



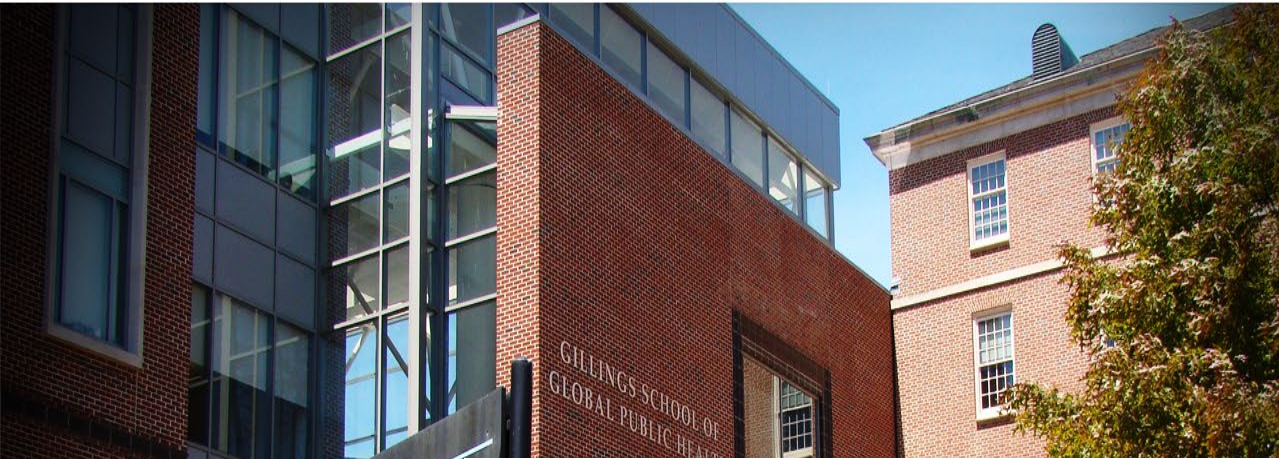
THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

Board of Trustees

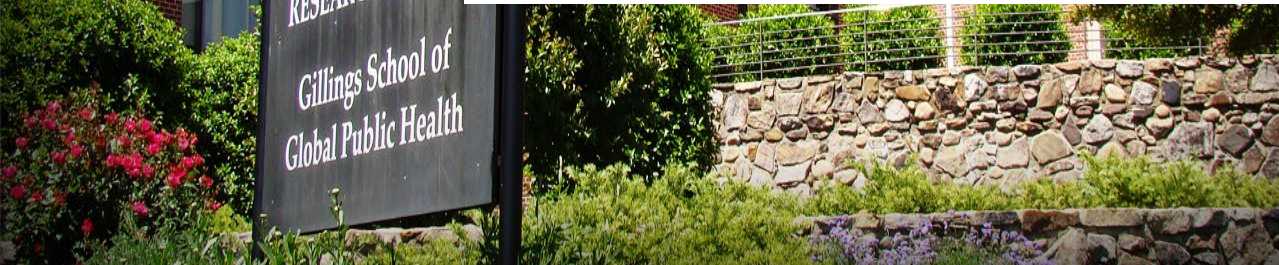


September 25, 2013

UNC Gillings School of Global Public Health



**Anticipating the future
Accelerating public health solutions**





UNC

GILLINGS SCHOOL OF
GLOBAL PUBLIC HEALTH

PAST
PRESENT
FUTURE



UNC

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GLOBAL PUBLIC HEALTH



Well to the World

Rankings

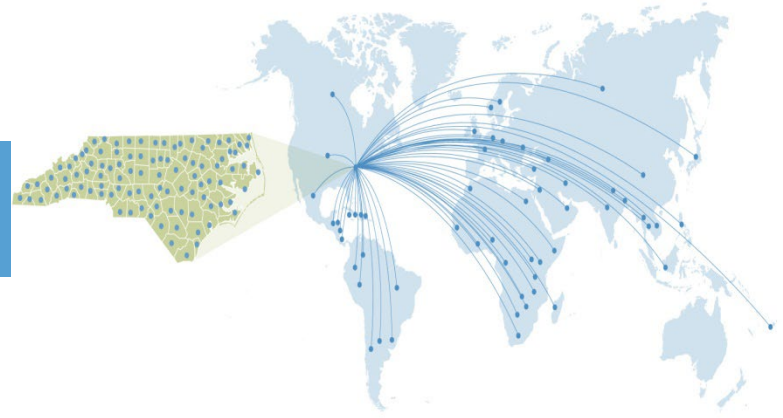
#1 *Public* school of public health
(2nd only to Johns Hopkins)

#1 Executive Masters in
Health Policy & Management

#1 Nutrition

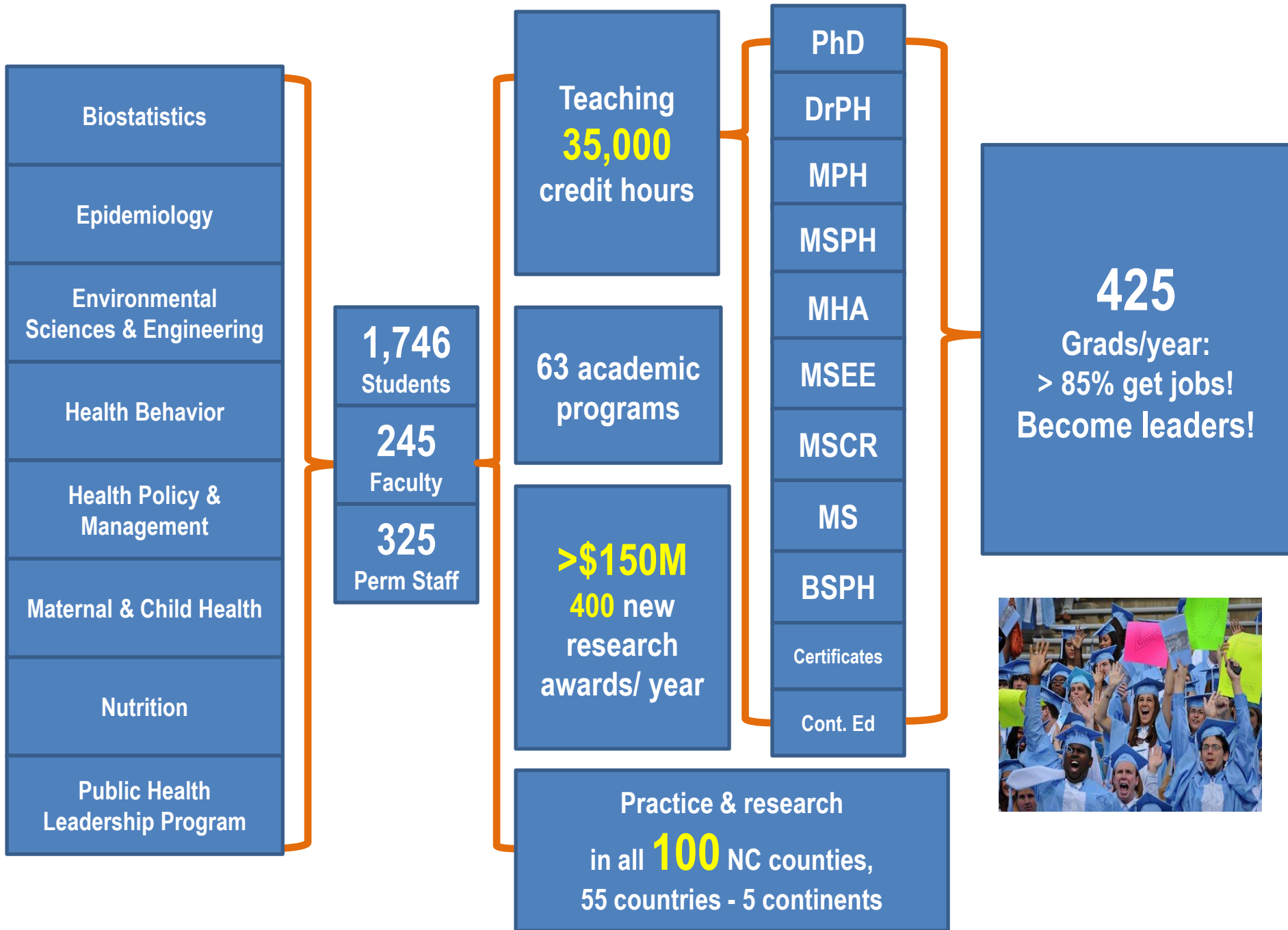


Mission



Across North Carolina and around the world...

- Improve public health
- Promote individual well-being
- Eliminate health disparities



Students

Welcome to the Top Public School of Public Health.

YOUR FUTURE STARTS HERE.

At Gillings, we prepare public health leaders and real-world problem-solvers. Our collaborative learning environment prepares our students to become effective, innovative researchers, policy-makers, educators and public health professionals who anticipate the future and accelerate solutions.



Student-Centered

Practical Idealists

Solving world's greatest public health problems: examples

- Lack of safe water
- SARS, MERS & other emerging infections
- Malaria
- Cancer, heart disease, diabetes & stroke
- Maternal & infant deaths
- Violence against women
- Global aging

Solving world's greatest public health problems

- Global non-communicable diseases
- Unintended injuries
- Man-made & natural disasters
- Lifestyle risks & diseases
- Relationship between climate change & health effects
- Pace of clinical trials
- Under- & over-nutrition
- Health care access, cost & quality

Teaching
Research
Practice
Dissemination
Policies
Programs
Products
Companies
North Carolina
Global







Water

- Lab to lagoons
- Communities to companies
- SPH to University & beyond
- Teaching, research & service
- Dissemination
- Local & global

A Defining Challenge of the 21st Century

“... water represents one of the great ... opportunities of our time ... **save millions of lives, feed the hungry, empower women, advance our national security interests, protect the environment ...**”

Hillary Clinton, Secretary of State

Director Jamie Bartram meets Secretary Clinton



**Water is
global.**

Clean Water

NO ACCESS

1 Billion people



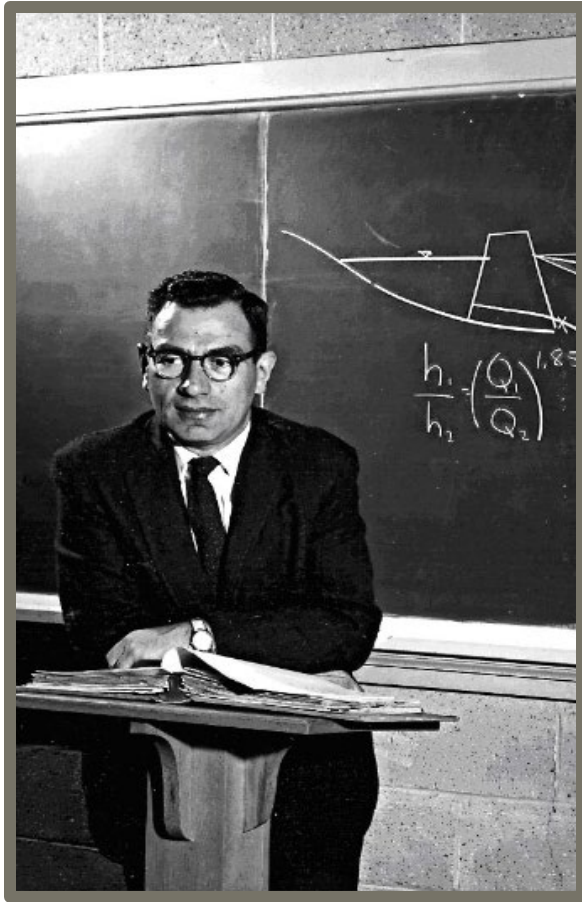
Too little, too far, too dirty

Water, Sanitation & Hygiene-Related Deaths

>3.4 million people
die each year

**Water is
local.**

Dan Okun, PhD, Kenan Dist. Prof.



