

Markey Cancer Center and National Cancer Institute Update

David M. Gosky, MA, MBA

Markey Cancer Affiliate Network Annual Meeting

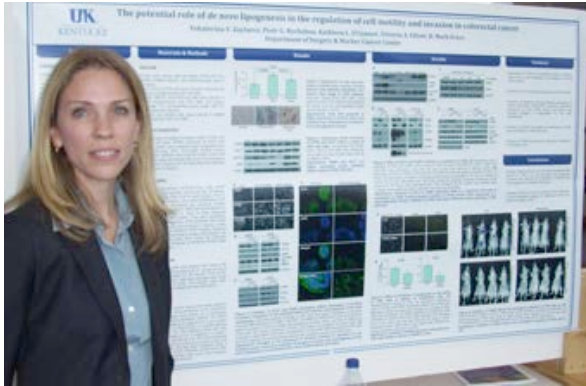
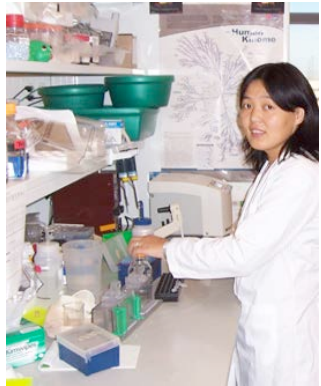
April 26, 2013



MARKEY CANCER CENTER

Our Mission

- **To reduce cancer mortality in our region through a comprehensive program of cancer research, treatment, education, and community engagement with a particular focus on the underserved population of Appalachian Kentucky.**



Markey makes a difference.

Significant Burden of Cancer in Kentucky

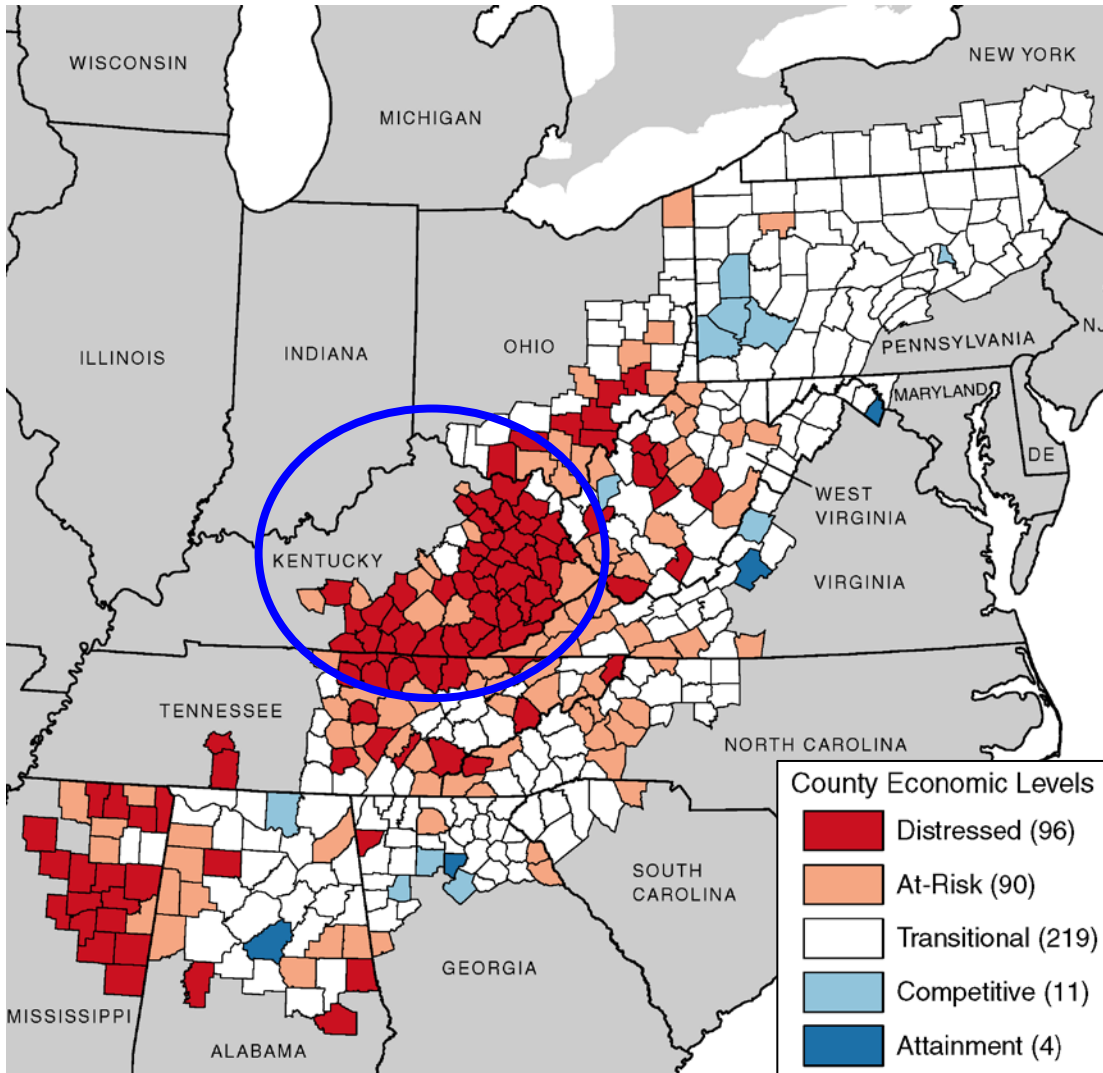
- **1st** in the nation in overall cancer mortality rate
- **2nd** highest incidence rate for all cancer sites
 - Lung and bronchus (1st); colon and rectum (1st); oral cavity and pharynx (1st); kidney and pelvis (2nd); brain (3rd); cervix (8th)
- Cancer incidence and mortality are highest in Appalachia, especially for lung, colorectal, and cervical cancer

Age-adjusted cancer mortality rates, 2005 – 2009

	All Cancers	Lung	Colorectal	Cervical
U.S.	178.7	50.6	16.1	2.4
Kentucky [†]	211.3	74.0	19.8	2.9
Appalachian Kentucky*	227.6	84.0	21.3	3.6

[†] p<0.05 vs U.S. as a whole; * p<.05 vs Kentucky as a whole. National Cancer for Health Statistics and Kentucky Cancer Registry.

