



**The great thing in the world is not so much where we stand,
as in what direction we are moving.**

Oliver Wendell Holmes

A man walking along a road comes across three bricklayers. When asked what he is doing, the first bricklayer replies, “I am laying bricks”. When asked the same question, the second bricklayer answers, “I am making my living”. When asked what he is doing, the third bricklayer steps back, looks around and responds “I am building a cathedral”.



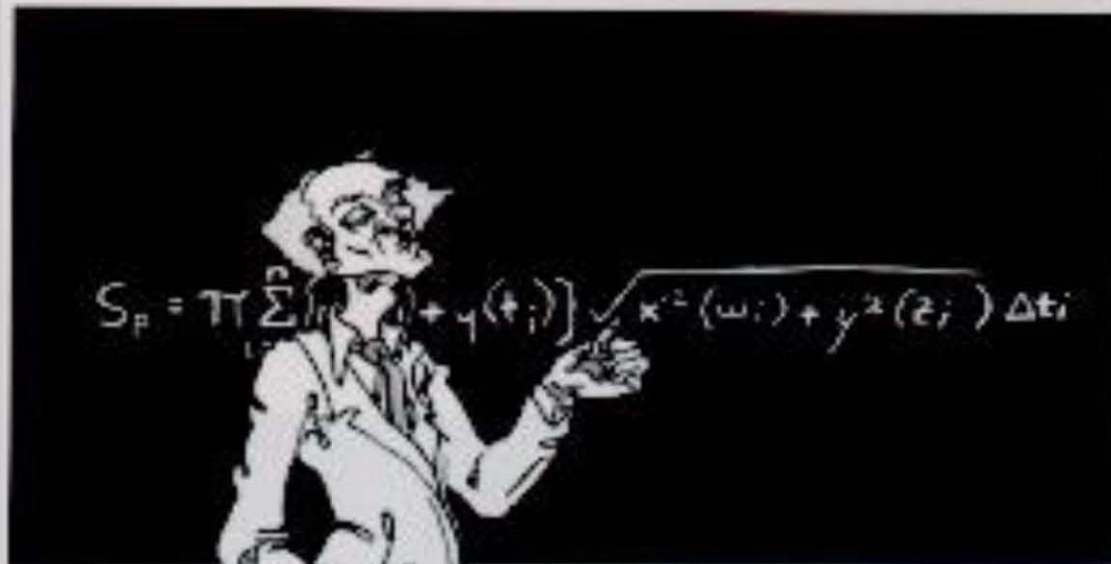
Academic Medicine ca. 2010

SUNY Stony Brook - Rising

A Vision for the East Campus



Academic Medicine - Rising or Falling?



Challenges for Academic Medicine

- 1. Advancing the Science of Medicine*
- 2. Educating Health Care Professionals*
- 3. Delivering Outstanding Patient Care*
- 4. Recruitment and Retention of the Very Best*
- 5. Informing Policymakers and Politicians*
- 6. Mentoring the Public***

Challenge for Stony Brook Medicine

Recruitment and Retention of the Very Best

Q #	Question	SBU Mean	Cohort Mean	Cohort Rank
21A	The workplace culture at this medical school cultivates: Collegiality	3.27	3.66	23
39A	My medical school is successful in hiring high quality faculty members	2.95	3.54	22
39D	My medical school is successful in retaining high quality faculty members	2.27	3.09	23
46	Your medical school as a place to work	3.23	3.64	23
49	If I had it to do all over, I would again choose to work at this medical school.	3.53	3.79	23

Challenge for Stony Brook Medicine

Recruitment and Retention of the Very Best

Gov. Paterson orders \$90M SUNY budget cut

SUNY budget to face still more cuts

The governor's proposed budget for 2010-11 would cut SUNY's operating budget by \$118 million. Combined with \$410 million in budget reductions during the past two years, SUNY would be losing more than half a billion dollars in state support.

concerned that cuts to SUNY will cause a "brain drain" in New York.

Over the past two years, SUNY has been disproportionately impacted by state funding cuts more than any other state agency.