“I had my class every year studying...The title of my class was **Additional Water Supply for Chapel Hill.**

... I provided them with a lot of data. Then they had to take the data and conclude [what] the best thing to do.”

1960s and 1970s



Yakety Yak



Daily Tar Heel



“They were considering Jordan Reservoir...

I went to the Board of Trustees. The Board of Trustees said, “Well, doesn’t Jordan Reservoir meet the standards?””



**Cane Creek Reservoir
completed in 1988**

**Thanks to Dan Okun,
his students and others
for the Chapel Hill
water supply.**

Thanks to North Carolina Digital History

Today...

MORE GREAT LEADERS



Safer water, less illness: from the lab to the world

- Eliminated $\sim 99.99\%$ of E. Coli
- Decreased prevalence of diarrhea by 50% in Mekong Region of Vietnam
- Created WaterSHED, non-profit business in Asia to distribute water filters





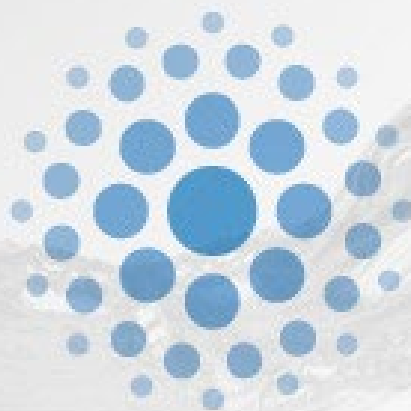
UNC
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GLOBAL PUBLIC HEALTH

THE WATER INSTITUTE



Jamie Bartram PhD,
Director





WATER IN OUR WORLD

Sanitation Creations



**Liz Morris, ESE alumna,
2nd runner-up, UNC Social
Business Conference**



The Dungaroo

KM Water Solutions



**Alice Wang, ESE,
1st place, 2013 Carolina
Challenge**



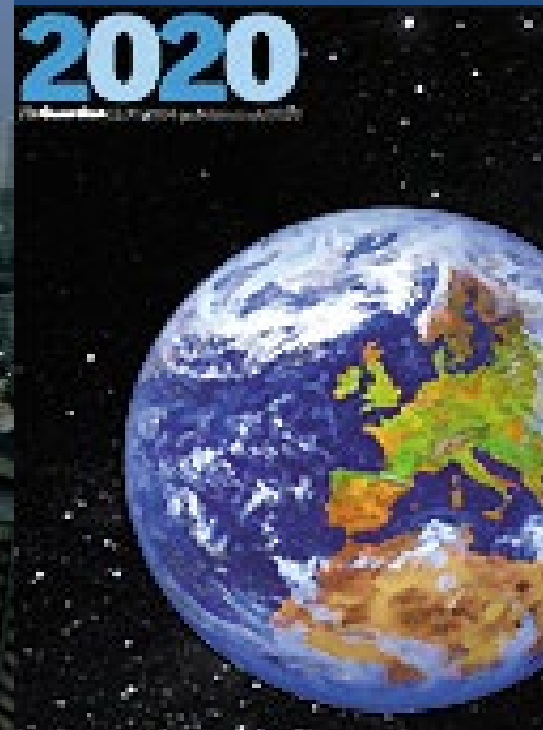
**Water testing
plastic bags**

**In 2010, we began a
strategic planning process.**

We called it SPH2020....

SPH2020

strategic planning process for SPH



MEGATRENDS

Gd	Um	Cs	P	Lr
Globalisation & deregulation	Urbanisation & migration	Climate change & sustainability	Population & lifespan growth	Localism & re-regulation



Implementing our vision

2011-12 Task Forces

- ☐ Teaching & Learning
 - ☐ Diversity and Inclusion
 - ☐ Revenue Generation
-

2012-13 Task Forces

- ☐ Admissions Practices
- ☐ Global School

**Task forces diverse in:
rank, roles, ethnicity,
organizations,
disciplines,
departments**



Reports Completed

- **Global School Task Force & Implementation Committee**

- Strategic partnerships

- **Revenue Generation**
- **Diversity & Inclusion Task Force**
 - Admissions Practices
- **Teaching & Learning**



McGavran-Greenberg collaboration space and Rosenau day lockers



Gillings Global Gateway



GILLINGS GLOBAL GATEWAY

North Carolina Roots. Worldwide Reach.

Global, Online MPH

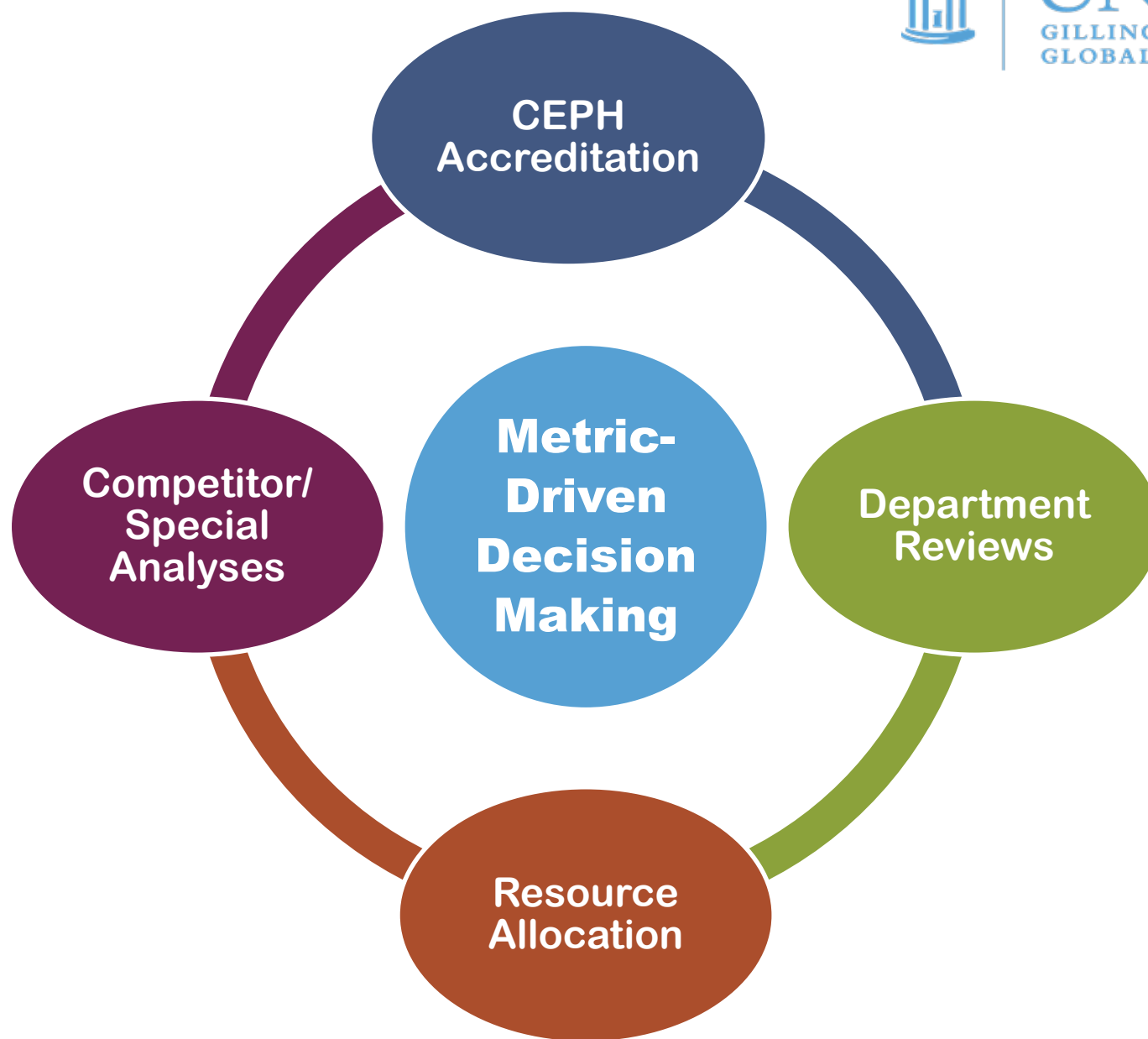




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GLOBAL PUBLIC HEALTH

Metric-Driven Decision Making... Critical for a Strong Future



Accreditation Assessment

Council on Education in Public Health

Goal I: Education

4 Objectives & 11 Metrics

- **Student Diversity & Quality**
- **Program Quality**
- **Educational Environment**

Goal II: Research

5 Objectives & 12 Metrics

- **Productivity**
- **Training**
- **Dissemination**
- **Innovation**

Goal III: Service

4 Objectives & 8 Metrics

- **Practice**
- **Service**
- **Engaged Scholarship**
- **Practice In Research & Education Mission**

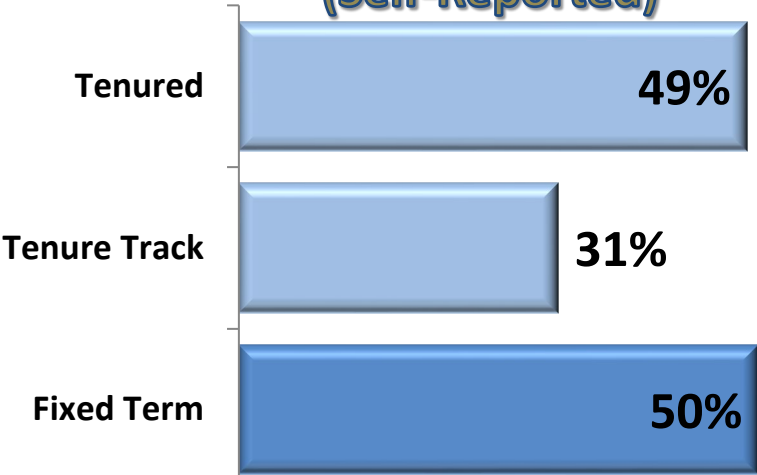
Goal IV: Faculty & Staff

5 Objectives & 7 Metrics

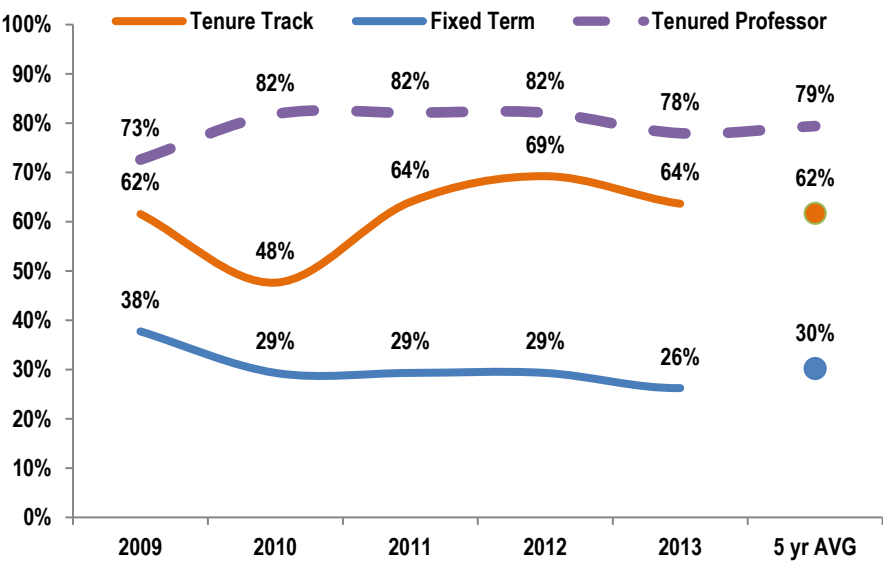
- **Faculty & Staff Diversity & Quality**
- **Practice Experience**
- **Collaboration**
- **Mentoring**