Appalachian Kentucky



Appalachian county economic status (2011-12)

↑ **Cancer**



↑ **Obesity**



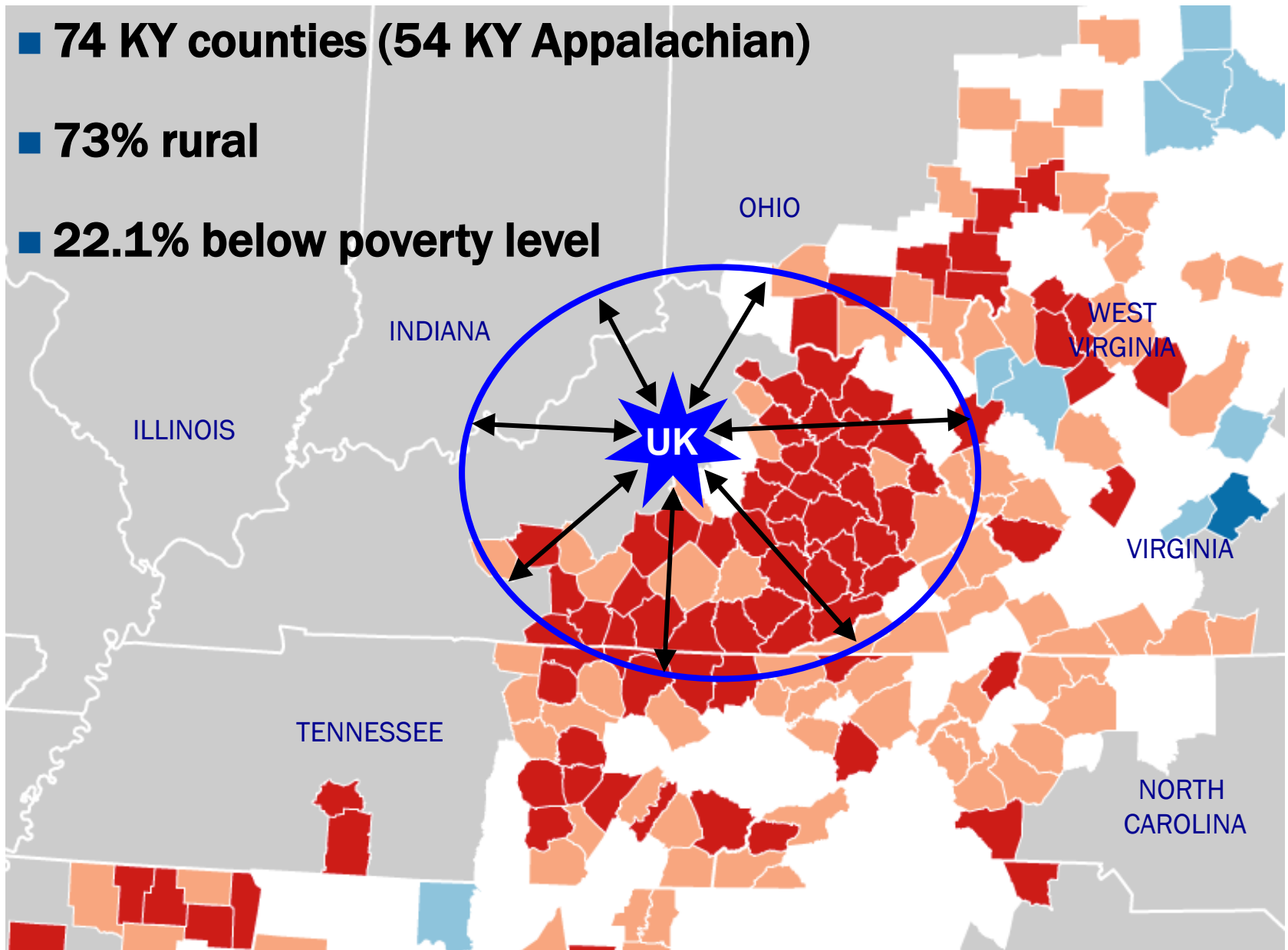
↑ **Smoking**

↑ **Poverty**



MCC Catchment Area

- 74 KY counties (54 KY Appalachian)
- 73% rural
- 22.1% below poverty level



NCI Designation

APPLICATION SUBMITTED
Sept. 25, 2012

Site visit completed
Jan. 30, 2013



Draft comments received
March 18, 2013

MCC Research Programs

**Drs. Thomas Tucker
and Mark Dignan**
22 members
