



# Emerging Issues in Cancer Control

---

*Martin Abeloff, M.D.*

Sidney Kimmel Comprehensive  
Cancer Center at Johns Hopkins

Maryland State Cancer Control Council  
Conference on Cancer

November 15, 2004



# The Harry and Jeanette Weinberg Building





# Cancer Research Building II

---





# Decrease in UK and USA Breast Cancer Deaths from 1987 to 1997

---

Decrease in death rate per 100,000 women  
(Age Group)

	<u>20-49</u>	<u>50-69</u>	<u>70-79</u>
UK	22%	22%	12%
USA	19%	18%	9%

“This substantial reduction in national mortality rates has come not from a single research breakthrough but from the careful evaluation and adoption of many interventions, each responsible on its own for only a moderate reduction in breast cancer mortality”

Peto et al:Lancet 2000:355:1822



# Trends in Breast Cancer in Five-Year Survival Rates (%) by Race and Year of Diagnosis 1974-1998

---

	<u>1974-76</u>	<u>1983-85</u>	<u>1992-98</u>
White	75	79	88
African-American	63	63	73
All Races	75	78	86



# Breast Cancer Care in the U.S. – The Big Picture

---

- U.S. spends twice as much on healthcare as Australia, Canada, England, New Zealand but quality of overall care is no better.
- U.S. performed at midlevel in most area of healthcare.
- **Five year breast cancer survival rate in U.S. was best.**
- U.S. also does the most screening for cervical cancer, has the lowest incidence of measles, and is tied with Canada for the lowest smoking rate.

Health Affairs 2004



# Key Factors Leading to Changes in Management of Breast Cancer

---

- **Marked increase in understanding of biology of breast cancer (molecular and cellular biology)**
- **Development of clinical research centers, networks, infrastructure, and methodologies**
- **Advances in breast screening and prevention**
- **Improvements and innovations in surgery and radiation therapy**
- **New drugs and combinations: cytotoxic, endocrine, targeted biologic therapies**
- **Patient autonomy**
- **Patient advocacy movement**



# The Future

---

- Prevention
- Greatly enhanced predictors and prognosticators with gene profiling and proteomics
- Molecularly targeted therapies including immunotherapy
- Improved “supportive care” – biphosphonates, management of menopausal symptoms, etc.
- Enhance understanding and care of the elderly and underserved minorities



# Breast Cancer Research Program Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins

---

**Nancy Davidson – Director**

**Sara Sukumar – Co-Director**

## Members, Basic to Translational

Saraswati Sukumar, Dmitri Artemov, Zaver Bhujwala,  
Robert Casero, James Herman, Elizabeth Jaffee,  
Ben Ho Park, Todd Reilly, Chris Umbricht, Cynthia  
Zahnow



# Breast Cancer Research Program Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins (continued)

---

## Members, Translational to Clinical

Nancy Davidson, Antonio Wolff, Pedram Argani, Deborah Armstrong, Fariba Asrari, Leisha Emens, John Fetting, Deborah Frassica, Elizabeth Garrett, Kathy Helzlsouer, Nagi Khouri, Ann Klassen, Julie Lange, Giovanni Parmigiani, Venue Raman, Vered Stearns, Theodore Tsangaris, Kala Visvanathan, Richard Zellars



## **Breast Cancer Research Program Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins (continued)**

---

- **Fundamentals of tumorigenesis**
- **Epidemiology and risk assessment**
- **Markers of risk, early detection, and diagnosis**
- **Discovery / development of novel therapies**
- **Clinical Research – prevention / therapeutic**



# Breast Cancer Research Program Kimmel Comprehensive Cancer Center at Johns Hopkins

---

- Chemopreventive efficacy of broccoli sprouts against breast cancer
- Fatty acid synthase inhibitor as a novel strategy for breast cancer therapy
- Immunotherapy (utilizing tumor vaccine) of breast cancer



# Partnerships

---

- Preventing Cancer, Diabetes, and CVD
  - ACS, ADA, and AHA
  - Guidelines
- Diffusion and dissemination of cancer information - Cancer Centers and NCI
- Implementation of the MD Cancer Plan - State and local agencies, academic institutions, and others
- Expediting discoveries – DBED, TEDCO, Universities, and others



# CRF Discoveries

---

- **Epigenetic Test for Colorectal Cancer Risk (Feinberg)**
- **P21 Knock Out Human Mammary Epithelial Cell Lines (Park)**
- **Mutational analysis of the tyrosine phosphatome in colorectal cancer (Vogelstein)**
- **Novel Approach for Tackling Cancer Chemoresistance (Biswal)**
- **Hand Held Patient Tracking, Education and Decision Support (Teds) Tool (Gibbons)**
- **LigAmp: Sensitive Point Mutation Detection (Eshleman)**