

National Cancer Institute



U.S. DEPARTMENT
OF HEALTH AND
HUMAN SERVICES
National Institutes
of Health

Overview NCI Diversity Training Programs

Dr. Sanya A. Springfield
Director
Center to Reduce Cancer Health Disparities

National Cancer Advisory Board
June 22, 2010

Historical Diversity Training Barriers

How could 20 years of funding Diversity Supplements and co-funding “targeted” programs...

...result in a dearth of competitive diverse cancer researchers?

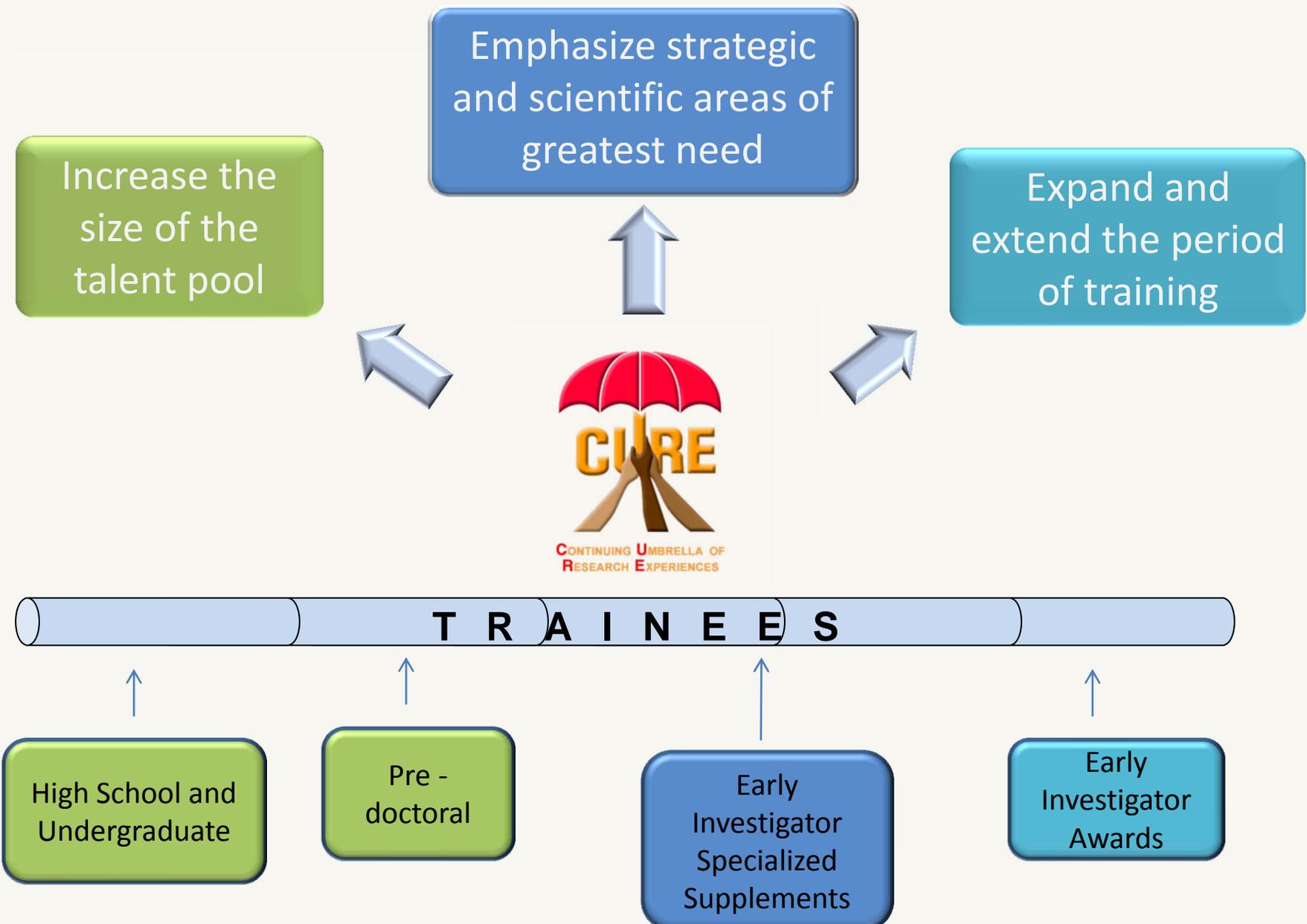
PIPELINE

- Low Pool
- Students Deterred
- Low Expectations
- Inadequate Preparation
- Scarcity of Role Models

PROGRAMS

- Late Intervention
- Short Term₁
- Selection Processes
- Lack of Next Steps
- Inadequate Tracking

