Biostatistics | Epidemiology | Administration | Computing Resource | Health Outcomes

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NIH CONFERENCE

Ann Zauber, PhD, presented at the NIH State of the Science Conference on Enhancing Use and Quality of Colorectal Cancer Screening on February 3, 2010. She and her colleagues at Erasmus MC used their microsimulation modeling program to derive projected capacities to deliver colorectal cancer screening and surveillance at the population level. She showed that population-based screening programs are feasible if they can be phased in over a 10-year period. Such programs could reach the entire US population eligible for CRC screening and maintain a steady level of colonoscopies for confirmation of positive test results and for surveillance.

2009 ANNUAL REPORT RELEASED

The 2009 Annual Report for the Department of Epidemiology and Biostatistics was released on February 19th. The report features a look back at achievements during the previous year such as faculty and staff changes, publications, seminars, presentations, and other academic service. A special thanks to Katherine Wong for organizing the effort and to all others who participated.

2010 WEBSITE UPDATE

The annual update to the Epidemiology and Biostatistics website is complete!

Updates were gathered via Annual Report, Biosketches, CVs, MSKCC photographer, and e-mail. All faculty and staff members are invited to participate in interim updates to web pages which can be made throughout the year by sending your requests to Rick Church.

NEW SOFTWARE

iChip: A Bioconductor/R Package for Analyzing Multi-Platform ChIP-chip Data with Various Sample Sizes
This package implements the methods for ChIP-chip data analysis described in Mo and Liang (Biometrics and Bioinformatics, 2010). It can be used to analyze the data from multiple platforms (e.g., Affymetrix, Agilent, and NimbleGen), and the data with single to multiple replicates.

NEW GRANT FOR MOSKOWITZ RESEARCH

Prediction Model: Breast Cancer in Women Irradiated for a Pediatric Malignancy

Chaya Moskowitz, PhD, has been awarded a $1.63 million R01 grant (CA136783) from the National Cancer Institute to develop a breast cancer risk prediction model for women treated with chest radiation for a pediatric cancer. Models for predicting the absolute risk of breast cancer, such as the Gail model, have been used extensively to advise patients on their individual risk of developing breast cancer and to design prevention trials. However, the majority of these risk calculators are not immediately applicable to survivors of a previous malignancy who have a risk that is modified by previous treatments.

Chaya Moskowitz, PhD

This four year study aims to quantify the long-term risk of breast cancer by taking into account information on treatment exposure and traditional risk factors for breast cancer, first focusing on the factors' association with the risk of breast cancer and then focusing on obtaining predictions of the individualized risk of breast cancer based on the relevant factors. For these purposes, the unique resources of the North American Childhood Cancer Survivor Study (CCSS) and the Dutch LATe Effect Registry (LATER) cohorts will be utilized. These two cohorts include the largest assembled group in the world of women with and at risk for breast cancer following therapeutic chest radiation.

This project brings together a highly qualified and diverse research team consisting of investigators at several institutions in the United States and the Netherlands. MSKCC co-investigators include Kevin Oeffinger, MD, Suzanne Wolden, MD, **Colin Begg, PhD**, **Jonine Bernstein, PhD**, **Peter Bach, MD**, and Monica Morrow, MD. Dr. Moskowitz will also collaborate with Gregory Armstrong, MD, CCSS Project Director at St. Jude Children's Research Hospital (Memphis, Tennessee) and Flora van Leeuwen, PhD, of the Dutch Childhood Oncology Group at The Netherlands Cancer Institute (Amsterdam, The Netherlands).

"We aim to create a tool that provides computer-assisted risk prediction in a format that can be easily used in clinical practice" states Dr. Moskowitz. "A long-term objective of this research project is to establish a basis for building future absolute risk tools to predict other outcomes for which survivors of cancer are at risk."

RECENT PUBLICATIONS

❖ *A Metastasis or a Second Independent Cancer? Evaluating the Clonal Origin of Tumors Using Array Copy Number Data*
Irina Ostrovnaya, **Adam Olshen**, **Venkatraman Seshan**, **Irene Orlow**, Donna Albertson, and **Colin Begg**
Irina Ostrovnaya, PhD, had a paper published in *Statistics in Medicine* which described a novel statistical methodology for distinguishing independent second primary cancers from metastases based on genome wide copy number profiles.

❖ *A Hidden Ising Model for ChIP-chip Data Analysis*
Qianxing Mo and Faming Liang
Quincy Mo, PhD, in collaboration with Faming Liang, PhD, from Texas A&M University, has developed a simple, but flexible and powerful model for analysis of ChIP-chip data. This novel methodology overcomes the limitations of parameter estimation in the existing Hidden Markov model-based methods for analyzing these data. Compared with other Bayesian methods involving MCMC simulations, this method is much more efficient computationally.

IN THE NEWS

Peter B. Bach, MD, MAPP, published a perspective article in *The New England Journal of Medicine* entitled A Map to Bad Policy — Hospital Efficiency Measures in the Dartmouth Atlas. The article, side-by-side with an article by Dartmouth Atlas researchers, critiqued the Atlas's methods primarily for not including patient outcomes in their measure of hospital efficiency. Additionally, Peter notes that it is misleading to attribute all of a patient's care to one hospital in a highly fragmented healthcare system. Both Dr. Bach's article and the piece written by the Dartmouth Atlas researchers end with responses from the other author.

EPI SEMINARS

Please remember to attend our Epidemiology Seminars given by candidates for the Epidemiology Faculty position. One of these applicants may become your colleague! Our next seminar will be given by Xuejuan Jiang, PhD, on April 5th.

