

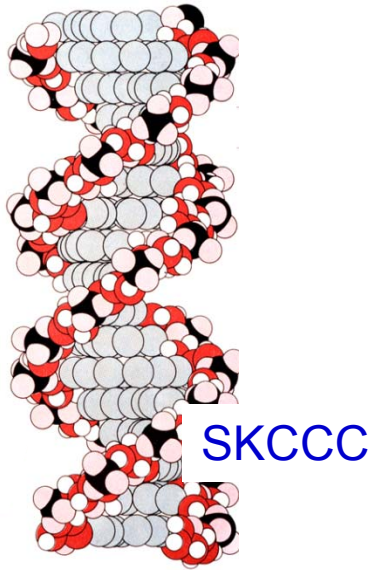
Sidney Kimmel Comprehensive Cancer Center Report 2011

William G. Nelson, M.D., Ph.D.
Director

New Directions for the SKCCC and its Research Programs: **Three Examples**

(why I am excited to be SKCCC Director)

- Individualized Health/Personalized Cancer Medicine
 - now a University-wide objective
- Initiative to eliminate cancer disparities
- Establishment of a Palliative Care capability for SKCCC and Johns Hopkins Medicine



Whole Exome Sequences of 100 Human Cancers*

11 colorectal cancers
 11 breast cancers
 24 pancreas cancers
 22 gliomas
 22 meduloblastomas

Washington
University

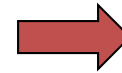
British Columbia
Cancer Research
Centre

Sanger Institute

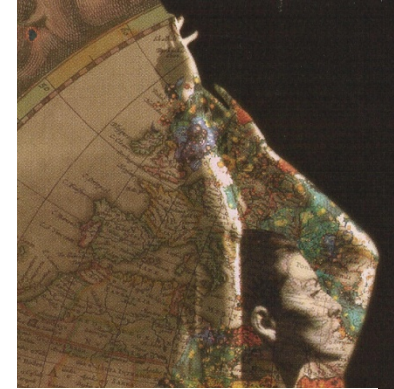
2 leukemias
 1 breast cancer

1 breast cancer
 4 granulosa cell tumors

1 lung cancer Sanger
 1 melanoma



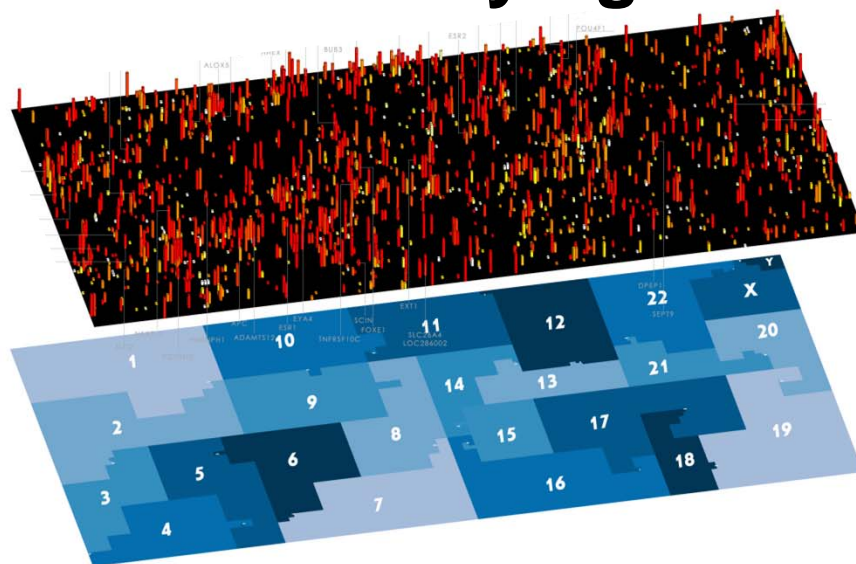
3142 mutated genes
 286 tumor suppressors
 33 oncogenes



