Co-Director, Behavioral and Health Disparities Research Program, Cancer Center Support Grant, MD Anderson
- Director, Tobacco Disparities Training Program, MD Anderson
- Co-Director, Center for Community-Engaged Translational Research, Duncan Family Institute for Cancer Prevention and Risk Assessment, MD Anderson
- Director, Community Networks Program Center, MD Anderson
- Member, Executive Committee for the Duncan Family Institute for Cancer Prevention and Risk Assessment

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The University of Alabama at Birmingham (UAB) is home to one of the original eight NCI-designated comprehensive cancer centers. UAB also has one of the nation's oldest and continuously-funded research training programs in cancer prevention and control (NCI R25T). For over a quarter of a century, we have provided interdisciplinary research training to both pre- and post-doctoral fellows, who now have established independent research careers in academic and scholarly organizations. Currently, we are seeking competitive applicants for **post-doctoral** fellowship positions.

This 1-2 year program prepares fellows for independent research careers in the field of cancer prevention and control. Our program is comprehensive, competitive and provides training in areas that range from primary prevention to cancer survivorship, from the cell to populations, and from basic science to community-based participatory research and interventions.

This successful and interdisciplinary postdoctoral program provides expert and closely-mentored training by a multi-disciplinary team. Senior faculty mentors represent diverse disciplines, including epidemiology, nutrition sciences, cancer survivorship, palliative and supportive care, nursing, informatics, health policy, social & behavioral sciences, cancer biology, and genetics. The program provides didactic and experiential training opportunities, including practical experience in grant preparation, data analysis, project management, professional skills training, and scientific writing (abstracts/manuscripts).

The program seeks highly qualified and experienced individuals who are passionate about advancing the science of cancer prevention and control, and who are motivated to take full opportunity of the rich, scholarly resources available at UAB. Eligible candidates must be U.S. citizens or permanent residents, and possess a doctoral degree (PhD, DrPH, MD, DO or equivalent) from an accredited university.

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Applications should include the following:

- Cover letter including a statement of research interests and how the training grant will further your scholarly career in cancer prevention and control
- Curriculum vitae
- 3 letters of recommendation and reprints of first authored papers.

Applications should be emailed to: Drs. Wendy Demark-Wahnefried and Karen Meneses (see below). For more information about the training program, please contact Drs. Wendy Demark-Wahnefried (demark@uab.edu) or Karen Meneses (menesesk@uab.edu) or visit our website http://www.uab.edu/cpctp.

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The University of Alabama at Birmingham (UAB) is home to one of the original eight NCI-designated comprehensive cancer centers (CCC). It has been continuously funded for >40 years and currently holds >$140 M in extramural research funding. The UAB-CCC is comprised of 6 major research programs, 15 shared facilities, and 2 SPORES. UAB is a thriving urban university/medical center with research funding exceeding $433 M, and houses a CCTS and a Nutrition and Obesity Research Center. We are growing and now recruiting for the following positions (12- month tenured or tenure-earning positions with salary, rank and tenure status commensurate with qualifications):

ENERGETICS & CANCER: Department of Nutrition Sciences/School of Health Professions is seeking an investigator with a track record in energetics and cancer biology. Appointments at the rank of Professor, Associate Professor or Assistant Professor are being considered, with rank and tenure status based on qualifications. Candidates must have an MD, DrPH, or PhD. Successful senior candidates will be expected to demonstrate a track record of a sustained program of research in this area, including mentoring of junior faculty and trainees. The Department of Nutrition Sciences (www.uab.edu/nutrition) has more than 18 full-time faculty members and more than 90 staff, students, and postdoctoral fellows involved in basic, animal, physiologic, clinical, and community-based research, service, and teaching. Contact: Wendy Demark-Wahnefried, PhD, RD, Professor & Webb Endowed Chair of Nutrition Sciences Email: demark@uab.edu