\$8.1 million (16% NCI)

**Cancer
Prevention
and Control**

**Drs. Jeff Moscow
and Jon Thorson**
45 members
\$5.6 million (44% NCI)

**Cancer Cell
Biology and
Signaling**

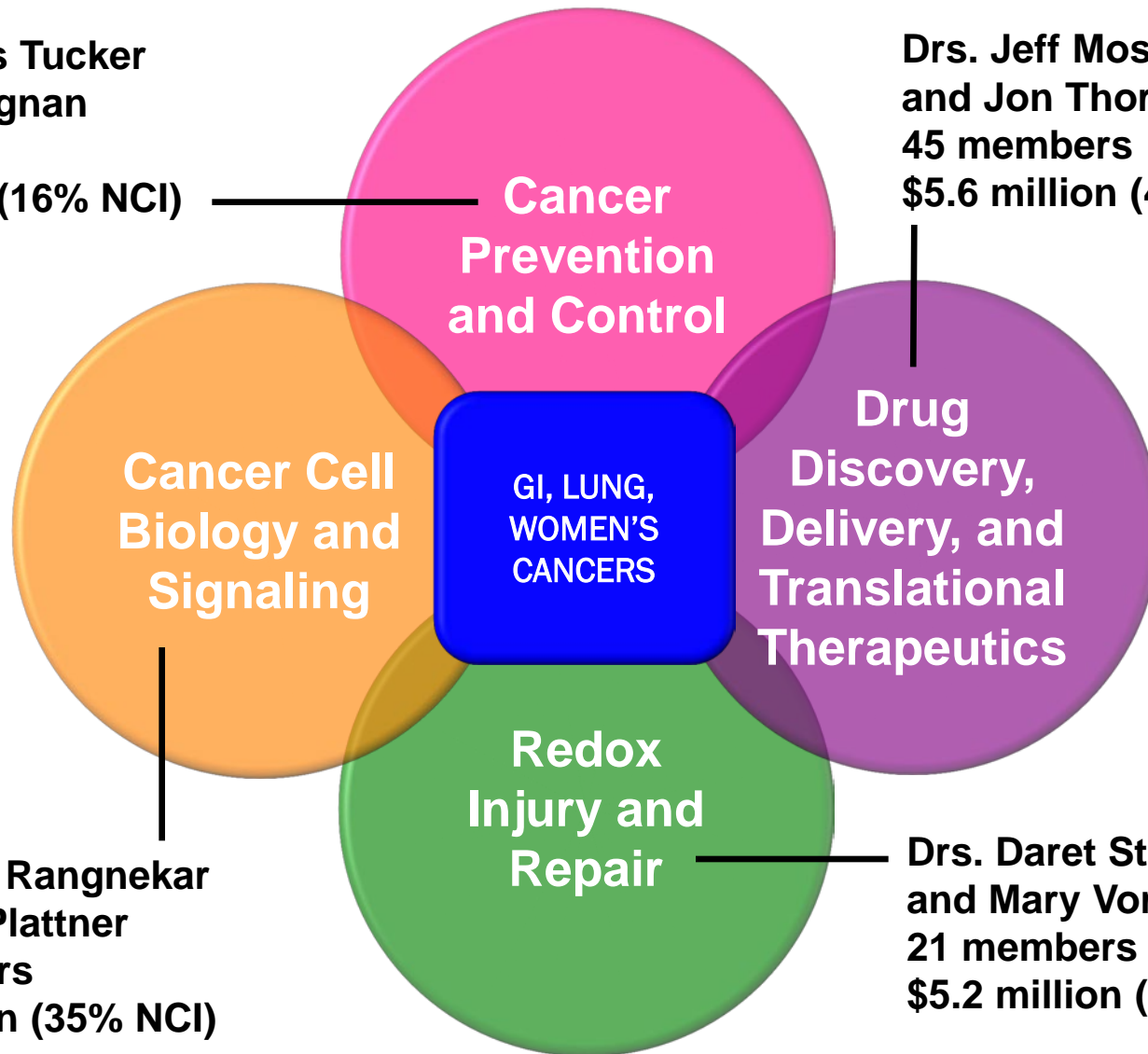
**GI, LUNG,
WOMEN'S
CANCERS**

**Drug
Discovery,
Delivery, and
Translational
Therapeutics**

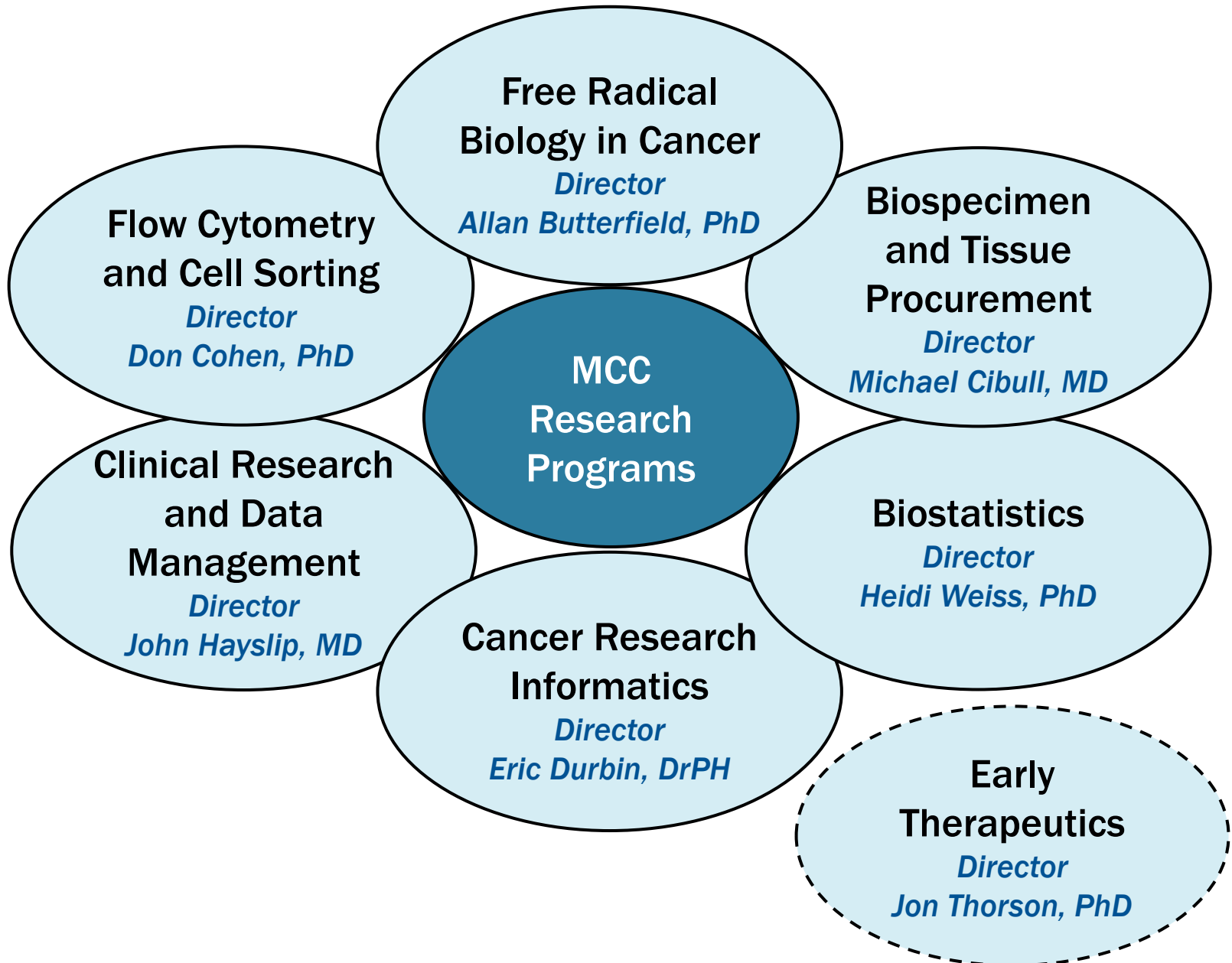
**Redox
Injury and
Repair**

**Drs. Vivek Rangnekar
and Rina Plattner**
26 members
\$4.3 million (35% NCI)

**Drs. Daret St. Clair
and Mary Vore**