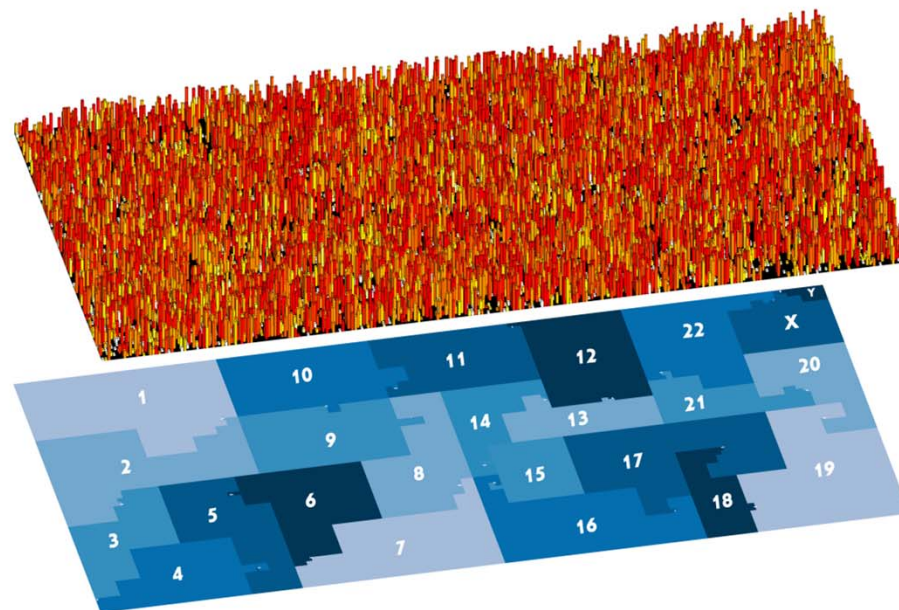
*Vogelstein B AACR Annual Meeting (2010)

Genome-Wide Epigenetic Alterations in Metastases from Men Dying of Prostate Cancer*

Hypermethylation
(versus normal
tissues)



Hypomethylation
(versus normal
tissues)



*Yegnasubramian S,
Aryee MJ *et al.* (2011)

Translational Development of Molecular Biomarkers at SKCCC: What are the Challenges?

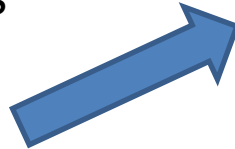
Biomarker Discoveries

germline DNA variants
 somatic DNA mutations, translocations, etc.
 somatic DNA somatic methylation changes
 RNA expression changes, splice variants
 protein expression changes



Biomarker Assay Platforms

DNA Beaming, PARE,
 MSP, nanoMSP, MOB,
 COMPARE, GEMINI



Regulatory/Systems Considerations

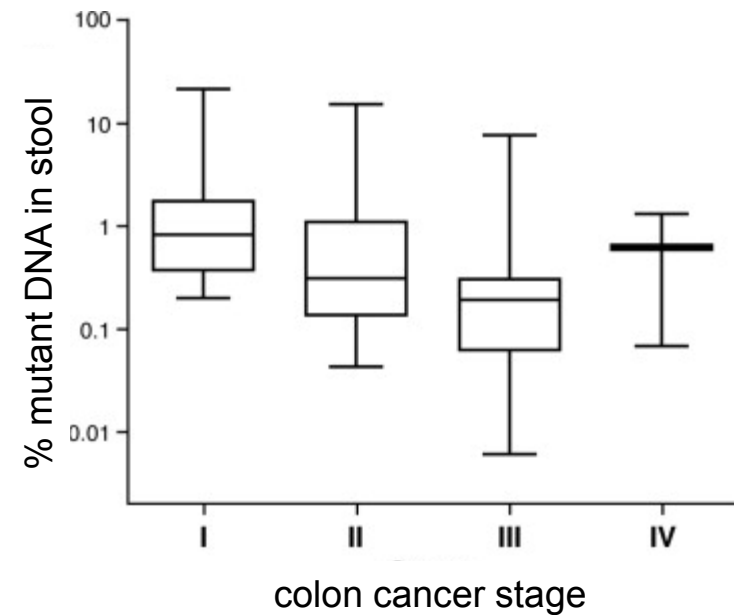
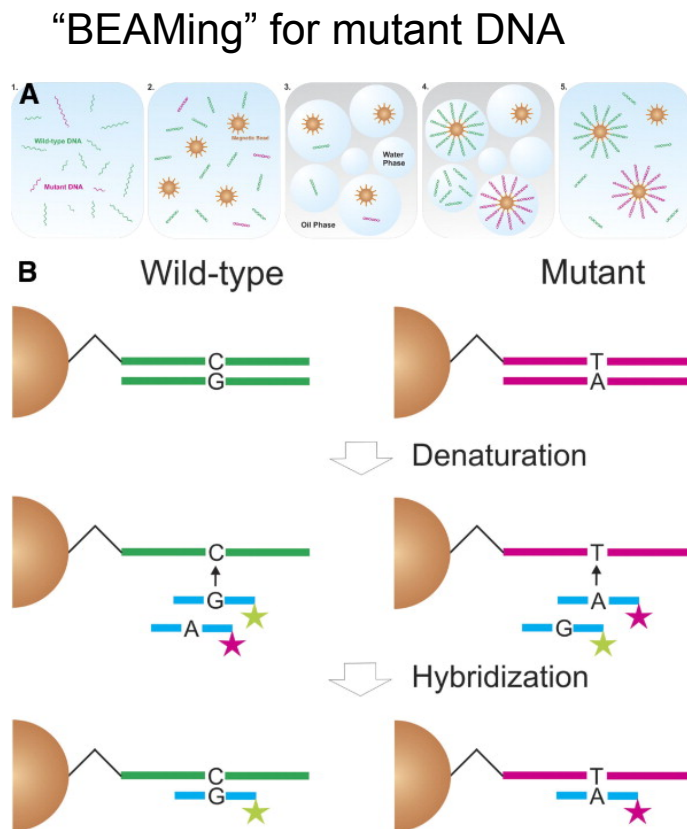
CLIA, biospecimen collection/
 archiving, HIPAA, health record
 information technology



