

Minutes of the Board of Trustees Retreat  
University of Kentucky  
Friday and Saturday, October 17-18, 2014

The Board of Trustees of the University of Kentucky began its Retreat at 9:00 a.m. on Friday, October 17, 2014 in Fellowship Hall at Mandrell Hall, Lexington, Kentucky and concluded its retreat on Saturday, October 18, 2014 in the Board Room on the 18<sup>th</sup> floor of Patterson Office Tower, Lexington, Kentucky.

A. Members Present

The following members of the Board of Trustees were present: C. B. Akins, Sr., James H. Booth, William C. Britton, E. Britt Brockman, Sheila Brothers, Mark P. Bryant, William S. Farish, Jr., Oliver Keith Gannon (Chair), Carol Martin “Bill” Gatton, Cammie DeShields Grant, Robert Grossman, David V. Hawpe, Kelly Sullivan Holland, Jake Ingram, James W. Stuckert, Robert Vance, and Barbara Young. Trustees Terry Mobley and Angela Edwards were absent.

The University administration was represented by President Eli Capilouto, Provost Christine Riordan, Executive Vice President for Health Affairs Michael Karpf, Executive Vice President for Finance and Administration Eric Monday and General Counsel William Thro.

The University faculty was represented by the Chair of the University Senate Council Andrew Hippisley and the University staff was represented by Chair of the Staff Senate Mike Adams.

Guests, other administrators and members of the news media were also present throughout the Retreat.

B. Welcome

Chair Gannon welcomed the members of the Board of Trustees and guests and expressed his enthusiasm for the fifth Retreat and the discussions scheduled. Chair Gannon was thankful for the annual opportunity to look closely and critically at the progress being made at the University; and to offer a collective voice and guidance regarding plans being made for the future.

Chair Gannon stated this Retreat would continue the strategic planning discussion from last year, but focus more singularly on the research mission of the University of Kentucky. Chair Gannon stated that “research is a key strategic endeavor and is directly related to the comprehensive land-grant mission to serve the needs of the citizens of the Commonwealth.”

C. Overview of the Day

President Capilouto thanked the many people who helped make the retreat possible. He thanked Provost Christine Riordan for her work leading the Strategic Planning process, and Interim Vice President for Research Lisa Cassis and Center for Applied Energy Research

Director Rodney Andrews, who also served as the co-chairs of the research working group in the Strategic Planning process.

President Capilouto stated that the Strategic Planning process would continue through the fall of 2014, building upon what was learned through the last year. The reports will be supplemented with additional data to generate a more complete picture of UK's current position, challenges, opportunities and the most aggressive path forward.

In meeting with the leaders of UK's Strategic Planning process, President Capilouto was impressed with their work and commitment to this "people-centered place." He reiterated that UK is about people and place; and that we are a "University for Kentucky." UK's mission of research "confronts the issues of the day, stirs the soul, fuels dreams, improves education and inspires generations. It is a critical responsibility of the University of Kentucky; from the cellular to the community level; to the basic, translational and applied research."

President Capilouto offered the following as examples:

- College of Fine Arts' Arturo Sandoval's "Confluence River Reflections" hangs in the grand foyer of the Owensboro Convention Center;
- College of Arts and Sciences' Dr. Frank X Walker is Kentucky's Poet Laureate and author of renowned literary pieces and works of poetry;
- College of Education's Kentucky P20 lab is sharing what works best in education;
- Center for Applied Energy Research's (CAER) promotes private and public sector partnerships to advance Kentucky;
- College of Design's House Boat to Energy Efficient Residence (HBEER) initiative created jobs lost during the 2008 recession;
- College of Nursing is working to reduce the harmful effects of tobacco;
- College of Agriculture, Food and Environment has developed a technology to sterilize mosquitos;
- College of Engineering's Dr. Suzanne Smith leads fellow faculty and students on a NASA grant to conduct research on the International Space Station and in the aerospace industry;
- College of Pharmacy's Dr. Jon Thorson is turning to coal mine exploration for unique organisms that might produce the next generation natural products;
- College of Business and Economics Dr. James Ziliak is studying the federal aid program Supplemental Nutrition Assistance Program (SNAP);
- School of Music and UK Healthcare have a graduate program in music therapy, demonstrating there is more than one way to heal someone; and
- The Green Dot Program and Center for Research on Violence Against Women's bystander program is effective and has been replicated in K-12 schools across Kentucky

President Capilouto stated that past investments like "Bucks for Brains" created invaluable contributions and opportunities. Currently the UK research enterprise competes for state resources, is mindful of the pressure to keep tuition and mandatory fee rates manageable, recognizes the flat and declining federal support for research, and realizes the big investments made by other institutions. The questions for the future of research at UK and the essence of



strategic planning ask what should we do; where should we focus; and how do we achieve our goals.

President Capilouto stated that his background in public health policy and management; specifically community-based interventions to improve health outcomes, drew him to facts about Kentucky. He stated that hundreds of Kentuckians die each year from chronic and preventable illnesses. The University of Kentucky can make a difference in closing Kentucky health gaps. UK is uniquely positioned to help the citizens of the Commonwealth because UK:

- Is one of eight institutions with programs in Agriculture, Pharmacy, Engineering and Medicine on a contiguous campus – including a full complement of health care colleges: Nursing, Dentistry, Public Health and Health Sciences, in addition to Pharmacy and Medicine;
- Has a physical presence in all 120 Kentucky counties through the extension network and clinical outreach programs;
- Has seventeen colleges and professional schools supported by a comprehensive research library system; and
- Is one of 22 institutions nationwide with a National Cancer Institute (NCI)-designation, Clinical Translational Science Award and Alzheimer’s Disease Center.

President Capilouto stated that because of the University’s breadth and depth, it has the distinctive opportunity to approach health challenges in multi-disciplinary, team science settings.

#### D. Optimizing Health Outcomes

President Capilouto introduced Dr. Nancy Schoenberg, Professor in the Department of Behavioral Science and Director of Community Engagement and Research in the Center for Clinical and Translational Sciences to familiarize the Board with some of UK’s current research to improve health outcomes.

Dr. Schoenberg shared the research of Dr. Debra Moser, the Linda C. Gill Professor in the College of Nursing, who partners with the Center for Excellence in Rural Health in Hazard, Kentucky and community health workers to improve cardiovascular health outcomes. She shared the cervical cancer research of Dr. Mark Dignan, Professor of Internal Medicine and Co-Leader of the Cancer Prevention and Control Research Program. Dr. Dignan in collaboration with local rural health departments, recruited and trained patient navigators to enroll women with abnormal Pap test results to identify the barriers/assets that affect women’s receipt of diagnostic and treatment services for cervical cancer; the patient navigators who then coached these women through the health care delivery system.

One of Dr. Schoenberg’s federally funded research projects, “Faith Moves Mountains,” is currently targeting smoking cessation intervention. Working with and through a faith-based community of 26 churches, lay health advisors are using the Cooper-Clayton method, support sessions, nicotine replacement therapy and motivational interviewing to help individuals quit smoking. Of the 591 enrolled, over 91 percent of the participants stayed with the program and over one-third quit. After six months, two-thirds of this group were still not smoking.

Dr. Schoenberg summarized that these three programs are a definitive example of how culturally appropriate community-based interventions can address and impact health gaps in Kentucky.

E. Improving Health Delivery

President Capilouto introduced Dr. Mark Williams, Director of the Center for Health Services Research and Professor and Vice Chair of the Department of Internal Medicine, to share with the Board the importance of health services research and the delivery of health systems that maximize health outcomes.

Dr. Williams stated that health services research is a science that has success in a multidisciplinary approach. Five components of an effective clinical system are consistency, information systems (collect, integrate, point of care), patient centered (engage patients in care delivery), team-based care (nurses, doctors, pharmacists, physical therapists) and innovation.

Dr. Williams shared three research projects that were examples for improving care delivery: UK – Appalachian Tele-Emergency Network; the National Coordinating Center for Public Health Services and Systems Research; and Project ACHIEVE, Effectiveness of Transitional Care, which looks at achieving patient-centered care and optimized health in care transitions by evaluating the value of evidence. Dr. Williams stated that these three examples were rooted in multidisciplinary science and were centered on coordinated care.

Drs. Schoenberg and Williams welcomed questions and comments from the Trustees. Comments and questions included praise for community based care, timeline for expansion of programs to western Kentucky, diverse population expansion, how UK's extension offices play key roles in improving access to care, implementation strategies and outcomes-based reimbursement. Other questions included student and professional opportunities, drug and substance abuse in Kentucky, mental health issues in diverse populations and the role of programs like Center for Excellence in Rural Health.

Trustees were also interested in the strengths of UK's research enterprise from a faculty/professional perspective and areas for growth and development. Drs. Schoenberg and Williams both praised the collegial collaborative atmosphere and the unique collection of colleges on a contiguous campus. Both believe that with an increase in the critical mass of faculty, investments in infrastructure and an investment in endowed centers, UK can become a leader in health outcomes for disadvantaged populations.

F. The Research Enterprise

President Capilouto introduced Interim Vice President for Research Lisa Cassis to share with Trustees information on the economic impact of University of Kentucky Sponsored Research.

Interim Vice President Cassis shared that in the last five months, evaluating UK's research enterprise has been her main mission. She is convinced that UK can make significant

strides in research with careful planning and strategic investment. As the state's flagship institution, it is an imperative that UK's focus be the Commonwealth's health disparities.

Dr. Cassis introduced Dr. Rodney Andrews, Director of the Center for Applied Energy Research (CAER), to update the Board on the state of UK's external and internal research portfolios.

Dr. Andrews explained that 70 percent of UK's research is sponsored predominantly by federal agencies. State and local government funds six percent and institutions 21 percent, with business and other sources making up the balance. As federal funding has declined and looks to remain flat for the foreseeable future, universities are competing more aggressively for the same dollars.

UK's College of Medicine has the largest mass of research funding, followed by the College of Engineering and large research centers. While UK's research volume has grown since 2004, its national ranking has declined. At the same time, the research and development spending of many aspirational research university peers has increased substantially. While our numbers are going up, other institutions around us are going up faster.

Dr. Andrews continued that UK's research enterprise must make thoughtful strategic decisions on our research investments. It must focus on solving Kentucky's biggest and most complex problems and invest in the areas of strength that support this mission. As only UK has the strength and the breadth of programs to do this for Kentucky, UK must continue to develop and enable the multidisciplinary teams necessary to tackle these problems. Additionally, the clinical and research enterprises are linked. As UK has expanded the clinical enterprise, applied research grows and this can be applied back and translated to improved patient care.

Dr. Andrews conveyed the need to focus investments on people, facilities and infrastructure. The successful and strategic hiring of individuals like Dr. Mark Evers and his group led to the National Cancer Institute (NCI) designation for the Markey Cancer Center, the only one in Kentucky. Also Dr. Kunlei Liu in the Center for Applied Energy Research (CAER) was hired to start a carbon capture program for coal fired power plants. Dr. Liu has built a group of 39 researchers, including six students, and has \$28 million in active grants.

Dr. Andrews shared that UK has also been successful with the "center" model, organized around multidisciplinary teams. Multidisciplinary groups also make effective use of space and personnel.

Drs. Cassis and Andrews asked the Board for comments or questions regarding the current status, priorities and investment of UK's research enterprise. The Board engaged in discussion, seeking answers to questions regarding faculty recruitment and retention and infrastructure needs.

#### G. Economic Impact of University of Kentucky Sponsored Research in the Commonwealth of Kentucky

To detail the economic impact of UK's sponsored research in the Commonwealth of

Kentucky, President Capilouto introduced Executive Vice President for Finance and Administration Eric Monday.

Mr. Monday detailed the hiring of a company called Tripp Umbach, a national leader in completing research, planning and economic impact studies for academic health centers, major research universities, hospitals, corporations and nonprofits. The goals of the study were to quantify annual economic impact of UK's sponsored research; quantify the employment impact of UK's sponsored research; quantify the annual government revenue impact of UK's sponsored research at the state and local level; and provide a defensible impact study which shows the impact of current sponsored research operations on the Commonwealth of Kentucky.

Tripp Umbach's methodology uses IMPLAN, input-output modeling software, to run economic impact analyses. Using recent economic data from public sources such as U.S. Bureau of Economic Analysis, U.S. Department of Labor's Bureau of Labor Statistics and U.S. Census Bureau, the data can predict effects on a regional economy from direct changes in employment and spending.

UK's sponsored research impact in direct, indirect and induced ways produced for 2013:

- \$581.2 million in annual economic impact in Kentucky;
- 8,114 jobs created and supported; and
- \$21.3 million generated annually in state and local taxes.

The Trustees engaged in discussion regarding research building(s) and support services, commercialization and start-up companies, the healthcare enterprise, undergraduate and graduate student success and patent opportunities.

#### H. Health Disparities in Kentucky

Vice President Cassis shared that as the Program Director of a National Institutes of Health (NIH)-funded Center of Biomedical Research Excellence (COBRE) which focuses on obesity and cardiovascular diseases, her research focuses on two health problems that clearly impact the lives of those throughout the Commonwealth. The evolution of the Center provides a compelling example of how thematic research, coupled with targeted recruitment around a research theme, empowers researchers at UK to find solutions to complex problems.

Dr. Cassis shared with Trustees that the objectives of COBRE are to identify mechanisms linking obesity to cardiovascular disease, develop a multidisciplinary research Center around this theme and use this as a platform to develop promising junior investigators to compete for NIH grant support. Keys to the COBRE plan include mentoring junior faculty and students, developing core facilities to optimize the research enterprise, strategic hiring and pilot projects.

Dr. Cassis offered that translational interdisciplinary teams under one roof and in close proximity result in clinical discoveries, clinical trials and improved clinical outcomes and standards of care.

The Board engaged in extensive discussion, seeking answers to questions regarding supporting basic research, educating constituents on the importance of research, fundamental duties of institutions of higher learning, financing the research mission, infrastructure realities, optimization and alignment of current resources and strengths, balance of priorities, attracting industry investment in UK and building on momentum.

I. Update on Capital Improvements on Campus

Executive Vice President Eric Monday updated the Board on the capital improvements on campus. He shared that over the last 40 months (since July 2011) UK has initiated 84 projects renovating 4.4 million square feet, investing \$1.36 billion. These projects can be characterized as being related to Quality of Life, Academic, HealthCare, and Infrastructure.

The Quality of Life projects (44) include housing, dining, parking, athletics, University recreation halls and student centers. Academic projects (13) include acquisitions, renovations, remodels and new construction. HealthCare projects (14) include fit-up of floors in the Patient Tower, Kentucky Clinic and Good Samaritan. Infrastructure projects (13) include security, road and sewer systems and central plant projects. These projects have been funded through a combination of debt, private partners, University funds, philanthropy and state and federal funds. This funding combination has resulted in an increase of UK's outstanding debt by \$240 million.

Ms. Mary Vosevich, UK's new Vice President for Facilities Management, updated the Board of Trustees on the four targeted areas for UK's campus.

Attention to the landscape plan was introduced during the campus master planning sessions last year. Focus will be directed on the campus landscape and creating a sense of place, belonging and pride. Attention will be directed to transition spaces that the campus community moves to and through and spaces where individuals congregate and collaborate.

Ms. Vosevich defined UK as a "city within a city." The utilities infrastructure needs to be robust, redundant and reliable. Attention will be directed to a utilities master plan for now and the future, with the appropriate economic analyses performed.

All major universities have a deferred maintenance plan. Facilities Management will strategize on how and what facilities need investments for efficient operations.

Ms. Vosevich stated that the last targeted area is preservation. Buildings and landscapes that have historic significance cannot be ignored and UK needs to link the past with the present while thinking about the future. Her office will inventory facilities and find ways to celebrate culturally and historically significant facilities using static displays, interactive displays, and other methods in order to preserve the greatness of this campus and respect its history.

The Board adjourned at 4:15 p.m.

Saturday, October 18, 2014

The Board of Trustees began its morning recap at 9:00 a.m., Saturday, October 18, 2014 in the Board Room, 18<sup>th</sup> floor of Patterson Office Tower on the University of Kentucky campus. The Trustees were introduced to and had a training session on *Directors Desk*, software developed by NASDAQ that allows for a paperless meeting environment.

J. 2014 Retreat Recap

As a follow up from the discussion held on Friday, President Capilouto presented for the Boards consideration and discussion, CR 1, Principles for the Research Enterprise. It read as follows:

Recommendation: Recognizing the essential nature and value of all scholarly and creative activity undertaken at a comprehensive, land-grant institution, the University's mission and the current financial environment compel a focus on research areas where:

1. the needs of Kentuckians and the Commonwealth are most pressing; and
2. the University can continue to compete successfully for external research support.

The President is directed to take steps necessary to achieve these goals and grow the University's research enterprise by:

1. Aligning resource commitments to optimize efficiency and facilitate faculty success;
2. Recruiting and retaining additional world-class researchers and research teams;
3. Strengthening the commitment to interdisciplinary exploration; and
4. Confirming and detailing the critical need for additional research infrastructure.

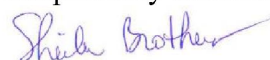
Concerns were raised about the inclusivity of staff and students and the role of faculty as scholars in the research mission. After extensive discussion, item number one and two were changed to read as follows:

1. Aligning resource commitments to optimize efficiency and facilitate faculty, staff and student success.
2. Recruiting and retaining world-class scholars and research teams

K. Retreat Adjourned

Chair Gannon adjourned the Retreat at 10:14 a.m.

Respectfully submitted,



Sheila Brothers  
Secretary, Board of Trustees





# Optimizing Health Outcomes

University of Kentucky  
Board of Trustees Retreat  
October 17, 2014

Nancy Schoenberg, Ph.D.