Continuing Umbrella of Research Experiences



Continuing

Umbrella



Research

Experiences

CONTINUING UMBRELLA OF RESEARCH EXPERIENCES

HS

Undergrad

Predocctoral

Postdoctoral

Junior Investigator

Diversity Research Supplements



NRSA Fellowships: F31

NRSA Institutional Training Grants: T32

Prevention and Control: R25

SPORE/Translational: P50
Cancer Center: P30 MD/POR

Clinical Oncology Training Grants: K12

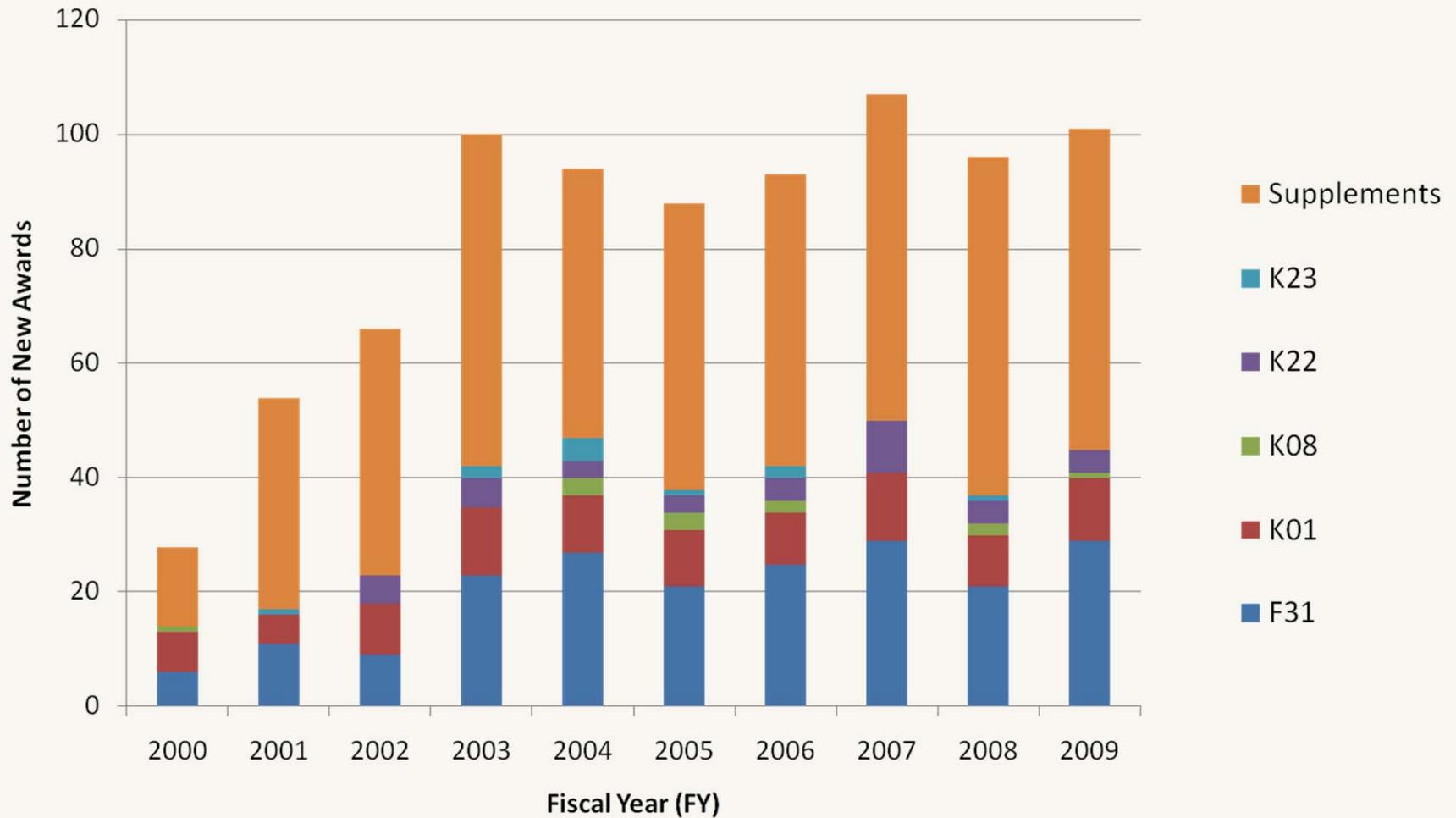
Career Awards: K01 K08 K23

Transition Career: K22

Cancer Center Grant: P30

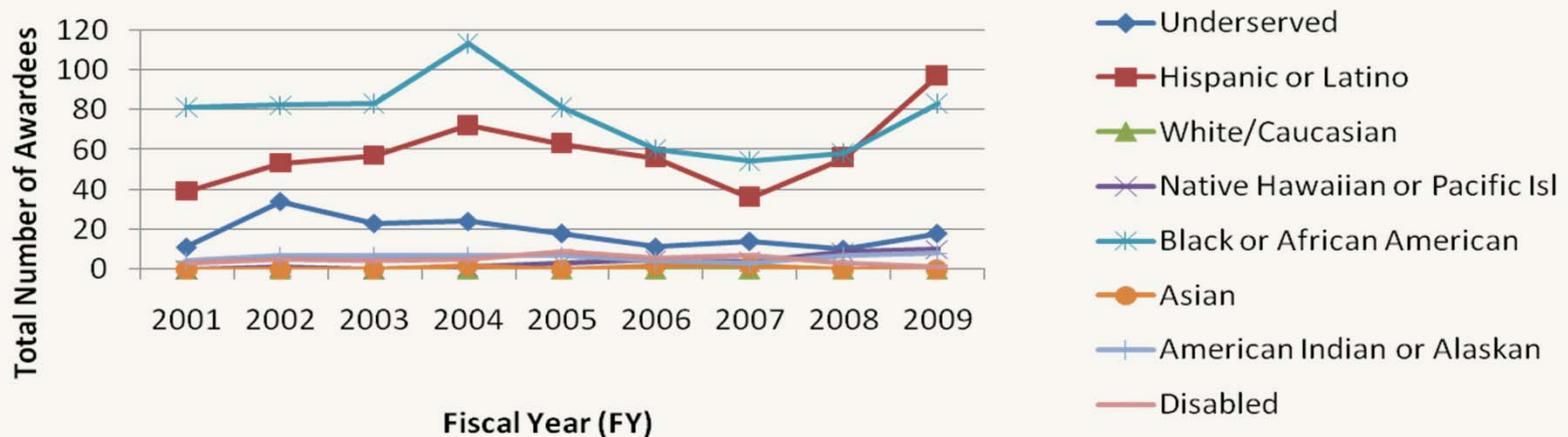
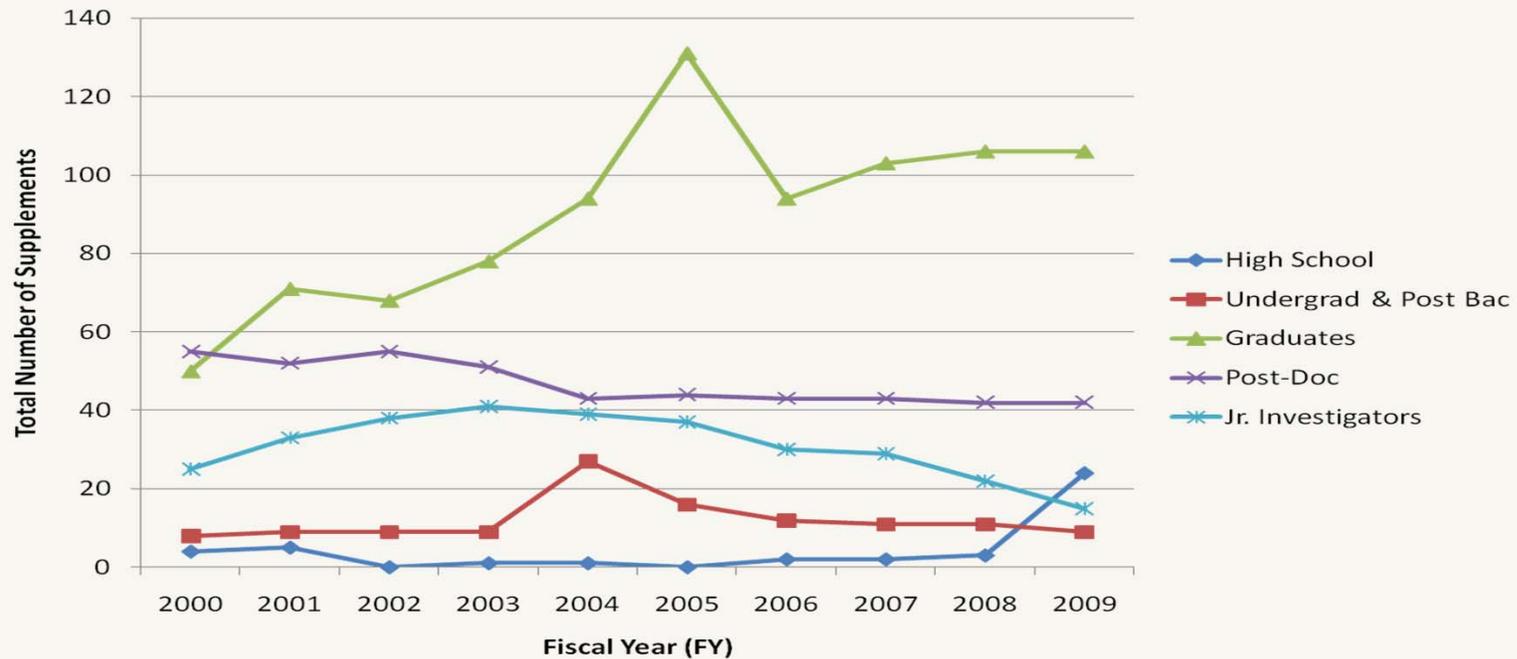