SPH Metrics

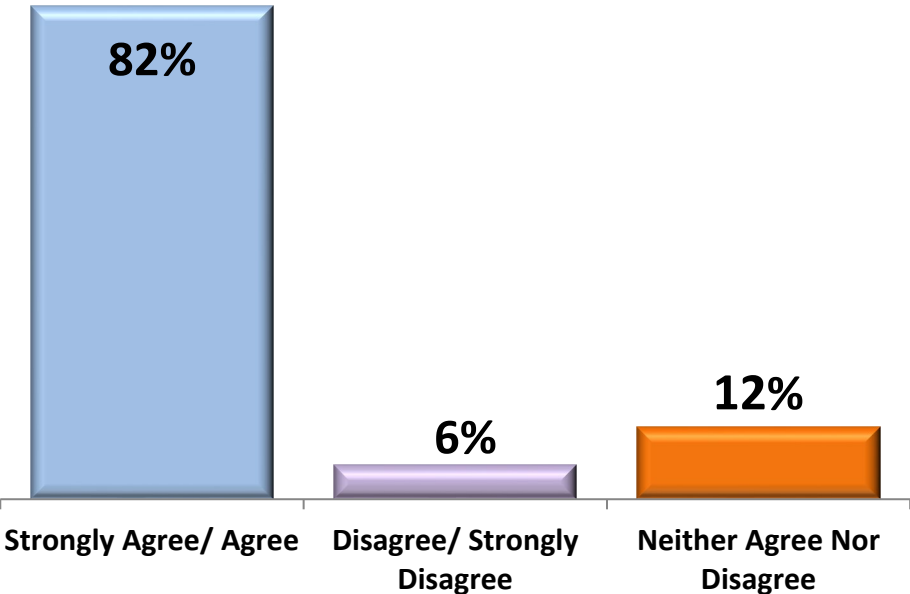
Innovative Technology Use (Self-Reported)



Asst Professor PIs



Course Evaluations: Effective Teacher

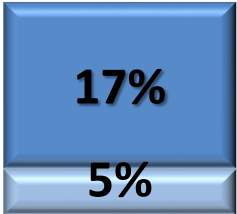


7:1-- publications : faculty member

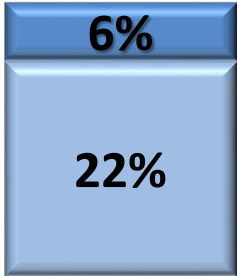
Tenure/Tenure Track Light Blue
Fixed Term Dark Blue

Figures show % of all publications
by rank & status

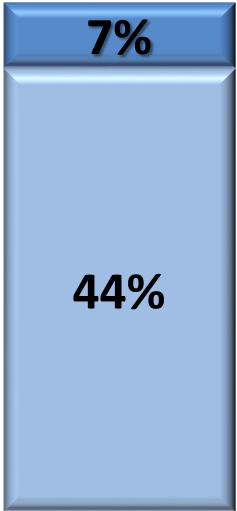
Assistant
Professor



Associate
Professor

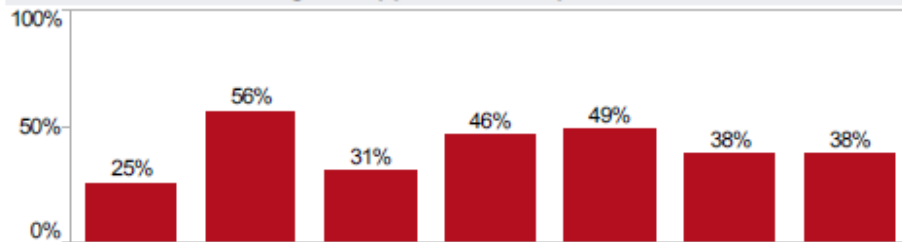


Professor

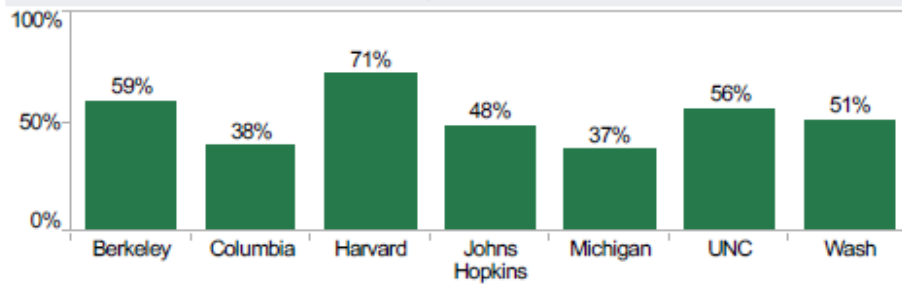


Competitor Analysis – Peer Comparisons

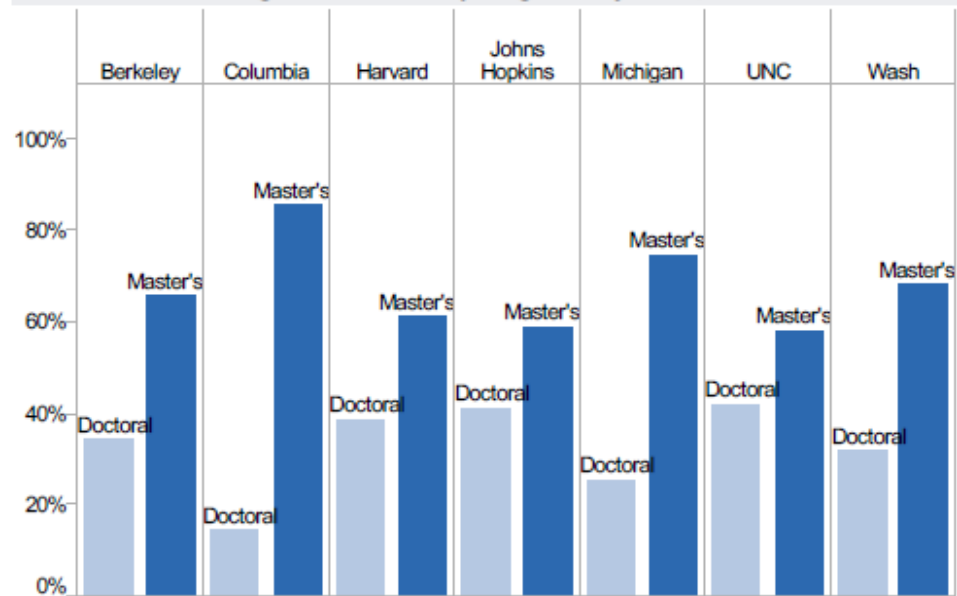
Percentage of Applicants Accepted, Fall 2012



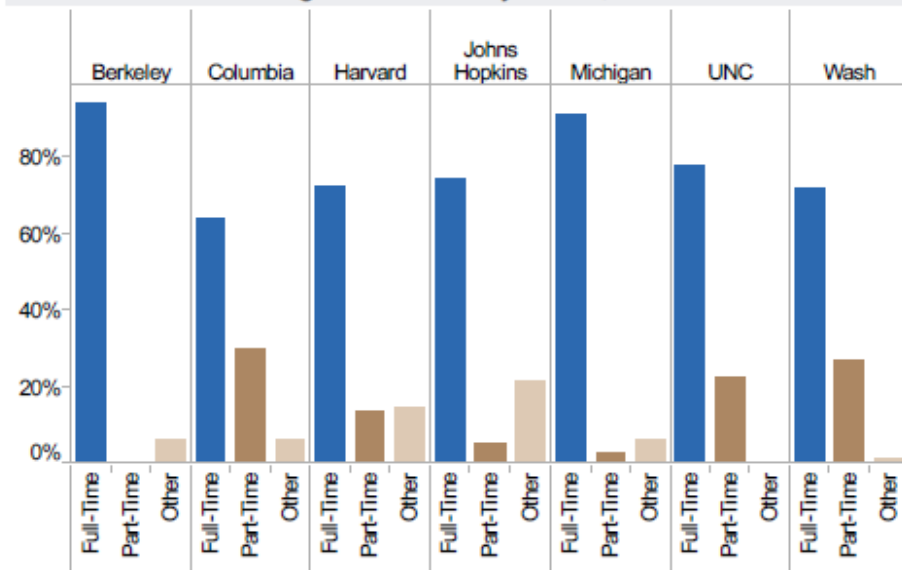
Yield, Fall 2012



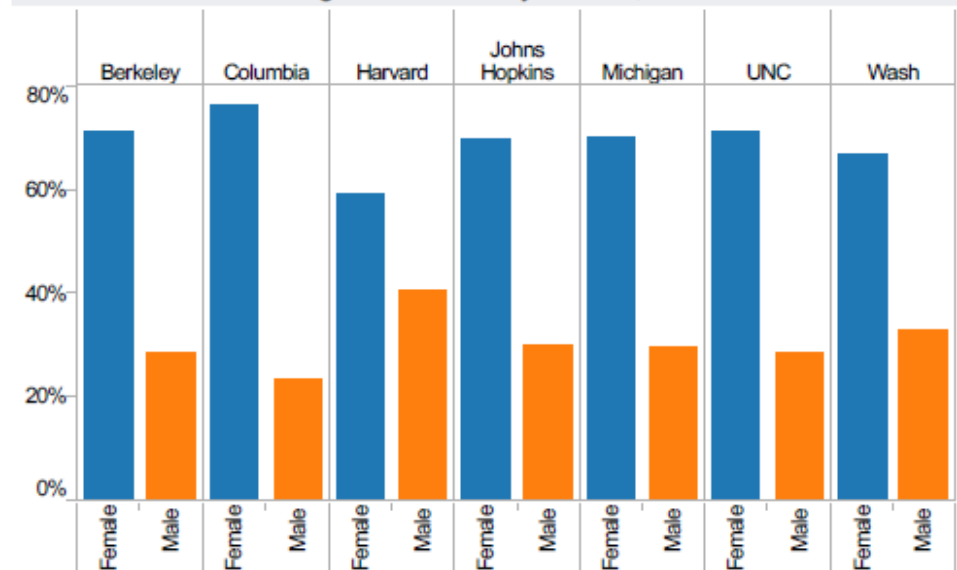
Percentage of Students by Degree Objective, Fall 2012



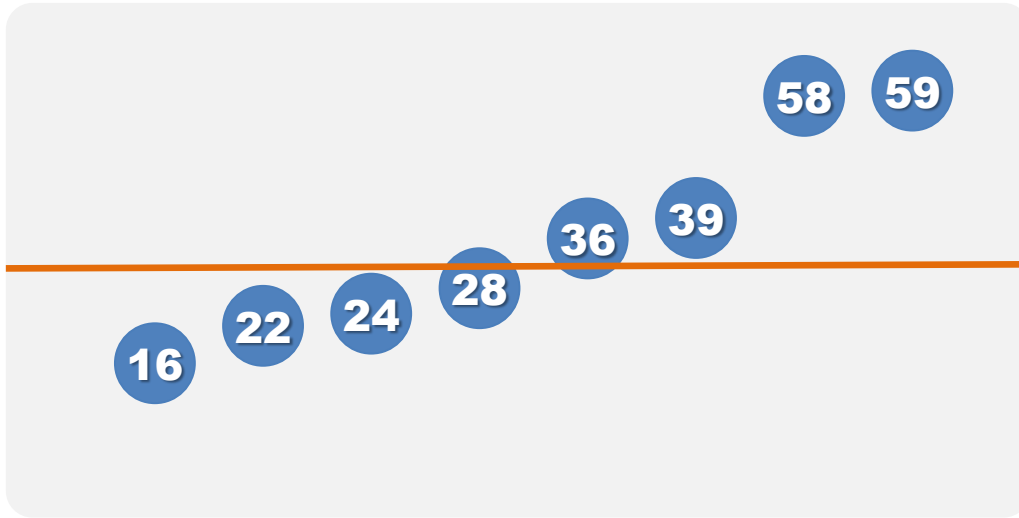
Percentage of Students by Status, Fall 2012