# HeartHealth: A Community Program for Life

**Debra Moser, Ph.D.**

Linda C. Gill Professor College of Nursing



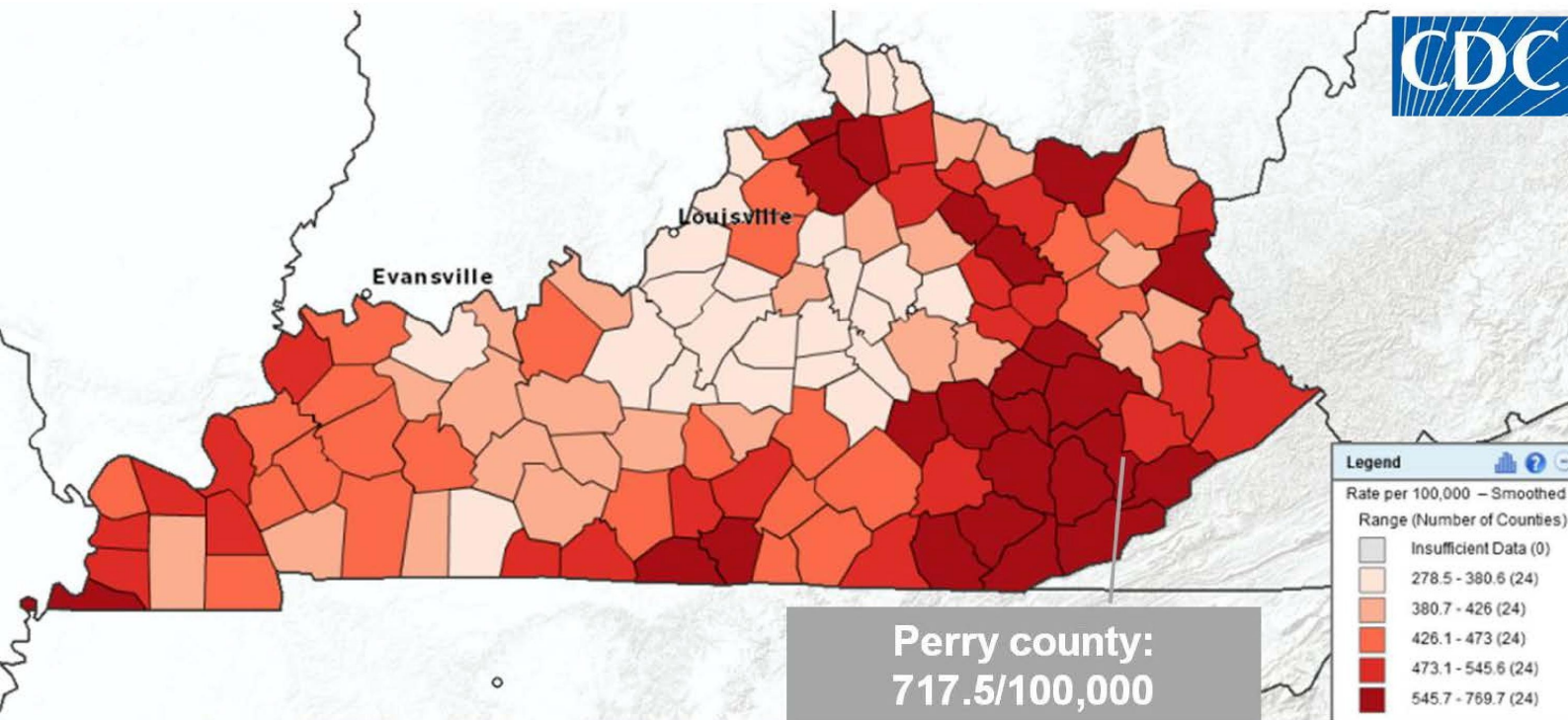
Support: Patient-Centered Outcomes  
Research Institute (PCORI)





# HEART DISEASE AND STROKE DEATH RATES ARE HIGHER IN EASTERN KENTUCKY THAN THE REST OF THE STATE OR U.S.

HEART DISEASE DEATH RATE PER 100,000, 35+, 2008-2010





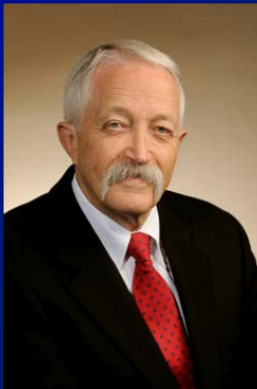
# THE HEARTHEALTH INTERVENTION

- 6 interactive modules:
  - 1) self-care and CVD risk reduction;
  - 2) nutrition;
  - 3) physical activity;
  - 4) depression control and stress reduction;
  - 5) managing multiple comorbid risk factors; and
  - 6) smoking cessation and/or medication adherence
- 12-week period by lay community health worker and nurse educators who have been trained extensively by our research nurse interventionist



# Patient Navigation for Cervical Cancer Control in Appalachia

**Mark Dignan, Ph.D., MPH**  
Prevention Research Center



Support: NIH/NCI R01 CA120606



# CERVICAL CANCER REMAINS A PROBLEM IN KY AND IN THE STUDY AREA

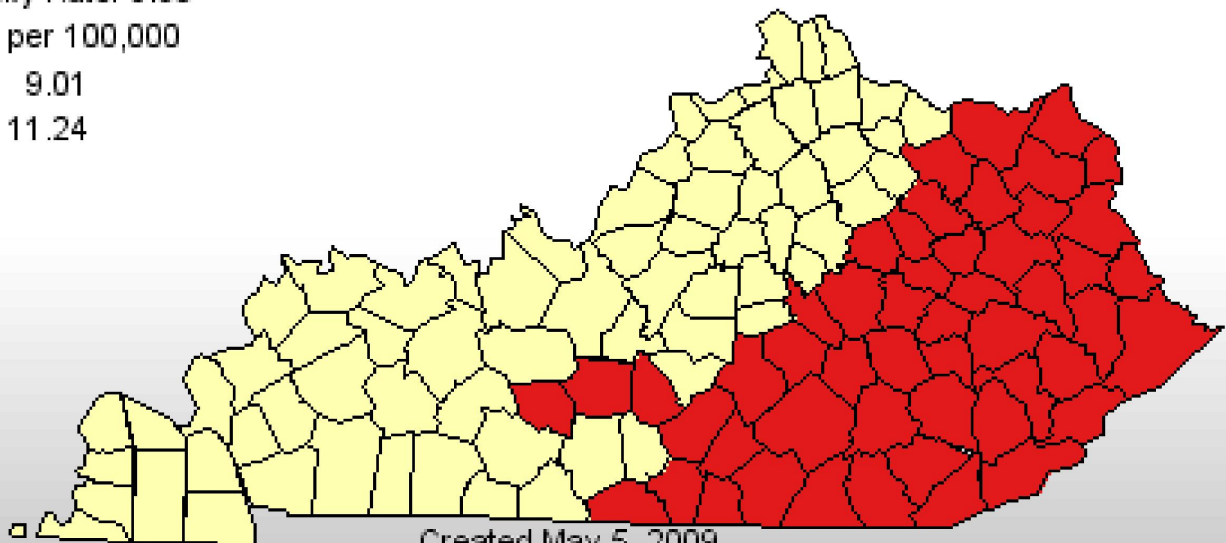
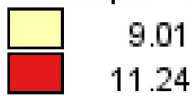
(U.S. RATE: 7.8, KY: 9.6, APP KY: 11.2 PER 100,00)

## Age-Adjusted Invasive Cancer Incidence Rates in Kentucky Cervix Uteri, 2002-2005 By Appalachian Region

Age-Adjusted to the 2000 U.S. Standard Million Population

Kentucky Rate: 9.63

Rate per 100,000



Created May 5, 2009  
Copyright (C) 2009 Kentucky Cancer Registry



## THE PN INTERVENTION

1. In collaboration with local rural health departments, recruited and trained patient navigators.
2. Enrolled women with abnormal Pap test results.
3. Identifying barriers/assets that affect women's receipt of diagnostic and treatment services for cervical cancer.
4. Navigators coached them through the health care delivery system.





# Faith Moves Mountains Quittin' Program

**Nancy E. Schoenberg, Ph.D.**

Marion Pearsall Professor of Behavioral Science



Support: NIH/NIMHD and NCI,  
R24MD0075741



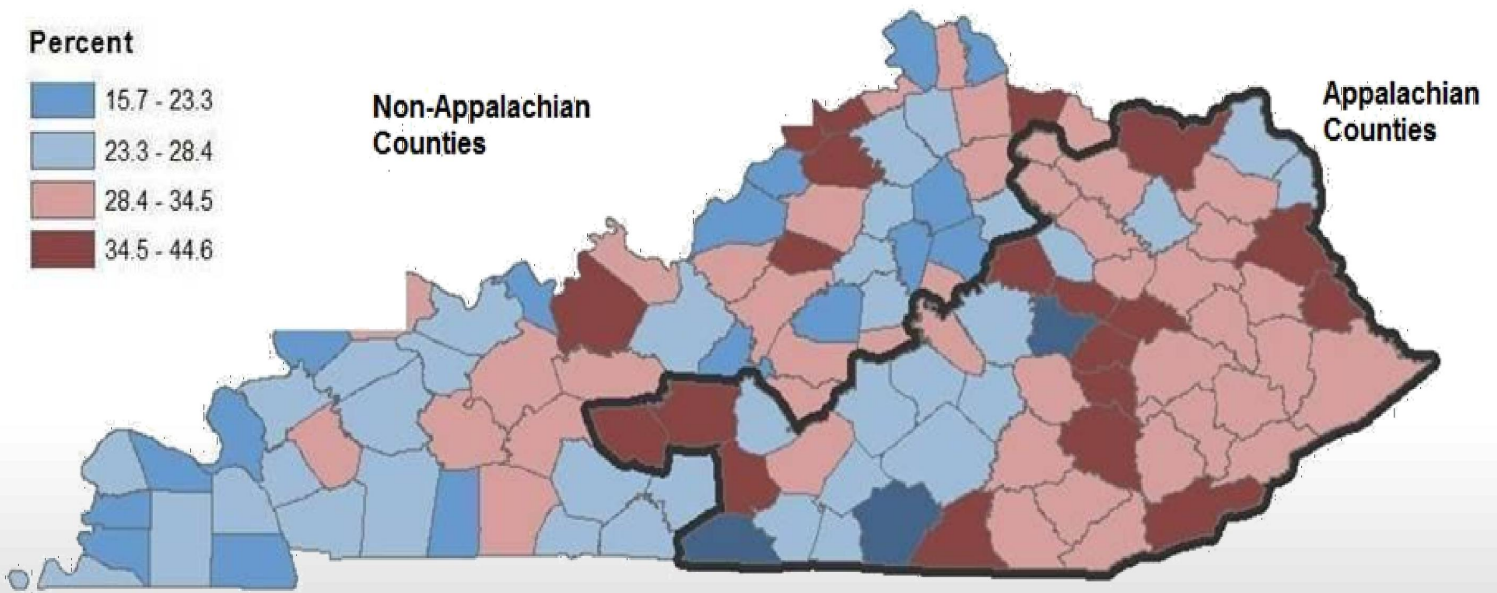
# CURRENT ADULT SMOKERS IN KENTUCKY, 2010

## Percent



Non-Appalachian Counties

Appalachian Counties



United States: 17.3%

Kentucky: 24.8%

Appalachian Kentucky: 29.1%

Note: Current Adult Smokers is defined as adults aged  $\geq 18$  years who reported having smoked  $\geq 100$  cigarettes during their lifetime and who now smoke every day or some days.





# SMOKING CESSATION INTERVENTION



- Lay health advisor (LHA) administered group randomized trial
- Church settings
- Components
  - 12 support sessions
  - and nicotine replacement therapy
  - Motivational Interviewing
  - Cooper- Clayton-based method





## 26 PARTICIPATING CHURCHES

- |                                    |                                             |
|------------------------------------|---------------------------------------------|
| Kingscreek Community Church        | Bledsoe Church of God of Prophecy           |
| Lewis Creek Pentecostal Church     | Immanuel Baptist Church                     |
| Corinth Baptist Church             | Neon First Church of God                    |
| Premium Baptist Church             | Smith Creek Full Gospel Pentecostal         |
| Kings Chapel Church                | Isom Presbyterian Church                    |
| Whitesburgs First Baptist          | Faith Community Church                      |
| Holy Trinity Tabernacle Church     | My Father's House in Jenkins                |
| Church of Christ in Harlan         | Church of Jesus Christ of Latter Day Saints |
| Hurricane Gap Baptist Church       | Cornerstone Community Church                |
| Wabaco Christian Church            | Jeremiah Missionary Baptist                 |
| Consolidated Baptist               | Holy Trinity Catholic Church                |
| Hindman United Methodist           |                                             |
| Whitesburg United Methodist Church |                                             |
| House of Prayer                    |                                             |
| Wallins Methodist Church           |                                             |





## PARTICIPANTS (591 CURRENT SMOKERS)



- 591 current smokers
- Unemployed (70%)
- Fair or poor health (56%)
- Most had attempted at least one cessation effort in their lives.
- Nearly 70% exhibited high or very high levels of nicotine dependence.



# OUTCOMES

Aims	Outcomes
Retention	91% retained
Fidelity	Median # sessions attended=7. 27% attended all 12 sessions
Smoking cessation	36.2% quit in intervention compared with 2.6% in control







# Optimizing Health Outcomes

University of Kentucky  
Board of Trustees Retreat  
October 17, 2014

Nancy Schoenberg, Ph.D.



**UK**  
UNIVERSITY OF  
KENTUCKY<sup>®</sup>  
**Improving Health Delivery**

University of Kentucky  
Board of Trustees Retreat  
October 17, 2014

Mark Williams, M.D.



## Why Apply Health Services Research to Public Health Delivery?

**>75%** of US health spending is attributable to conditions that are largely preventable

- Cardiovascular disease
- Diabetes
- Lung diseases
- Cancer
- Injuries
- Vaccine-preventable diseases and sexually transmitted infections

**<5%** of US health spending is allocated to prevention and public health

## Why Apply Health Services Research to Public Health Delivery?

Evidence-based prevention strategies **reach** less than half of the U.S. target populations at risk:

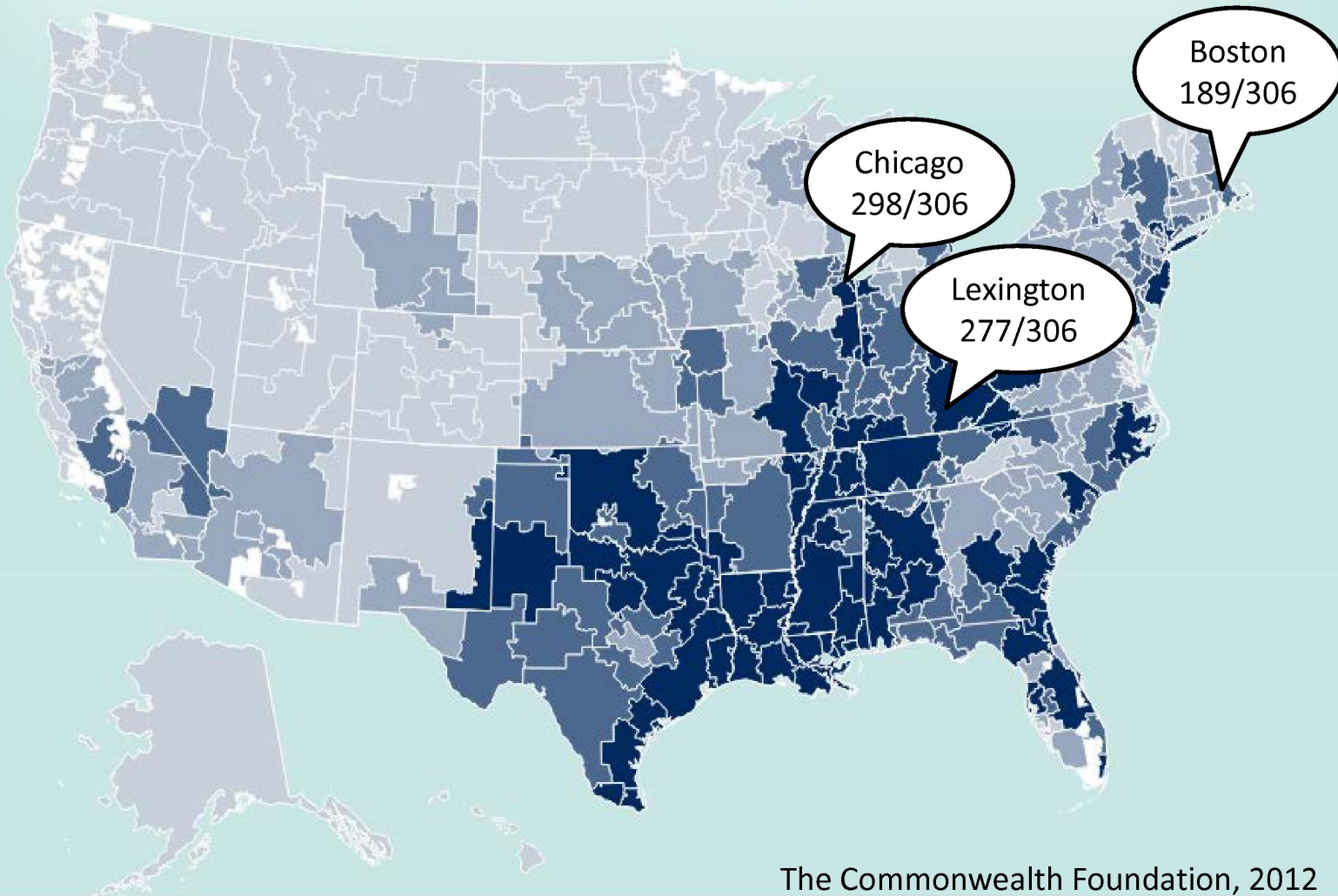
- Smoking cessation
- Influenza vaccination
- Hypertension control
- Nutrition & physical activity programs
- Family planning
- Substance abuse prevention
- Interpersonal violence prevention





## Potentially Avoidable Hospital Use and Cost: Overall Ranking, 2012

● Top Quartile   ● Second Quartile   ● Third Quartile   ● Bottom Quartile   ● No Data



The Commonwealth Foundation, 2012

# Effective clinical systems improvement program

## Five components

### Consistency



### Information system



### Patient-centered



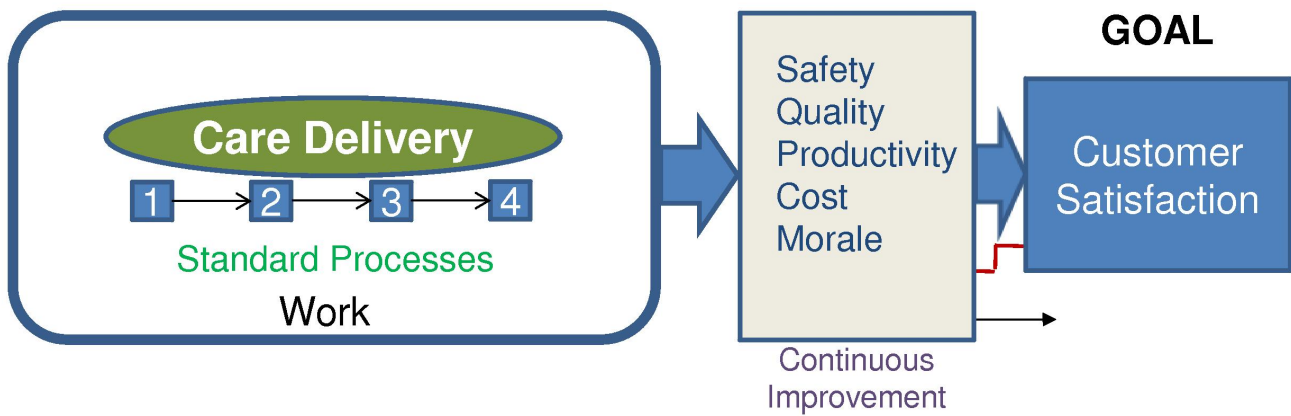
### Team-based care



### Innovation



# TRUE LEAN™ Operating Environment



## Three Research Project Examples For Improving Care Delivery

- UK-Appalachian Tele-Emergency Network
- National Coordinating Center for Public Health Services and Systems Research
- PCORI – Project ACHIEVE