21 members
\$5.2 million (46% NCI)

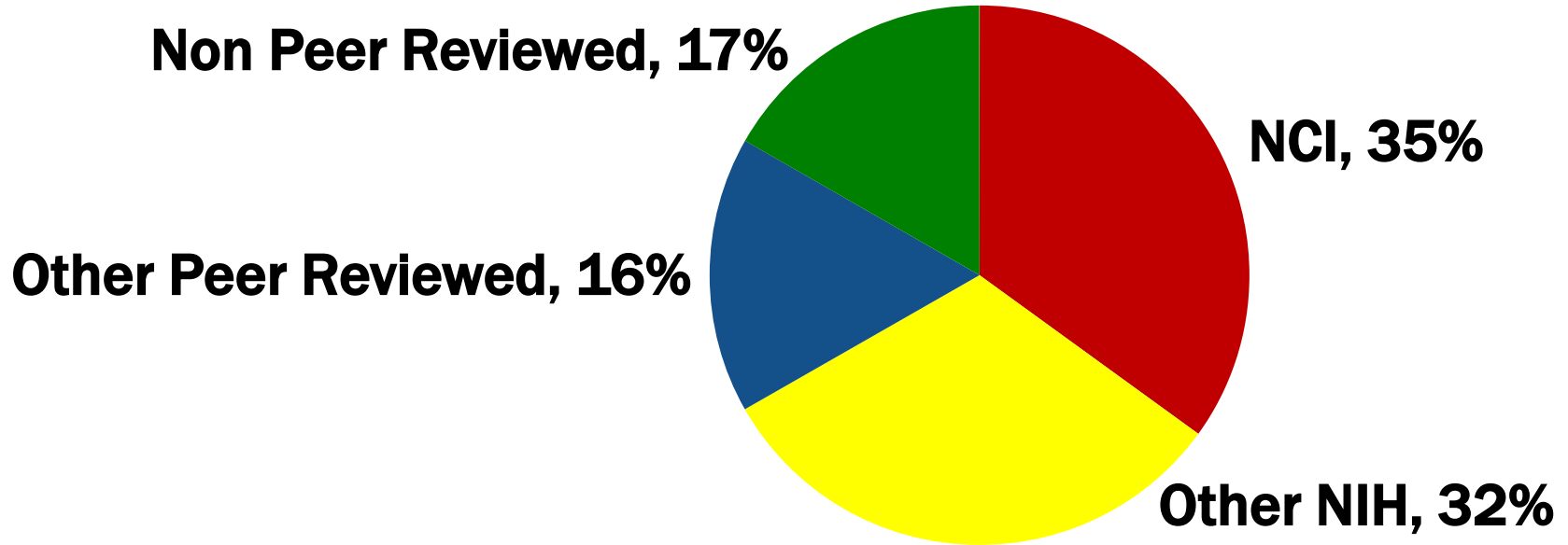


MCC Shared Resources



Strong Cancer Funding

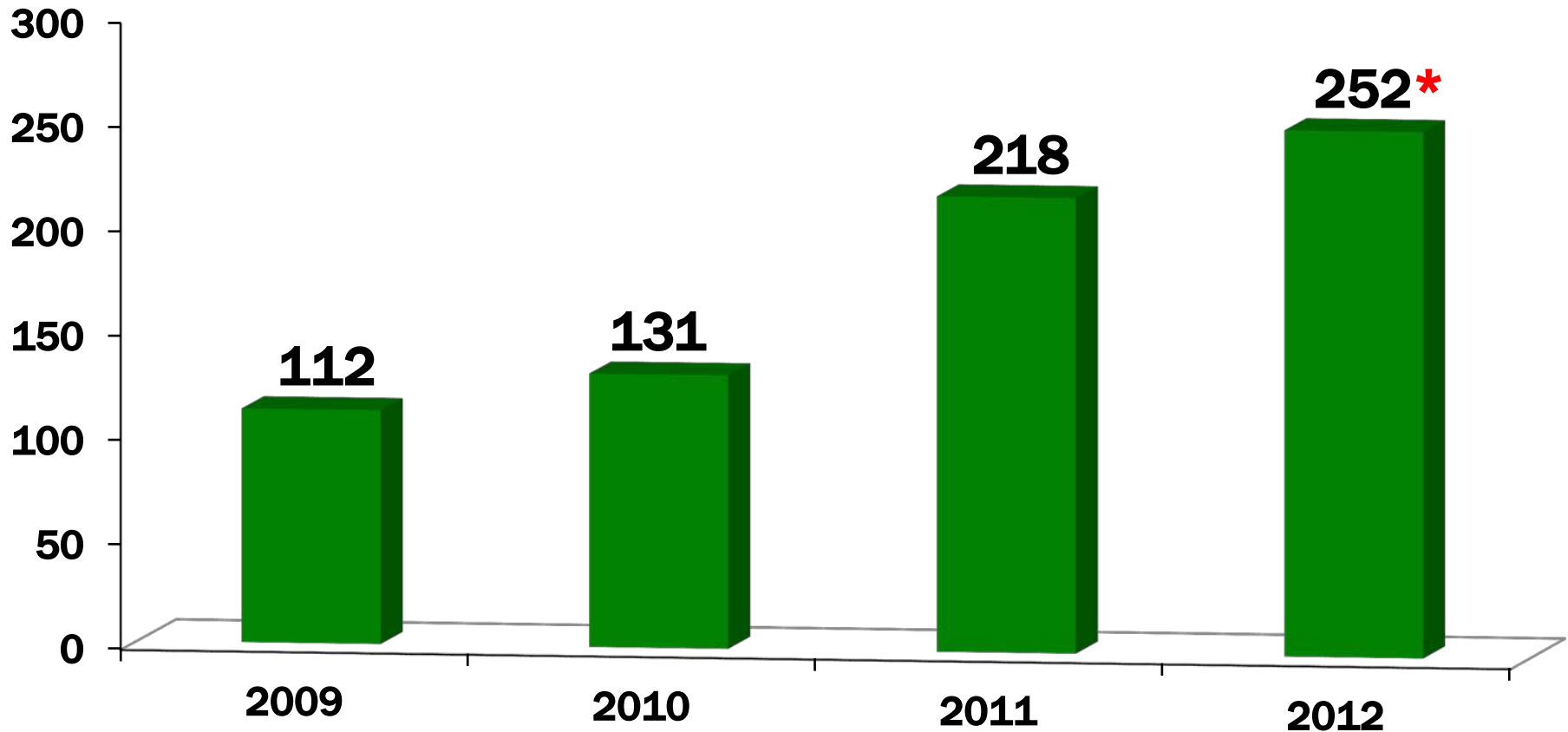
(updated through December 31, 2012)



Funding source	Total # of projects	Sum of direct costs	Sum of total costs
NCI	49	\$7,635,845	\$10,103,084
Other NIH	40	\$6,582,993	\$9,163,027
ACS, NSF, Other Peer Reviewed	13	\$3,778,808	\$4,780,801
Non Peer Reviewed	49	\$4,563,097	\$4,821,544
Total	151	\$22,560,743	\$28,868,456