Growth in CURE Mechanisms*



*K01/K08 began in 1997; K23 began in 2000; and K22 began in 2001

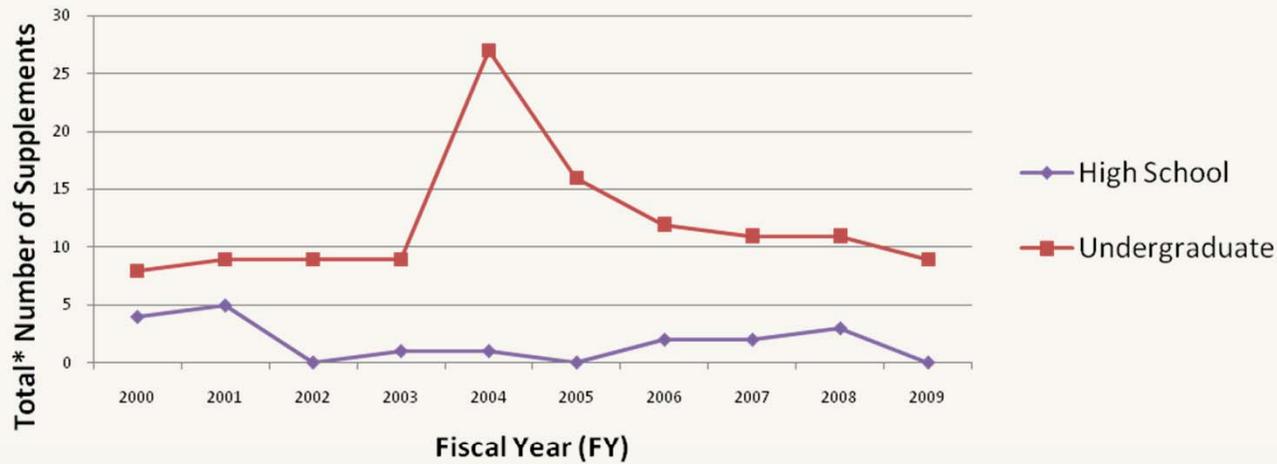
Diversity Supplements



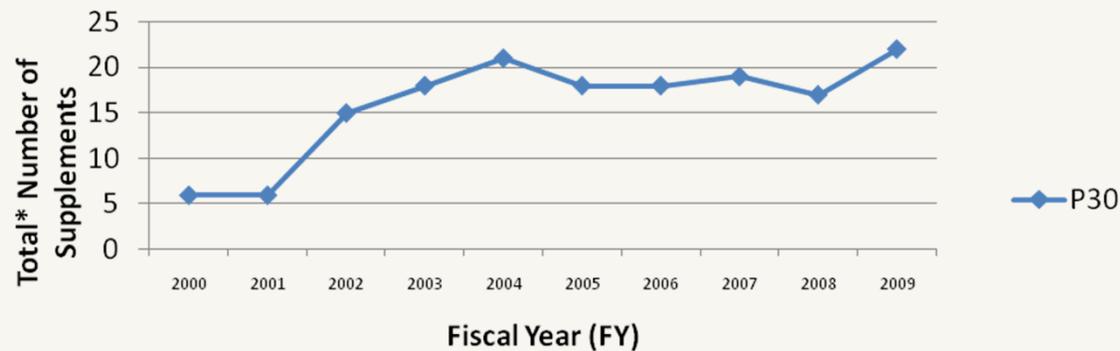
*Individuals who are underrepresented, first generation college graduates, from disadvantaged backgrounds, or disability

Diversity/P30 Supplements for High School and Undergraduates

Diversity Supplements



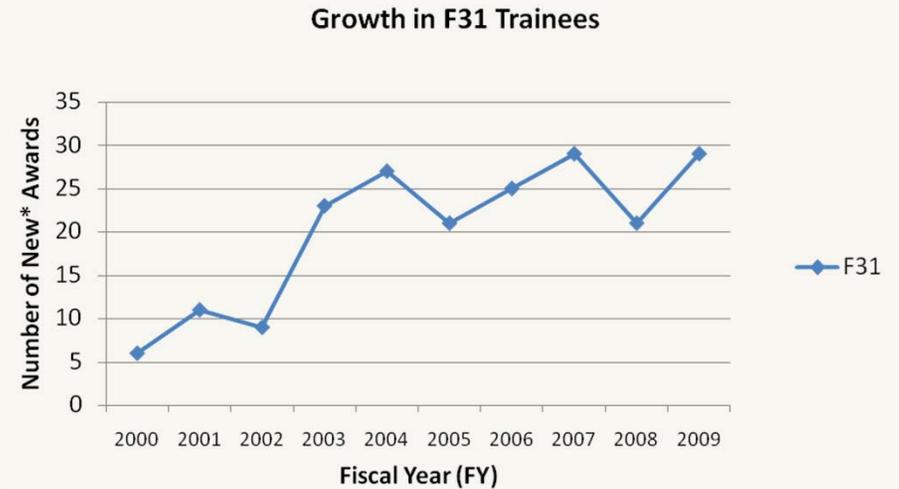
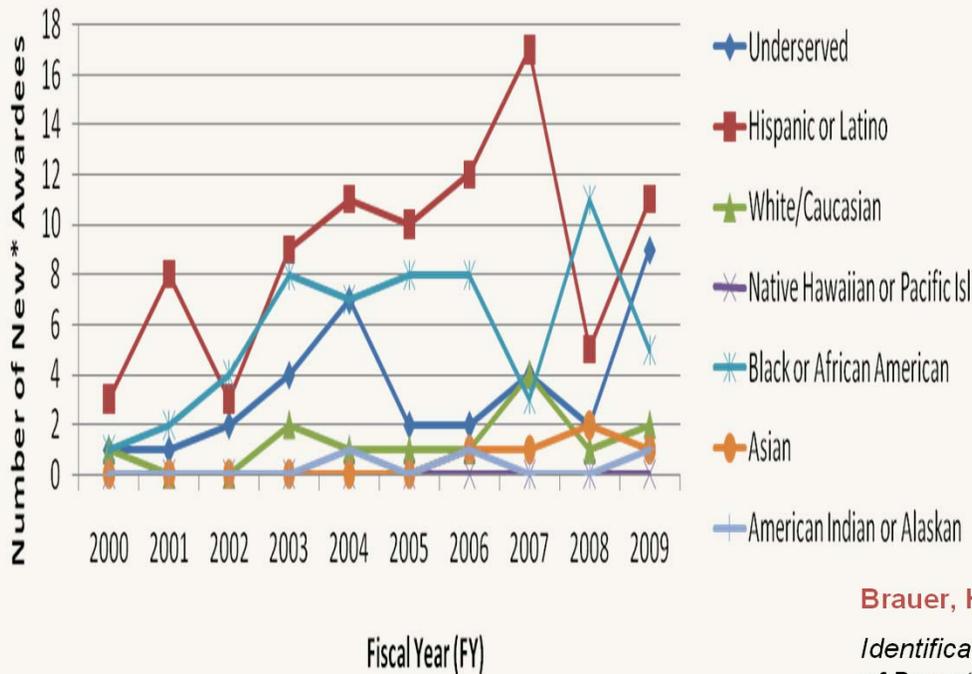
P30 Supplements