# UK-Appalachian Tele-Emergency Network



University of Kentucky  
Chandler Medical Center (UK-ATEN Hub)



Rural Non-Critical Access  
Hospital (UK-ATEN Spoke)



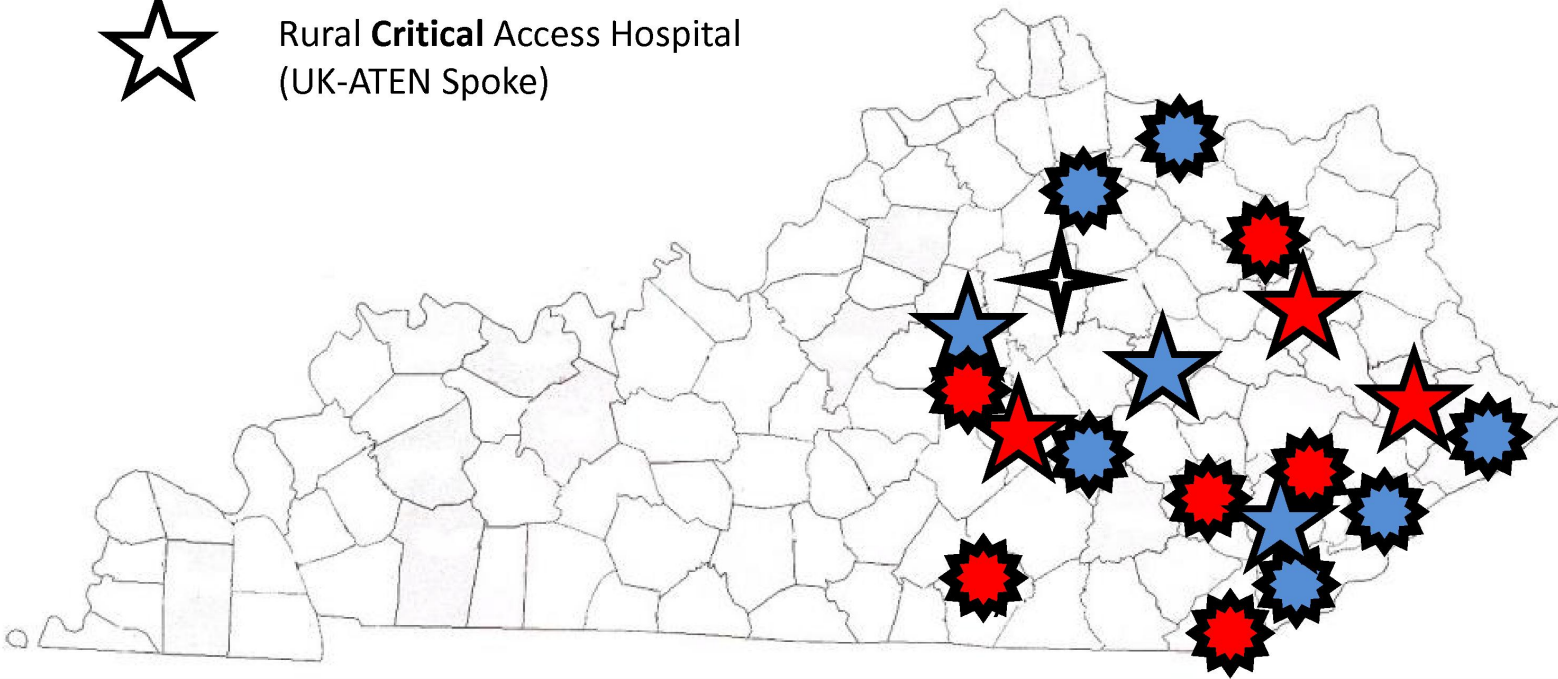
Rural **Critical** Access Hospital  
(UK-ATEN Spoke)



Control Site



Intervention Site





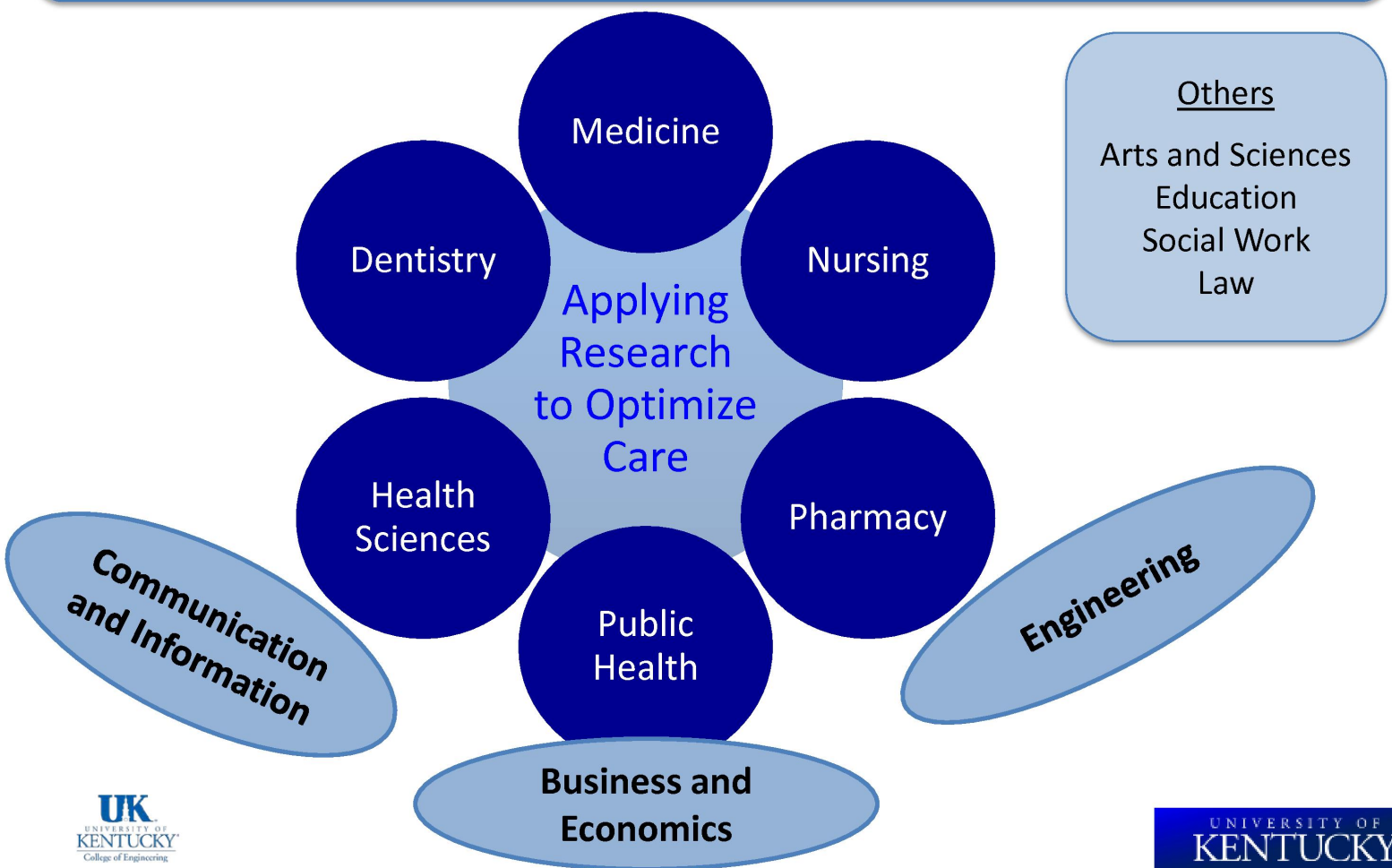
# National Coordinating Center for Public Health Services and Systems Research

- Funded by Robert Wood Johnson Foundation:  
**\$10.5M** to UK from 2011-2015
- Intramural research activities
  - **Public Health Value**: Cost estimation, economic evaluation
  - **Delivery System Reform**: ACA effects on public health delivery, population health measurement, aligning public health & health care delivery
- Extramural research programs (funded separately **≈ \$30M**)
  - **Practice-based Research Networks** (PBRNs) across U.S.
  - Investigator-initiated research awards
  - Predoctoral/Postdoctoral & career development awards
  - Quick Strike rapid-cycle studies

## Public Health PBRN Reach

- Networks in **32** U.S. states
- **1,593** local public health agencies engaged
- **35** state agencies engaged
- **52** universities engaged
- **58** professional and community organizations
- Emerging Canadian network

# Connect — Catalyze — Create



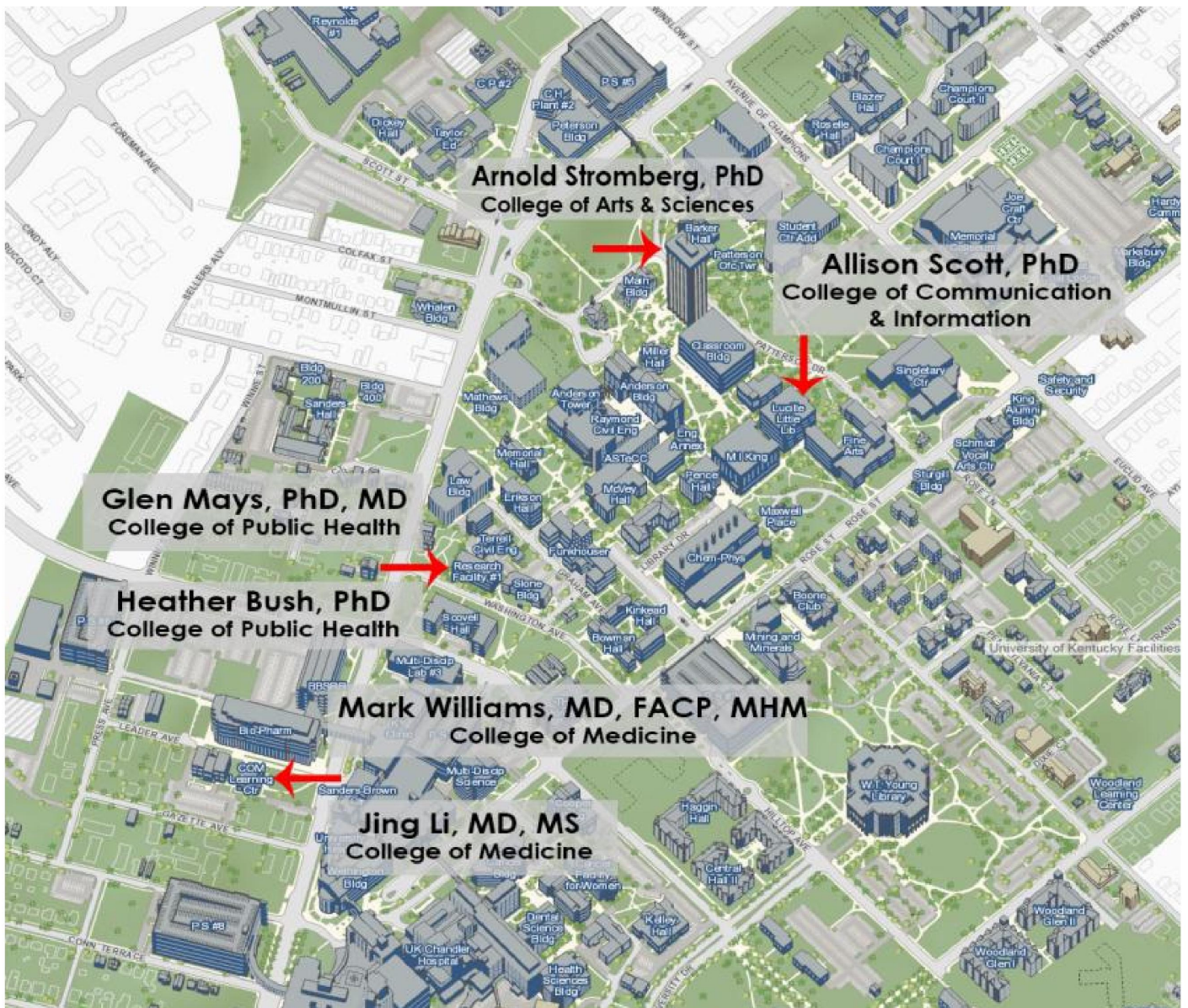




# Project **ACHIEVE**

## Effectiveness of Transitional Care

**Achieving Patient-Centered Care  
and Optimized Health In Care  
Transitions by Evaluating the Value  
of Evidence**



**Arnold Stromberg, PhD**  
College of Arts & Sciences

**Allison Scott, PhD**  
College of Communication  
& Information

**Glen Mays, PhD, MD**  
College of Public Health

**Heather Bush, PhD**  
College of Public Health

**Mark Williams, MD, FACP, MHM**  
College of Medicine

**Jing Li, MD, MS**  
College of Medicine

# ACHIEVE Study Design – 3 year study

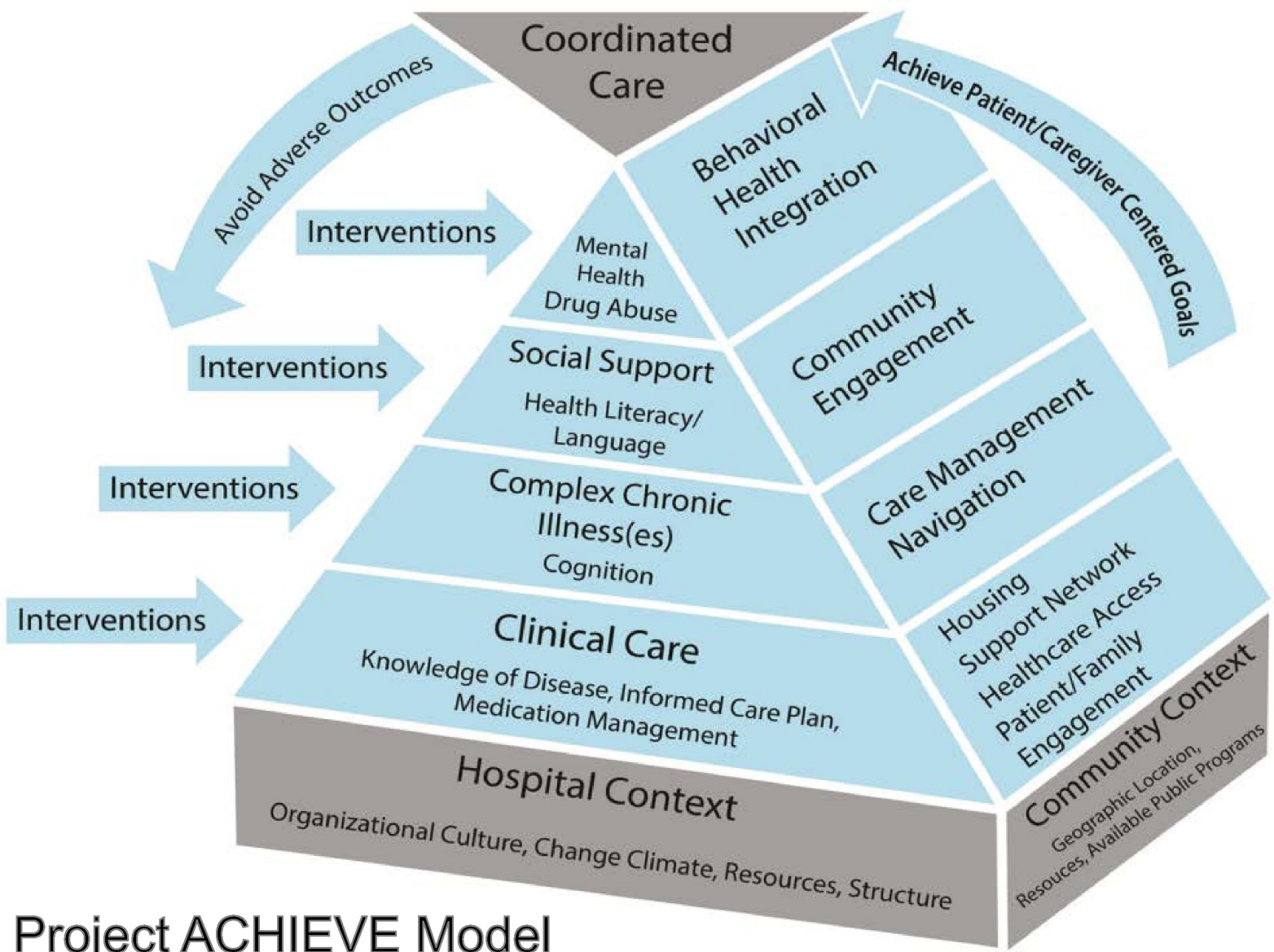
**Phase 1:** Survey Development

**Phase 2a:** Retrospective Longitudinal  
Comparative Analyses

**Phase 2b:** Prospective Cohort Analysis

**Phase 3:** Dissemination





Project ACHIEVE Model

# Translational Science



## Return on investment:

- Educate future leaders
- Improve health of the Commonwealth
- Grow research portfolio



# Improving Health Delivery

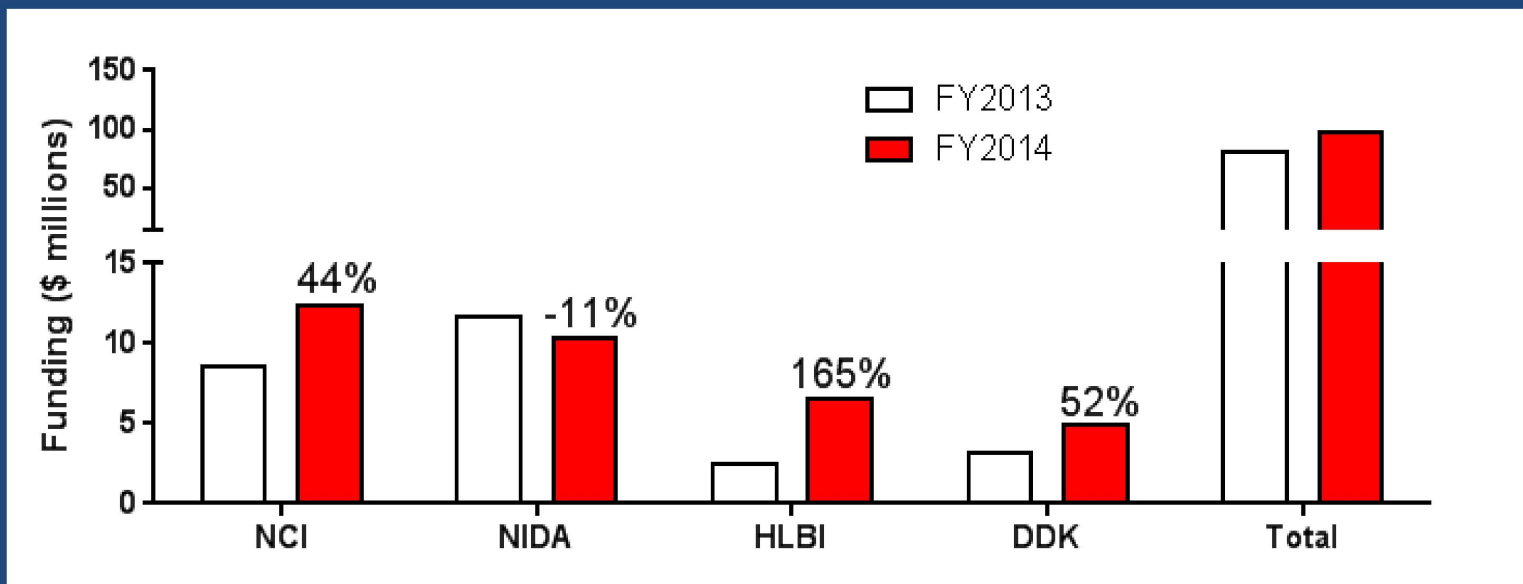
University of Kentucky  
Board of Trustees Retreat  
October 17, 2014

Mark Williams, M.D.