Challenges for Academic Medicine

Recruitment and Retention of the Very Best



Faculty Development



Faculty Development



The Graduate School

Creating Bilingual PhD Graduates

AT THE CROSSROADS: SCIENCE MEETS THE MEDICAL PATIENT

AT THE CROSSROADS: Science Meets the Medical Patient

Course Directors: Jess Mandel, M.D.; Kenneth Kaushansky, M.D.; Jason Yuan, M.D., Ph.D.

Course Objectives: To provide a comprehensive course on patient- and disease-oriented pathogenic and therapeutic mechanisms for graduate students who are enrolled in the HHMI Med-Into-Grad program (and other programs), and for medical students who are interested in translational research.

Required Readings: 2-3 key journal articles will be distributed prior to each seminar.

Date	Location	Topic	Speaker
Sept 9th	MTF168 I.	Introduction	
Week 1		Part 1 : Human Diseases: An Overview (30 min.) Part 2 : Clinical Diagnostic and therapeutic approaches (30 min.)	Ken Kaushansky, M.D. Jess Mandel, M.D.
Sept. 16th	MTF168 II.	Gastrointestinal Disease	
Week 2		Diarrhea: ion transporters and signaling pathways in the pathogenesis	Kim Barrett, Ph.D
Sept. 23rd	MTF168 III.	Respiratory Disease	
Week 3		Idiopathic and chronic thromboembolic pulmonary hypertension: Receptor signaling and transcription factors in pathogenesis	Jason Yuan, M.D., Ph.D. Jess Mandel, M.D.
Sept. 30th	MTF168 IV.	Cardiovascular Disease	
Week 4		Coronary artery and atherosclerosis: Role of nuclear receptors	Christopher Glass, M.D./Ph.D.
Oct. 7th	MTF168 V.	Neurological Disease	
Week 5		Alzheimer's disease	Douglas Galasko, M.D.
Oct. 14th	MTF168 VI.	Endocrine Disease	
Week 6		Thyroid hormones and the heart	Wolfgang Dillmann, M.D.
Oct. 21st	MTF168 VII.	Infectious Disease	
Week 7		Malaria	Joe Vinetz, M.D.
Oct. 28th	MTF168 VIII.	Hematological Diseases	
Week 8		Myeloproliferative diseases	Ken Kaushansky, M.D.
Nov. 4th	MTF168 IX.	Cancer	
Week 9		Lung cancer glycobiology	Mark Fuster, M.D.

The Graduate School

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CLINICAL EXPERIENCE MENTORS

Cancer and blood cell malignancies (Kaushansky)

Cardiovascular diseases (Knowlton)

CNS injury and disease, neuro-oncology (Carter)

Cutaneous biology (Gallo)

Diabetes (Mudaliar)

Genetic diseases (Jones)

Infectious disease (Vinetz)

Inflammatory, autoimmune disease (Firestein)

Lung biology and diseases (Fuster)

Neurodegenerative diseases (Mobley)

Tropical infectious disease, (Vinetz)

Viral infectious disease (Richman)