BEHAVIORAL SCIENTIST: Division of Preventive Medicine (DOPM)/School of Medicine is seeking a candidate with expertise in lifestyle change interventions, particularly as it relates to cancer prevention and control (e.g., physical activity, nutrition, smoking). The candidate will be expected to provide leadership to develop and implement a research program in lifestyle changes and to contribute to programmatic excellence in the DOPM and the UAB-CCC. Appointments are open at the rank of Associate or Full Professor. The DOPM currently has 24 full-time faculty members involved in research programs related to clinical health services research, clinical trials, and epidemiology with particular focus on underserved populations and women. Contact: Monica Baskin, PhD, Associate Professor of Preventive Medicine Email: mbaskin@uabmc.edu

CANCER EPIDEMIOLOGY: The Department of Epidemiology in the School of Public Health invites applications for faculty positions at the Assistant Professor or Associate Professor in Cancer Epidemiology. Successful candidates should have (1) a PhD or an equivalent degree in epidemiology, human genetics, molecular genetics, biological sciences, biostatistics, bioinformatics or related fields; (2) a track record and/or strong promise of obtaining peer-reviewed external funding and publications in the above areas; (3) commitment to excellence in teaching and advising undergraduate and graduate students; (4) excellent written and oral communication skills; and (5) a strong work ethic and demonstration of collaborative research. Candidates with a research focus in genetics, biomarkers, molecular epidemiology, environmental exposures or disease mechanisms in human populations, and applicants with strong methods/quantitative skills, are particularly encouraged to apply. Contact: Christine Skibola, PhD, Professor & Caldwell Marks Endowed Chair in Molecular Epidemiologycskibola@uab.edu

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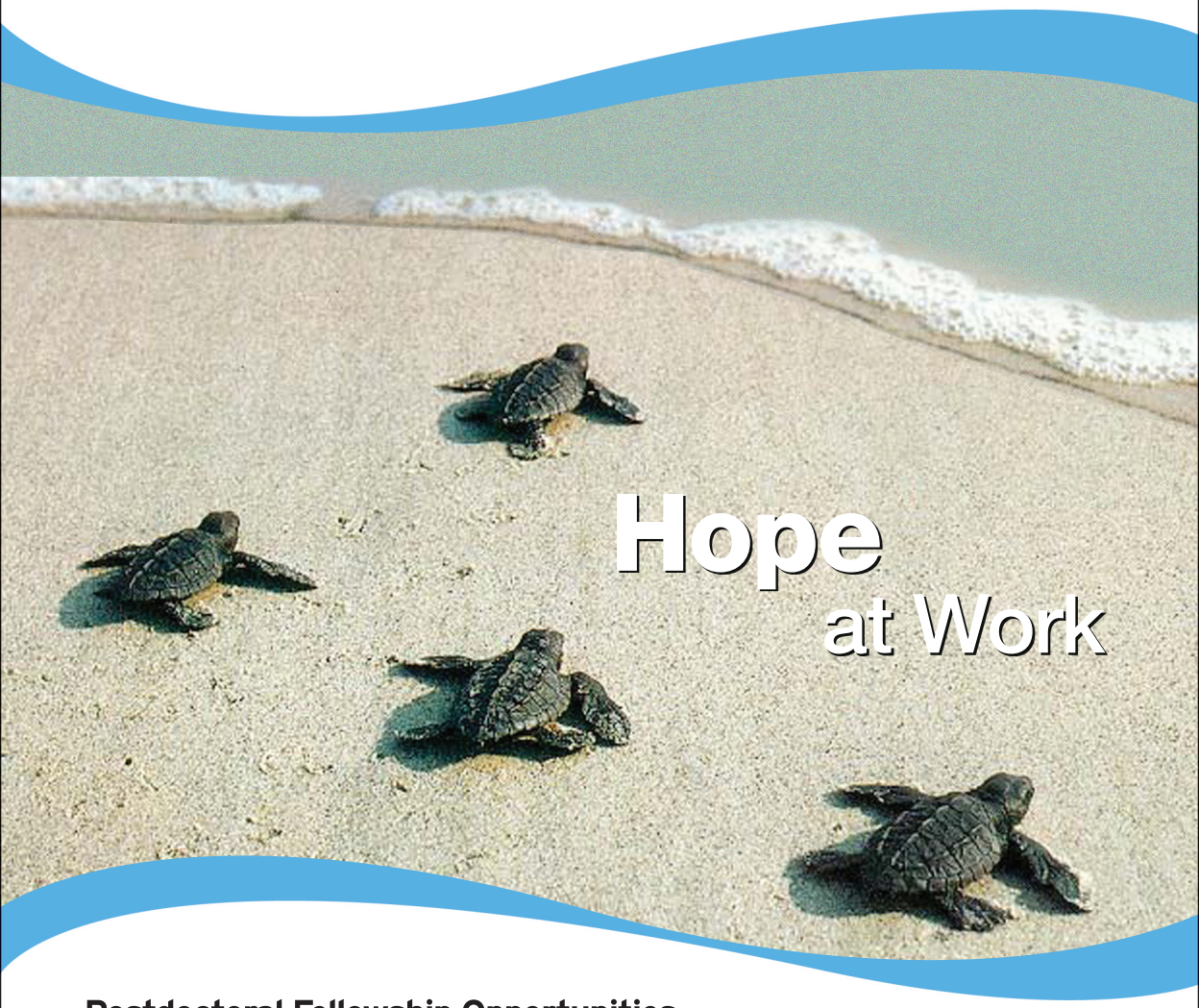