Health Disparities in the  
Commonwealth:  
Obesity and Cardiovascular Diseases  
A Compelling Example

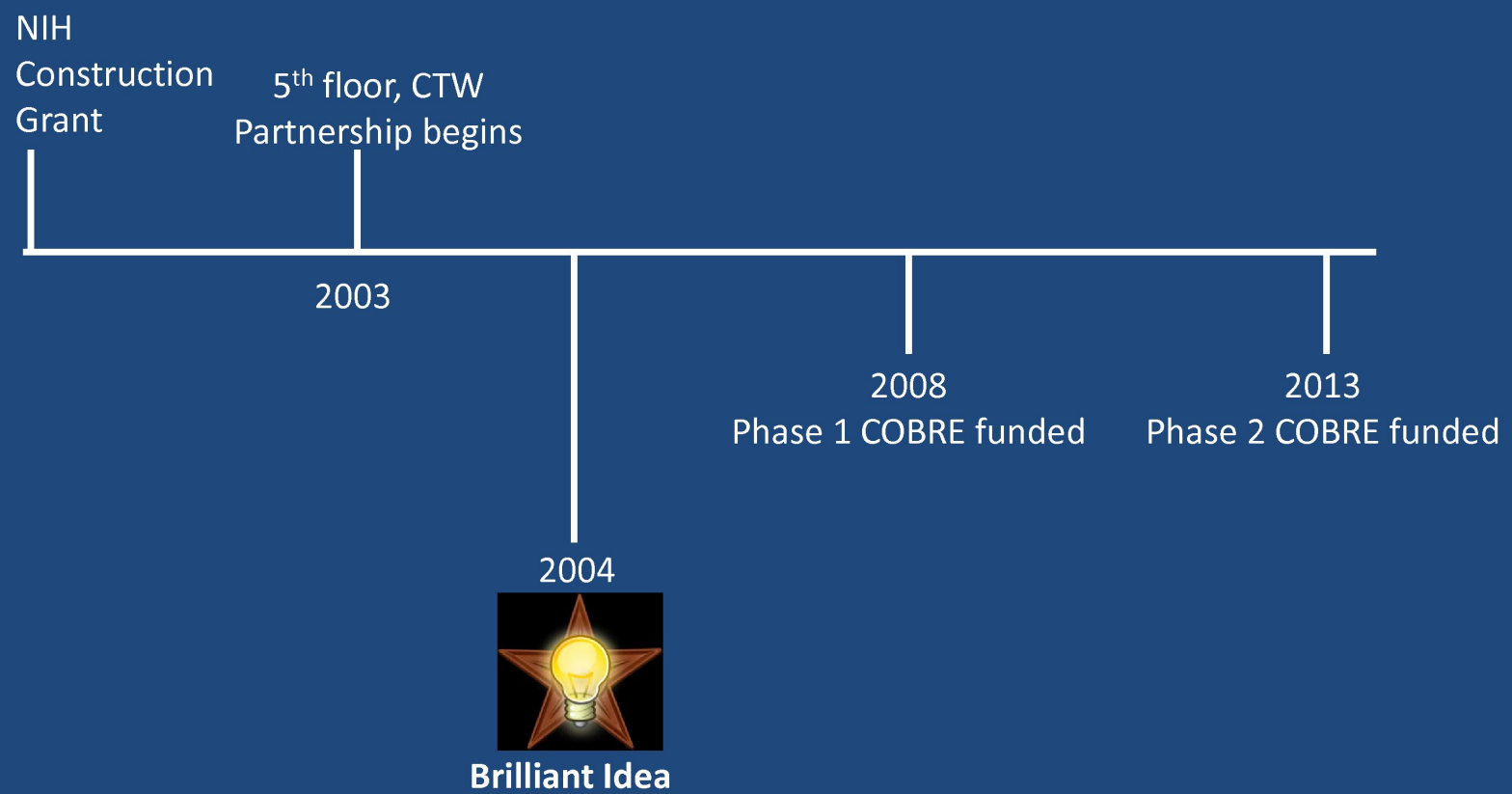
# UK NIH Funding Aligns with Health Disparities in the Commonwealth



NCI = National Cancer Institute; NIDA = National Institute for Drug Abuse; HLBI = Heart, Lung and Blood Institute; DDK = Diabetes, Digestive Diseases and Kidney

## NIH COBRE on Obesity and Cardiovascular Diseases: Historical Perspective of Center Development

---





Lisa Cassis  
Pharm Sci



Alan Daugherty  
CVRC



Ming Gong



Zhen Guo



Bernie Hennig



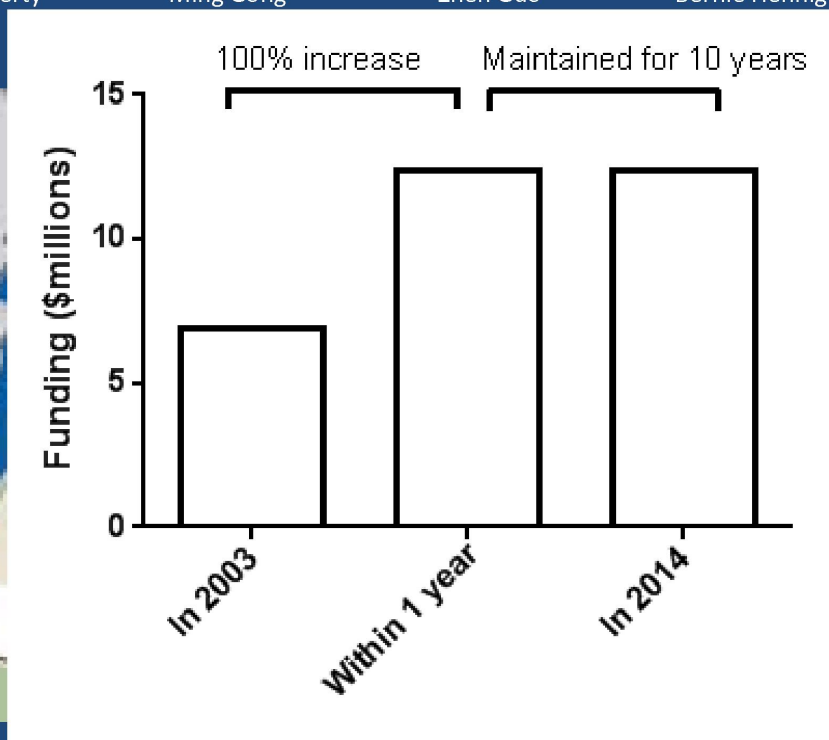
Nancy Webb  
Endocrinology



Phil Kern  
Endocrinology



Lisa Tannock  
Endocrinology



Erik Eckhardt  
Gastroenterology



Vicky King  
Cardiology



Deneys van der Westhuyzen  
Endocrinology

Dennis Bruemmer  
Endocrinology



Fred de Beer  
Internal Medicine



# NIH Center of Biomedical Research Excellence (COBRE) on Obesity and Cardiovascular Diseases

---

- Objectives

- Identify mechanisms linking obesity to CV disease, two health disparities that are rampant in the Commonwealth
- Develop a multidisciplinary research Center around this theme
- Use this as a platform to develop promising junior investigators to compete for NIH grant support (“graduates”)

- Plan

- Mentoring,
- Develop core facilities to optimize research enterprise,
- Strategic hiring,
- Pilot Projects



# Progress during Phase 1

Junior PI	Graduate	Grants Funded	Funding (millions)	Publications
Dennis Bruemmer	√	3 (2 R01s, 1 ADA)	\$4.1	17
Greg Graf	√	2 (R01s)	\$3.7	9
Lisa Tannock	√	4 (3 R01s, 1 VA Merit)	\$6.8	13
Zhenheng Guo	√	2 (R01s)	\$3.7	8
Sean Stocker	√	1 (R01)	\$1.9	9
Jianhua Shao	√	4 (2 R01s, 1 R21, 1 ADA)	\$4.5	10
Shuxia Wang	√	2 (R01, VA Merit)	\$3.1	11
Victoria King	√	2 (R01, CCTS)	\$3.7	11
Kevin Pearson	√	2 (R01, R03)	\$2.0	12
Eric Eckhardt	√	1 (R21)	\$0.41	6
Zhenyu Li	√	3 (R01, ASH, Astra Zeneca)	\$0.5	16
Changcheng Zhou	√	2 (R01, SDG)	\$1.43	4
<b>TOTALS</b>	12	28	\$36	125

- Have now graduated 12 out of 12 at a rate of 100%, or 2.4 investigators/year
- Graduates have multiple grants (2.25/investigator)
- 2.5 publications/investigator/year

# Cost Effective Investment of Research

---

**NIH Phase I  
COBRE Award  
\$10.5 million**

UK Investment  
**\$400,000 (VPR)**



**Junior  
Investigator  
and Mentor  
Funding:  
\$72 million**



**NIH Phase 2  
COBRE Award  
\$11.3 million**

UK Investment  
**\$250,000 (VPR)**

**= \$94 million**

Funding is impressive, but it is the research and its impact that matters...

- **An Example of our research:**

**Childhood obesity and its  
impact on cardiac function**

## Project 2: Brandon Fornwalt, MD/PhD

---



Susan Smyth, MD/PhD  
Professor and Division Chief  
Cardiology, Dept Internal Med  
COM

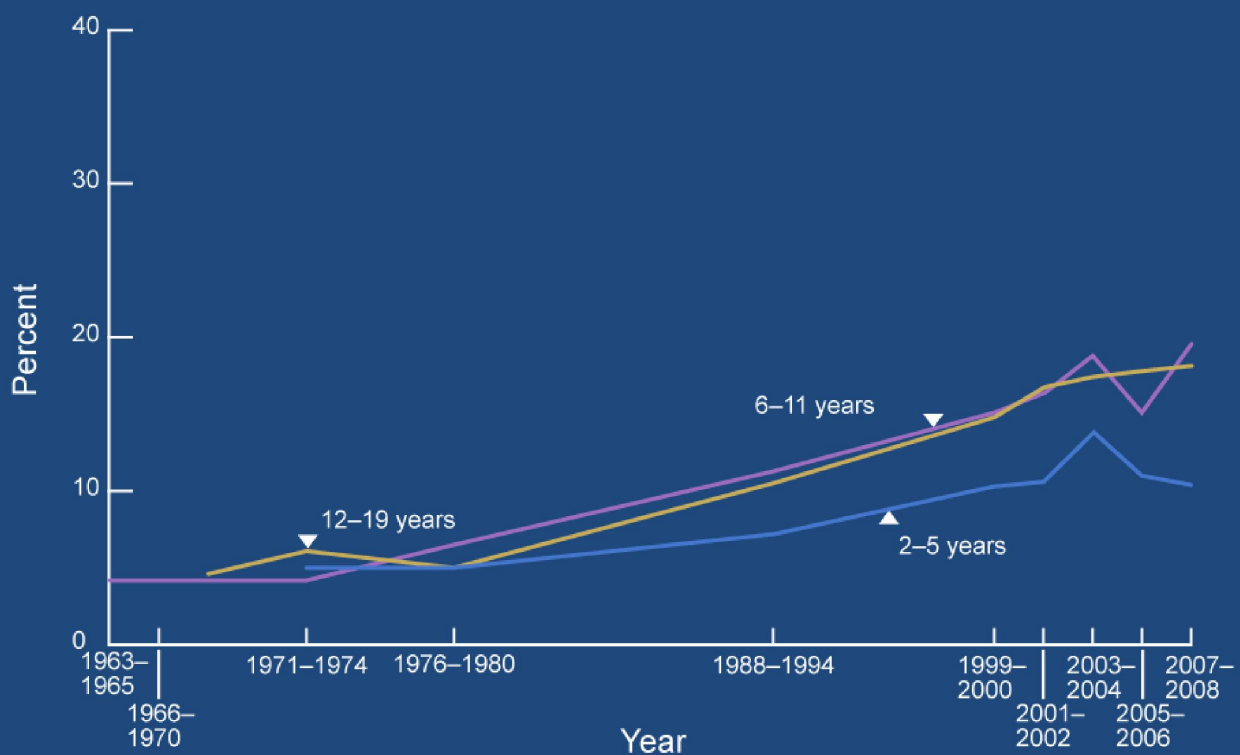


Brandon Fornwalt, MD/PhD  
Assistant Professor  
Dept Pediatrics,  
COM



David Randall, PhD  
Professor  
Dept Physiology  
COM

# Pediatric Obesity is Prevalent

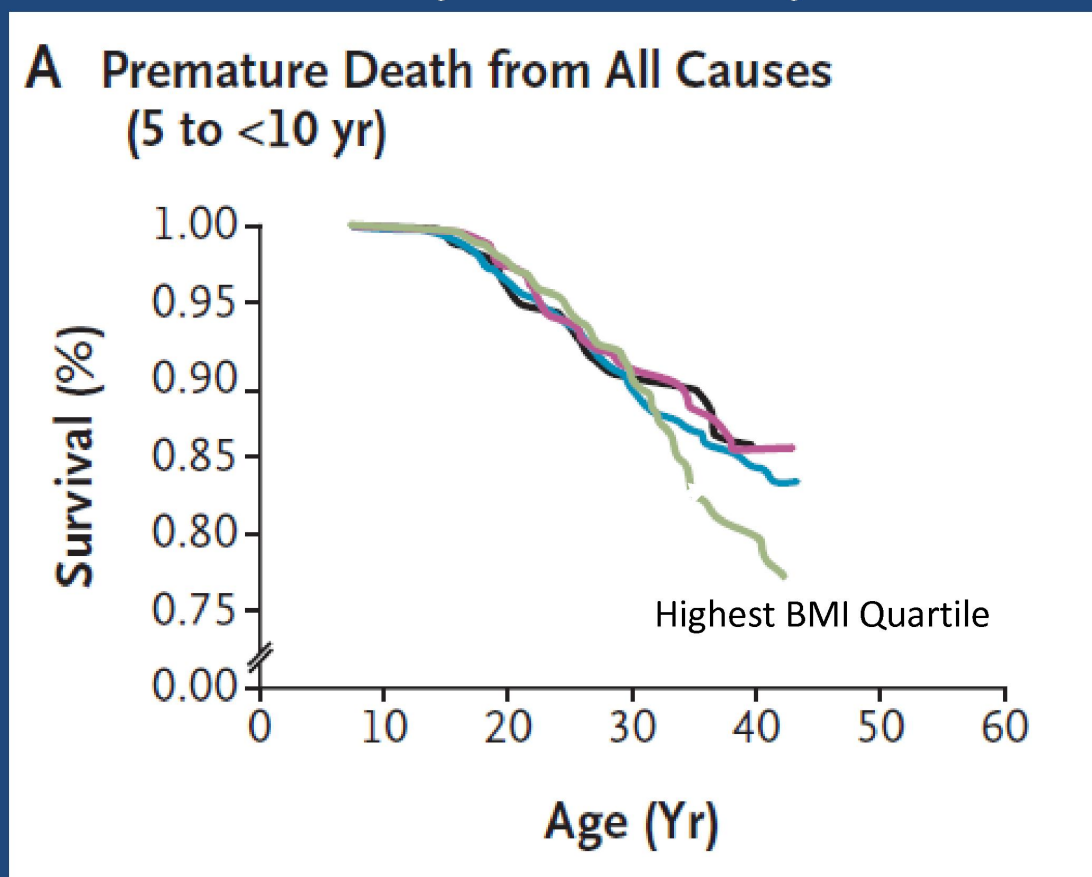


NOTE: Obesity is defined as body mass index (BMI) greater than or equal to sex- and age-specific 95th percentile from the 2000 CDC Growth Charts.

SOURCES: CDC/NCHS, National Health Examination Surveys II (ages 6-11), III (ages 12-17), and National Health and Nutrition Examination Surveys (NHANES) I-III, and NHANES 1999-2000, 2001-2002, 2003-2004, 2005-2006, and 2007-2008.



# Pediatric Obesity is Associated with Early Mortality



Franks PW, et al. *NEJM*. 2010;**362**:485-93.