Challenge for Academic Medicine

Advancing the Science of Medicine



Challenge for Stony Brook Medicine

Research Productivity ca. August 2010



Over 20 departments

634 research grants
Over \$75M total funding

Over 200 unique scholarly
publications

Challenge for Stony Brook Medicine *Research Productivity ca. July 2010*

Direct Expenditures per Principal Investigator

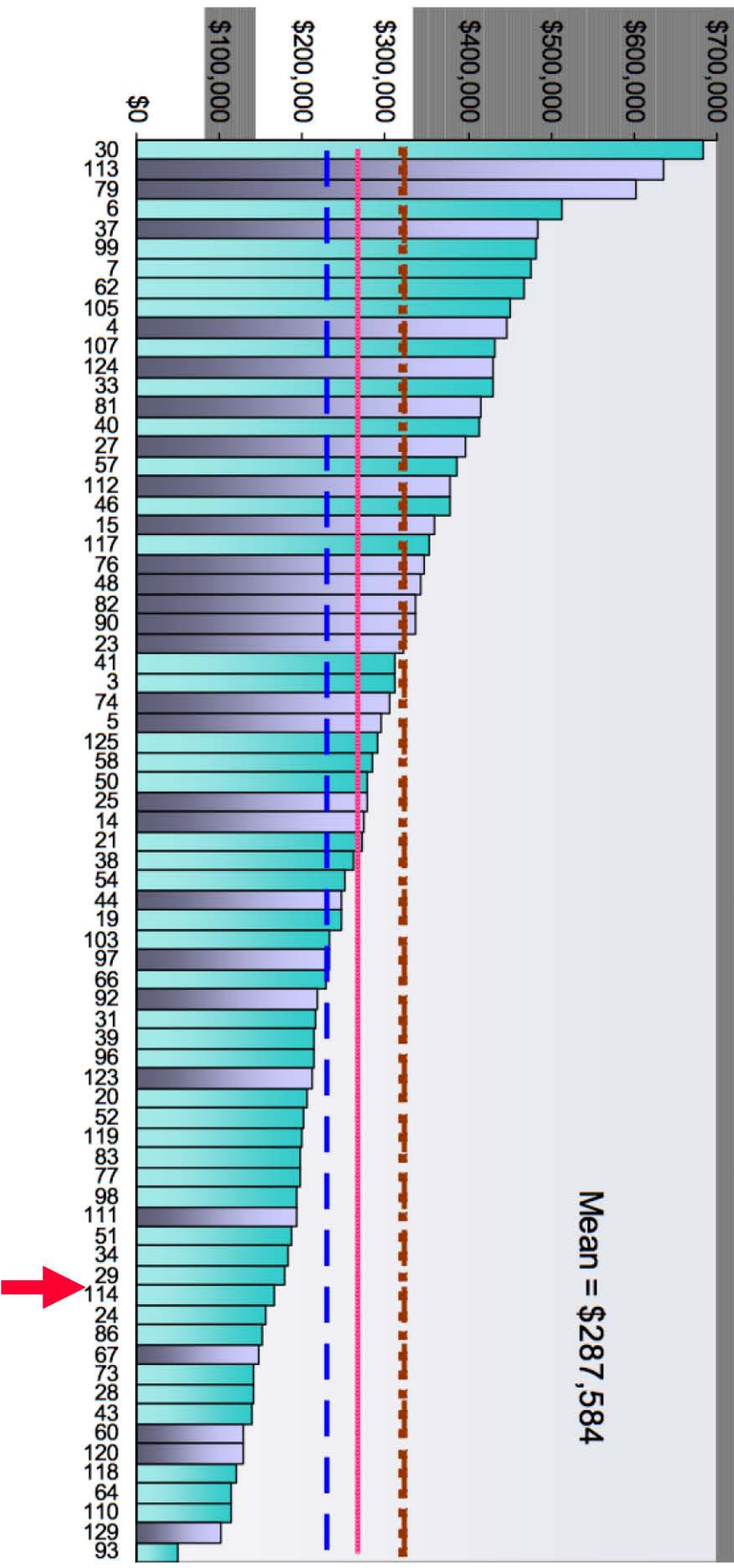
Purpose: Assesses research productivity of faculty engaged in research

Higher Number is Favorable

Formula: Sponsored Programs Direct Expenditures

PIs Associated with Sponsored Programs Expenditures

Mean = \$287,584



Challenges for Stony Brook Medicine

Enhancing Biomedical Research

Research space development

Starting up state-of-the-art laboratories

Assessing new core technologies

What should occupy our attention?