Postdoctoral Fellowship Opportunities

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).

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Associate / Full Professor (Tenure Track)

In a joint recruitment effort, the Department of Epidemiology and Biostatistics, Institute for Health Promotion Research (IHPR) and the Cancer Therapy and Research Center (CTRC) at the University of Texas Health Science Center in San Antonio (UTHSCSA) invites applications for a tenure-track faculty position in behavioral science at the associate or full professor level, with experience and extramural funding history in cancer prevention and control research, especially health-related quality of life (QoL) research among cancer patients and cancer survivors.

Institute for Health Promotion Research: The IHPR, established in 2006 as a unit of the Department of Epidemiology and Biostatistics at UTHSCSA, directs many research projects that address chronic disease and cancer prevention and control research. http://ihpr.uthscsa.edu

Cancer Therapy and Research Center: The CTRC is one of four National Cancer Institute (NCI)-designated Cancer Centers in Texas and the only NCI-designated center in South Texas, serving a 38-county region of 4.4 million people. www.ctrc.uthscsa.edu

The research activities at the IHPR, CTRC, and their host institution (UTHSCSA) provide varied and exciting opportunities for behavior research studies. The successful candidate will have the opportunity to collaborate closely with faculty from other UTHSCSA schools (i.e., Medical, Dental, Nursing, and Allied Health), the UT School of Public Health's San Antonio Regional Campus, and UTHSCSA's Regional Academic Health Center campuses in Harlingen and McAllen, Texas, located on the U.S.-Mexico border.

Qualifications: 1) completed doctoral degree (M.D. or Ph.D. equivalent); 2) track record of independent, peer-reviewed grant funding; 3) record of peer-reviewed publications in the area of cancer and behavioral sciences; 4) ability to serve as principal investigator on externally funded projects and as co-investigator with multi-disciplinary research teams; and 5) contribution to the educational mission through teaching and advising graduate students and/or mentoring early-career scientists.

Candidate Review: Review of applications will begin immediately and continue until the position is filled. Candidates should e-mail a letter describing their qualifications and interests along with their curriculum vitae, and contact information for three professional references to:

Amelie G. Ramirez, Dr.P.H.
Chair, Behavioral Faculty Search Committee
Director, Institute for Health Promotion Research
7411 John Smith Drive, Suite 1000
San Antonio, Texas 78229
210-562-6500
ramirezag@uthscsa.edu
http://ihpr.uthscsa.edu

INSTITUTE FOR HEALTH PROMOTION RESEARCH
UT HEALTH SCIENCE CENTER®
SAN ANTONIO

All Faculty appointments are designated as security sensitive positions. The University of Texas Health Science Center at San Antonio is an Equal Employment Opportunity/Affirmative Action Employer.