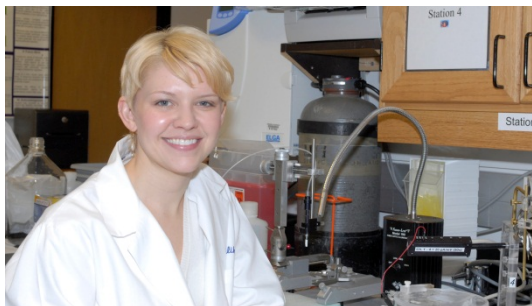
Increased Therapeutic Trial Accruals

(updated: January 1, 2012 to December 31, 2012)



***52% Appalachian residents**

Training the Next Generation of Transdisciplinary Cancer Scientists



- “Training Program in Oxidative Stress and Nutrition” (T32 DK007778)†
- “Molecular Mechanisms of Toxicity Training Grant” (T32 ES007266)†
- “UK Cancer Nanotechnology Training Center” (R25 CA153954)*
- “Oncology Research Training for Surgeon Scientists” (T32 CA160003)*
- “Physician Training Award in Cancer Prevention” (ACS)*
- “Interdisciplinary Research Training in Cancer Biology” (T32 CA165990)*

(†Renewed since 2009; *New since 2009)

Pilot Funds: Return on Investment (2007 – 2012)

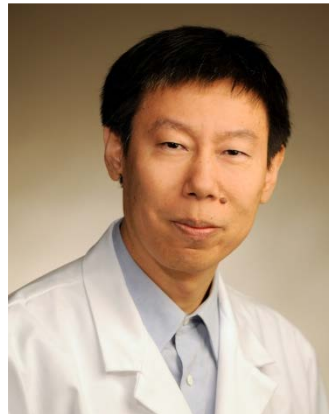
50 Pilot Projects awarded – \$4.5M
23 received external grant awards – \$17.3M

**Tobacco regulatory
science studies**



**E. Hahn, RN, PhD
(CP)
R01 ES021502
P50 (Pending)**

**Wnt/ β -catenin
inhibition by resveratrol
and its derivatives**



**C. Liu, PhD
(CS)
R21 CA139359
Liu-Watt, LLC**

**Mc1r in melanocyte
UV-induced DNA
damage and repair**



**J. D'Orazio, MD, PhD
(RR)
R01 CA131075
R03 CA125782**

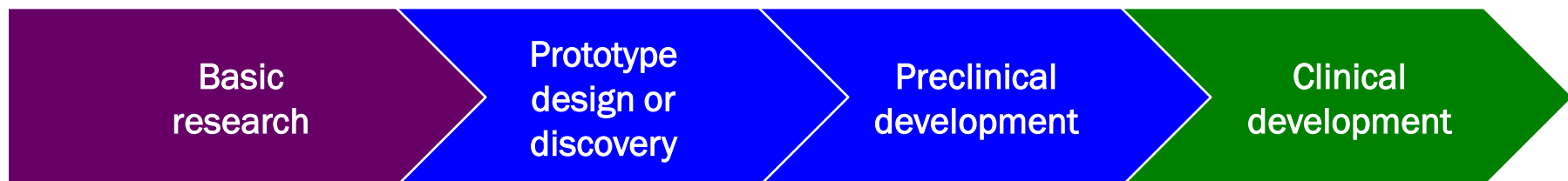
**Identification of
novel lung cancer
proteins**



**E. Hirschowitz, MD
(DT)
R01 CA100323
R03 CA162520
Clinical Trial**

Achieving Bench-to-Bedside Translation

- Over the last 5 years, 6 concepts, compounds, or devices developed by MCC investigators have entered clinical development
- Many other projects at various stages of preclinical development



- Ruthenium complexes
- Prenyl function inhibitors
- PAR4 secretagogues
- Snail function inhibitors
- 4E-BP1 phosphorylation inhibitors
- pRNA delivery system
- Hyperthermia in NSCLC
- Amifostine aerosol
- FIDAS analogs for hMAT2A inhibition
- Immunoproteasome inhibitor (UK-101)
- Thiaminase
- Mithramycin analog
- DMAPT (Phase I)
- AR-67 (Phase II)
- Bortezomib in AML (Phase III)
- NSCLC vaccine (pilot)
- MESNA plus doxorubicin (pilot)
- XRT optical monitoring (pilot)

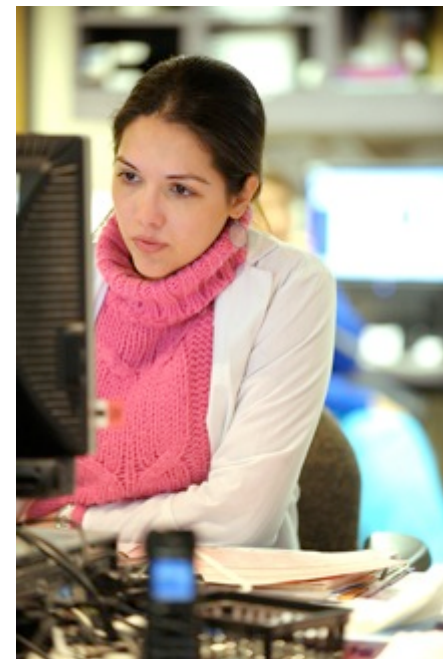
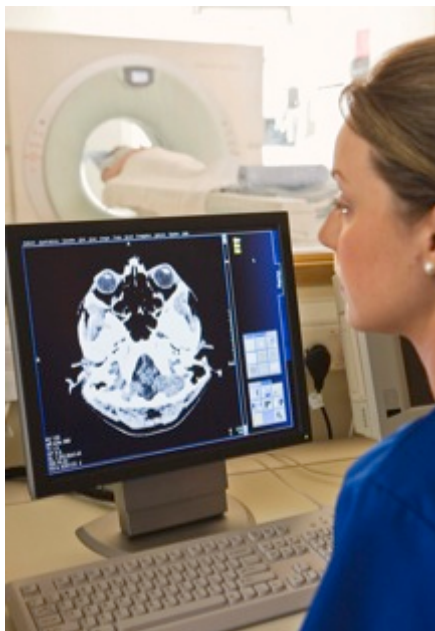
Impactful