Solutions for Stony Brook Medicine

Biomedical Research Facelift



Solutions for Stony Brook Medicine

Topics and Tools

Topics

Tools

Cancer

Imaging

Infections/Immunity

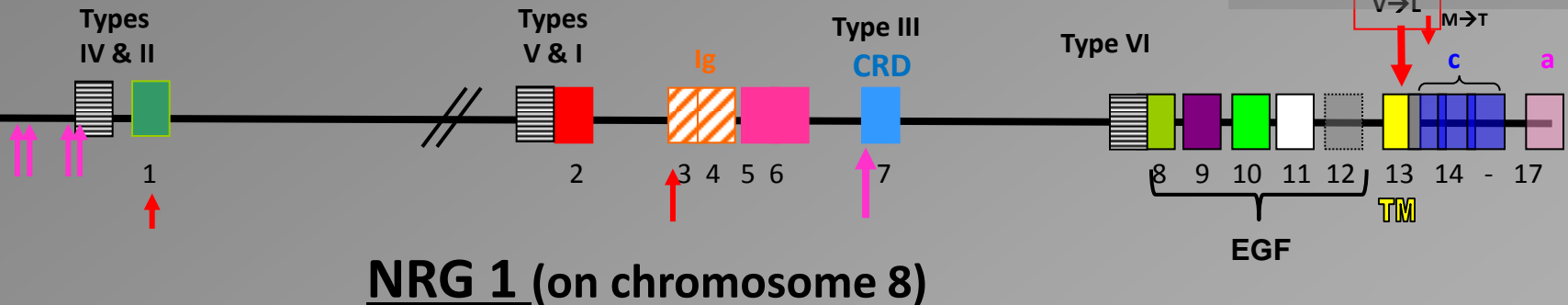
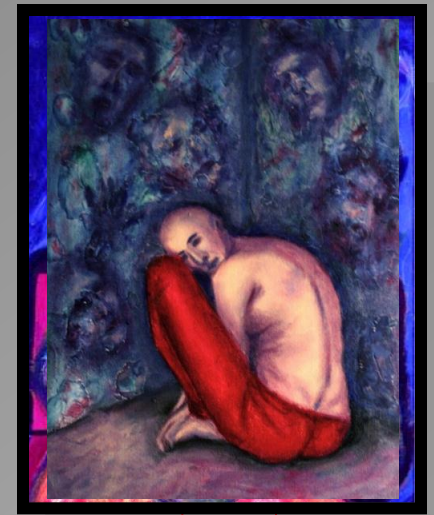
Genetics

Neurobiology

Informatics

Neuregulin 1 and Schizophrenia:

Neuregulin 1 is strongly implicated as a susceptibility gene for Schizophrenia



Neuregulin and Cholinergic signaling:

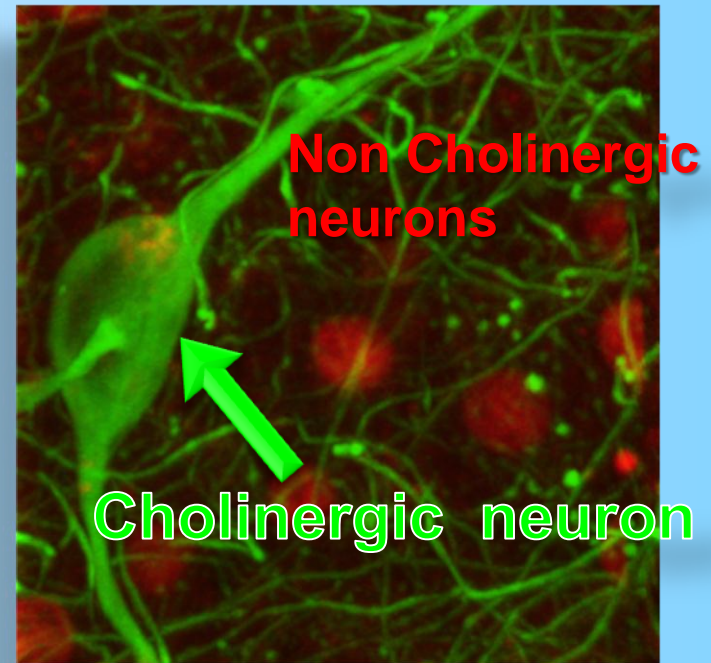
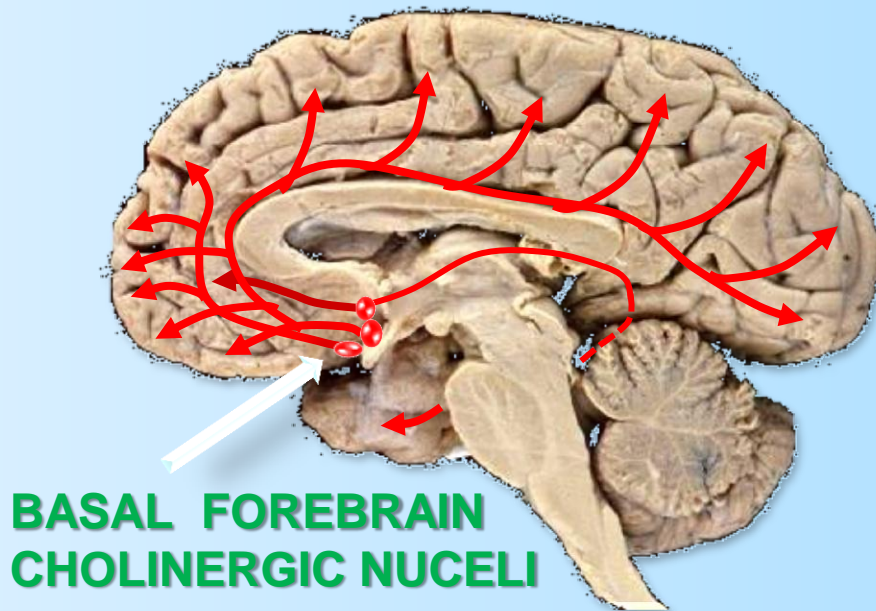
Nrg1 isoforms were originally identified based on regulatory role in cholinergic (nicotinic) neurons