Renee Lichtenstein will be discussing the RAM application (Resource for Administrative Management) on March 30th at noon in the 3rd floor conference room**.** RAM is an application that enables users to store, query, and view hard documents online.

PCPR SEMINARS

Upcoming PCPR seminars:
- ❖ April 30th
  Karen Glanz, PhD, MPH
- ❖ May 11th
  Jennifer Griggs, MD, MPH

RECENT PROMOTIONS

Ronglai Shen, PhD, has been promoted to Assistant Member in the Biostatistics Service.

CRG CORNER

CRDBi is the web client platform of the Clinical Research Database. The release version is currently CRDBi 1.13.

The Computer Resource Group (CRG) introduced additional data collection tools including:
- ❖ Phase 1 Clinic Module
- ❖ Diagnostic Test Module
- ❖ Patient Survey Module
- ❖ Primary Care Provider Survey Module
- ❖ Recist Module
- ❖ Comorbidity Module
- ❖ Administrative Module

THE WOMEN'S ENVIRONMENT, CANCER, AND RADIATION EPIDEMIOLOGY STUDY (WECARE)

Jonine Bernstein, PhD

Several recent publications from **Dr. Jonine Bernstein's** WECARE study were printed in February, March, and April 2010. The study includes over 2,000 women with contralateral breast cancer (CBC) and unilateral breast cancer (UBC). The primary objective of this multi-center, population-based study is to examine the interaction of radiation exposure and genetic susceptibility in the etiology of second primary breast cancer. Notably, one publication this February investigated the effectiveness of chemotherapy and tamoxifen among BRCA1 and BRCA2 mutation carriers and non-carriers finding a similar relative risk reduction for CBC in both groups. A publication this March identified 470 unique sequence variants among BRCA1 and BRCA2 mutation carriers. By categorizing these variants into two sub-groups, the investigators determined that individuals with unambiguously defined deleterious mutations were at higher risk of CBC, whereas those with sequence variants of unknown clinical significance were not. Additionally, two more publications in February investigated the effects of other potential risk predictors such as reproductive factors, oral contraceptives, and postmenopausal hormones and found that these factors have similar effects for CBC among BRCA1 and BRCA2 mutation carriers and non-carriers.

- ❖ *Adjuvant Systemic Therapy for Breast Cancer in BRCA1/BRCA2 Mutation Carriers in a Population-Based Study of Risk of Contralateral Breast Cancer*
  Kerryn Reding, **Jonine Bernstein**, Bryan Langholz, Leslie Bernstein, Robert Haile, **Colin Begg**, Charles Lynch, Patrick Concannon, Åke Borg, Sharon Teraoka, Therese Törngren, Anh Diep, Shanyan Xue, Lisbeth Bertelsen, **Xiaolin Liang**, **Anne Reiner**, **Marinela Capanu**, Kathleen Malone, and The WECARE Collaborative Study Group

- ❖ *Characterization of BRCA1 and BRCA2 Deleterious Mutations and Variants of Unknown Clinical Significance in Unilateral and Bilateral Breast Cancer: The WECARE Study*
  Åke Borg, Robert Haile, Kathleen Malone, **Marinela Capanu**, Ahn Diep, Therese Törngren, Sharon Teraoka, **Colin Begg**, Duncan Thomas, Patrick Concannon, Lene Mellemkjaer, Leslie Bernstein, Lina Tellhed, Shanyan Xue, Eric Olson, **Xiaolin Liang**, Jessica Dolle, Anne-Lise Børresen-Dale, The WECARE Study Collaborative Group, and **Jonine Bernstein**

- ❖ *Reproductive Factors and Risk of Contralateral Breast Cancer by BRCA1 and BRCA2 Mutation Status: Results from the WECARE Study*
  Jenny Poynter, Bryan Langholz, Joan Largent, Lene Mellemkjær, Leslie Bernstein, Kathleen Malone, Charles Lynch, Åke Borg, Patrick Concannon, Sharon Teraoka, Shanyan Xue, Anh Diep, Therese Törngren, **Colin Begg**, **Marinela Capanu**, Robert Haile, The WECARE Study Collaborative Group, and **Jonine Bernstein**

- ❖ *Oral Contraceptives and Postmenopausal Hormones and Risk of Contralateral Breast Cancer among BRCA1 and BRCA2 Mutation Carriers and Noncarriers: The WECARE Study*
  Jane Figueiredo, Robert Haile, Leslie Bernstein, Kathleen Malone, Joan Largent, Bryan Langholz, Charles Lynch, Lisbeth Bertelsen, **Marinela Capanu**, Patrick Concannon, Åke Borg, Anne-Lise Børresen-Dale, Anh Diep, Sharon Teraoka, Therese Törngren, Shanyan Xue, and **Jonine Bernstein**

SECURING PATIENT IDENTIFIERS & PERSONAL HEALTH INFORMATION

Please remember when dealing with MSKCC patient identifiers and outside collaborators to use appropriate security measures:
- ✓ Ensure that the recipient is authorized to receive the data
- ✓ Send the data through secure methods
  - ❖ Select the "MSKSecure" option in your email
  - ❖ Use an FTP server or a Secure Shell server for large datasets
  - ❖ Encrypt all contents when using a media device

If you have any further questions regarding the transmission of data containing patient identifiers, please contact Rick Church. For any questions regarding regulatory documentation, please contact Sharon Bayuga.

CONGRATULATIONS!

Shari Goldfarb, MD recently received a Komen Postdoctoral Clinical Research Career Development Grant. Shari's mentors on the grant are **Ethan Basch, MD** and Maura Dickler, MD.