Innovative

Collaborative

Dynamic

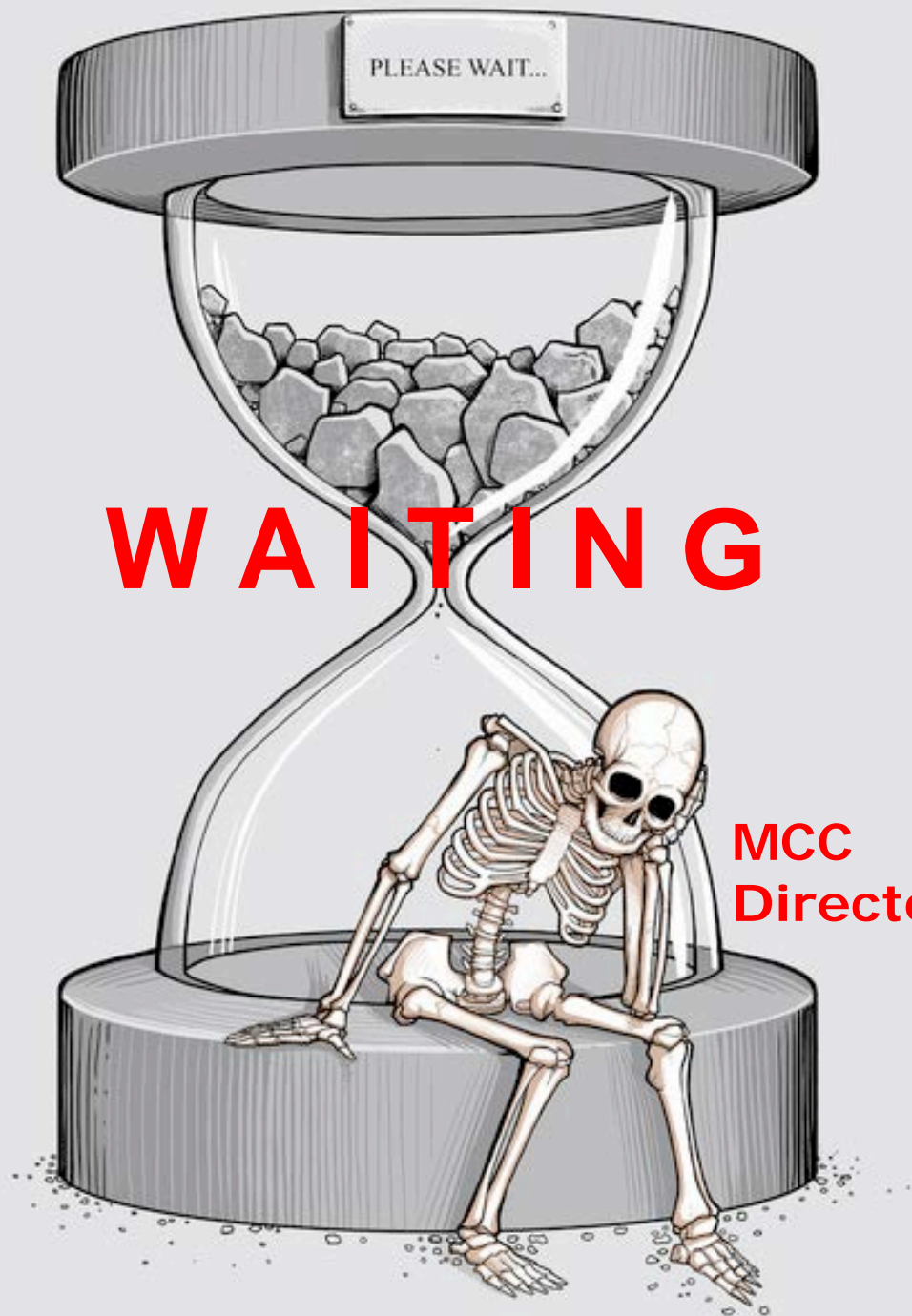
Transformative



UK
UNIVERSITY OF
KENTUCKY®

MARKEY CANCER CENTER

Markey makes a difference.



**Impact
score:
mid-May**

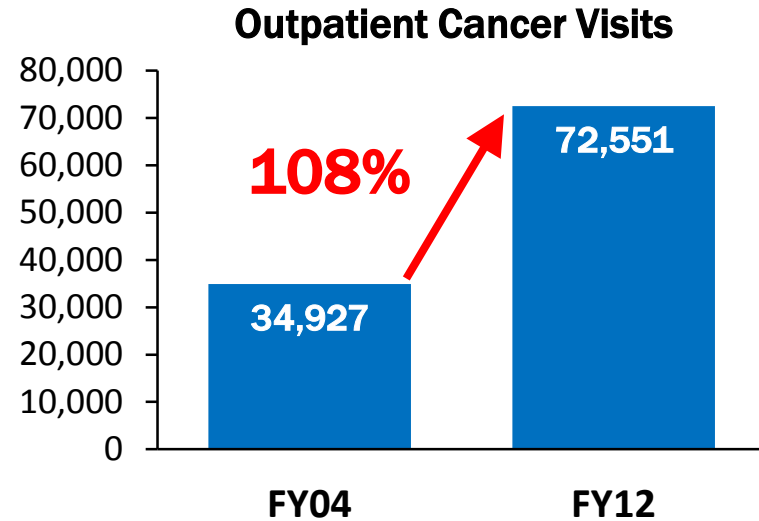
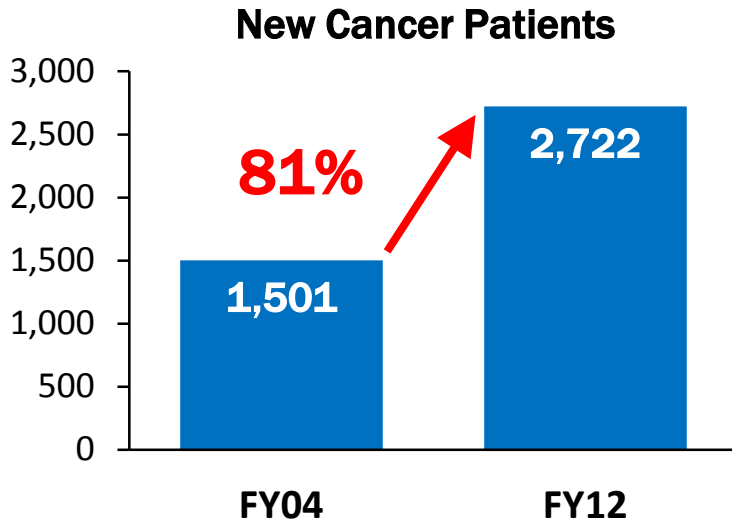
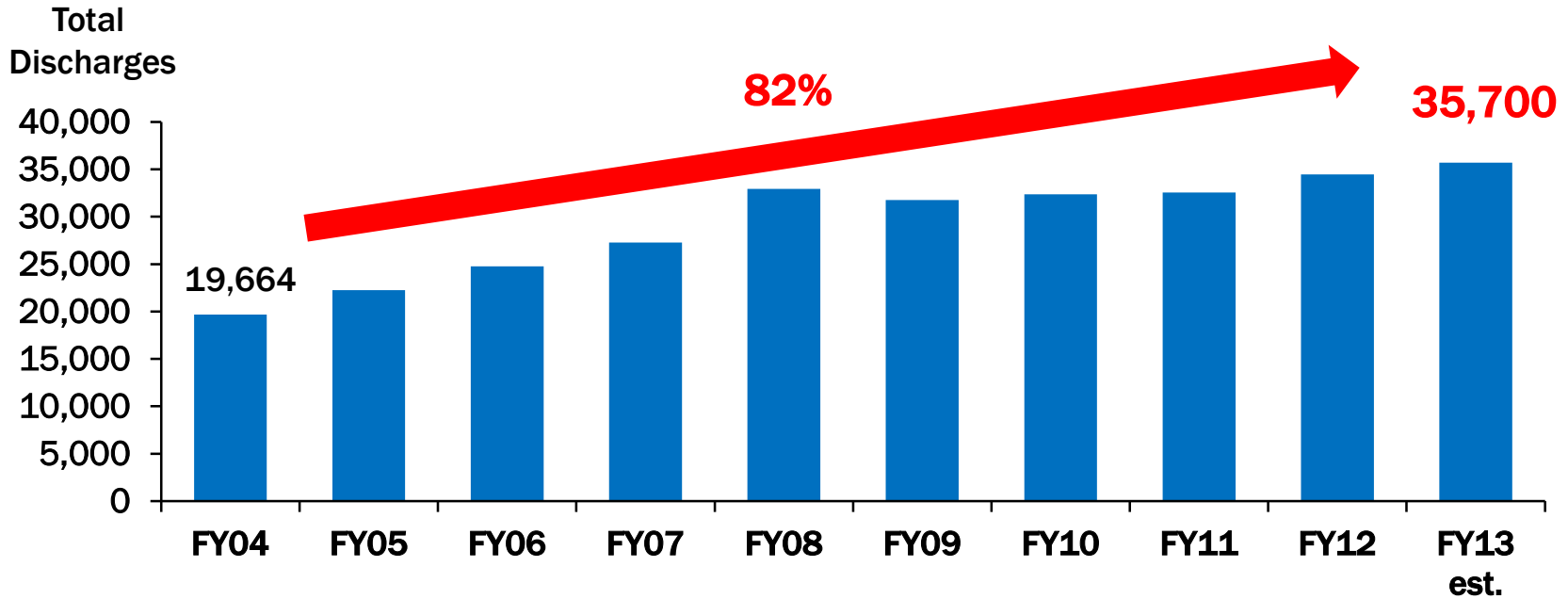
**MCC
Director**