Courtesy Dr. Lorna Role

CHOLINERGIC CIRCUITS involved in **MEMORY & COGNITION**
ARE COMPROMISED in **NEUROPSYCHIATRIC** and **NEURODEGENERATIVE**
DISORDERS (e.g. SZ, AD)

PHARMACOLOGICAL APPROACHES TO MANIPULATING
CHOLINERGIC CIRCUITS HAVE LARGELY FAILED...

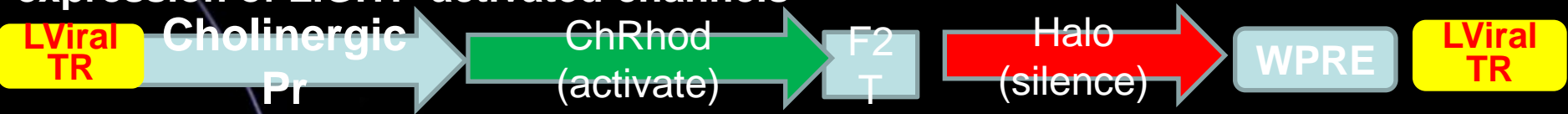
Mostly because these neurons are rare, only certain ones are involved in these diseases, and drugs are not very specific for just the right neurons



Courtesy Dr. Lorna Role

THE APPROACH: ENGINEERING of OPTO-GENETIC PROBES FOR SELECTIVE ACTIVATION OF CHOLINERGIC NEURONS

Infect with viral construct that: (a) targets cholinergic neurons (b) drives expression of LIGHT- activated channels



light → activate cholinergic neurons → ameliorate cognitive deficits.



- develop optogenetic –based DBS approaches for “tuning” cholinergic neurons
- controlling cholinergic modulation of attention and memory-related circuits

Courtesy Dr. Lorna Role

The logo features a vertical column of three colored squares on the left: green at the top, blue in the middle, and red at the bottom. To the right of these squares, the word "SUNY" is written in blue, and the word "REACH" is written in a multi-colored font where each letter is a different color: R (green), E (yellow), A (blue), C (blue), and H (red).