*Types 1 and 5

Pre-doctoral Students (F31s) Growth

Ruth L. Kirschstein NRSA Award



Nwachkwu, Jerome

*Mechanism of ART-27
Function in Prostate
Cancer*

Farmer, Tyessa

*A high resolution
comparative analysis of
early onset breast cancer
by race*

Brauer, Heather

*Identification and validation
of Breast Cancer Peptide
Markers*

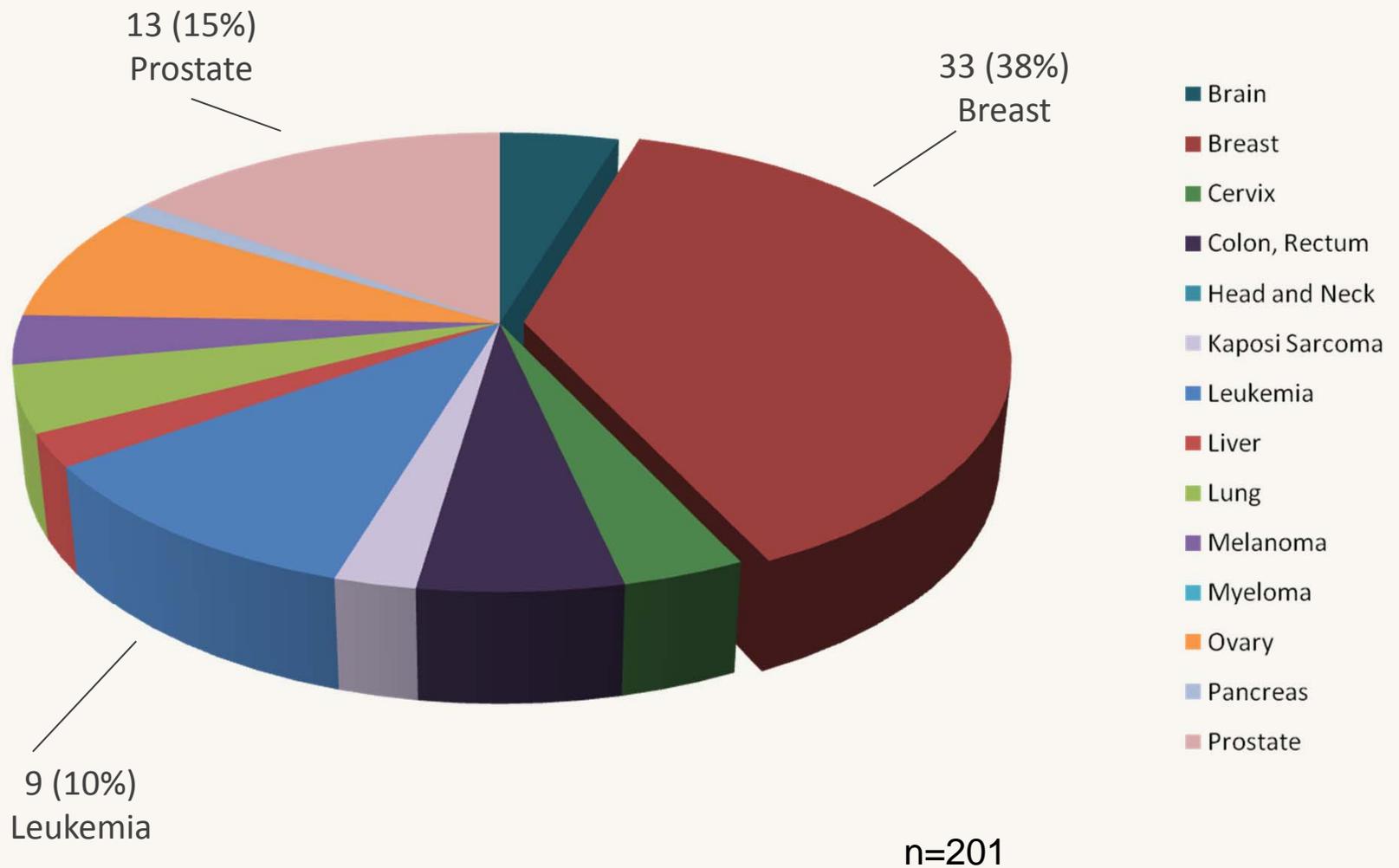
Armaiz-Pena, Guillermo

*Role of Src in Stress-Mediated
Progression of Ovarian Cancer*



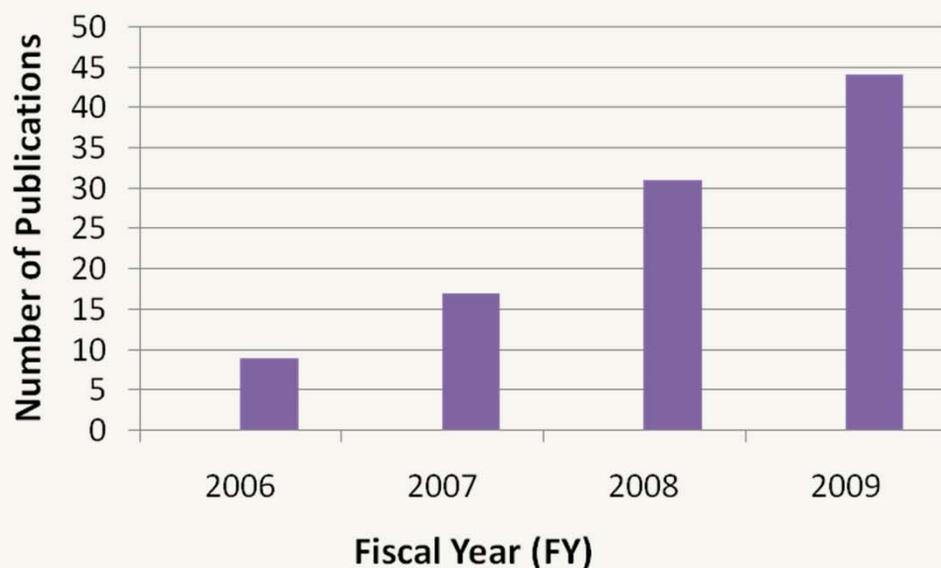
*Type 1

Pre-doctoral Research by Cancer Type

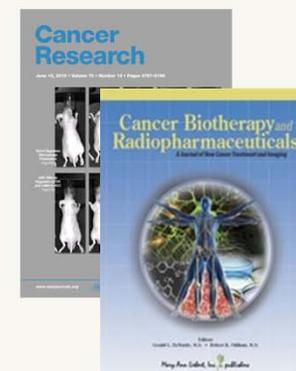
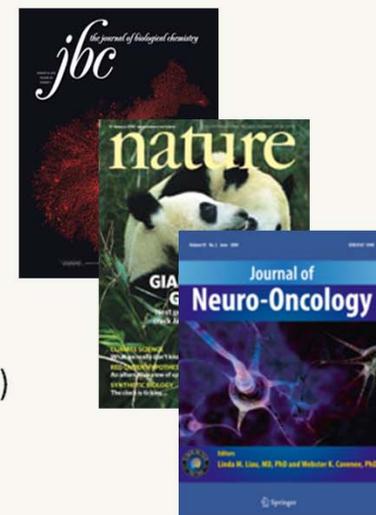