**Council
decision:
end of
June**

MCC Update

Clinical Growth 2012 - 2013

UK HealthCare Growth



FY13 Clinical Recruits



Lars Wagner, MD
Professor, Department of Pediatrics
Division Chief, Pediatric Oncology

- Recruited from Cincinnati Children's Hospital



Patrick O'Donnell, MD, PhD
Assistant Professor, Department of Orthopedics

- Completed fellowship at University of Toronto, Mt. Sinai Hospital



Jerry Martin, MB, BCh
Assistant Professor, Department of Surgery
Division of Cardiothoracic Surgery

- Completed fellowships at UK and Duke University

Research Growth 2012- 2013

FY13 Grants Awarded-selected

PI	Sponsor	Grant Number	Dates	Title	Total
Bondada, Subbarao	NCI	R01 CA165469	2/7/13-1/31/18	Role of Tcl1 and Par-4 in regulation of chronic lymphocytic leukemia	\$297,793
Glazer, Edith	ACS	RSG-13-079-01-CDD	1/1/13-12/31/16	Ruthenium Complex Scaffolds for the Creation of Targeted Chemotherapeutics	\$238,333
Hahn, Ellen	NIEHS	R01 ES021502	9/1/12-5/31/17	FRESH: Dual Home Screening for Lung Cancer Prevention	\$450,790
Hahn, Ellen	KYDPH	PON272812000 022781	7/1/12-6/30/13	Community Partnerships for Tobacco Use Prevention (KDPH)	\$114,263
Kyprianou, Natasha	Sanofi Aventis	NA	11/1/12-10/31/13	Effect of Microtubule-Targeting Chemotherapy on EMT in Prostate Cancer Model	\$120,469
Li, Guo-Min	NCI	R01 CA167181	2/15/13-1/31/18	Novel Mechanism of Genome Instability in Colorectal Cancer	\$231,103
Plattner, Rina	NCI	R01 CA166499	9/12/12-8/31/17	A Role for c-Abl/Arg in Melanoma Progression	\$315,543
Rangnekar, Vivek	NCI	T32 CA165990	4/1/13-3/31/16	Interdisciplinary Research Training in Cancer Biology	\$209,977
She, Qing-Bai	NCI	R01 CA175105	4/1/13-3/31/13	Targeting Translation Dependence in Colorectal Cancer Progression	\$232,854
Shi, Xianglin	NIEHS	R01 ES020137	9/1/12-5/31/13	MicroRNA-190 and Oxidative Stress in Arsenic Carcinogenesis	\$100,238
Spear, Brett	NIGMS	R25 GM102776	9/1/12-6/30/17	Kentucky Bridge to a Biomedical Doctorate for Appalachian Students	\$230,799
Zhang, Joy	NCI	R03 CA171604	9/1/12-8/31/14	Apple Peel Extract Inhibits Cr(VI)-induced Lung Cancer	\$74,250
Total of All Grants					\$4,861,167

FY13 Research Recruits



Brady Reynolds, Ph.D.
Associate Professor, Behavioral Science

- Recruited from The Ohio State University



Meenakshi Upreti, Ph.D.
Assistant Professor, Pharmaceutical Science

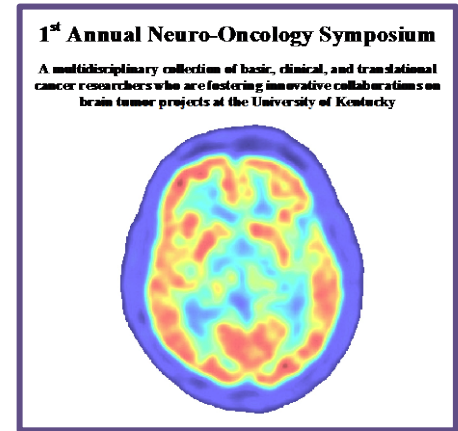
- Recruited from the University of Arkansas for Medical Sciences