Integration into Clinical Practice

Test	Marker	Specimen	Company	Disease	Indication
<i>PCA3</i>	RNA	urine	Dianon	prostate cancer	predicts prostate biopsy outcome
<i>MGMT</i> methylation	DNA	tissue	MDxHealth	glioblastoma	predicts response to temozolomide
<i>GSTP1</i> methylation	DNA	urine tissue	LabCorp MDxHealth	prostate cancer	predicts prostate biopsy outcome
AMACR	protein	tissue	many	prostate cancer	diagnosis aid

Detection of Cancer-Specific Mutations in Blood and Body Fluids: Opportunity for Screening and Early Detection*



Unmet medical needs:

- *poor colonoscopy quality*
- *timing of repeat colonoscopy*

*Diehl F *et al.* Gastroenterology 135: 489-98 (2008)

Improving Cancer Health at a Population Scale: **Covered Lives in the Johns Hopkins Health System**

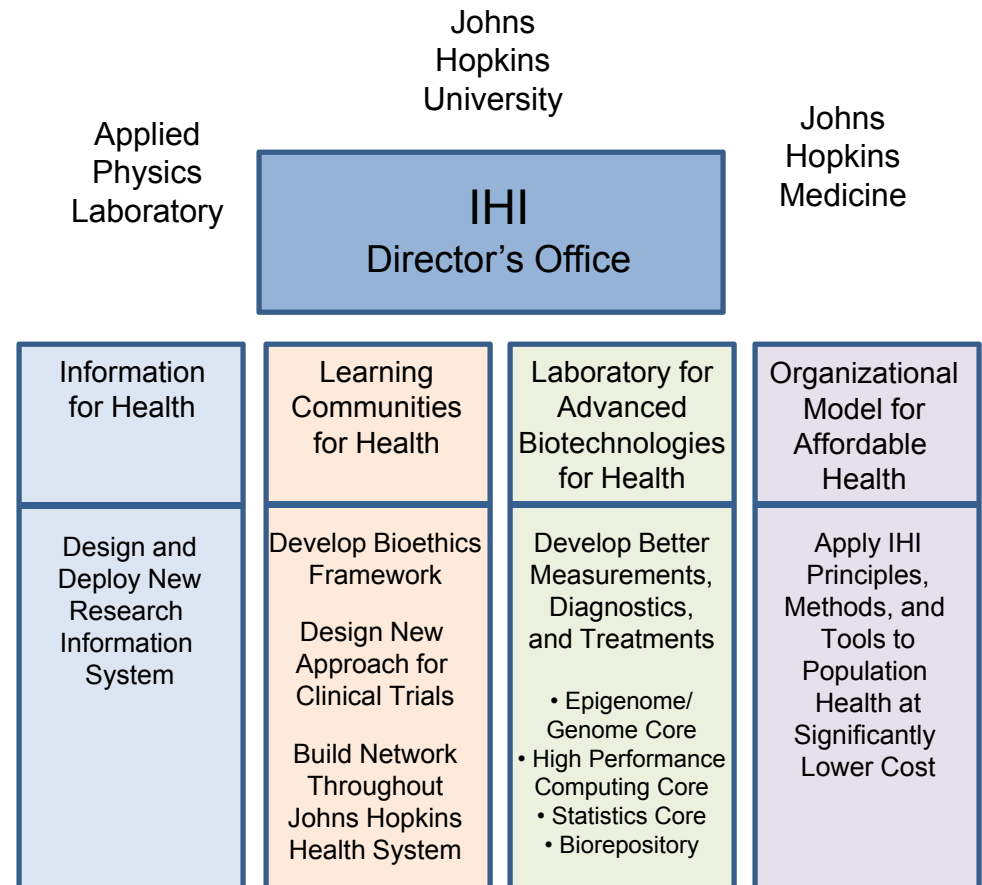
Organization (Characteristics)	Population Size
Johns Hopkins Community Physicians (Primary Care Provider Network)	>260,000
Johns Hopkins Priority Partners (Medicaid Health Maintenance Organization)	>185,000
Johns Hopkins Employee Health Program (Health Insurance Plan)	>50,000
Johns Hopkins US Family Health Plan (Provider to US Government and Military Employees and Families)	Enrolling