Pre-doctoral Publications

Peer Reviewed Publications of F31 Awardees

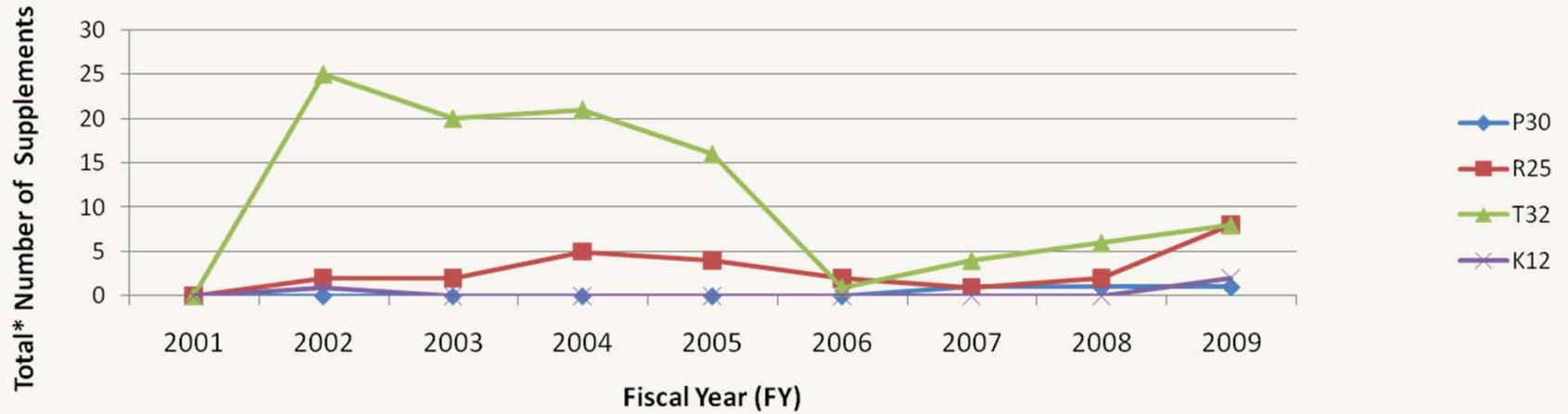


■ F31 (Pre-docs)