**Other
Achievements
2012 - 2013**

National / International Conferences

2012

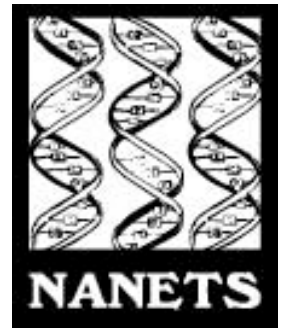
- Natural Products Symposium, August
- Inaugural Neuro-Oncology Mini Symposium, November



2013

- Inaugural Breast Cancer Symposium, March
- 2nd International Conference of RNA Nanotechnology and Therapeutics, April 3-5
- Neuroendocrine Tumor Regional Conference, April 19-20
- Upcoming:
 - 15th Annual Midwest DNA Repair Symposium, May 18

Breast Translational Group



**15th Annual Midwest
DNA Repair
Symposium**

International Conference of RNA Nanotechnology and Therapeutics



Organized and chaired by Dr. Peixuan Guo
200+ participants from around the world (15 countries)

DanceBlue 2013



Markey Affiliate Network

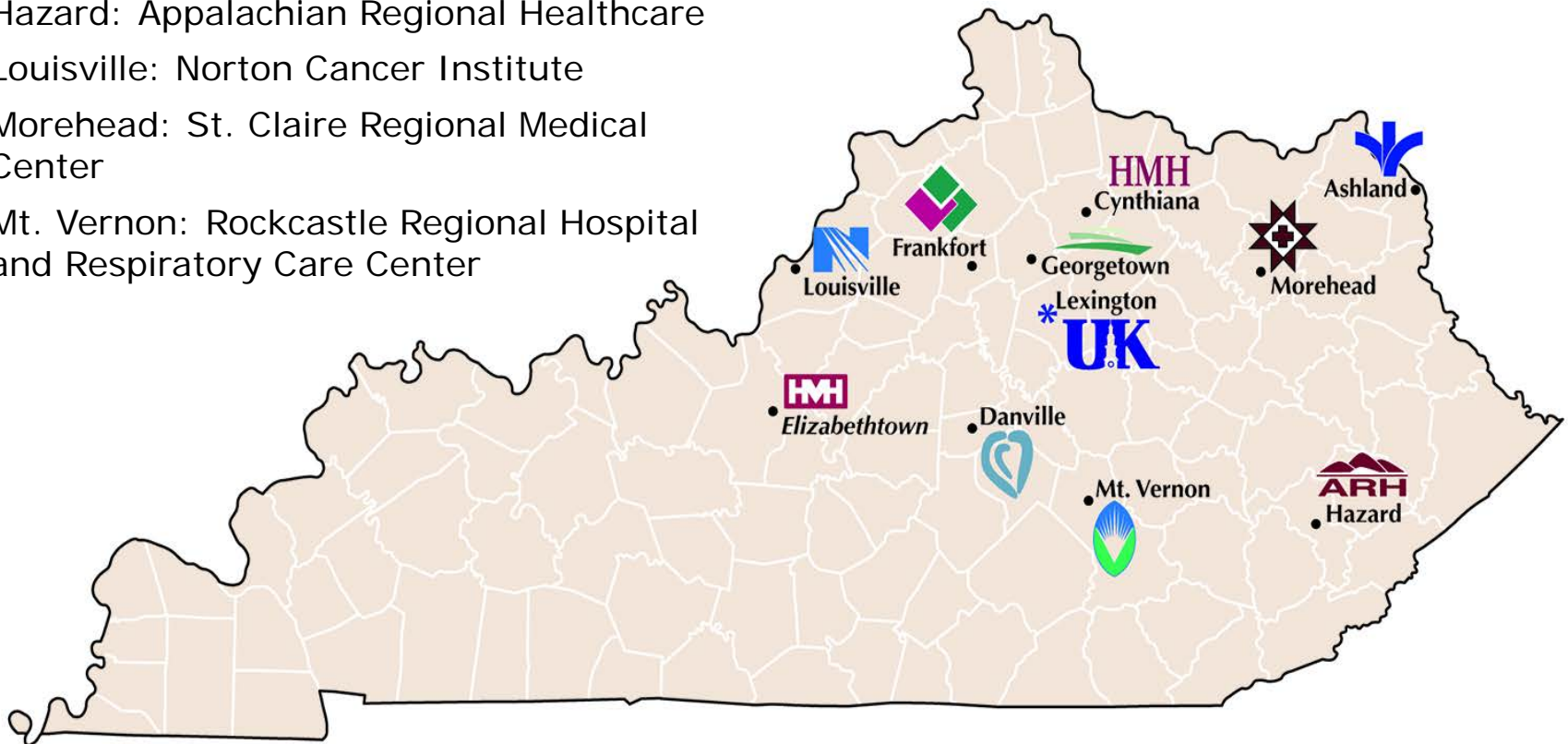
Markey Cancer Center Affiliate Network

UK Markey Cancer Center Affiliates

- Ashland: Our Lady of Bellefonte Hospital
- Cynthiana: Harrison Memorial Hospital
- Danville: Commonwealth Cancer Center
- Frankfort: Frankfort Regional Medical Center
- Georgetown: Georgetown Community Hospital
- Hazard: Appalachian Regional Healthcare
- Louisville: Norton Cancer Institute
- Morehead: St. Claire Regional Medical Center
- Mt. Vernon: Rockcastle Regional Hospital and Respiratory Care Center

Potential Future Affiliates

- Elizabethtown: Hardin Memorial Hospital



MCCAN New Programs and Services for 2013

- **MCCAN Case Conference Series**
 - **Broadcast live via UK TeleCare and webcast via CECentral**
 - **Continuing education credit offered**
- **Assistance with ACoS Commission on Cancer Accreditation**
- **Telegenetic Counseling Program**

Closing Remarks

MCC Strategic Goals

- **Goal 1: To establish the MCC as a transformational center dedicated to the prevention of cancers and the reduction of cancer burden and disparities with a focus on rural underrepresented communities of Appalachian Kentucky**
- **Goal 2: To be a nationally recognized leader in the diagnosis and treatment of cancers that have high incidence rates in Kentucky**
- **Goal 3: To increase MCC investigator-initiated clinical research and clinical trial accruals**

Summary

Over the next 5 years, the MCC needs to ...

- **Be bigger and stronger from a clinical and research perspective**
- **Increase our cancer-related funding**
- **Increase therapeutic clinical trial accruals to >15% of new patients**
- **Increase interactions with our affiliate hospitals**
- **Better consolidate and focus our educational mission**
- **Take Markey discoveries to clinical trials**
- **Maintain and increase our focus and interactions in our catchment population of Appalachian Kentucky**

Thank you!