Percentage of Students by Gender, Fall 2012

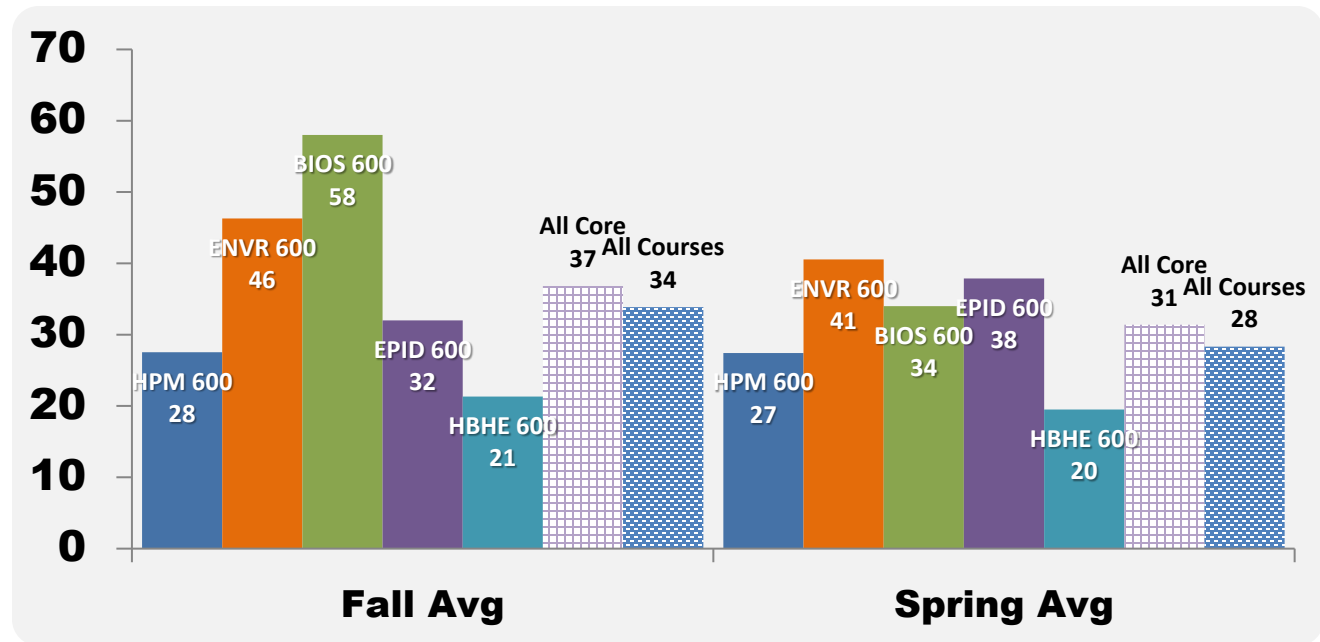


Special Analyses: TA Ratios by Department



**School average all
courses
34 students to 1 TA**

**Core course
average
37 students to
1 TA**



SPH State Budget Allocation Model Components

Enrollment & Teaching Measures

- **TSCH** (Taught Student Credit Hours)
- **FTE** (Enrolled student full time equivalents)

Weights By Degree Type

- **Doctoral**
- **Masters**
- **Undergraduate**
- **Certificate**

Value Equivalent Ratios

- **Derived from degree type weightings, FTE, TSCH**

Adjustments

- **Strategic allocation for School initiatives**
- **Manual adjustments after formula**

Implementation factor

- **Spreads results over multiple years for *gradual change***

\$

- **Permanent state budget change to each department**

Economics of SPH Faculty Recruitment and Retention

Average
amount of
counter -
offers

\$100,000

Counteroffer
Amount

\$1,400,000

Start-up
Costs

\$1,500,000

Replacement Costs
Avoided
by Retaining
Faculty

\$24,500,000

Potential Loss in
Funding
(Grant or Other)

ROI: \$100K Investment
for
\$24.5M Research
Awards

Economic Impact on
NC = \$29.4M

\$24.5 M

Average amount of
research awards for ALL
faculty retained in a
given year

Economic Impact

\$154 M

Research awards/year with
SPH PIs

**5,555
Jobs**

2,267 Jobs

\$63M

\$165M

\$142M

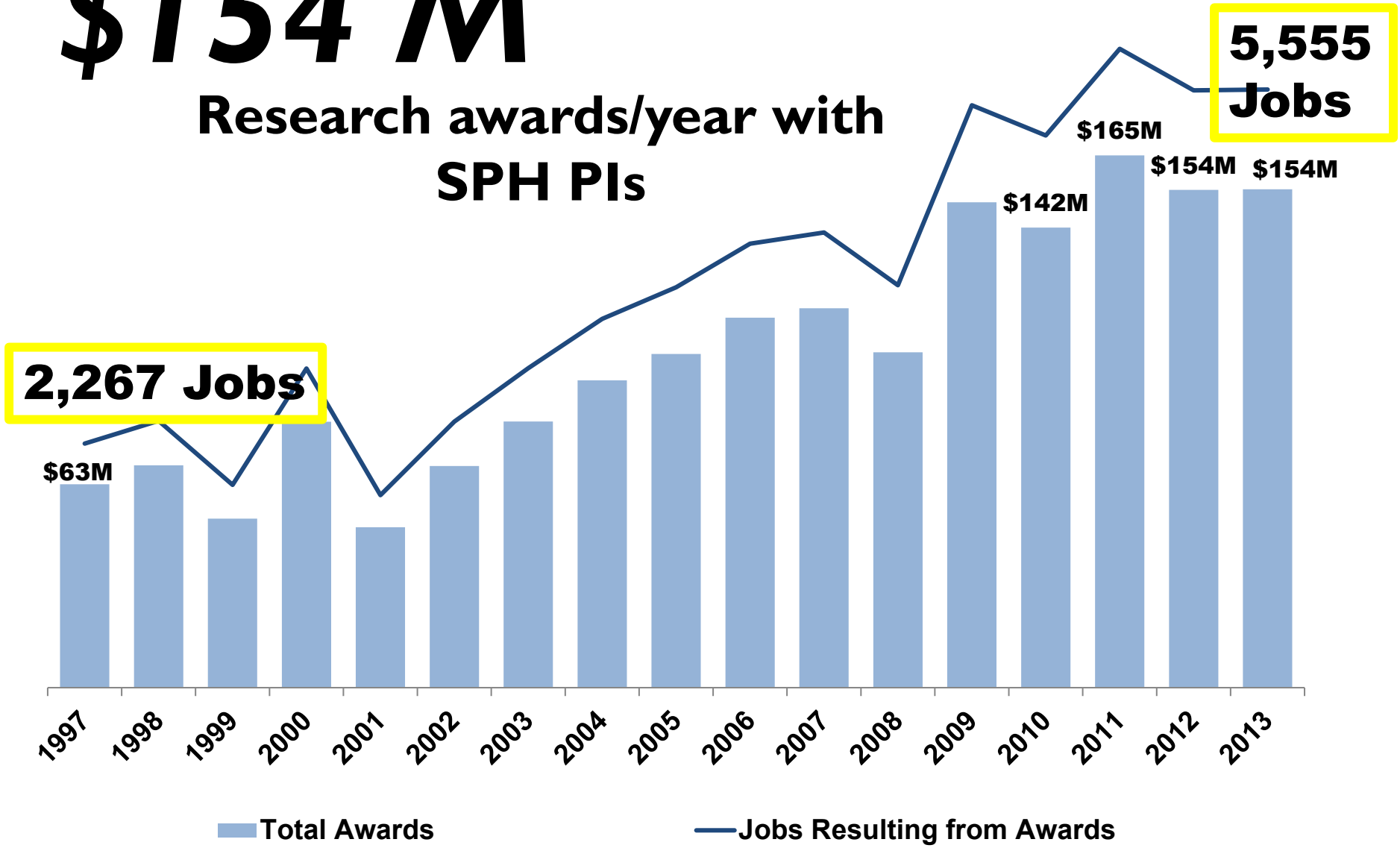
\$154M

\$154M

1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

Total Awards

Jobs Resulting from Awards



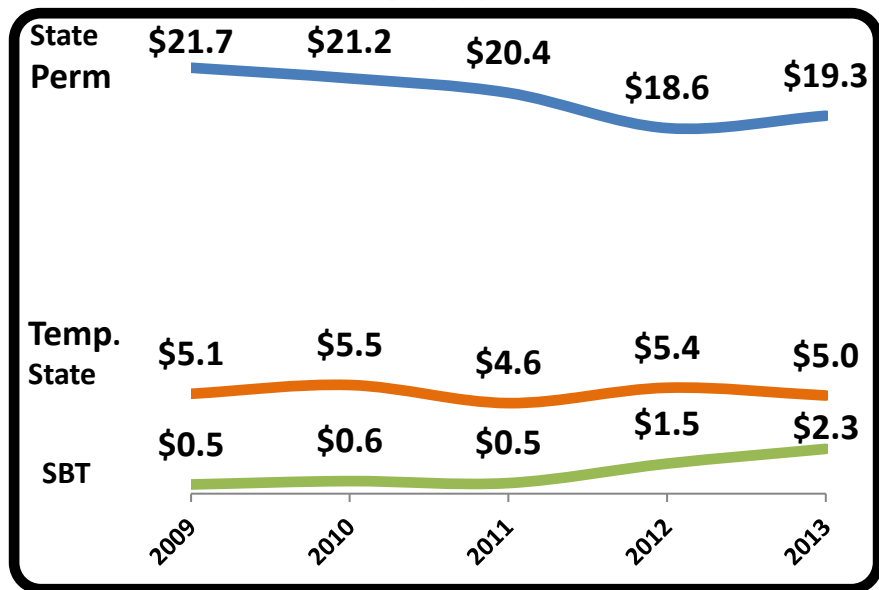
**Solving some of
the world's
greatest health
threats and
problems**