Clinical Research Training in Cancer Control

The R25T NCI-supported Clinical Research Training in Cancer Control Program of the University of Rochester is located in the beautiful Finger Lakes region of upstate New York. It provides post-doctoral M.D. or Ph.D. researchers with the knowledge and experience to establish careers as outstanding independent investigators in cancer control and prevention research.

> **"This is a first-rate, model program that is directed by a superb leader with the support of an excellent team of mentors and outstanding institutional commitment."[1]**

Fellows

> **"The strength of the rigorous program is clearly evident in the productivity of the fellows, where a number of them have already been successful in competing for extramural NIH funding."[1]**

Successful Grant Techniques

An emphasis on preparing to compete successfully for research funding and to get an initial grant.

Rich Learning Environment

Courses, seminars, and workshops on cancer control and research methodology in three focus areas: Patient-Oriented Research, Biostatistics and Informatics Research, and Health Outcomes Research.

A Choice of Four Degrees

Choice of earning an MPH degree, or an MS degree with a focus on Clinical Investigation, Medical Statistics or Translational Research.

Mentoring from Experts

Professional guidance by University of Rochester-based mentors with expertise in cancer control and prevention and off-site mentors actively involved in NCI-supported multi-center cancer control research studies.

Diverse Research Opportunities

Exceptionally diverse research opportunities provided by 17 on-site mentors, all with competitively funded cancer control research grants, and the resources of an NCI-funded Community Clinical Oncology Program Base.

Practical Experience

Practical experience in protocol design, study procedures, statistical analysis, grant and manuscript writing, and oral presentation.

Eligibility

The program eagerly seeks highly motivated individuals with doctorates (Ph.D., Dr.P.H., M.D.) in health related areas, as well as experienced individuals with similar degrees wishing to change their research focus, who are committed to developing a successful research career in cancer control as an independent investigator. NIH requires candidates must be US citizens or permanent residents. Two to three years of funding with stipends of $50,000 per year are offered along with tuition, health insurance, research support, travel to four scientific meetings per year and a faculty appointment as a Research Assistant Professor in the School of Medicine with all faculty benefits and privileges. Applications from women and minorities are strongly encouraged.

Further Information

A detailed description of the program, biosketches of mentors, didactic course and other research training opportunities, and application material can be found at:

www.futureresearchers.org

You can also contact Dr. Gary Morrow, Program Director, James P. Wilmot Cancer Center, University of Rochester Box CU 420658, 265 Crittenden Blvd, Rochester, NY, 14642
(585) 275-5513 / Fax (585) 461-5601
e-mail: Gary_Morrow@URMC.Rochester.edu

1. NCI review group consensus statement for funded grant renewal

Georgetown Lombardi Comprehensive Cancer Center

Working to prevent and cure cancer with a local focus and global impact

At Georgetown Lombardi, we are reducing the impact of cancer and diminishing disparities in the Washington, DC, region through

- **DISCOVERY** of environmental, genetic and behavioral risk factors and biomarkers for cancer
- Development of **INTERVENTIONS** to modify risk factors and behaviors, improve screening and enhance quality of life
- Research to inform **CLINICAL PRACTICE** and **POLICY** debates

Georgetown | Lombardi

COMPREHENSIVE CANCER CENTER

lombardi.georgetown.edu

Breakthrough

Research in Cancer Prevention

- Causes
- Screening
- Outcomes

“My research at Fred Hutch is helping minimize health disparities among cancer survivors in the Latino and African American communities to ensure a high quality of life for everyone.”

—Rachel Ceballos, PhD

Cancer Prevention Program
Division of Public Health Sciences

FRED HUTCHINSON
CANCER RESEARCH CENTER

A LIFE OF SCIENCE

The Abramson Cancer Center
at the University of Pennsylvania
supports ASPO's mission
to propel research
in cancer prevention & control
and to nurture the careers
of its investigators

THE UNIVERSITY OF ARIZONA

ACCEPTING APPLICATIONS JANUARY 2014

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 2014. 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 41 NCI Designated Comprehensive Cancer Centers. The UACC is one of seven centers in the nation with an NCI Specialized Program of Research Excellence (SPORE) grant for gastrointestinal cancers and it is also one of five centers in the nation with a SPORE 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