# MRI Techniques: Increased Subcutaneous and Visceral Adiposity in Obese Children in the Commonwealth

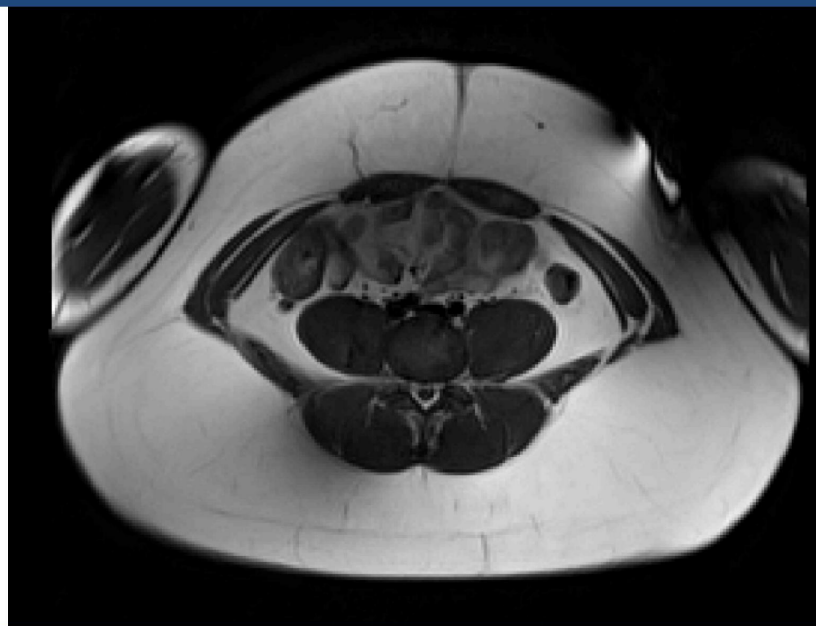
16 yr, Healthy



Subcutaneous Fat

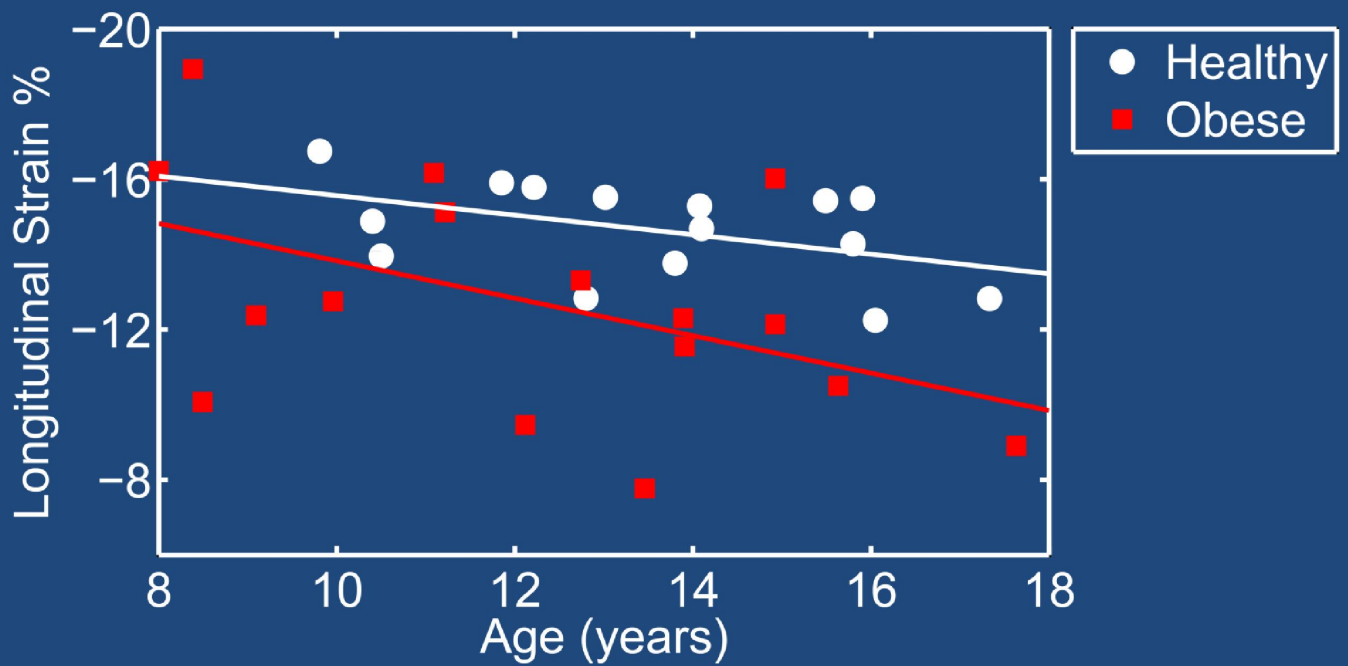
Visceral Fat

16 yr, Obese



Note: these are on the same scale

## Obese Children Have Impaired Cardiac Strain



Preliminary, unpublished data

# Challenge

## Impact on Health

### Disparities

- Prevention/life style changes
- Clinical practice evolution
- Therapeutics

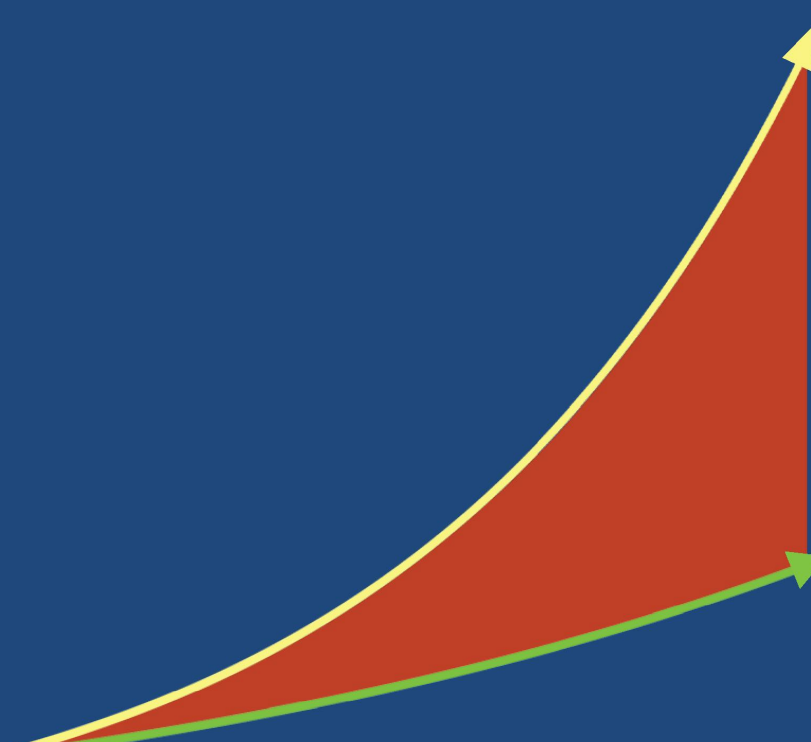
### Opportunity

- Focused application of knowledge
- Translational, interdisciplinary “team” research

### Knowledge

- Potential to improve human health

Time





Phil Kern Endocrine



Lisa Tannock Endocrine



Terrie Lennie Nursing



Kevin Pearce Family Medicine

Basic scientists: appetite control, obesity-induced diabetes, cardiovascular disease, liver dysfunction, dementia, cognition decline, behavioral aspects of obesity

Physician scientists bench to bedside

Population scientists: behavioral aspects of obesity



Ann Vail Agriculture



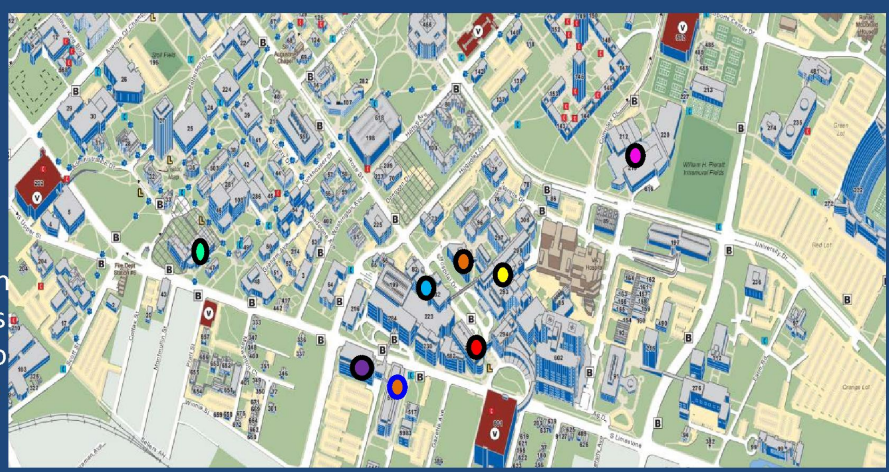
Alison Gustafon Agriculture



Nancy Schoenberg Behavioral Sci



Jim Zilliak Business/Economics

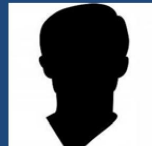


New Faculty Recruits

● = location



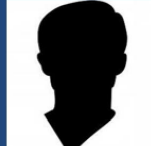
Epidemiologist



Health Economist



Biostatistician



Diabetes expert



Basic scientist



Anthropologist



Pediatrician



# University of Kentucky Research Enterprise

Status

Priorities

Investments



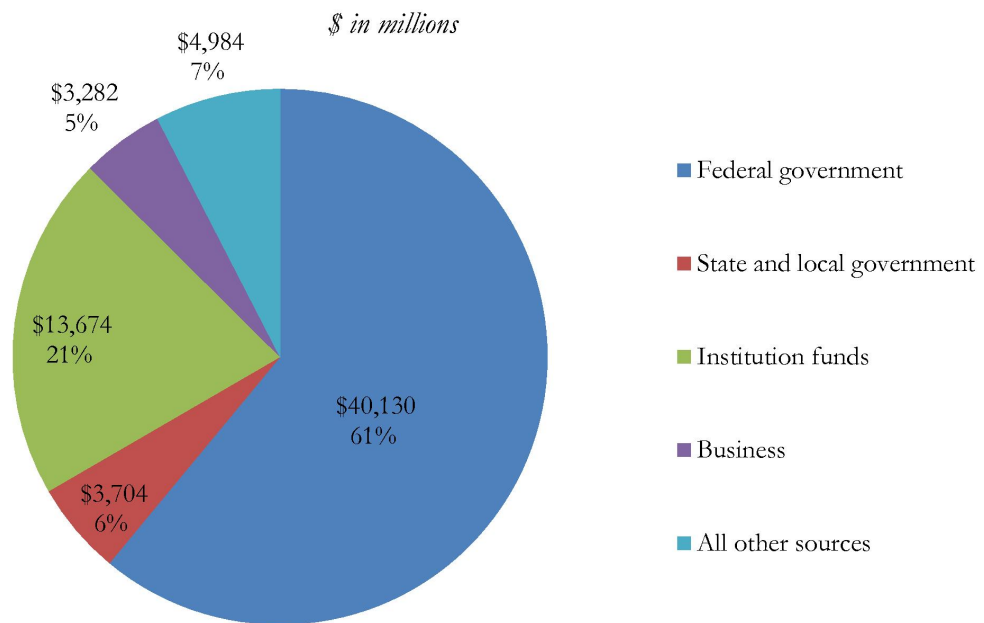
It's still not recovering

# FEDERAL RESEARCH ENVIRONMENT



Total higher education research expenditures were \$65.8 billion in FY12\*; more than 60% was funded by the federal government

**Higher Education  
Total Research & Development Expenditures, FY12\*  
By Source of Funds**  
100% = \$65.8 billion

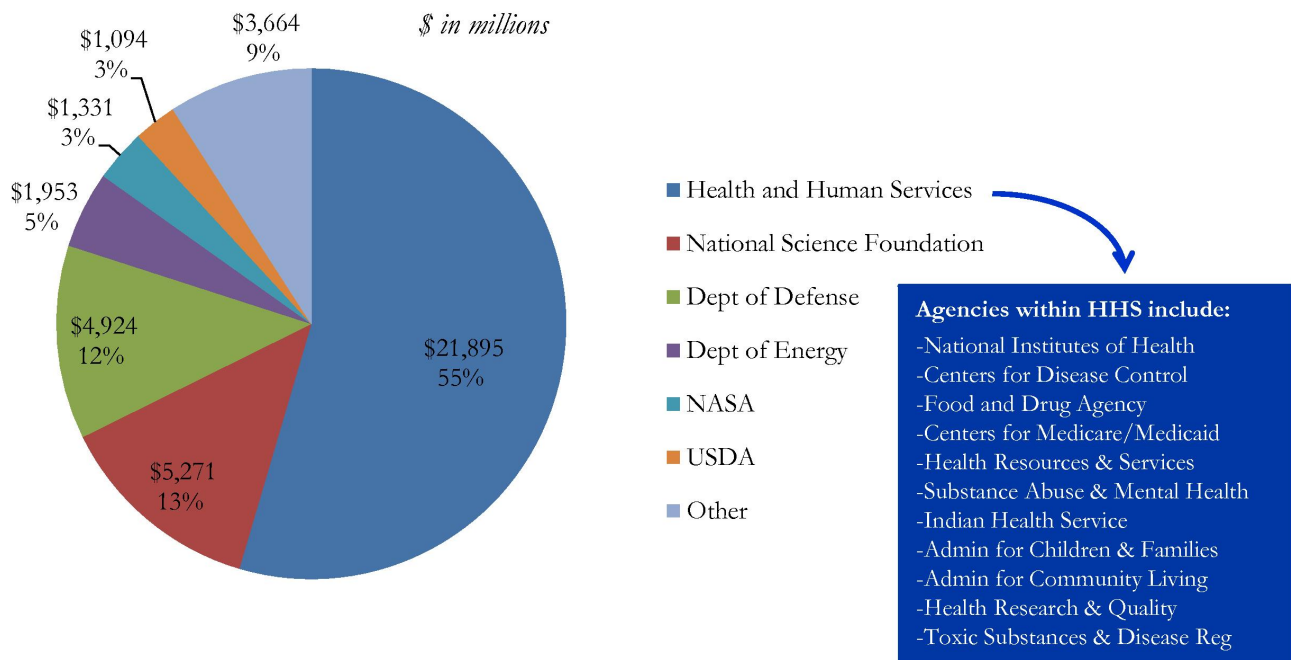


\* Latest year available

Source:  
2012 – NSF, National Center for Science & Engineering Statistics, Higher Education Research and Development Survey  
2012, Table 1

Just over half of the federal component is funded by Health and Human Services, of which NIH is the biggest contributor

**Higher Education  
Federal Research & Development Expenditures, FY12\***  
**By Federal Agency**  
100% = \$40.1 billion

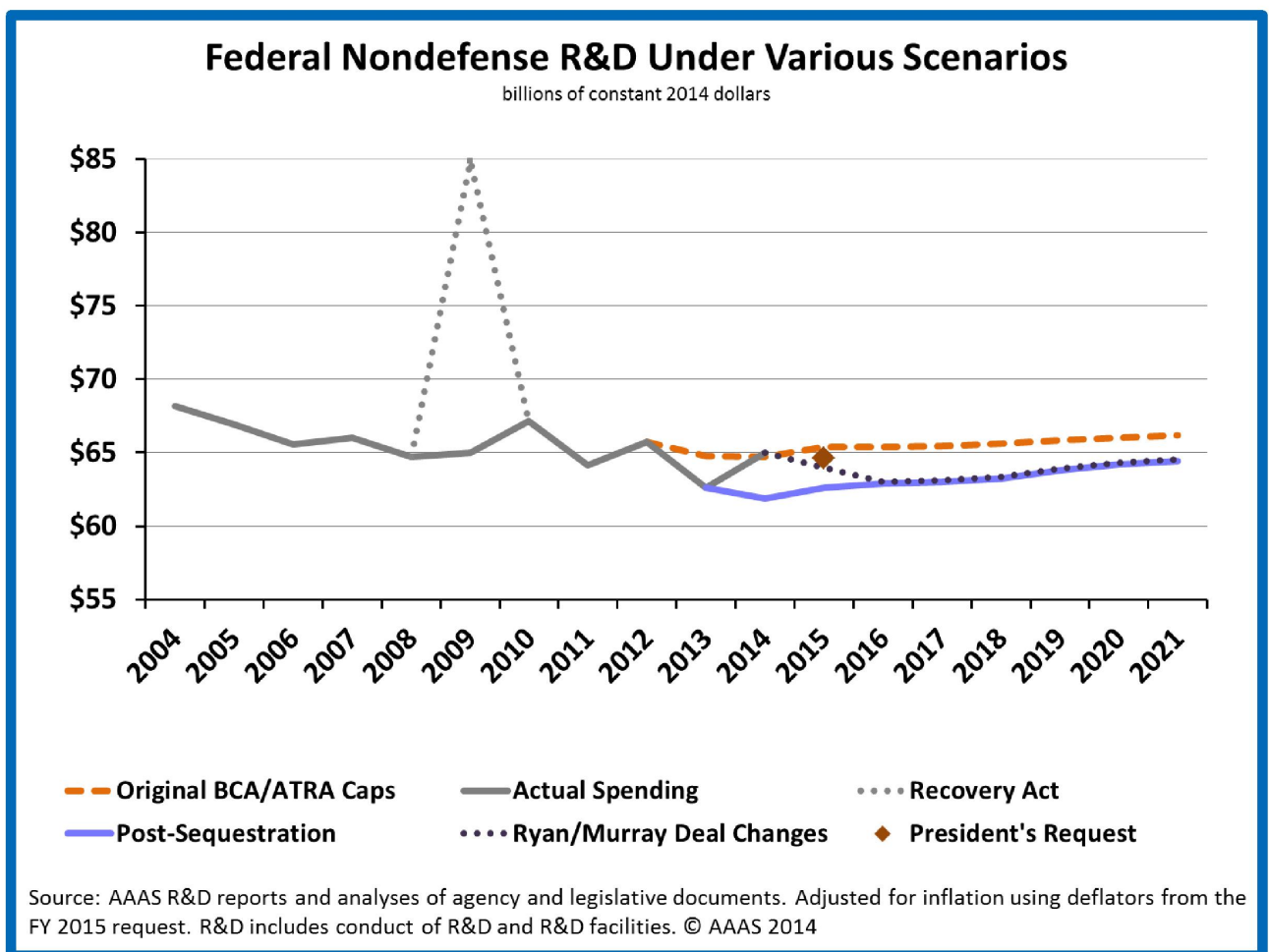


\* Latest year available

Source:  
2012 – NSF, National Center for Science & Engineering Statistics, Higher Education Research and Development Survey  
2012, Table 3



And the prospect is that funding will not exceed a flat line in even the best-case scenario