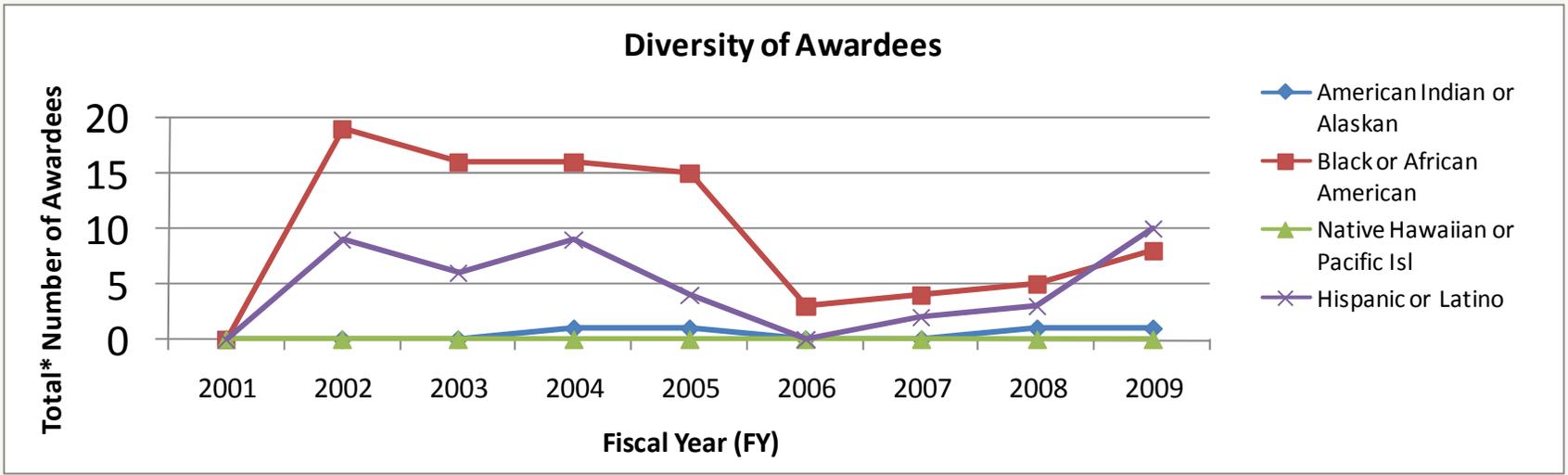


Early Stage Specialized Supplements

Awards

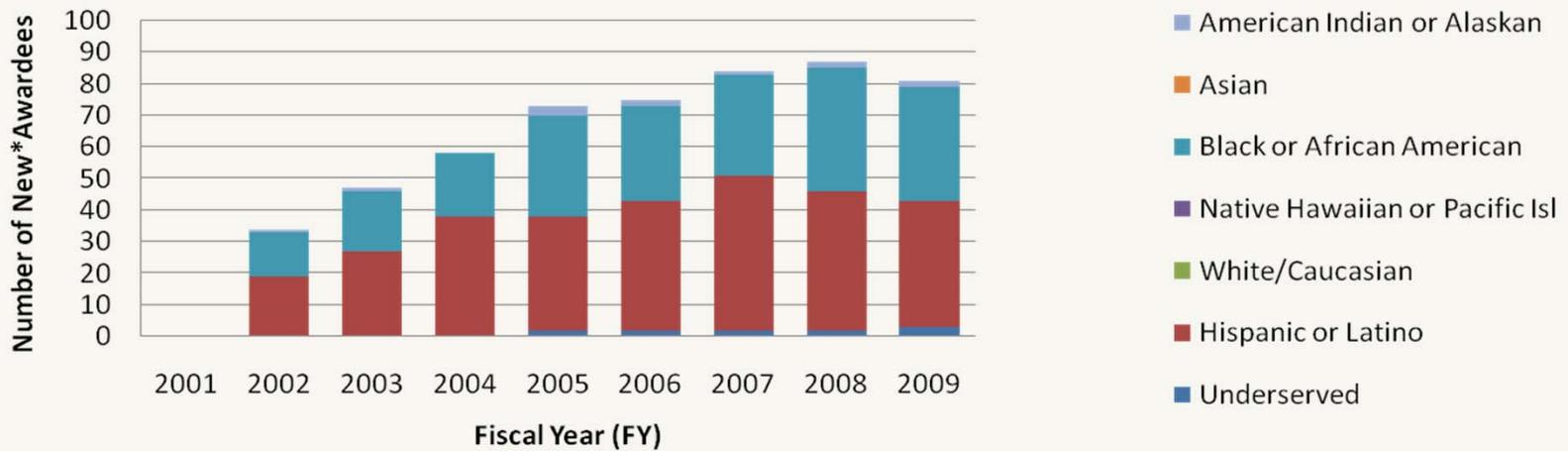
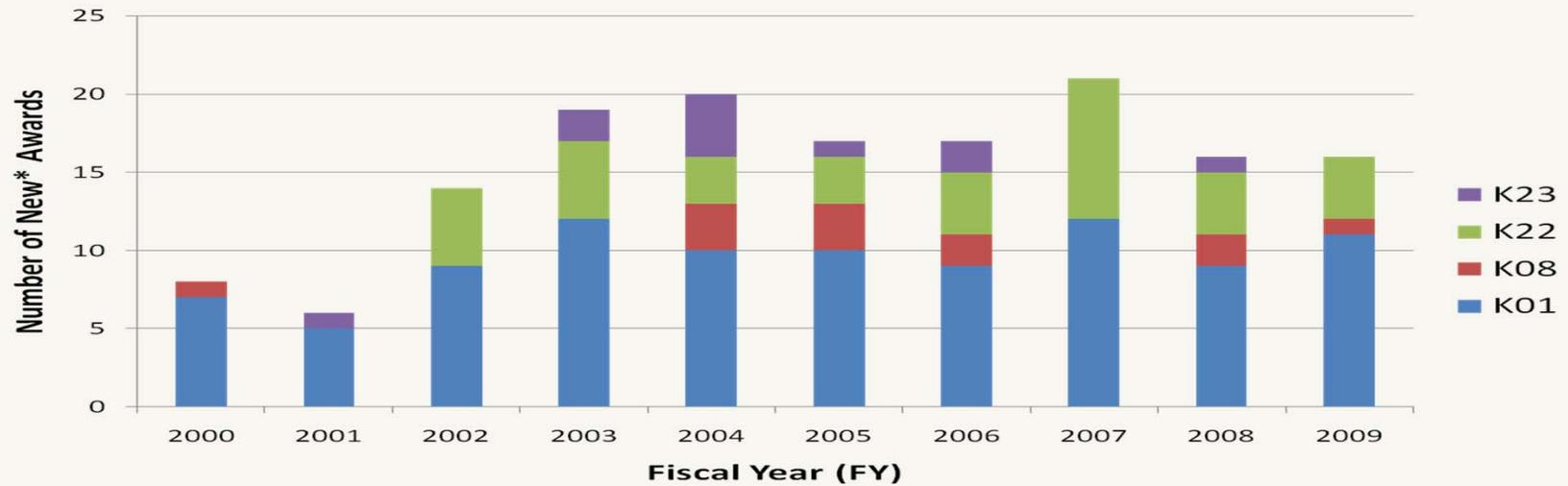


Diversity of Awardees



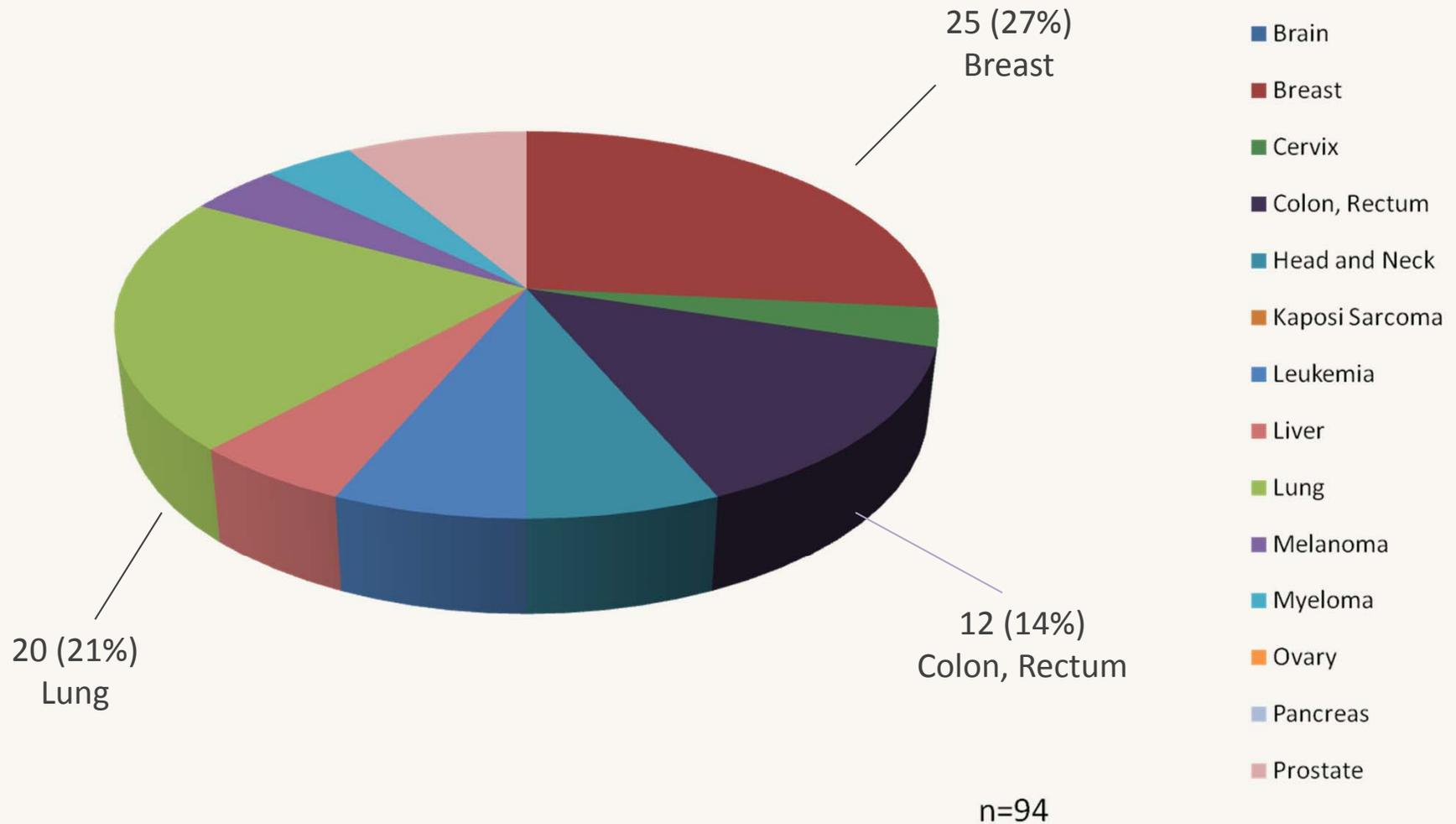
*Types 1 and 5

Early Stage Investigator Career Development Award (K)