FACULTY POSITIONS

Cancer Epidemiology, Cancer Control and Clinical Outcomes Research

St. Jude Children's Research Hospital is seeking faculty candidates at the ranks of Assistant, Associate or Full Member to join 10 existing faculty members in the Department of Epidemiology and Cancer Control. The department comprises a multi-disciplinary team of faculty and staff engaged in epidemiologic-, outcomes- and intervention-based research involving pediatric cancer populations. Each successful candidate will be expected to conduct both independent and collaborative research and must have a PhD in a health or behavioral science discipline, or an MD with advanced training in clinical or public health research. Faculty rank will be commensurate with previous training and expertise, including demonstrated success in securing nationally based funding and publications in peer-reviewed journals. Excellent oral and written communication skills are essential.

St. Jude is the only pediatric cancer research institution to be designated a Comprehensive Cancer Center by the National Cancer Institute.

Interested individuals are asked to submit a cover letter and C.V. to:
Les Robison, PhD, Chair
Department of Epidemiology and Cancer Control
St. Jude Children's Research Hospital
262 Danny Thomas Place, MS 735
Memphis, TN 38105

St. Jude is a Drug-Free Workplace. Candidates receiving offers of employment are subject to pre-employment drug testing and background checks.

www.stjude.org/jobs

Ranked in the top 10 best places to work in academia by *The Scientist* yearly since 2005.
Named one of the nation's top pediatric cancer care hospitals by *Parents* magazine, 2013.
Named the nation's best children's cancer hospital by *U.S. News & World Report*, 2010.
Named to *FORTUNE* magazine's 100 Best Companies to Work For yearly since 2011.
An Equal Opportunity Employer —

St. Jude Children's Research Hospital
ALSAC • Danny Thomas, Founder

Dan L. Duncan Cancer Center at Baylor College of Medicine

Cancer Epidemiologists

BCM Baylor College of Medicine

The Dan L. Duncan Cancer Center at Baylor College of Medicine in Houston, Texas is seeking cancer/molecular epidemiologists at all academic levels. The Center has considerable resources to expand the program in Cancer Prevention and Population Sciences, and the successful candidates will have an important role in the continued growth of this program. The individuals will have the opportunity to collaborate with other epidemiologists, geneticists, biologists, and clinicians in the Cancer Center and its affiliated hospitals (Texas Children's, the Houston VA Medical Center, St. Luke's Hospital, and Ben Taub General Hospital). The Human Genome Center at Baylor provides another important resource. Collaborations with faculty in health services research at our Center of Excellence at the VA Medical Center and with MD Anderson Cancer Center are encouraged. Previous research experience, history of successful peer-reviewed grant funding, and a relevant publication record are required.

Salary and start-up package will be commensurate with qualifications and prior experience. Interested candidates should submit curriculum vitae, a summary of past work, a brief outline of future plans, and the names of at least three individuals who will provide letters of support. Applications will be accepted until the positions are filled.

Applications should be submitted to Melissa Bondy, Ph.D., Associate Director for Cancer Prevention and Population Sciences, Baylor College of Medicine, One Baylor Plaza, BCM 600, Houston, Texas 77030 or email to mbondy@bcm.edu. Baylor College of Medicine is an Equal Opportunity/Affirmative Action/Equal Access Employer.

www.bcm.edu/cancercenter

R25 Training Program in Pediatric Cancer Epidemiology and Control

Texas Children's Cancer Center

Baylor College of Medicine is proud to offer a post-doctoral training program in pediatric cancer epidemiology and control

In conjunction with the Texas Children's Cancer Center, we have established a new fellowship program that targets both clinical oncology fellows and research fellows who have interests in pediatric cancers. Fellows have the opportunity to work with leaders in the fields of pediatric oncology and childhood cancer epidemiology. The program provides individually tailored education plans, rich mentored research experiences, and incorporates career development mini-courses, seminars and experimental activities to facilitate the transition from fellow to early stage faculty.