How we are positioned nationally

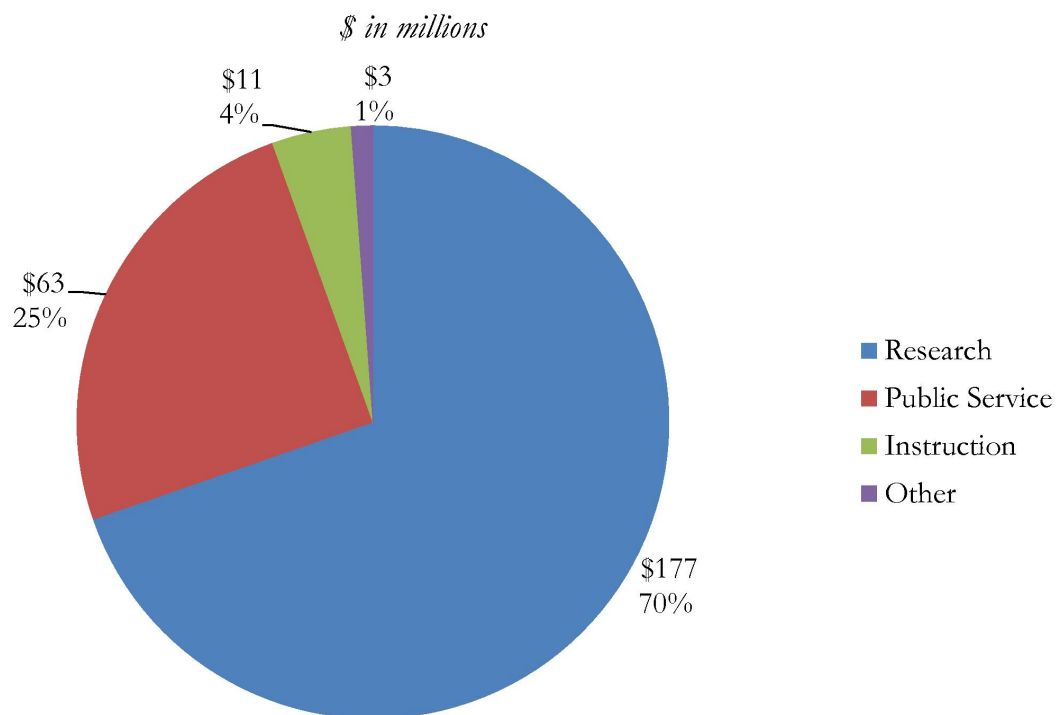
# UK'S CURRENT RESEARCH PORTFOLIO



At UK, of the total FY14 Sponsored Program expenditures of \$255 million, 70% (\$177 million) was classified as research

### Total Sponsored Program Expenditures, FY14

100% = \$255 million

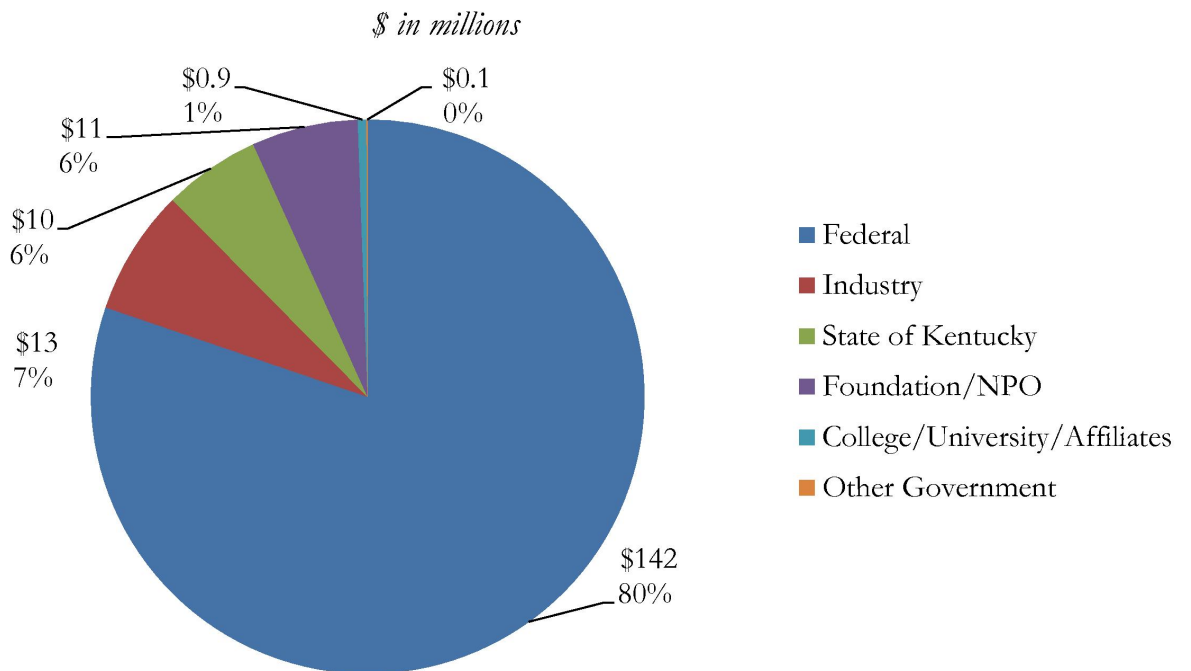


# UK's research is sponsored predominantly by federal agencies

## Total Sponsored Research Expenditures, FY14

By Sponsor Type

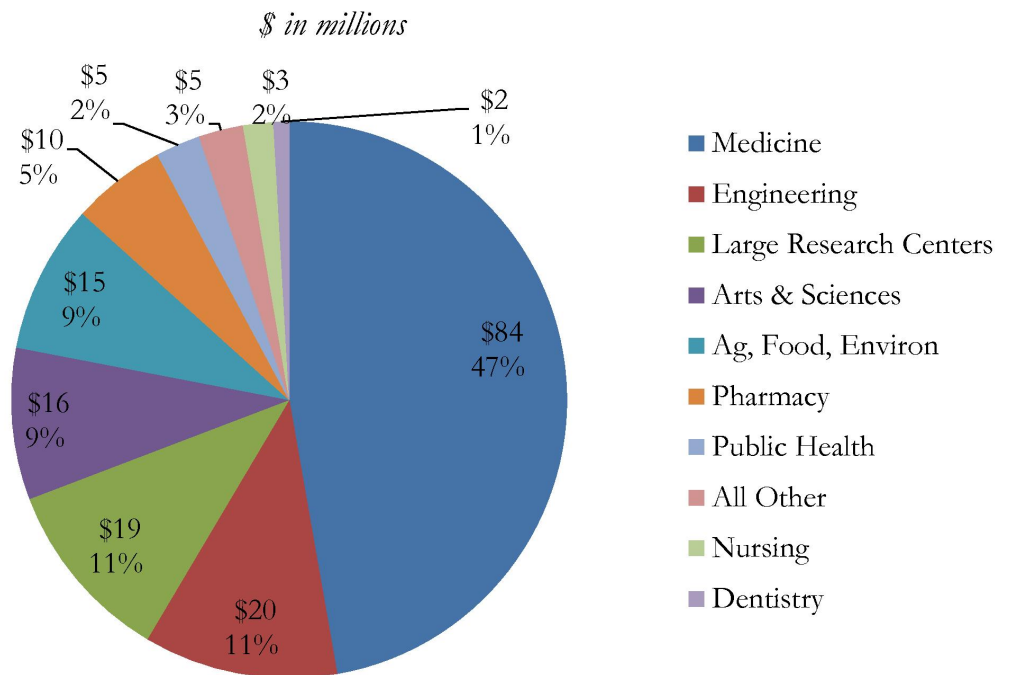
100% = \$177 million



The College of Medicine is the largest college in research followed by Engineering and large research centers

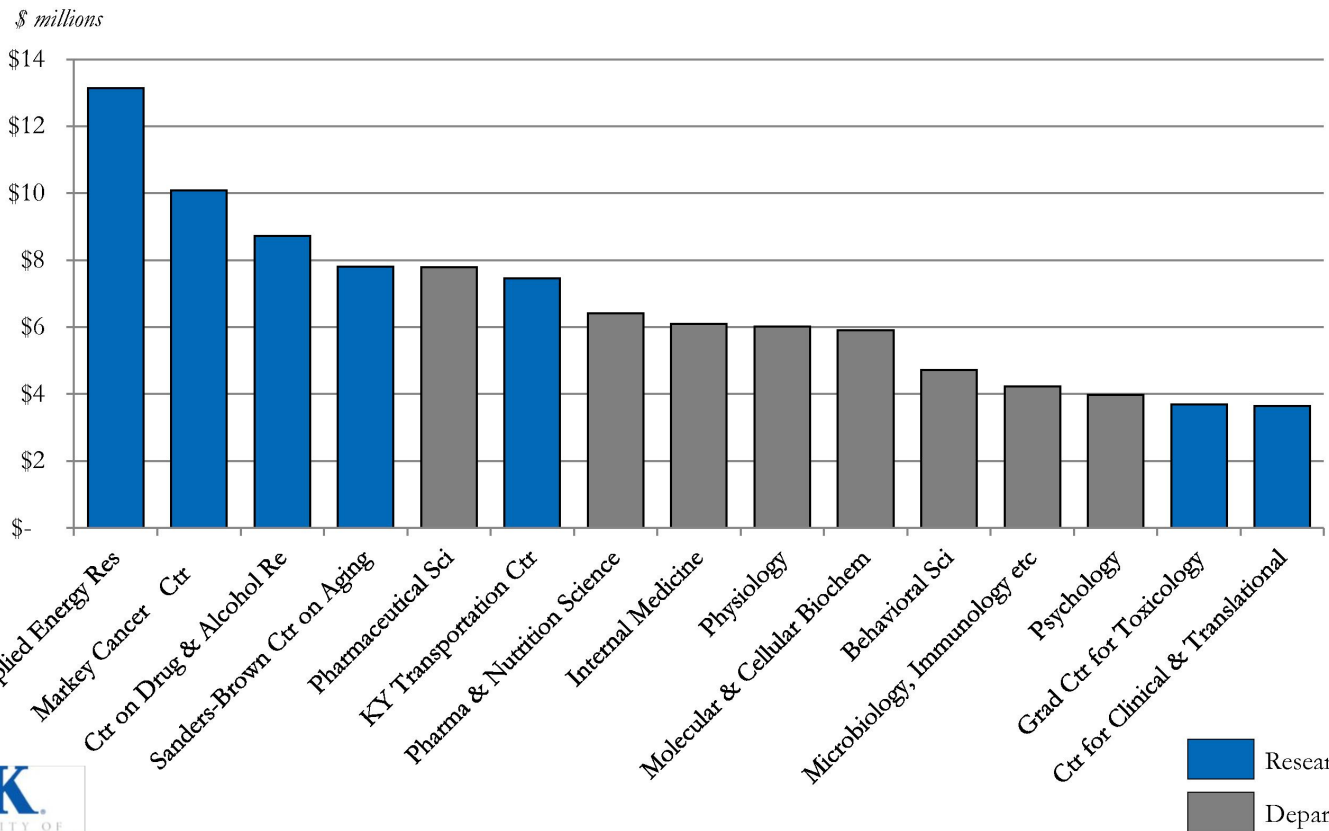
**Total Sponsored Research Expenditures, FY14  
By College**

100% = \$177 million



# The biggest of the top 15 departments/centers, by FY14 research expenditures, are multidisciplinary research centers

## Highest Volume Research Units, FY14



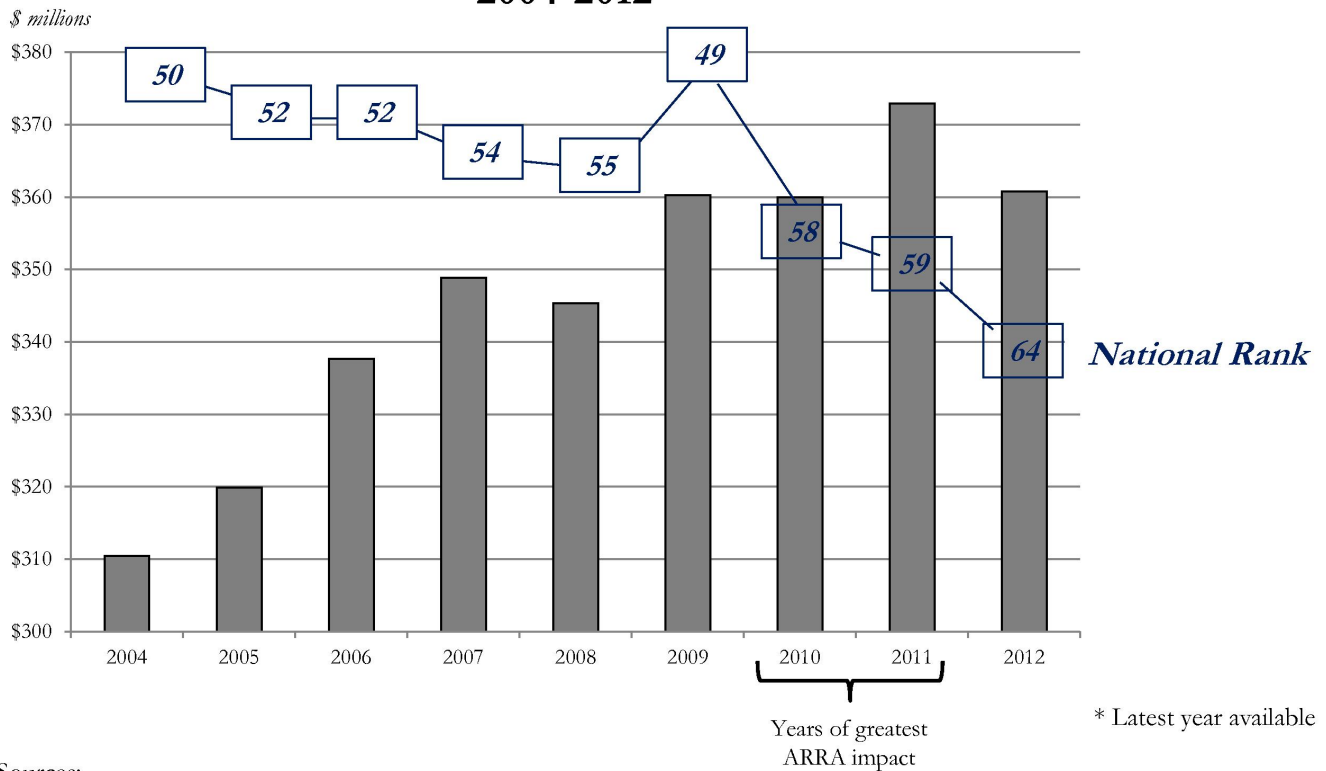


# HOW DO WE COMPARE WITH PEERS



# While UK's research volume has grown since 2004, its national ranking has declined

## UK Research & Development Expenditures and Rank 2004-2012\*



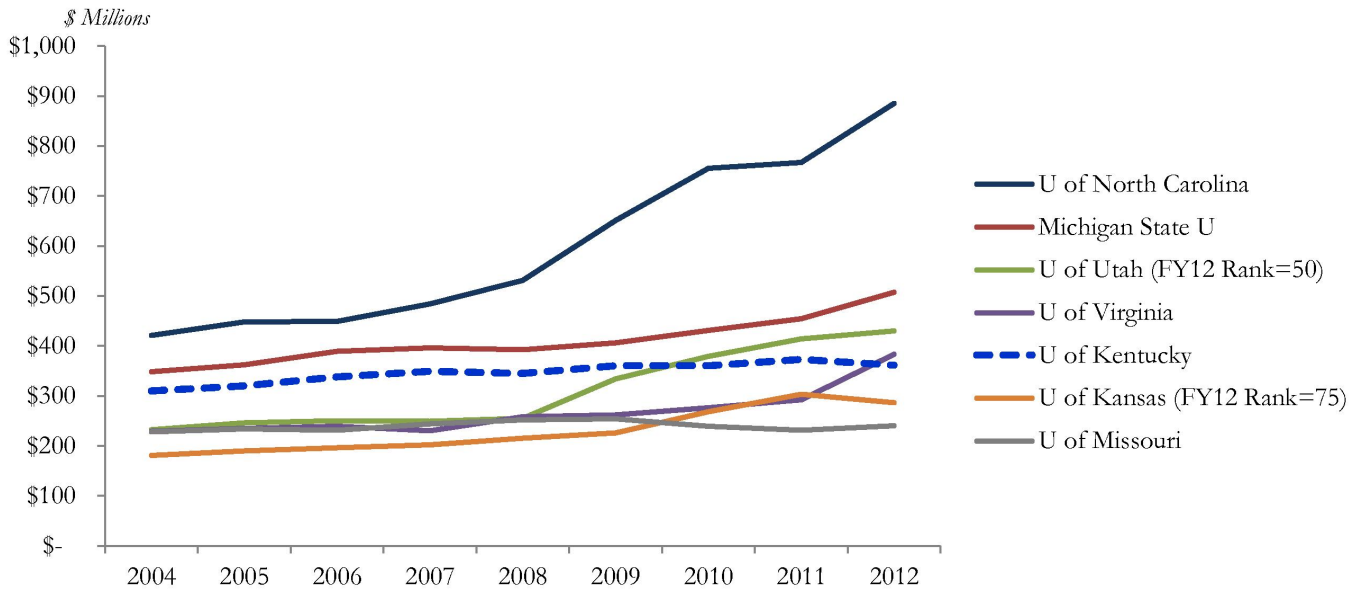
Sources:

2012 – NSF, National Center for Science & Engineering Statistics, Higher Education Research and Development Survey 2012  
 2004 to 2011 - NSF/National Center for Science and Engineering Statistics, Higher Education Research and Development Survey Table 13



At the same time, the R&D spend of many aspirational research university peers has increased substantially

### National R&D Expenditure for UK vs Benchmarks 2004-2012\*



\* Latest year available

Sources:

2012 – NSF, National Center for Science & Engineering Statistics, Higher Education Research and Development Survey 2012  
2004 to 2011 - NSF/National Center for Science and Engineering Statistics, Higher Education Research and Development Survey Table 13



In this competitive environment, UK's national rankings show it situated toward the bottom of a set of benchmark institutions

### Higher Education R&D Rankings – UK vs Benchmarks

Institution	FY04 Research \$ (millions)	FY04 Higher Ed R&D Rank	FY12 Research \$ (millions)	FY12 Higher Ed R&D Rank
University of North Carolina	\$417	30	\$885	11
Michigan State University	\$325	39	\$507	36
University of Utah	\$232	63	\$430	50
University of Virginia	\$229	67	\$383	59
<b>University of Kentucky</b>	<b>\$298</b>	<b>50</b>	<b>\$361</b>	<b>64</b>
University of Kansas	\$181	83	\$286	75
University of Missouri	\$218	69	\$240	88

Source: National Science Foundation, National Center for Science & Engineering Statistics, Higher Education Research & Development Survey, FY12, Table 4-Ranked by All R&D expenditures; NSF HERD ranks 2004 tab 27



**UK RESEARCH IMPERATIVE**





## UK must be the research university for Kentucky...

- Make thoughtful strategic decisions on our research investments
- Focus on solving Kentucky's biggest and most complex problems
- Invest in areas of strength that support this mission
- Continue to develop and enable the multidisciplinary teams it takes to tackle these problems

...Only UK has the strength and the breadth of programs to do this for our state



Rank	Name – School of Medicine	NIH Funding (in millions)
29	Northwestern U at Chicago	\$169
30	Case Western Reserve U	\$165
31	U of Chicago	\$160
32	Albert Einstein College of Medicine	\$156
33	U of Iowa	\$147
34	UT Southwestern Medical Center	\$146
35	U of Maryland Baltimore	\$141
36	U of Rochester	\$140
37	U of Utah	\$134
38	U of Illinois	\$131
39	U of Massachusetts Medical School Worcester	\$129
40	Ohio State U	\$128
41	U of California Irvine	\$126
42	U of Florida	\$123
43	Weill Medical College of Cornell U	\$112
44	U of Virginia	\$110
45	Indiana U-Purdue U at Indianapolis	\$106
46	U of Miami School of Medicine	\$104
47	Boston U Medical Campus	\$102
48	Medical College of Wisconsin	\$89
49	Wake Forest U Health Sciences	\$84
50	Cleveland Clinic Lerner Com-CWRU	\$82
51	Dartmouth College	\$82
52	U of Texas Health Science Center Houston	\$79
53	Medical U of South Carolina	\$78
54	Virginia Commonwealth U	\$77
55	U of Texas Medical BR Galveston	\$76
56	U of Kentucky	\$76

# UK HealthCare impact on research

## NIH FUNDING

\$76.4M Current amount

+ 9.6M Recent grant awards

---

~ \$86.0M Total

**Possible new rank = 49**



## Positive Indicators

- ✓ National Science Foundation EPSCoR Award: \$24M
  - Investing \$15.5M in UK's research infrastructure
  
- ✓ Mark Williams – PCORI grant Effectiveness in Transitional Care
  - A \$15M contract over three years with \$6M coming to UK
  
- ✓ Wayne Sanderson – NIOSH grant Central Appalachian Region Educational Research Center
  - \$990K awarded

## KENTUCKY TRIFECTA CME EVENT

SATURDAY, OCTOBER 25 at 8:00 A.M.  
Biopharm Complex, Room 124  
789 South Limestone Street, Lexington

The College of Medicine has a "trifecta" of national federal funding. We are one of 22 medical centers in the United States that:

- earned Clinical and Translational Science Award
  - received NCI designation for our Cancer Center, and
  - have a federally funded Alzheimer's Disease Center
- Experts will discuss the importance of this "trifecta."