Cancer Prevention and Control Program members already working with these entities to establish cancer screening guidelines and improve screening performance- first project focuses on reducing over-screening for prostate cancer among elderly men

Individualized Health/Personalized Medicine at SKCCC and at Johns Hopkins Medicine

What are the Challenges/Opportunities?

- Individualized Health Initiative (IHI) Planning led by Provost, Dean of Engineering, and SKCCC Director
- Envisioned \$1.5B project (>\$0.5B investment in Epic health record/management system- investment in research information technology needed)
- Brings together Schools of Medicine, Public Health, Engineering, Nursing, Arts & Sciences, Business, Applied Physics Laboratory
- \$30M Malone gift to Engineering
- \$30M Commonwealth Foundation gift to SKCCC for Personalized Cancer Medicine





Race, Ethnicity, and Cancer Mortality in the SKCCC Catchment Area (2010)

Race Category	Gender Category	Cancer Incidence %	SKCCC Cancer Registrants %
White	Male	39.4	43.3
	Female	38.0	32.3
	Total	77.4	75.6
Black	Male	9.1	9.6
	Female	9.0	10.0
	Total	18.1	19.6
Other	Male	2.3	2.3
	Female	2.2	2.5
	Total	4.5	4.8

- Maryland cancer problem
 - 2nd rank state/district in cancer mortality in 1985
 - Cancer disparities in African-Americans were a major contributor to poor cancer outcomes
 - Disparities were particularly evident in colorectal, prostate, lung, and breast cancers

Working to Eliminate Cancer Health Disparities: Committed Leadership

at SKCCC



CONFERENCE CHAIRPERSON:

William G. Nelson, Johns Hopkins Kimmel
Comprehensive Cancer Center, Baltimore, MD



at Johns Hopkins Medicine



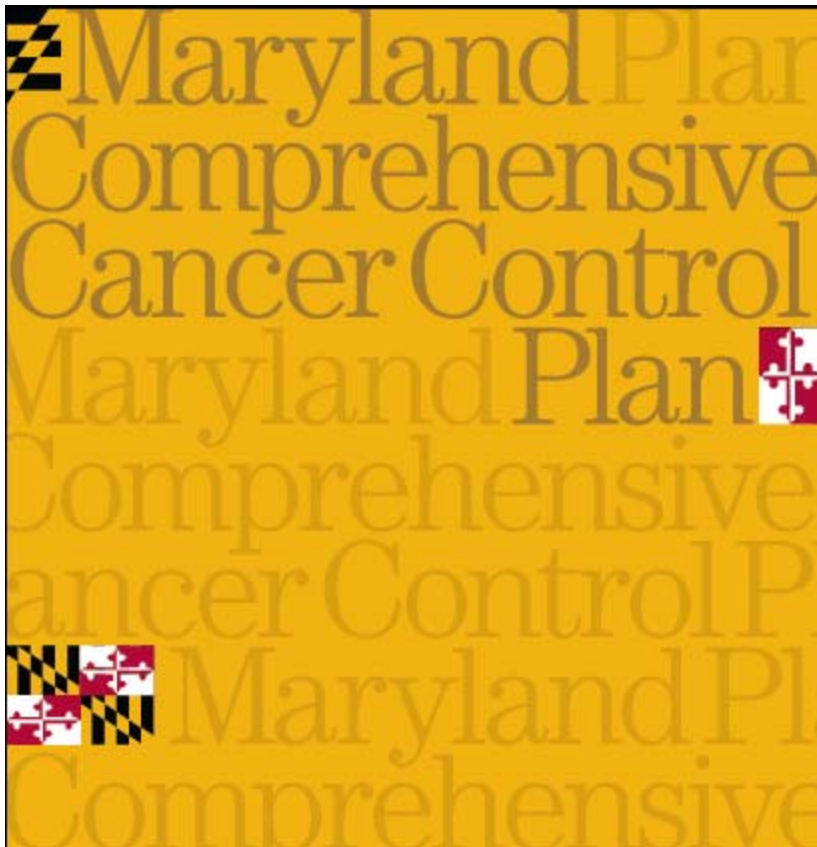
**Office of Diversity and
Cultural Competence**