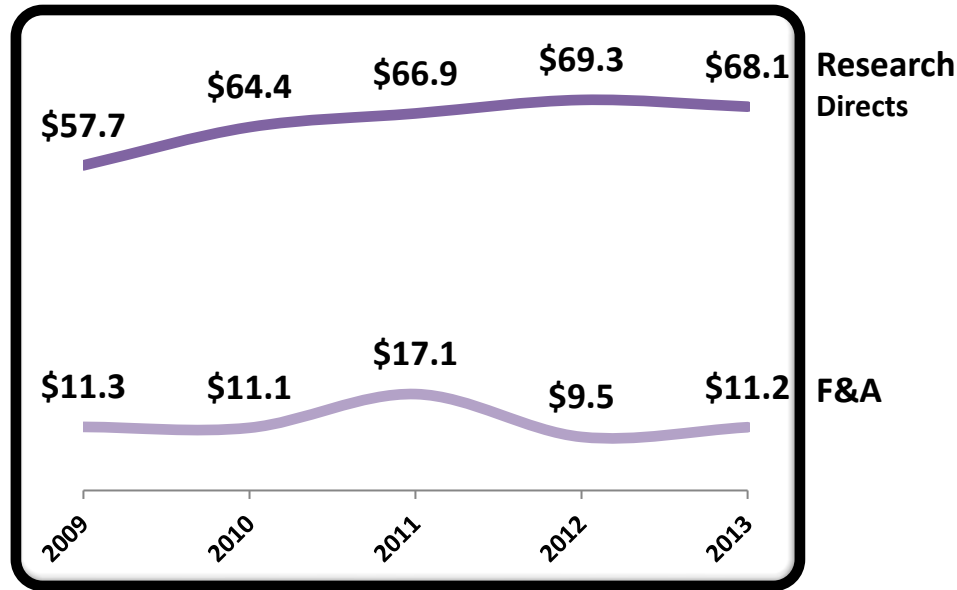


Revenue Trends by Source Type

State



Research



Trusts and Misc

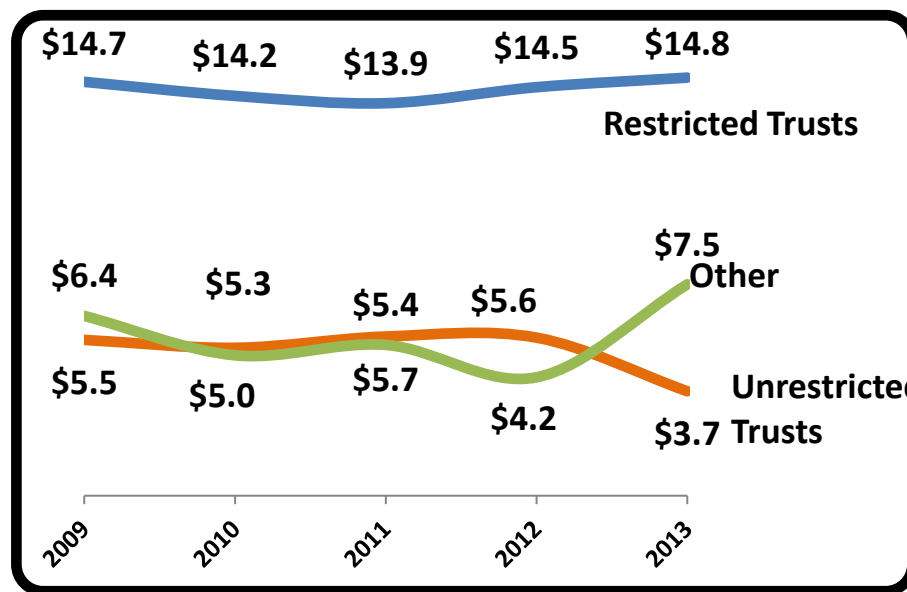




Photo credit: Sam Kittner '85

Board of Trustees: UNC Lineberger and its Impact

September 26, 2013

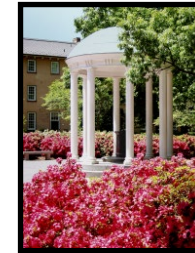
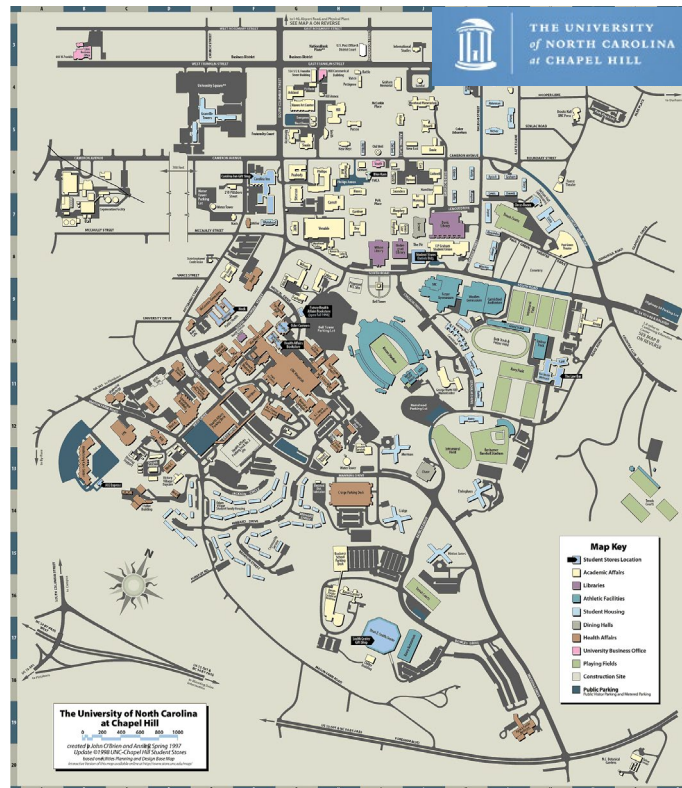
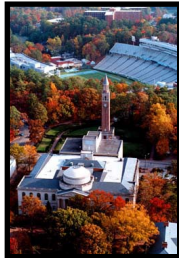


UNC Lineberger Comprehensive Cancer Center

UNC Lineberger

North Carolina's Public Comprehensive Cancer Center

**Organizing Faculty Across a Great University to:
Prevent, detect early and improve treatment of cancer
in our state, nation & the world.**



UNC
CANCER CARE



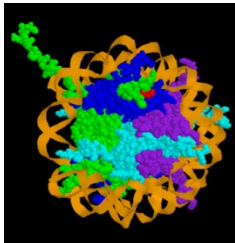
UNC
LINEBERGER

UNC Lineberger

335 Faculty / \$240M Yearly Cancer Funding

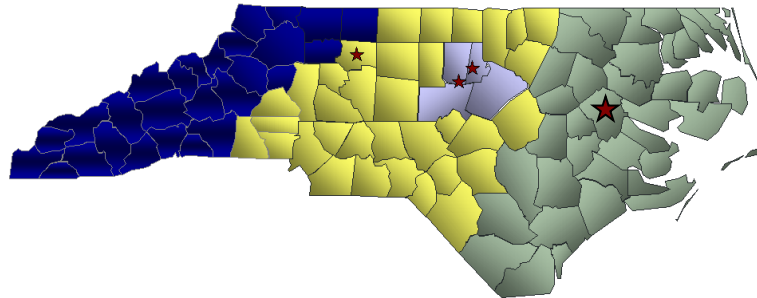
Basic Research

Molecular, cellular, & animal model research



Clinical & Translational Research

Innovation in diagnostics & therapeutics



Clinical Excellence

Patient-centered care



*Geriatric oncology clinic,
Brain metastasis clinic,
Bladder Cancer Center of Excellence*

Economic Development

*Intellectual property
Attract & start companies*



Dissemination & Outreach

AHEC, community & clinical practice quality

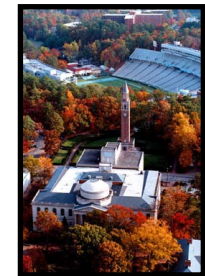


UNC System Partners

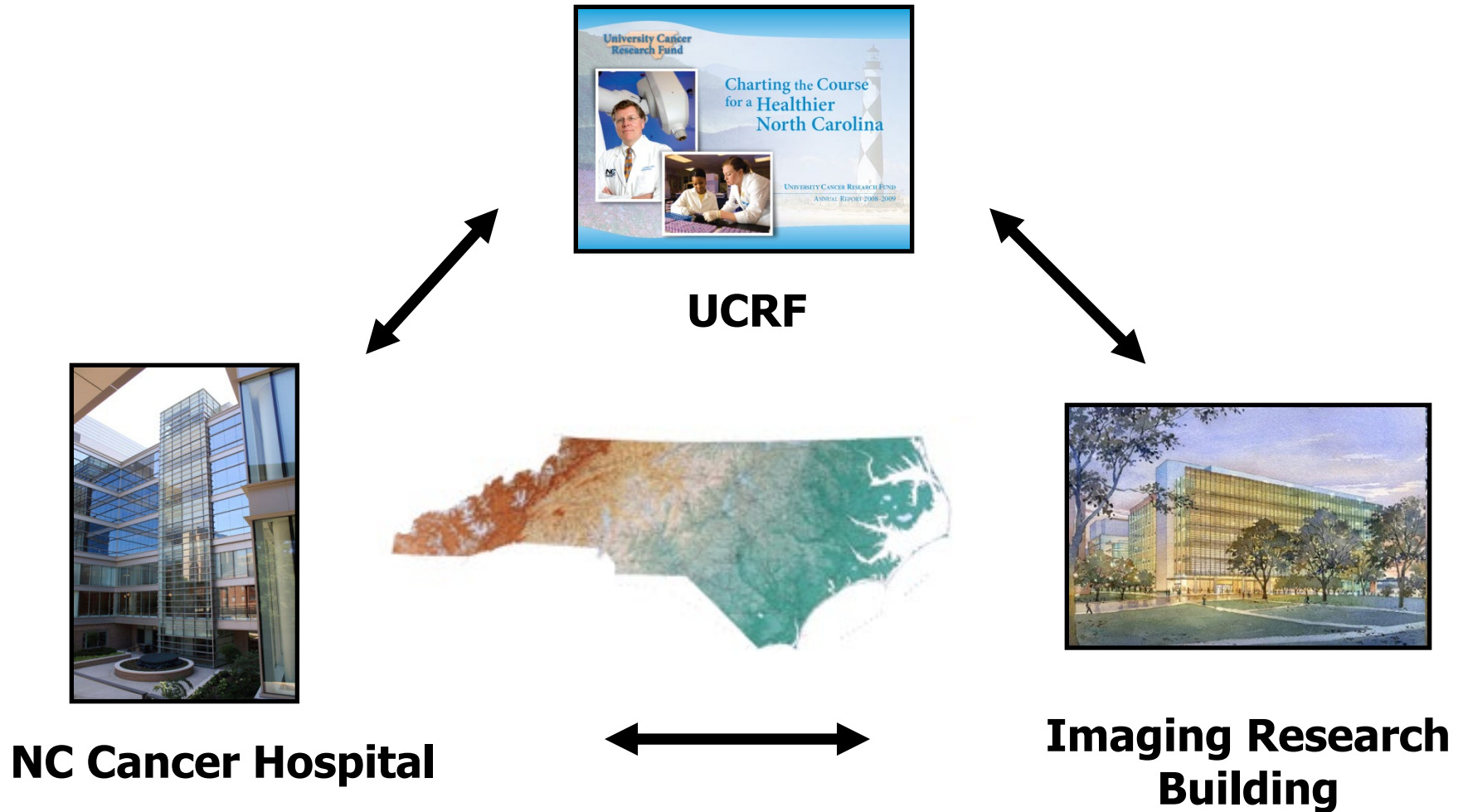
Population Sciences

*Epidemiology, prevention, early detection,
minority disparities, & health outcomes*

125,000 Patient Visits
4,500 New Patients
826 on Therapeutic Trials



Extraordinary Support From North Carolina





Becoming the Best

**Prevention
& Detection
Research**

**Research
Infrastructure**

**College & Other
Schools**

**Culture:
Health Affairs**

**Enhancing
Faculty Research**

CTSA

**Service to
the State**

**Changing
Technology**

**Opening Cancer
Hospital**

**Patient
Care**

**Tech
Transfer**

**Flat
Fund**

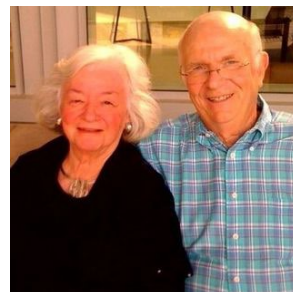
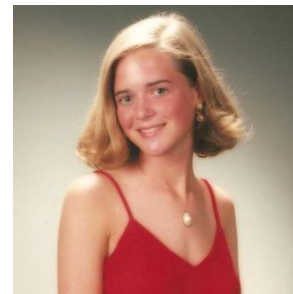
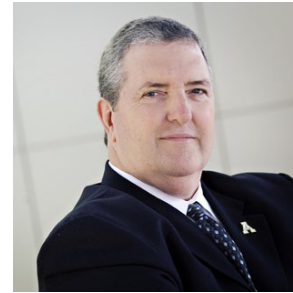
**Rising Cancer
Incidence**

**Clinical
Excellence**

**Team
Science**

**The
Legislature**

Becoming the Best ...