### FACULTY PRESENTERS



**B. Mark Evers, MD**

"Markey Cancer Center NCI Designation One Year Evaluation: Impact on the institution, region, and state; and future plans"

*Director, Markey Cancer Center  
Professor and Vice Chair for Research, Department of Surgery  
University of Kentucky  
College of Medicine  
Lexington, Kentucky*



**Linda Van Eldik, PhD**

"What's New in Alzheimer's Disease: Clinical Trials at the Sanders-Brown Center on Aging"

*Director, Sanders-Brown Center on Aging and Alzheimer's Disease Center  
Professor, Department Anatomy and Neurobiology  
University of Kentucky  
College of Medicine  
Lexington, KY*



**Philip Kern, MD**

"The UK Center for Clinical and Translational Sciences – part of the UK Triple Crown"

*Associate Provost for Clinical and Translational Sciences  
Director, Barnstable Brown Diabetes and Obesity Center  
Director, Center for Clinical and Translational Sciences  
University of Kentucky  
College of Medicine  
Lexington, KY*

To register, please follow this link: <https://mednet.mc.uky.edu/alumniweekend/register.aspx> or contact Kristin Shattuck at [kristin.shattuck@uky.edu](mailto:kristin.shattuck@uky.edu); 859-323-5834.

PRESENTED BY:

**UKHealthCare.**

**UK**  
UNIVERSITY OF  
KENTUCKY  
College of Medicine

*A continental breakfast will be served*

ACCREDITATION The University of Kentucky College of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. The University of Kentucky College of Medicine designates this live activity for a maximum of 1.5 AMA PRA Category 1 Credit(s)™. Physicians should only claim credit commensurate with the extent of their participation in the activity. The University of Kentucky College of Medicine presents this activity for educational purposes only. Participants are expected to utilize their own expertise and judgment while engaged in the practice of medicine. The content of the presentations is provided solely by presenters who have been selected for presentations because of recognized expertise in their field.



How do we do this?

**WE NEED TO FOCUS INVESTMENTS-  
PEOPLE, FACILITIES AND INFRASTRUCTURE**



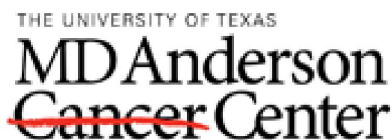
## Other institutions are making sharp, competitive moves. Some examples:



The University of Southern California recruited Drs. Arthur Toga and Paul Thompson plus their 100+ person scientific team running the Lab of Neuro Imaging at UCLA (\$12M annual budget). U/Penn was rumored to be courting them as well.



For its Knight Cancer Institute, Oregon Health & Science University recruited Dr. Charles Blanke from The University of British Columbia (\$40M in funding). OHSU is in securing \$500M in donations to match \$500M put up by Phil Knight of Nike.



MD Anderson recruited Dr. Ronald DePinho from Dana Farber Cancer Institute as President of MD Anderson's Cancer Center. A 55-person team, and their funding, followed him to Houston.

Making Cancer History<sup>®</sup>



CHLA recruited Dr. Bradley Peterson from Columbia University Dana Farber Cancer Institute as inaugural director of the Institute for the Developing Mind. He brought 18-20 researchers and their funding.



## Additional examples include:



The University of Florida has created a plan to rise to national “preeminence” by recruiting top talent for its research strategy. It is backed by state funding and almost \$1B in private fundraising.



Since its inception, the University of Utah’s USTAR has attracted 50 leading researchers from MIT, Harvard University, UCLA, Case Western, University of Arizona, Oak Ridge National Laboratory, and other top research institutions



Northeastern University is planning to build a state-of-the-art, 220,000 square foot, Science and Engineering research building scheduled to open in 2016. This facility will provide space for Northeastern’s ongoing faculty hiring initiative.



## And UK itself has engaged in such competitive moves



- Recruited Dr. Mark Evers from the University of Texas Medical Branch along with many colleagues from his laboratory
- Dr. Evers leads the Markey Cancer Center, which under his leadership has become the only NCI-designated Cancer Center in Kentucky

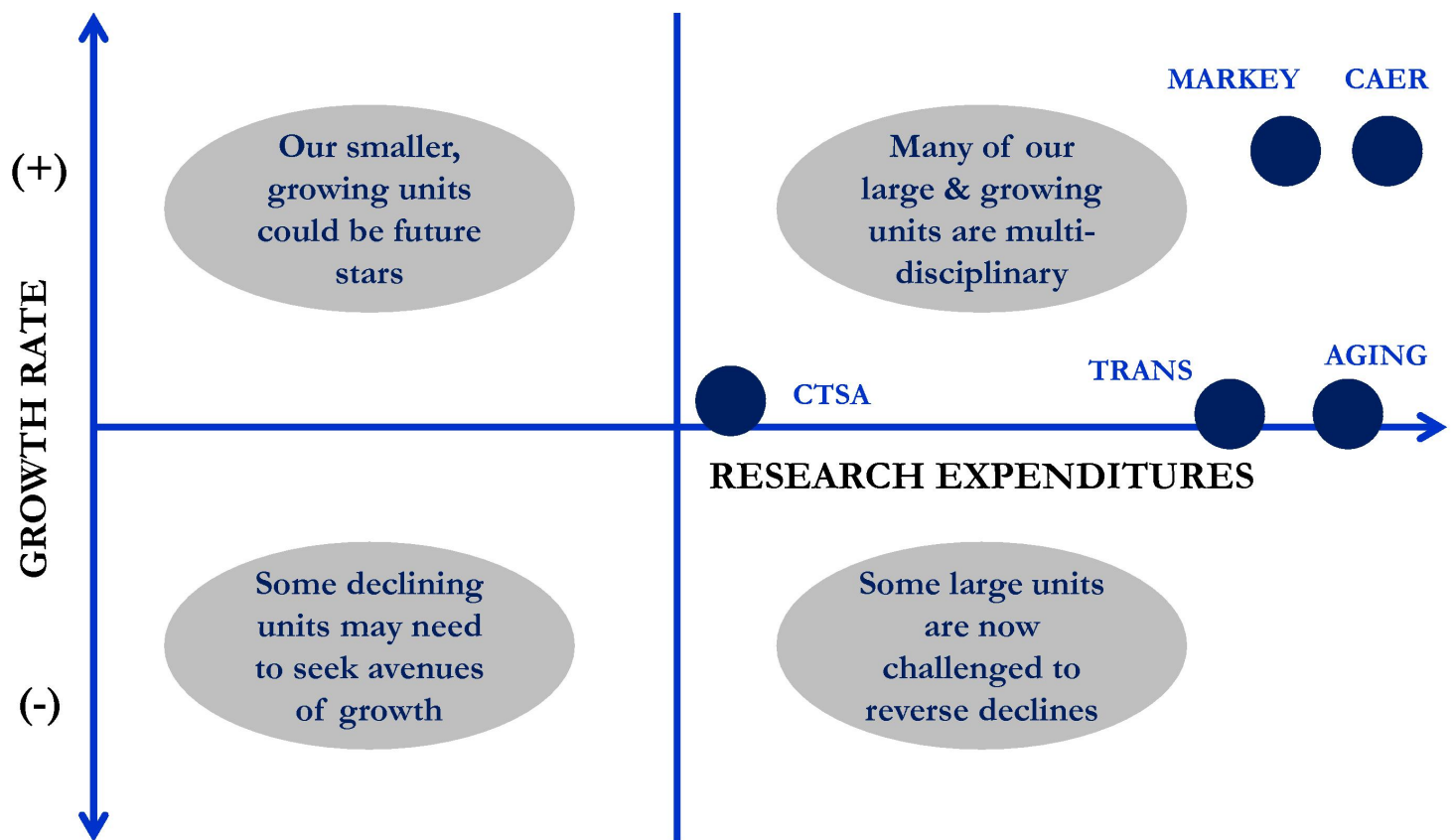
Fulfilling our land grant mission by solving Kentucky's most complex and intractable problems is what excites and motivates our best researchers

## These investments pay across campus...



- Recruited Dr. Kunlei Liu from the Babcock & Wilcox Company along with with a \$1.5 million investment from EON-US (now LGE/KU) to start carbon capture program for coal fired power plants.
- Dr. Liu founded industrial consortium (CMRG) in 2008, receiving \$1.8 million annually in support.
- Dr. Liu has built a group of 39 researchers, including 6 coop students, and \$28 million in active grants.

## Centers, organized around multidisciplinary teams, are large and growing



**College of Medicine data reveal the power of multidisciplinary teams in generating high levels of research funding per square foot**

COM Department/Center/Team	Res \$/Ft <sup>2</sup>
Center on Aging	363
Toxicology	318
Nutritional Sciences	241
Anatomy & Neurobiology	227
Physiology	211
Markey Cancer Center	166
Microbiology & Immunology	138
Internal medicine	102

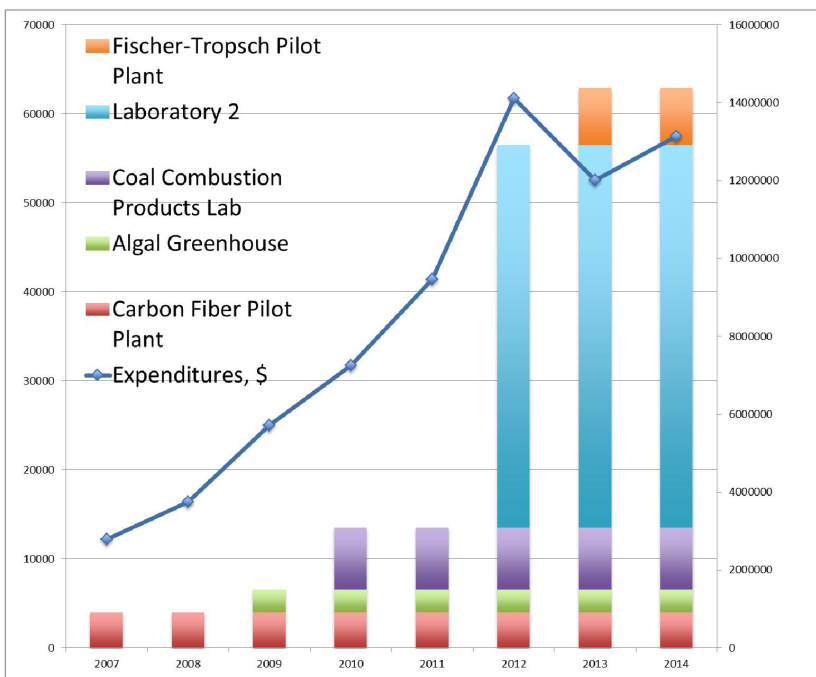
 Multidisciplinary Centers/Teams

**The Markey Cancer Center underscores the strategic point. This rapidly growing center holds some space in reserve to accommodate expected increases in research activity.**

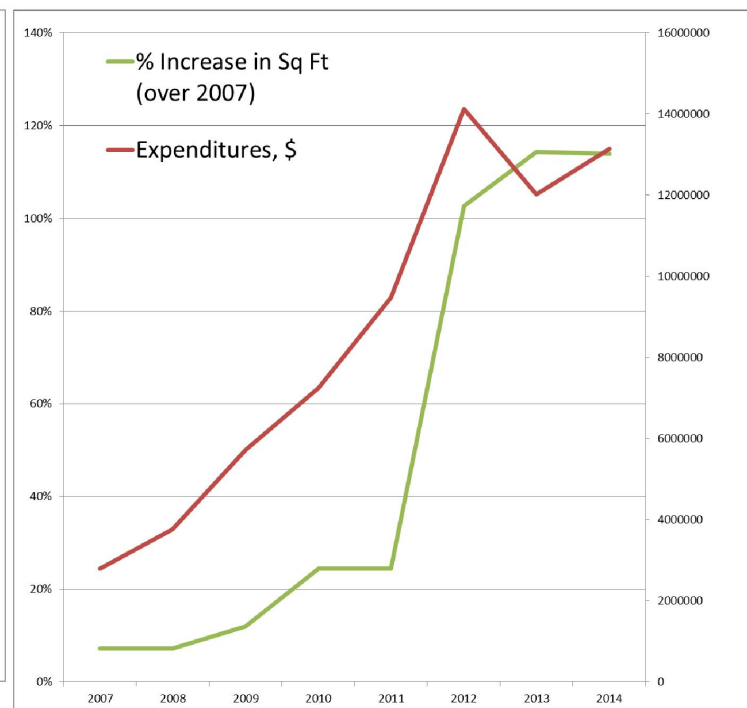


The CAER, which is on a steep growth curve, also demonstrates the strong correlation between space and research volume

Space Increments vs Research Expenditures



% Increase in Space vs Research Expenditures



# Quality of Space Matters



Current College of Medicine space = 253,654 sq. ft.

- 41% of space was built between 1931 and 1979
- 26% was built between 1980 and 2002
- 33% was built between 2003 and 2009

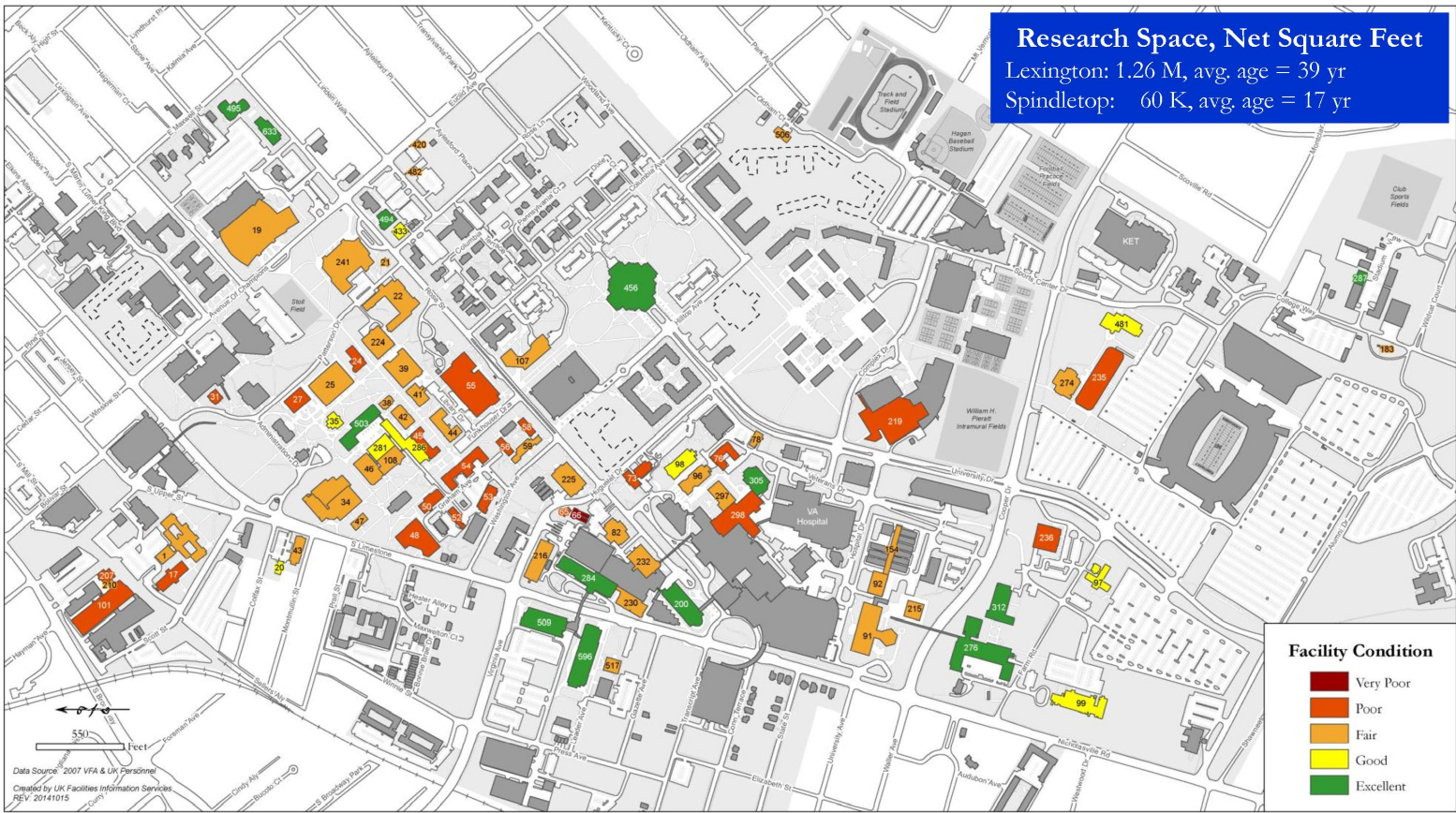


# Research Buildings Facility Condition

- University of Kentucky Lexington Campus -

## Research Space, Net Square Feet

Lexington: 1.26 M, avg. age = 39 yr  
Spindletop: 60 K, avg. age = 17 yr



Data Source: 2007 VFA & UK Personnel  
Created by UK Facilities Information Services  
REV: 20141015

- What clearly-defined focus areas for UK research will enable us to address the needs of the Commonwealth, build on our strengths, and achieve distinctiveness relative to our peers?
- What resource commitments will be needed to grow our capabilities and relative position in our designated focus areas?
- What implementation approaches are necessary to ensure the enduring progress of our research enterprise?