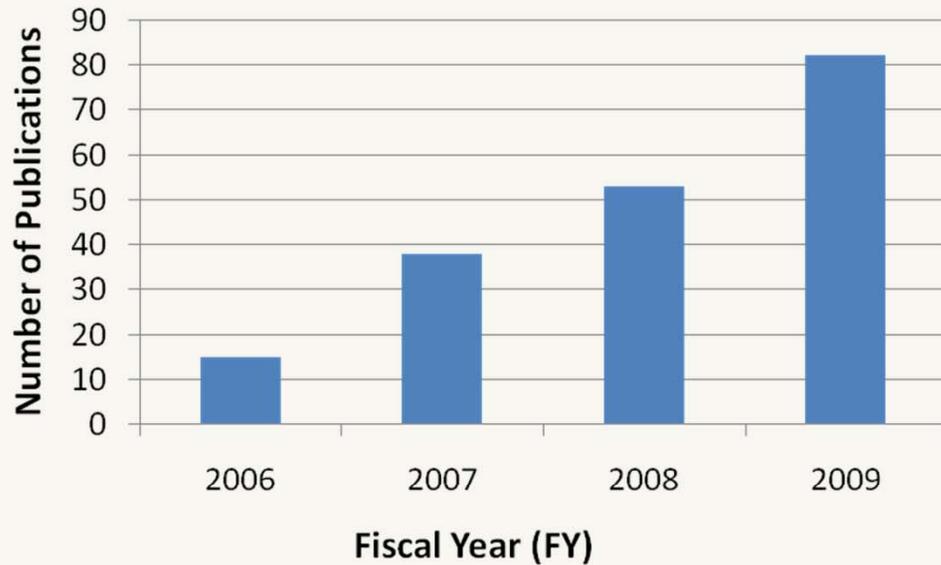
*Type 1

Early Stage Investigator Research by Cancer Type



Early Stage Investigator Publications

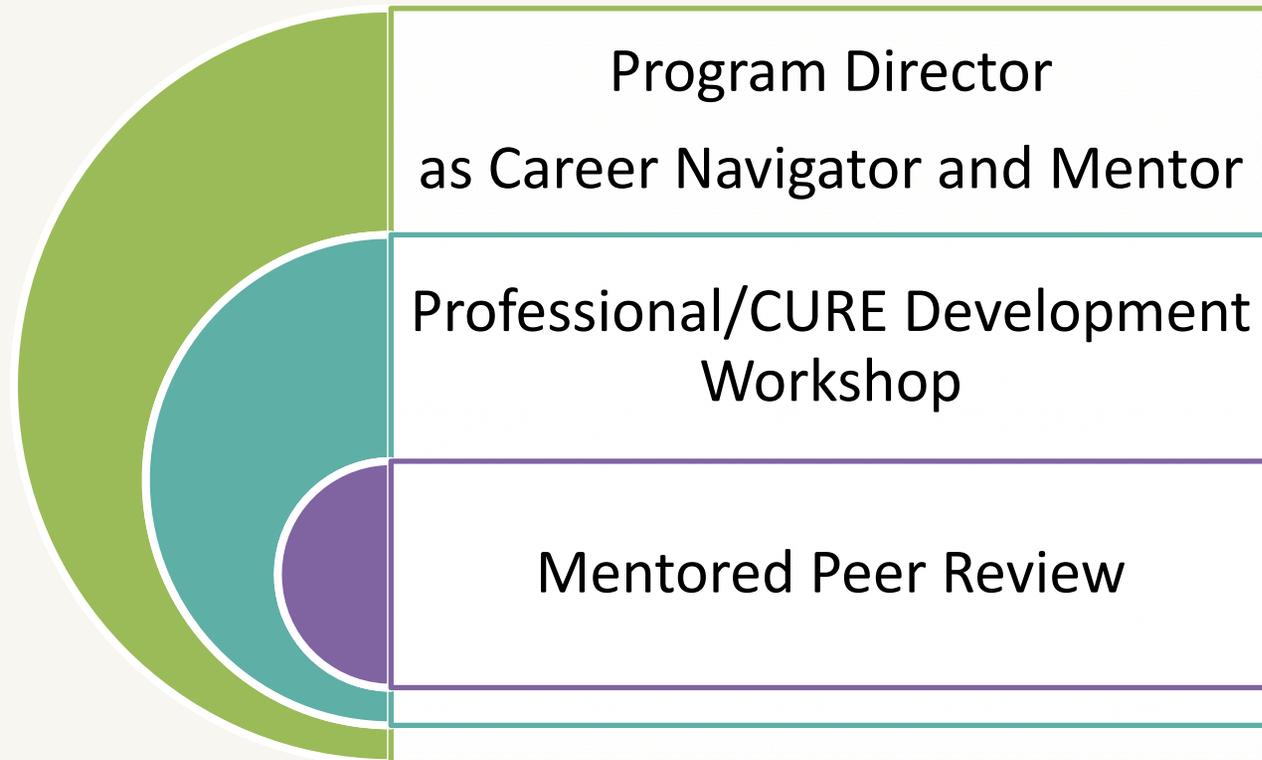
Peer Reviewed Publications of K-series



■ K Series (Early Stage Investigators)



CURE Unique Features



Program Director as Career Navigator

CURE
Program
Director

- Diversity of Role Models
- Continual Assessment with Feedback for Growth from HS to R01
- Assist with Cultural Adaptation
- Mentoring Book and Quarterly Newsletter

Professional/Career Development Workshop

Personalized and Culturally-Sensitive Professional/Career Development Workshop

- Interviewing Skills and Publication Skills Building
- Networking with NIH and NCI staff and peers
- Grant Writing
- Research Career Expectations
- Competitive Scientific Poster Session



Mentored Peer Review



Observe
Mock
Review

Serve on
Mock
Review

Ad hoc IRG
Member

Standing
IRG
Member

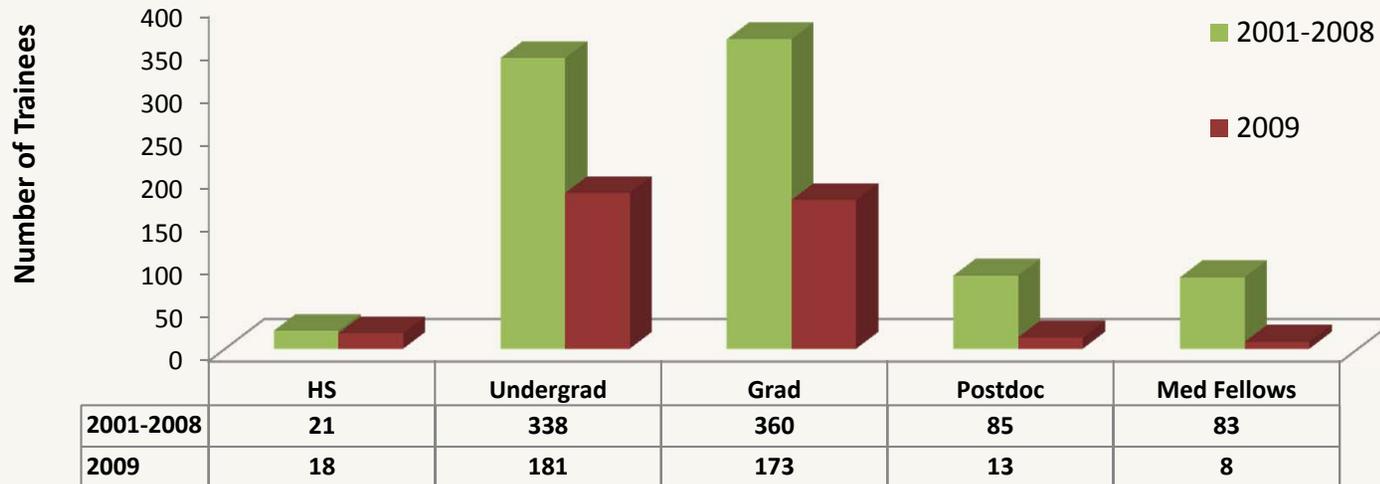
Advisory
Committees

CURE Trainees at Cancer Centers

Graduate/Pre-docs	F31		
	CC Awards	21	38%
	Total	55	
Junior Investigators Scientists	K01		
	CC Awards	24	49%
	Total	49	
Junior Investigators Clinicians	K08		
	CC Awards	5	71%
	Total	7	
Junior Investigators New Basic/Clinical Scientist	K22		
	CC Awards	5	29%
	Total	17	
Junior Investigators Clinicians	K23		
	CC Awards	4	50%
	Total	8	