... means never forgetting why we're here

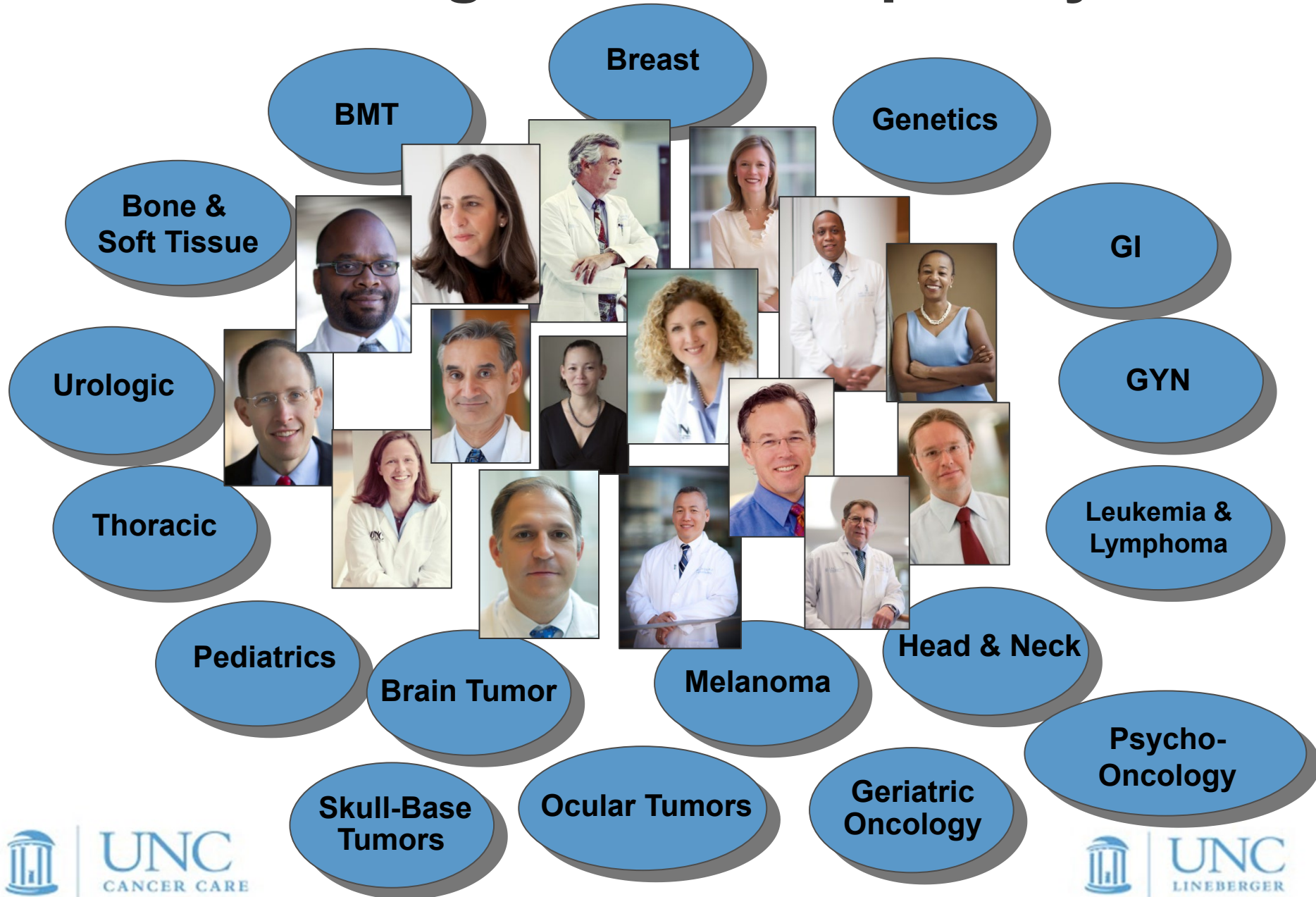


UNC
CANCER CARE



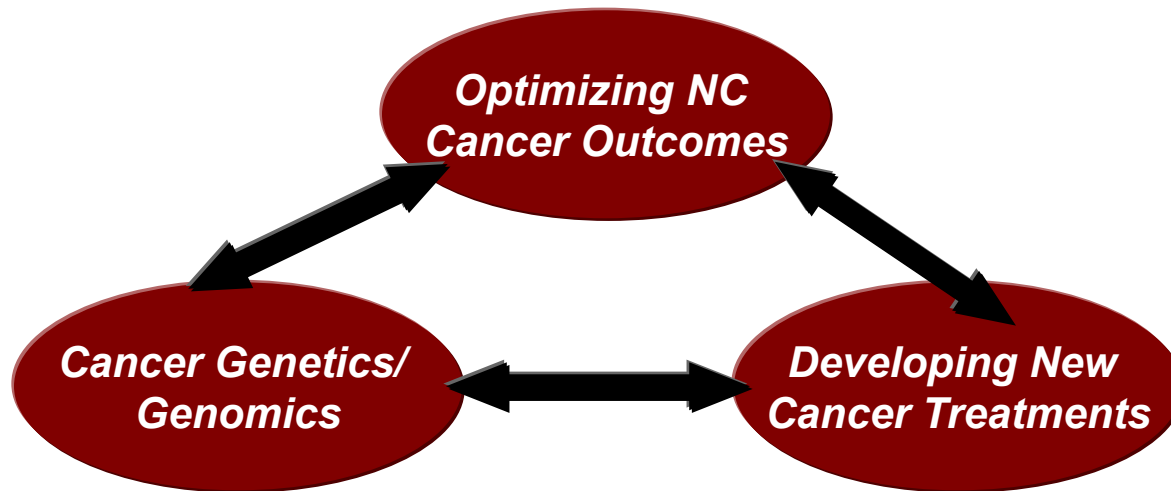
UNC
LINEBERGER

UNC Lineberger Multidisciplinary Care



UNC Lineberger/UCRF Strategic Plan

Tier III



Tier II

Opportunity Fund
Innovation, Technology & Recruitment

Tier I

Infrastructure

Clinical Excellence & Outreach, Clinical/Translational Research Cores, Tissue Procurement & Informatics, Population & Basic Science Cores



UNC
CANCER CARE



UNC
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Recent UCRF Recruits

It's About the People



John Baron, MD



Bhisham Chera, MD



Andrew Dudley, PhD



David Eberhard, MD, PhD



Larry Engel, PhD



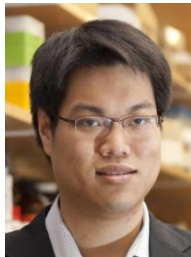
Stephanie Gupton, PhD



Jian Jin, PhD



Alain Laederach, PhD



Sam Lai, PhD



Carrie Lee, MD



Stan Lemon, PhD



Autumn McRee, MD



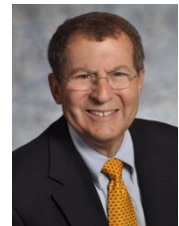
Ben Major, PhD



Michelle Mendez, PhD



Bradley Merritt, MD



Hy Muss, MD



Seth Noar, PhD



Christine Rini, PhD



Whitney Robinson, PhD



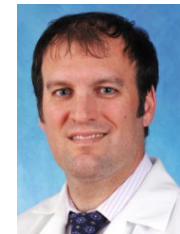
Hanna Sanoff, MD



Angela Smith, MD



Stephanie Wheeler, PhD



Michael Woods, MD



Claire Yang, PhD

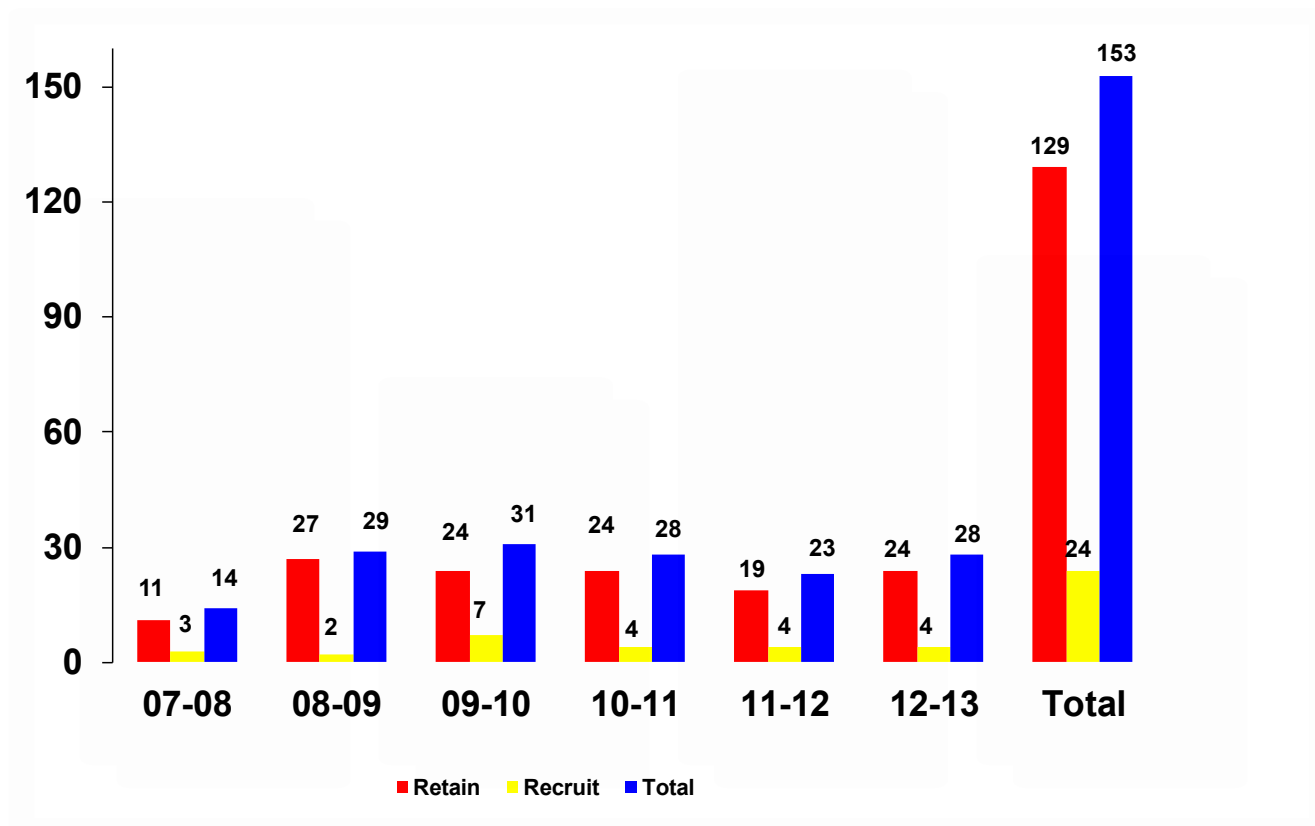


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Faculty Recruitment and Retention



Fueled by UCRF



UNC
CANCER CARE



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LINEBERGER

External Relations: We're in the Headlines



***New York Tobacco Regulations Light Up
Public Health Debate***

Anonymity In Genetic Research Can Be Fleeting

Perfection Is Skin Deep: Everyone Has Flawed Genes

Scientists See Upside And Downside Of Sequencing

nature.com

Fetal genome deduced from parental DNA
Method could make non-invasive screening commonplace -
and problematic.