Successfully bring all of these components together

## **CENTER OF BIOMEDICAL RESEARCH EXCELLENCE ON OBESITY AND CARDIOVASCULAR DISEASES**



**Transformation:**  
a thorough or dramatic change  
in form or appearance.



see blue.

1

**40**  
**months**



see blue.

2

**84**  
**projects**



see blue. 3

**4.4**  
**million sq. ft.**



see blue. 4





A blue rectangular slide with the text "\$1.36 billion" in large white font. At the bottom left is a small blue icon of a person at a computer. At the bottom right is the text "see blue." in white, followed by a small number "5".

**\$1.36**  
**billion**

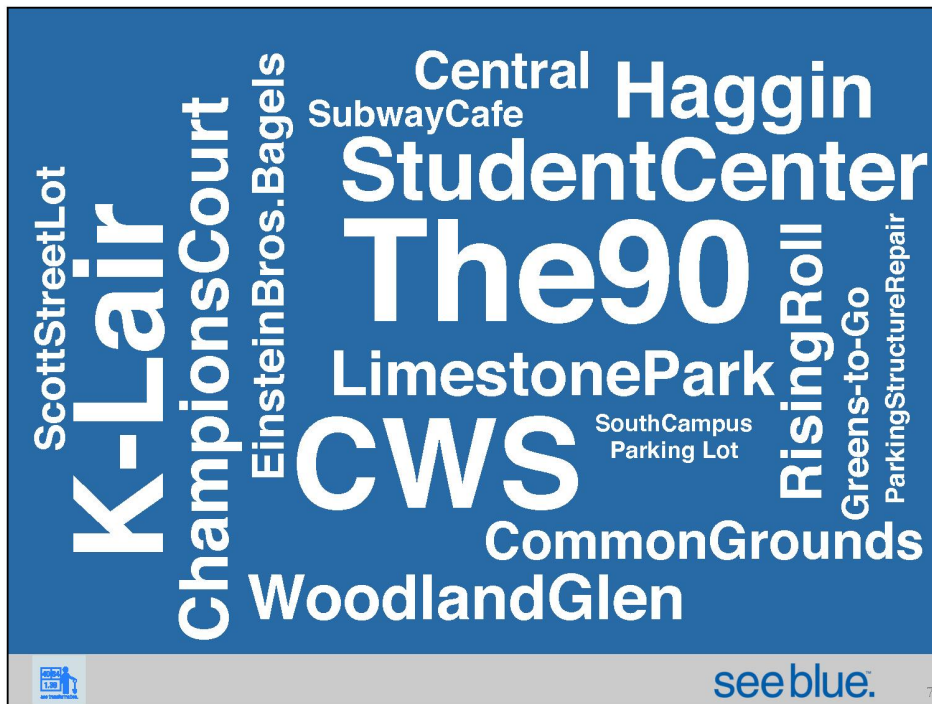
 see blue. 5

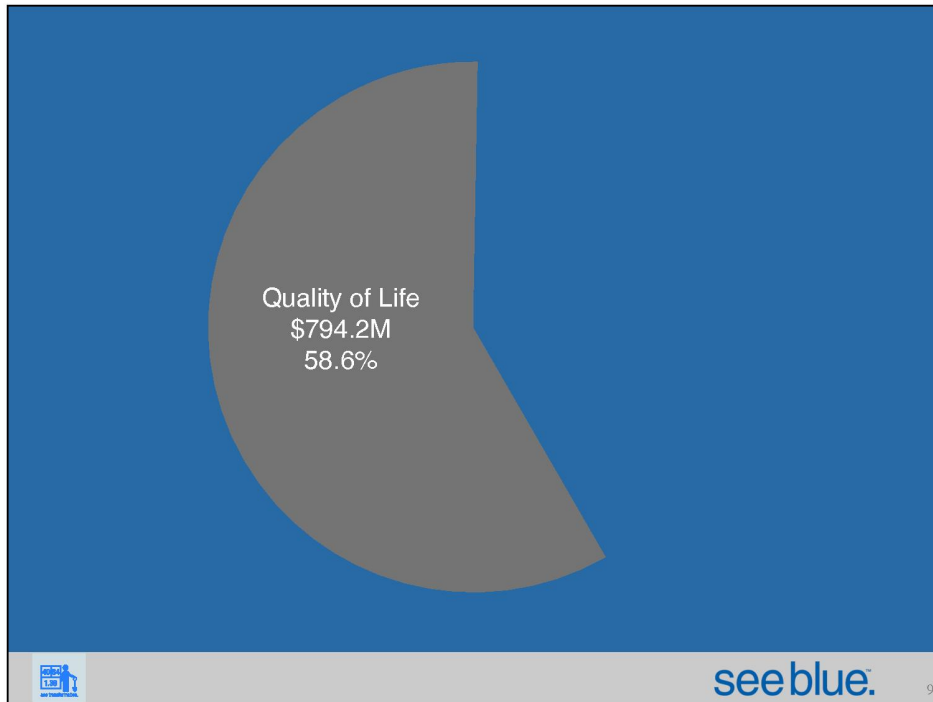


A blue rectangular slide with the text "Quality of Life" in white font, enclosed in a white oval. At the bottom left is a small blue icon of a person at a computer. At the bottom right is the text "see blue." in white, followed by a small number "6".

**Quality  
of Life**

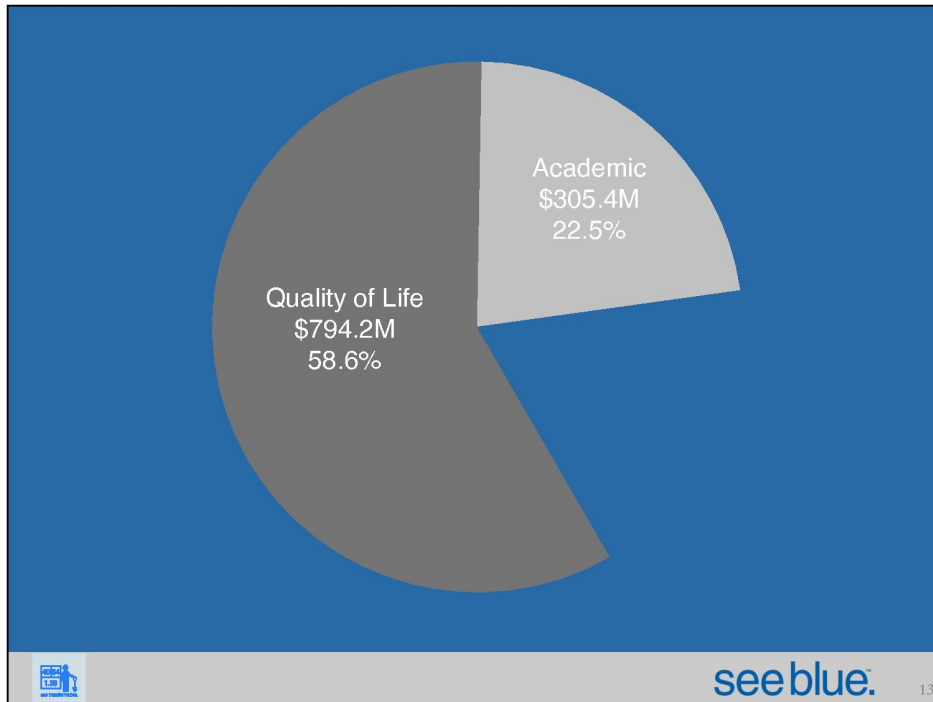
 see blue. 6





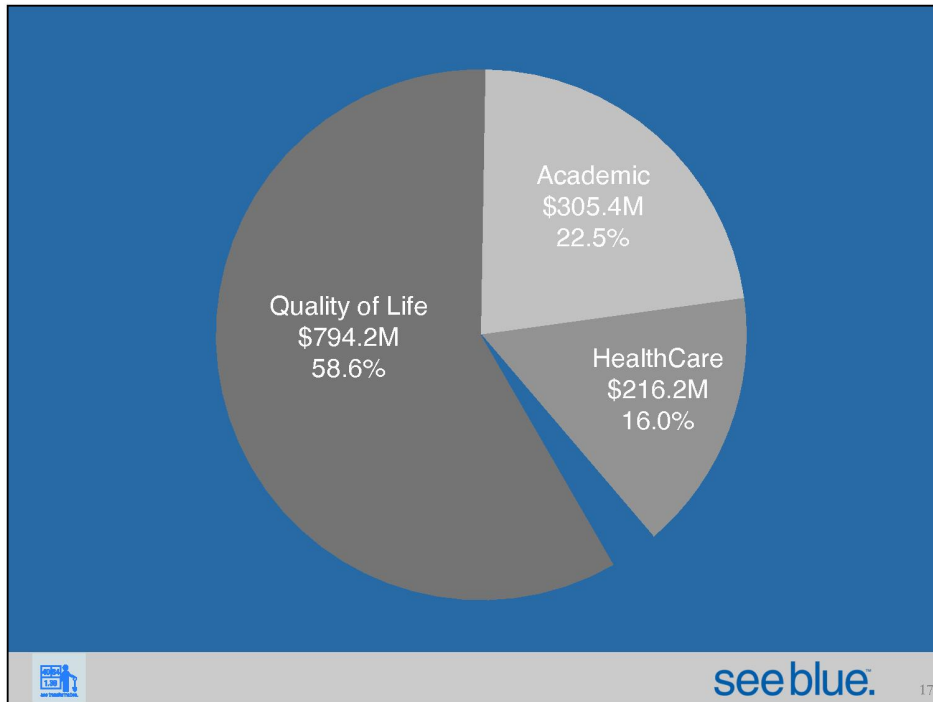
The word 'Academic' is written in a large, white, sans-serif font inside a white oval shape. The background is blue. At the bottom left is a small icon of a person at a computer. At the bottom right is the text 'see blue.' followed by a small number '10'.



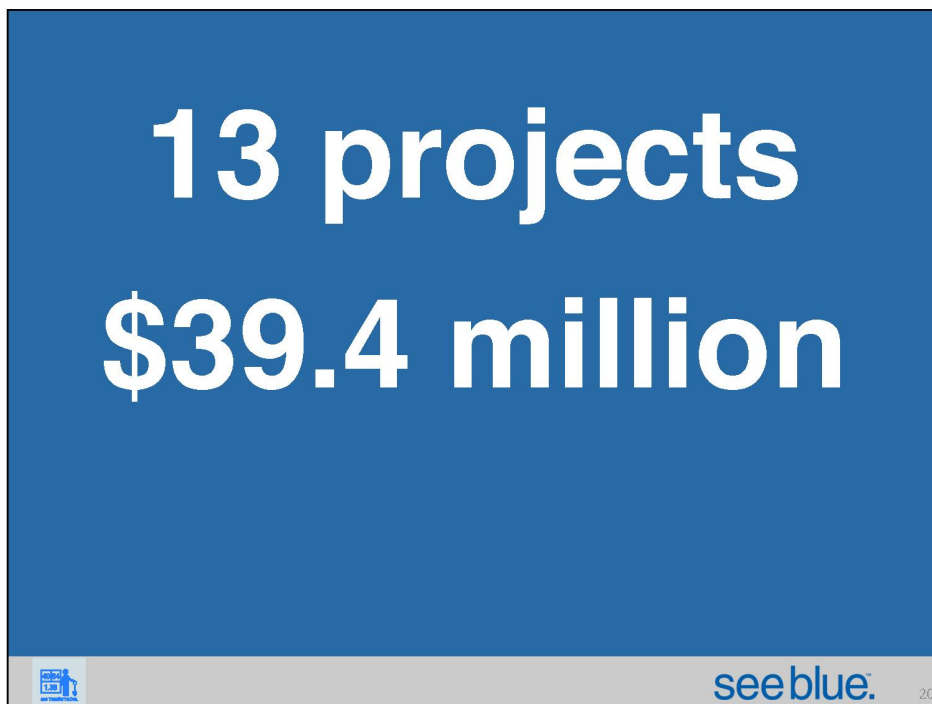
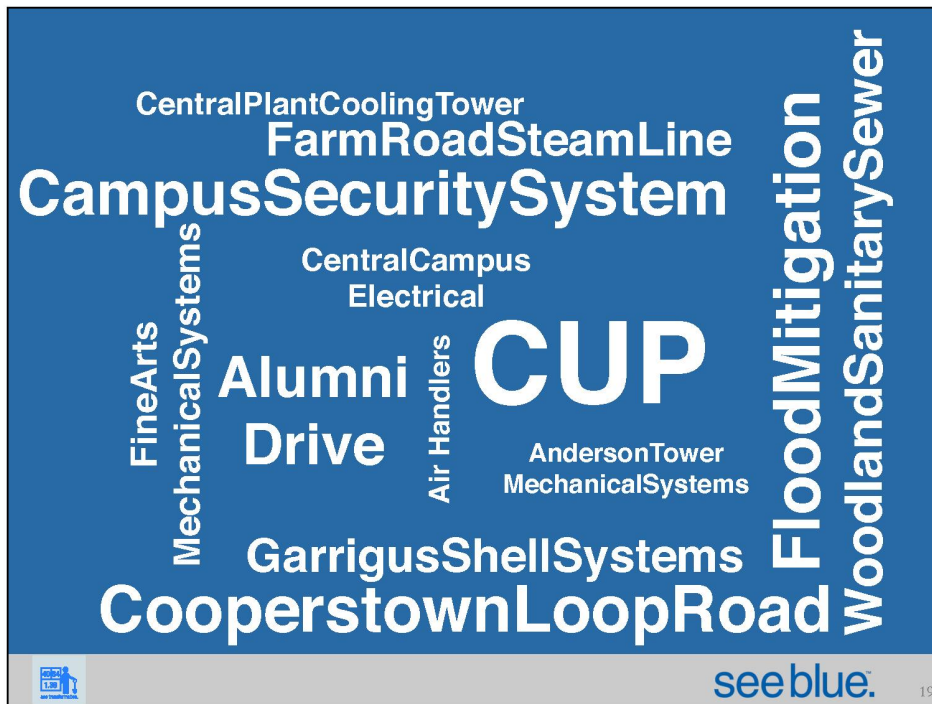


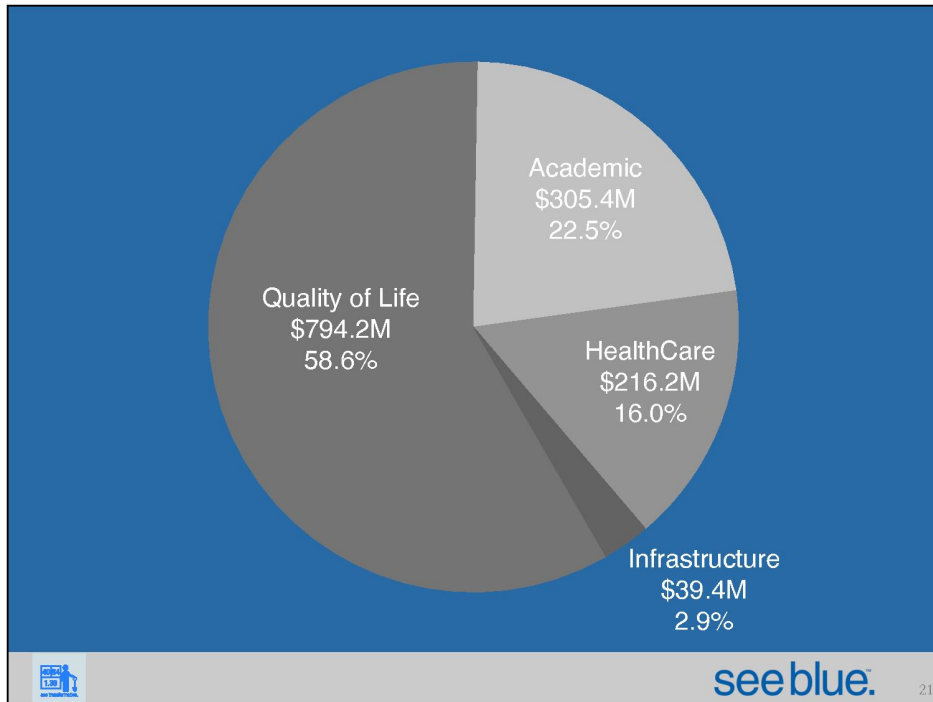






The word "Infrastructure" is displayed in a large, white, sans-serif font, centered within a white oval. The background is a solid blue color. The footer of the slide features the 'see blue.' logo and the number 18.





**Capacity:**  
The ability or power to do.

The text is displayed in white on a blue background. The footer includes the 'see blue.' logo and the number 22.

44%



Debt

 see blue. 23

44% + 32%



Partners

 see blue. 24



44%+32%+11%+9%+4%



see blue.

27



see blue.

28



# Impact on Debt



29

—	<b>\$732M</b>	<i>Outstanding debt as of June 30, 2011</i>
+	<b>\$204M</b>	<i>Debt retired July 2011 to June 2014</i>
—	<b>\$604M</b>	<i>New debt issued or anticipated since July 2011</i>
—	<b>\$160M</b>	<i>Debt to be paid in next 3 years</i>
<hr/>		
	<b>\$972M</b>	<i>Projected outstanding debt as of July 2017</i>



30

# see transformation.



see blue.

31

# see tomorrow.

- ✦ landscape plan
- ✦ infrastructure plan
- ✦ deferred maintenance plan
- ✦ preservation



see blue.

32

**see blue.  
see transformation.  
see tomorrow.**



see blue.

33