Brian Gibbs, PhD/MPA, Associate Dean
for Diversity and Cultural Competence

Johns Hopkins Medicine
Diversity and Inclusion
Plan 2020

- 20% of 200 Hopkins leaders under-represented minorities
- 75% of community residents view Hopkins as ‘trusted partner’

Working to Eliminate Cancer Health Disparities: **Committed Partners: State of Maryland** Comprehensive Cancer Control Plan

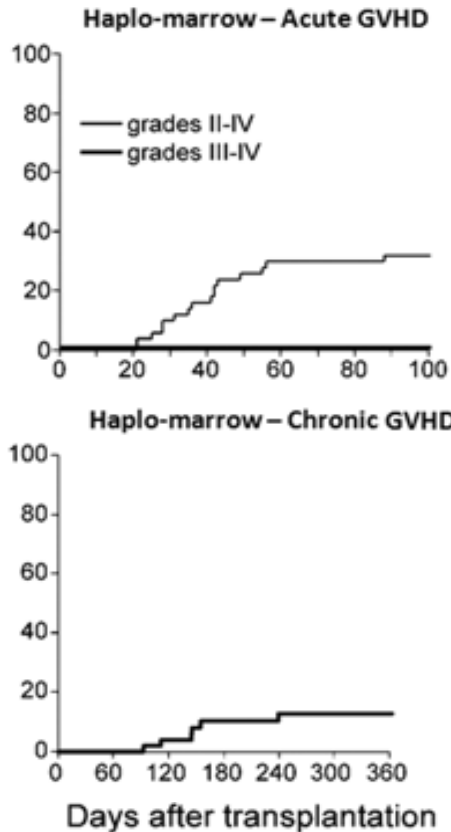


- High cancer mortality in Maryland prompted issuance of Cancer Control Plans; 2004 was first Comprehensive Cancer Control Plan
- SKCCC and University of Maryland Greenebaum Cancer Center have contributed to the Comprehensive Cancer Control Plans
- Cancer mortality among African-Americans *and disparities* are falling

New Maryland Comprehensive Cancer Control Plan introduced at SKCCC in summer of 2011

SKCCC Research Helps Eliminate Disparities in Cancer Treatment*

Opportunity: Allogeneic bone marrow transplantation (alloBMT) has proven benefit in the treatment of hematological malignancies and inherited bone marrow disorders.



Challenge: HLA-matched bone marrow donors are under-represented among African-American and other minority populations.

Solution: Innovative strategy for establishing immune tolerance in bone marrow allografts reduces graft-versus-host disease (GVHD) and making alloBMT more accessible to minority patients.

*Brunstein CG *et al.* Blood 118: 282-288 (2011)

Individualizing the Care of Patients with Advanced Cancers: the Role of Palliative Care*

- SKCCC Director and Administrator led in the establishment of a Palliative Care Program for all of Johns Hopkins Medicine
- \$3M investment in new faculty, facilities, research
- National search identified Thomas J. Smith, M.D., as inaugural Director



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SOUNDING BOARD

Bending the Cost Curve in Cancer Care

Thomas J. Smith, M.D., and Bruce E. Hillner, M.D.

VOLUME 29 · NUMBER 6 · FEBRUARY 20 2011

JOURNAL OF CLINICAL ONCOLOGY

ASCO SPECIAL ARTICLE

American Society of Clinical Oncology Statement: Toward Individualized Care for Patients With Advanced Cancer

Jeffrey M. Peppercorn, Thomas J. Smith, Paul R. Helft, David J. DeBono, Scott R. Berry, Dana S. Wollins, Daniel M. Hayes, Jamie H. Von Roenn, and Lowell E. Schnipper

The Role of Chemotherapy at the End of Life: "When Is Enough, Enough?"

Sarah Elizabeth Harrington, MD
Thomas J. Smith, MD

JAMA®

Planned SKCCC Space Expansion

Bayview Campus:
25,000 ft²



- New Faculty (8 positions)
- Radiation Oncology
- Medical Oncology
- Pulmonary
- Clinical space- 20,000 ft²;
Laboratory/support space-
5,000 ft²

Suburban Hospital:
7,000 ft²



Sibley Hospital:
30,000 ft²



All Children's Hospital:
46,800 ft²



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