The program offers: * Competitive salary * Health insurance
* 3 years of funding with transition to junior faculty in year 3
* Tuition support * Travel allowances * Research support

www.txch.org/education

BCM Baylor College of Medicine

For program information and application, please visit
www.txch.org/education/postdoctoral-research-fellowship

All inquiries should be made to Michael Scheurer, Ph.D. at scheurer@bcm.edu.

Baylor College of Medicine and Texas Children's Hospital are Equal Opportunity/Affirmative Action/Equal Access Employers.

UIC UNIVERSITY OF ILLINOIS AT CHICAGO Institute for Health Research and Policy
SCHOOL OF PUBLIC HEALTH

Postdoctoral Traineeship in Cancer Prevention and Control

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

The positions will be available in August 2013. Applications are being accepted until April 30, 2013.

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

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

Marian Fitzgibbon PhD
CECDP Co-Director

Melinda Stolley, PhD
CECDP Co-Director

Postdoctoral Fellowships

Computational Genomic Epidemiology of Cancer
Program Director: Robert C. Elston, PhD Associate Director: Li Li, MD, PhD

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 September 1st, 2013
To apply and for more information visit: http://cancer.case.edu/training/computationalgenomics/
Call: 216.844.5375 or **Email:** lyn.haselton@case.edu

****ASPO Attendees:** Associate Director Li Li, MD, PhD, 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.

Half of all cancer today is PREVENTABLE.
How are you spreading the word?

8IGHT™
WAYSTOPREVENTCANCER

With cancer rates projected to double in the next 15 years, now is the time to start a high-impact, scientifically-driven cancer prevention program to promote healthier communities. The Prevention and Control program at the Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine shared the science with our community through the 8ight Ways to Stay Healthy and Prevent Cancer program. Visit www.8ightways.org to:

- Download a cancer prevention presentation available for your professional use
- Read the Cancer Causes & Control paper that backs up the science
- Watch our 8ight Ways to Prevent Cancer videos
- Read our 8ight Ways to Stay Healthy and Prevent Cancer brochure, including 8ight Ways to Prevent Breast Cancer and the Cancer Survivors' 8ight Ways to Stay Healthy After Cancer

SITEMAN CANCER CENTER®
BARNES-JEWISH HOSPITAL • WASHINGTON UNIVERSITY SCHOOL OF MEDICINE
A National Cancer Institute Comprehensive Cancer Center

BARNES-JEWISH Hospital
BJC HealthCare

Washington University in St. Louis
Physicians

National Cancer Institute

ABOUT BRP

The Behavioral Research Program (BRP) is within the National Cancer Institute's Division of Cancer Control and Population Sciences. BRP initiates, supports, and evaluates a comprehensive program of research ranging from basic behavioral research to the development, testing, and dissemination of interventions in areas such as tobacco use, screening, dietary behavior, and sun protection. Our goal is to increase the breadth, depth, and quality of behavioral research in cancer prevention and control.

dccps.cancer.gov/brp

AREAS OF RESEARCH

- Basic Biobehavioral and Psychological Sciences
- Health Behaviors
- Health Communication and Informatics
- Process of Care
- Science of Research and Technology
- Tobacco Control

KEY INITIATIVES, TOOLS, AND RESOURCES

Health Information National Trends Survey (HINTS)

Nationally representative data on the American public's need for, access to, and use of cancer-related information.

Grid-Enabled Measures Database (GEM)

A virtual community for researchers to harmonize data and share constructs.

Smokefree.gov & Women.smokefree.gov

Free, evidence-based information and tools to help smokers quit for good.

Classification of Laws Association with School Students (CLASS)

Monitors and evaluates state-level school physical education and nutrition policies.

Team Science Toolkit

An interactive website that consolidates knowledge and facilitates resource sharing.

More information and a complete list of funding opportunities for BRP and the Division of Cancer Control and Population Sciences can be found at cancercontrol.cancer.gov/funding_apply.html and behavioralresearch.cancer.gov.

DEPARTMENT OF HEALTH & HUMAN SERVICES · USA
NATIONAL INSTITUTES OF HEALTH
NATIONAL CANCER INSTITUTE