**Scientists Parse
Genes Of Breast
Cancer's Four Major
Types**



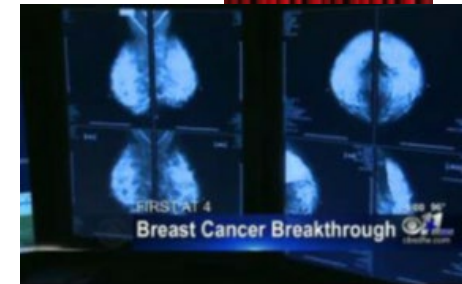
**Support Group Helps
Dads Widowed by Cancer**

The New York Times

A Lifeline for Widowed Fathers

Justices Consider Whether Patents on Genes Are Valid

***Study Divides Breast Cancer Into Four
Distinct Types***



THE LANCET Oncology

Building a pathology laboratory in Malawi



**Most Teens Support Tough
Smoking Bans: Survey**

Financial Impact

Total NIH Funding: FY 2012

Rank	University	\$M
1	Johns Hopkins	\$645.7
2	UCSF	\$500.4
3	U Washington	\$458.7
4	U Michigan	\$458.5
5	Penn	\$457.5
6	U Pittsburgh	\$430.0
7	UCSD	\$395.0
8	Washington University	\$381.5
9	UNC Chapel Hill	\$377.6
10	Yale	\$371.1
11	UCLA	\$360.7
12	Duke	\$355.6

Total NCI Funding: FY 2012

Rank	University	\$M
1	MD Anderson	\$120.1
2	Fred Hutch	\$95.0
3	Johns Hopkins	\$85.1
4	U Michigan	\$75.6
5	Dana Farber	\$75.5
6	Memorial Sloan Kettering	\$72.8
7	Vanderbilt	\$65.6
8	Mayo Clinic	\$64.8
9	UCSF	\$64.2
10	Penn	\$62.7
11	UNC Chapel Hill	\$59.4
12	Brigham and Womens	\$55.4



University Cancer Research Fund



- **Funding:** \$25M, \$40M, \$50M thereafter
- **Funding sources:**
 - Former H&W, Tobacco Trusts - \$8M
 - Other tobacco products tax - \$26M
 - General fund - \$18M
- **Economic impact:**
 - Extramural funding generated:
FY08 \$5M, FY09 \$25M, FY10 \$57M, FY11 \$69M,
New Data: FY12 \$88M
 - Recruitment/Retention – over 140 faculty
 - Jobs created – greater than 5,000
 - Development of IP & start-ups >10
 - Total impact on NC FY12: \$290M

Major scientific findings reported in the world's top journals

Research Across the State

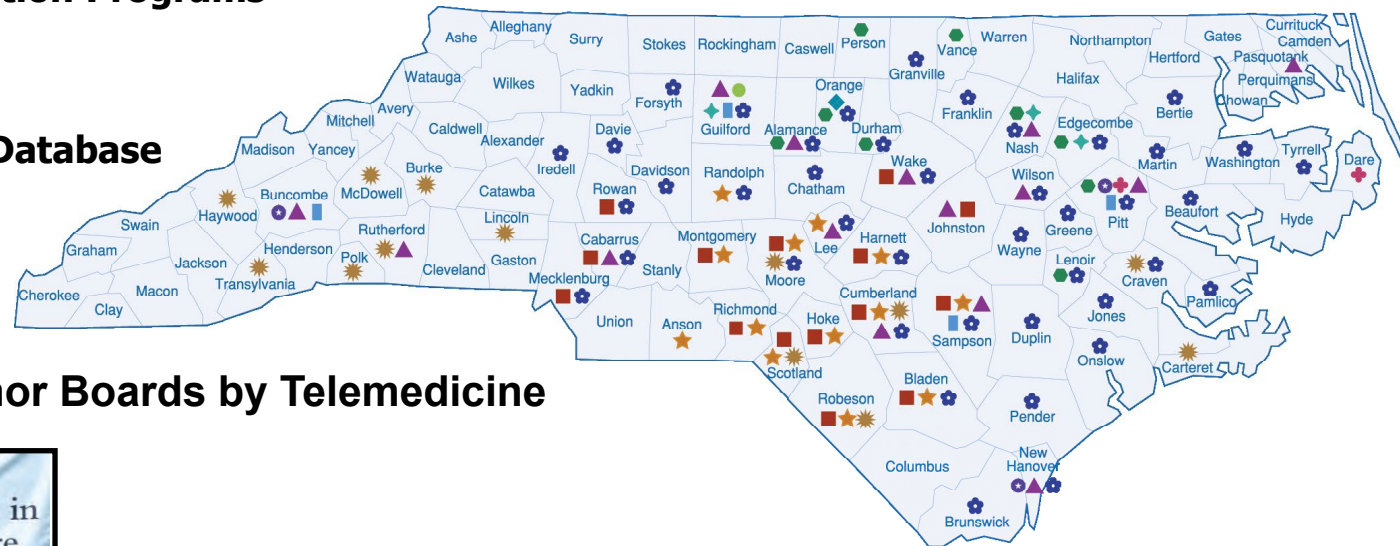
*Optimizing NC
Cancer Outcomes*

Prevention & Early Detection Programs

Clinical Trials Network

Quality of Care Research

Outcomes – State-Wide Database



Disease-Specific Tumor Boards by Telemedicine



Cancer prevention project with NC Community Colleges



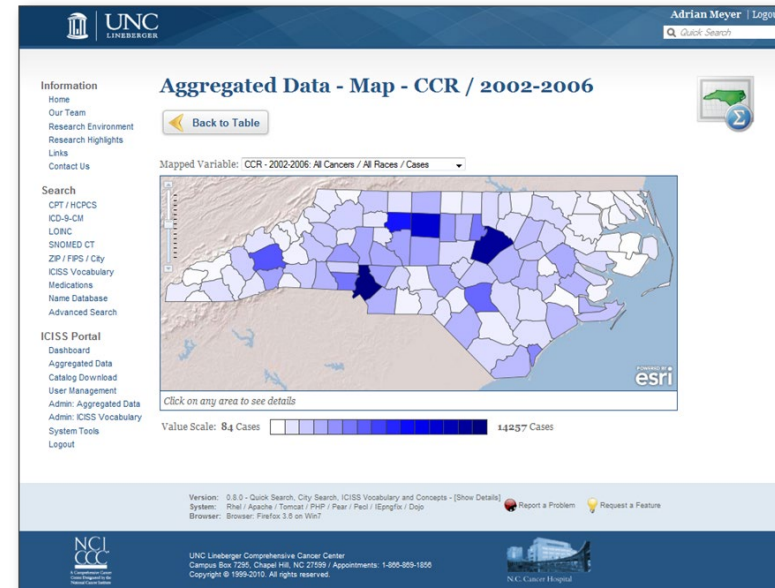
ICISS: Integrated Cancer Information Surveillance System

*Optimizing NC
Cancer Outcomes*

NC Cancer Registry : 100% - 320,000 cases (2003-2010)

Health Care Claims: Medicare, Medicaid,
NCBCBS, State Employees (5.5 million)

Cases Linked to Claims: 80% of NC cancers
(~255,000 cases)



JAMA, April 18, 2012—Vol 307, No. 15 **1611**

ORIGINAL CONTRIBUTION

**Intensity-Modulated Radiation Therapy,
Proton Therapy, or Conformal Radiation
Therapy and Morbidity and Disease Control
in Localized Prostate Cancer**



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Lung Cancer & Tobacco



Eugenia Eng,
PhD



Samuel Cykert,
PhD

Accountability for Cancer Care through Undoing Racism and Equity (ACCURE).

National Cancer Institute. \$2.7M

ORIGINAL CONTRIBUTION

Factors Associated With Decisions to Undergo Surgery Among Patients With Newly Diagnosed Early-Stage Lung Cancer

Lung Cancer Surgery: Decisions Against Life Saving Care.

American Cancer Society. \$1.8M

NCI1-U01-CA154281 –

Maximizing state & local policies to restrict tobacco marketing

\$12.8M Kurt Ribisl, PI

Regulatory strategies to reduce illegal Internet cigarette, alcohol, and opiate sales

R. Williams

Robert Wood Johnson Foundation / NCI R01

Just Awarded: 2 \$20M NCI Project Grants

Prevention Communication Strategies:

Kurt Ribisl, Noel Brewer, Adam Goldstein & Team

Lung Epithelial Biomarkers of Smoke Constituents

Robert Tarran, Claire Doerschuk, Ric Boucher & Team

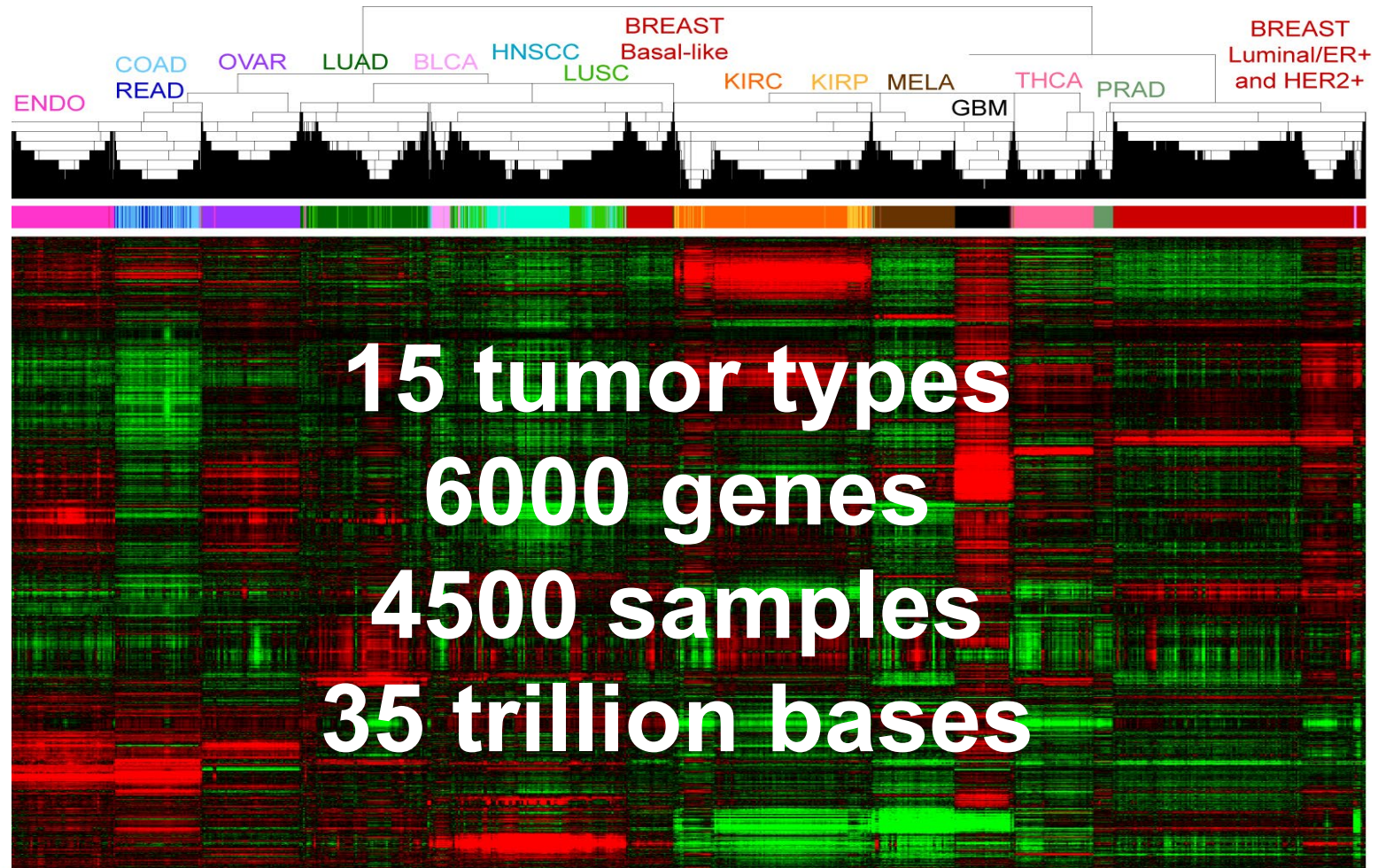


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CANCER CARE



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National Leadership: mRNA Sequencing for the Cancer Genome Atlas