SUNY
REACH

A Research Vision
To Meet a Public Mission

Educating Physicians

100 Years of Modern Medical Education



Abraham Flexner

Commitment to scientific foundations and to high standards

Educating Health Care Professionals

Teaching at Stony Brook ca. July 2010



496 undergraduate medical
students
166 biomedical graduate
students
481 resident physicians
99 post-doc medical fellows

Educating Health Care Professionals

Teaching at Stony Brook ca. July 2010



Educating Health Care Professionals

Academy of Educational Scholars

New program to promote educational excellence

Funded by the Dean's Offices, Departments and the OP

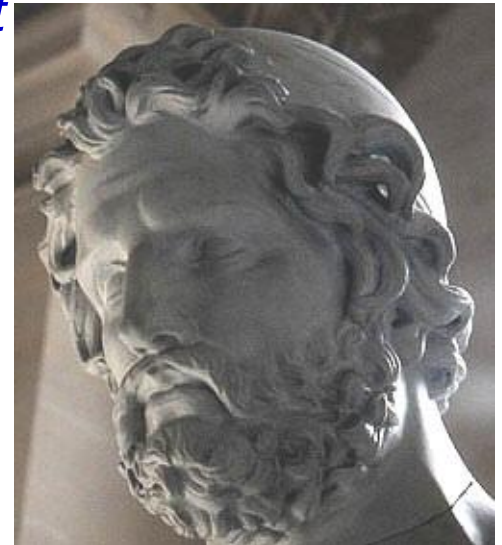
Tackle educational challenges at SBU HSC

Effective teaching of residents under regulatory agency rules

Optimizing undergraduate prerequisites for professional school

Making pre-clinical curriculum clinically relevant

Implement Med-into-Grad or other programs



Educating Health Care Professionals

Life Changing Experiences - Global Health

One month rotation UCSD to Maputo

IM, Peds, EM residents

ID, Card, Pulm fellows

Neph, ID, HO, Neurosurg faculty

Three month rotation Maputo Central

Hospital to UCSD

Clinical research project

Daily morning teaching conference

Weekly UCSD/MCH case conference

Devoted UCSD and UCH faculty

SB Clinical Practice ca. September 2010



~31,000 inpatient stays
~4000 births
~84,000 ED visits
~500,000 outpatient visits
O/E mortality = 0.86