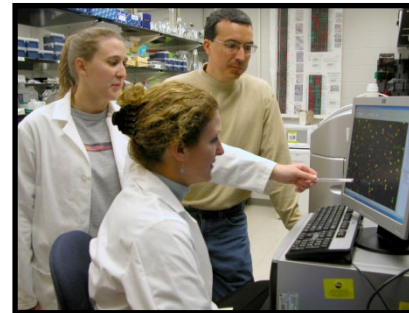
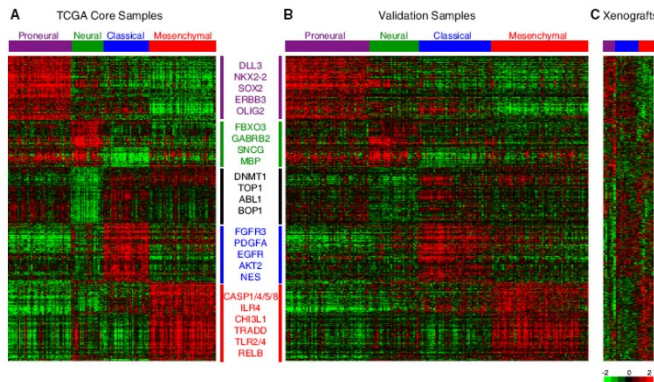
Genomics in the Clinic

**Cancer Genetics/
Genomics**

Cell
PRESS

Cancer Cell
Article

Integrated Genomic Analysis Identifies Clinically Relevant Subtypes of Glioblastoma Characterized by Abnormalities in *PDGFRA*, *IDH1*, *EGFR*, and *NF1*



Chuck Perou, PhD
Lisa Carey, MD
Katie Hoadley, PhD



Neil Hayes, MD

LCCC 1108 – The UNCseq™ Project

NC Genes

The Cancer Genome Atlas

Four *Nature* papers 2012-13

UNC provided all RNA, microRNA data, and analysis

A Team Approach to Relaying Information to Patients:

Psychologists, ethicists, clinicians, pathologists, geneticists



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Discovering & Testing Cancer Drugs

*Developing New
Cancer Treatments*



Developing Drugs for UNC-Identified Targets

- A. Mer Inhibitors for Pediatric Leukemia
- B. Ror2 Inhibitors for Renal Cancer
- C. IDH1 Inhibitors for Brain Tumors

NCI NeXT Projects

Stephen Frye, PhD: Director of Chemical Biology and Drug Development

Mouse Phase I Unit: Genetically engineered mouse models: testing novel cancer therapies

48 partners in academia and industry

26 published manuscripts: *Cell*, *Nature*, & *PNAS*

17 funded grant proposals: \$11.2M

Norman E. Sharpless, MD
Charles M. Perou, PhD



3,500 cages
Small animal imaging
Pharmacokinetics
Specialized contracting



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“Kinoming”

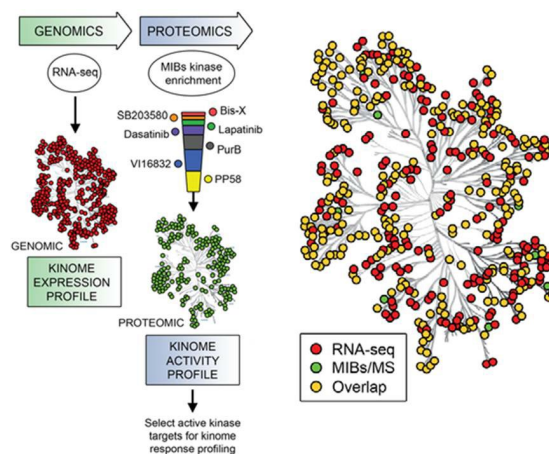
**Opportunity and
Innovation**



Lisa Carey, MD



Keith Amos, MD



Gary Johnson, PhD



Dynamic Reprogramming of the Kinome in Response to Targeted MEK Inhibition in Triple-Negative Breast Cancer

James S. Duncan,^{1,2} Martin C. Whittle,^{1,2} Kazuhiro Nakamura,¹ Amy N. Abell,¹ Alicia A. Midland,² Jon S. Zawistowski,¹ Nancy L. Johnson,¹ Deborah A. Granger,¹ Nicole Vincent Jordan,¹ David B. Darr,³ Jerry Usary,³ Pei-Fen Kuan,⁴ David M. Smalley,¹ Ben Major,⁵ Xiaping He,³ Katherine A. Hoadley,³ Bing Zhou,^{3,6} Norman E. Sharpless,^{3,6} Charles M. Perou,³ William Y. Kim,^{2,6} Shawn M. Gomez,² Xin Chen,⁷ Jian Jin,⁷ Stephen V. Frye,⁷ H. Shelton Earp,^{1,6} Lee M. Graves,¹ and Gary L. Johnson^{1,*}

***Breast Cancer Window Trial In Progress
Beginning analysis of Pancreatic Cancer & Melanoma***

New funding: R01, SPOR, Komen



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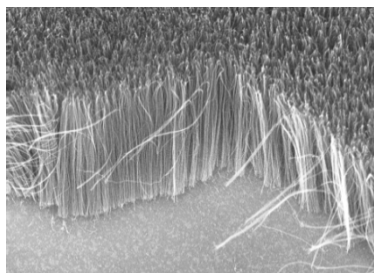
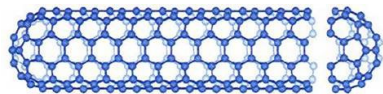


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Physics to Clinical Care: Innovation & Entrepreneurship

*Opportunity and
Innovation*

International recognition



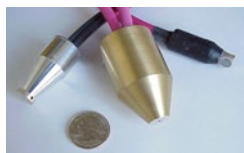
**SCIENCE
NEWS**
This Week
X Rays to Go
Carbon nanotubes
could shrink machines



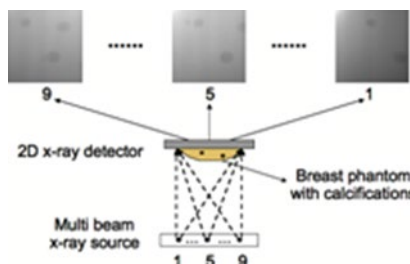
X-RAY FIRST This image of three sets of

Carbon nanotubes ...

**Featured in the Economist
7/2009: *Modern X-ray
technology: Another look inside***



**... engineered into an
x-ray source**



**CNT Breast Tomosynthesis machine:
First in the nation**



**NC Cancer Hospital
Clinical trials begin in
March**

CNT technology replace mammography?



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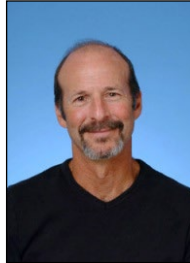
Global Cancer Research



Carol Shores



Mina Hosseinipour



Irving Hoffman



Kristy Richards



Dirk Dittmer



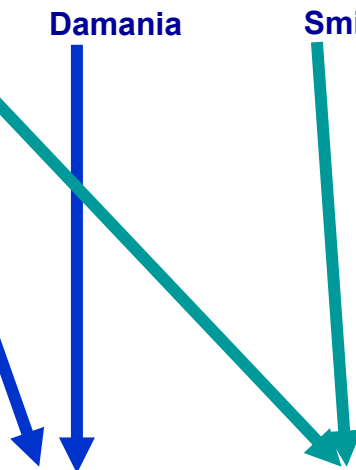
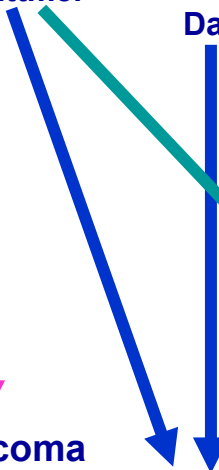
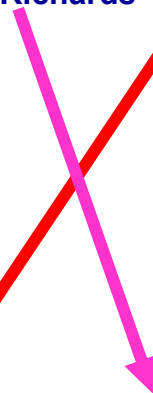
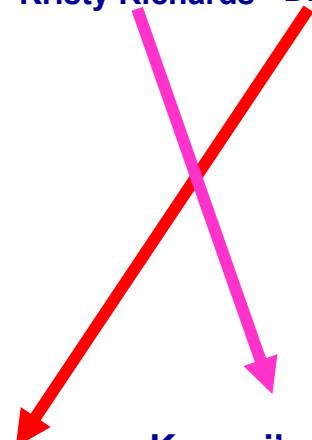
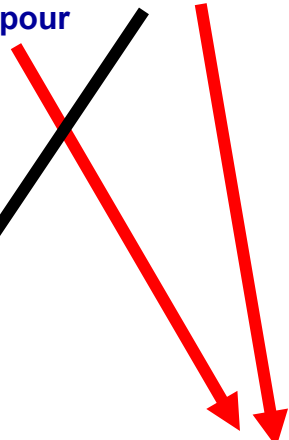
Blossom Damania



Jennifer Smith



Satish Gopal



Burkitt's lymphoma
(Malawi)

Kaposi's sarcoma
(Malawi,
AMC in Africa)

Kaposi's sarcoma
(USA)

Kaposi's sarcoma
(Brazil)
&
Lymphoma
(Brazil, India)

Cervical carcinoma
(Kenya, China
South Africa,
Zambia)

Lymphoma/ breast
cancer
(Malawi)



Groesbeck Parham, MD



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The Future



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CHILLINGSWORTH SCHOOL OF
GLOBAL PUBLIC HEALTH



Norman Sharpless, MD
*Wellcome Professor
of Cancer Research*



Lisa A. Carey, MD
*Preyer Professor
in Breast Cancer Research*



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Questions?



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Photo credit: Sam Kittner '85

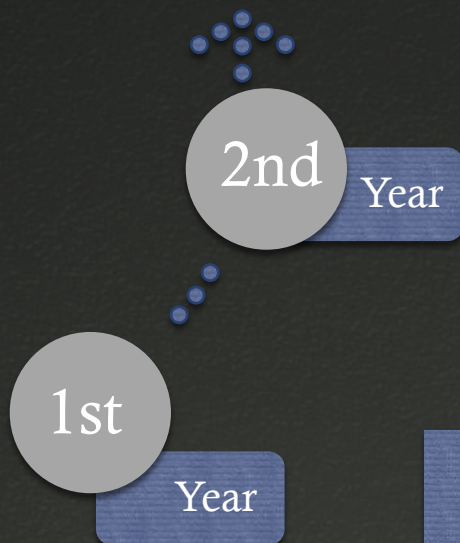


Why storytelling?



The Carolina Embrace





Skills Application
Capstone Project

dissertation; advisor buy-in

Client-driven Media Product &
Immersion Workshop

student driven; selective

Multimedia Storytelling Coursework; Portfolio Development

Academic credit; building media & science student network

CAROLINA

Can ~~storytelling~~ revolutionize the way we share science?

Graduate Training Curricula

- core mission
- scale up potential
- improve STEM workforce
- 3+ years to evaluate
- long term wins

Basic Narrative Research

- cultural change
- novel inquiry
- publications
- relevance to STEM
- retention, gender, minorities

Media Product Innovation

- build digital storytelling landscape
- short term wins
- experimentation
- serve UNC outreach
- program sustainability



Let's build a space where scientists
and media scholars innovate
through story.

www.scientistswithstories.org



Photo credit: Sam Kittner '85