Solutions for Stony Brook Health Sciences

Patient Care

Creating a primary care model for the future

Create a culture that promotes patient satisfaction

Welcome patients as partners in care

Move beyond intermittent, facility-based contact

Wisely facilitating specialized care

Facilitate internal and external referrals

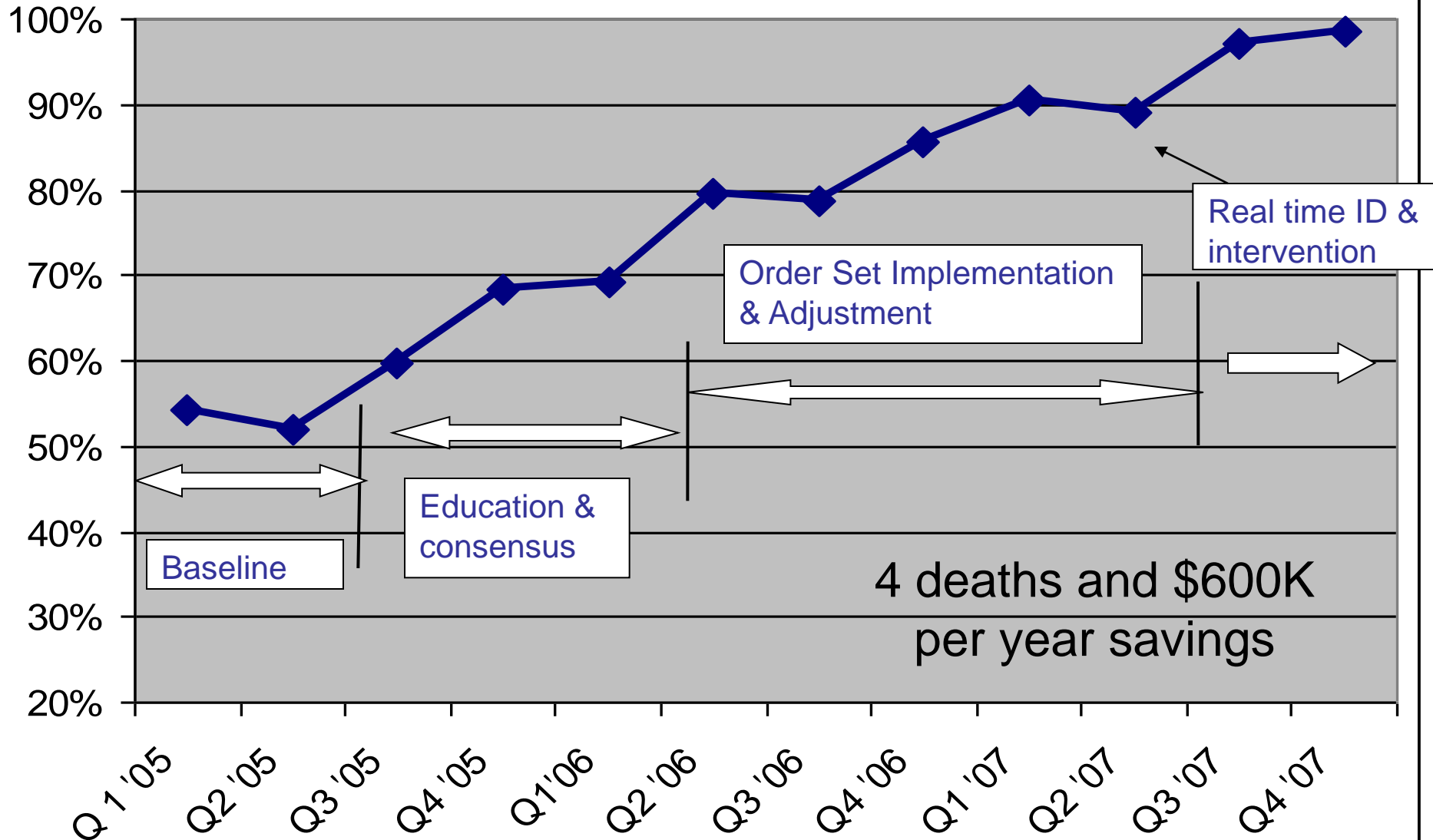
Develop multi-disciplinary clinics

Build networks with the community - “captive PC”

Hard wire a science of health care quality

Percent of Randomly Sampled Inpatients with Adequate VTE Prophylaxis

N = 2,944 mean 82 audits / month



4 deaths and \$600K
per year savings

The Health Sciences at Stony Brook University

Growing Clinical Programs

Strategic Goals

Educational

Scholarship

Fiscal



Building Bridges

Community Practitioners

Continuing Medical Education
Open-up patient care conferences
Free, real-time expert consultation
Timely referral follow-up
Accountable Care Organization

Building Bridges

Faculty and Staff

Academic leadership training

Professional development fund

Celebrate superior patient and learner satisfaction

Pilot grants for translational research and clinical innovation

Coordinate faculty recruitment to grow nascent critical masses

Provide scholarly opportunities in the science of clinical quality
measurement and intervention





Building Bridges

Within the East Campus

Develop stronger ties amongst the 5 HSC Schools
Build our cancer, infection and neurosciences programs
Invest in our tools, genetics, informatics and imaging
Develop a clinical investigation infrastructure
Facilitate productive, non-contentious interactions
within our clinical practices

Building Bridges

With the West Campus

Physical sciences with biomedical applications
Prerequisite competencies for premedical students
Enhance global health programs



Building Bridges

With Our Other Partners

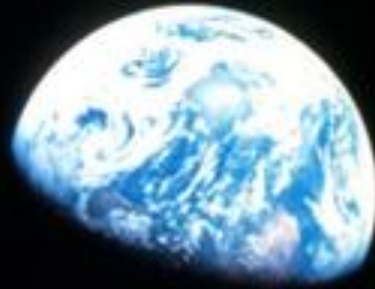
BioImaging with Brookhaven National Laboratory
Cancer and Neurobiology with Cold Spring Harbor
Clinical and bench research, especially outcomes with NVAMC



The Health Sciences at Stony Brook University

Non-Metaphorical Building





**So many of our dreams at first seem impossible,
then they seem improbable, and then, when we summon the
will, they soon become inevitable.**

Christopher Reeve