Minority Institution/Cancer Center Partnership Training

MI/CCP Training, 2001-2008 & 2009



Increase Translational Research Capacity



Dr. Adeyinka Laiyemo
(Gastrointestinal cancer)
Howard University



Dr. Nicolle Martin
(Cancer prevention)
Morehouse School of Medicine



Dr. Maribel Tirado
(Cancer Immunotherapy)
University of Puerto Rico



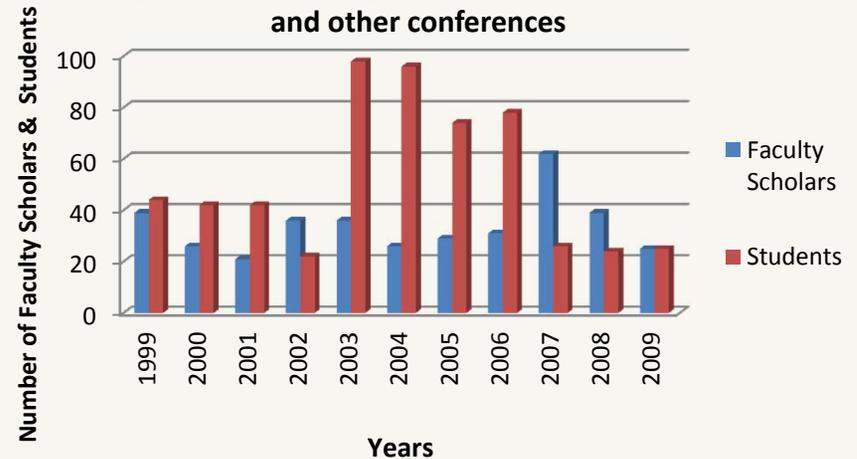
Dr. Amosy E. M'Koma
(Colorectal cancer)
Meharry Medical College

AACR/MICR Minority Scholars/Faculty

AACR *American Association for Cancer Research*



Faculty Scholars and Students supported to attend and present scientific presentations at annual AACR and other conferences



864 Minority Scholars/Faculty funded by R13 conference grants to AACR

CURE Impact

Pipeline of
diverse
cancer
investigators
and mentors



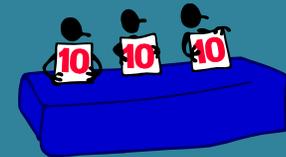
Over 1700
scientific
publications



Over 100
competitive
grants



Over 200
Committees
with 18,000
days of
review
service



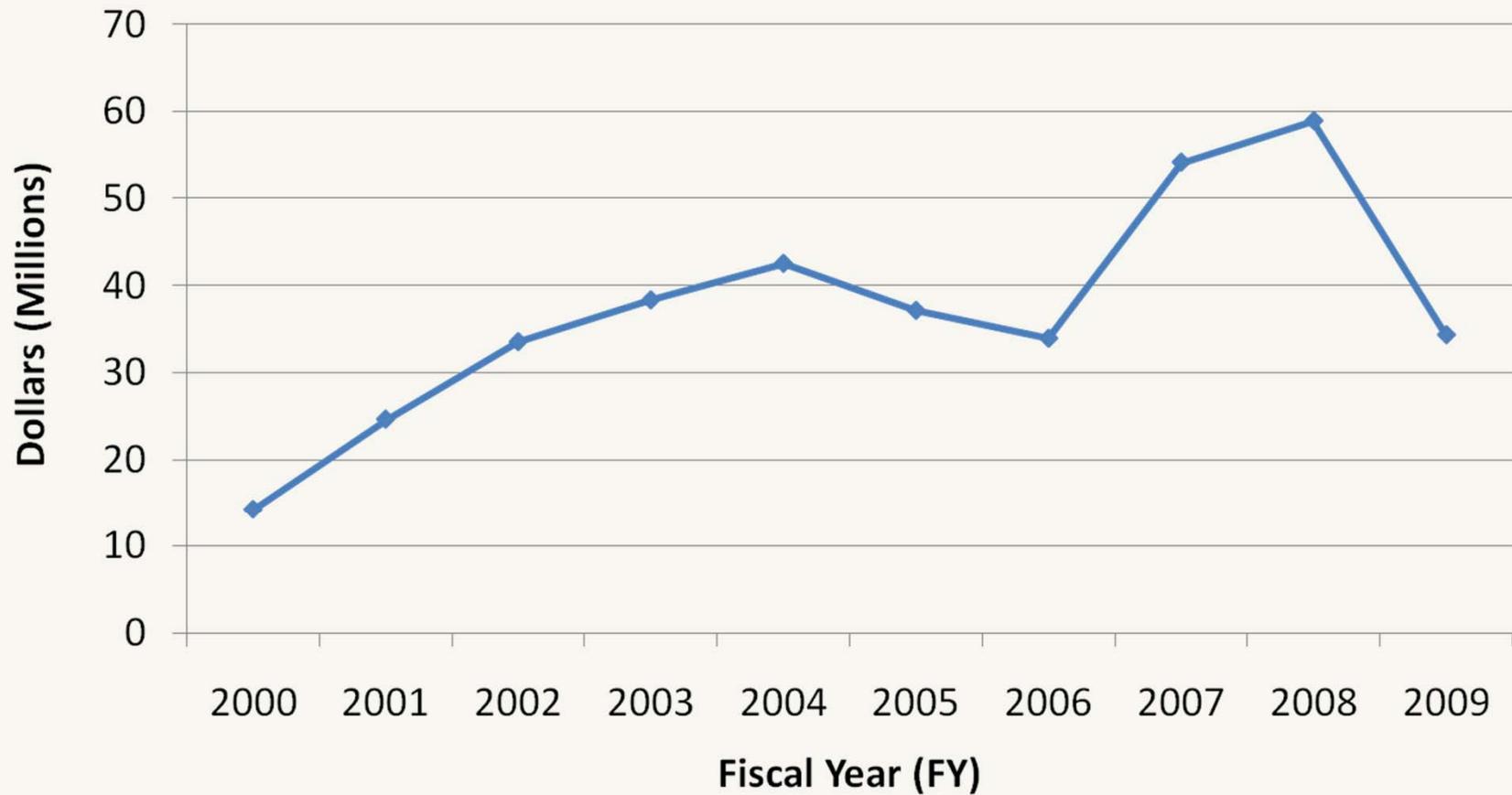
Pre-doc and Early Stage Investigator Overall Competitiveness

Pre-doc and Early Stage Investigator Competitiveness 2005-2010		
	Submitted Applications*	Funded Awards
F31	6	3
K01	208	55
K08	13	5
K22	13	4
K23	94	15
TOTAL	334	82 (24.6%)

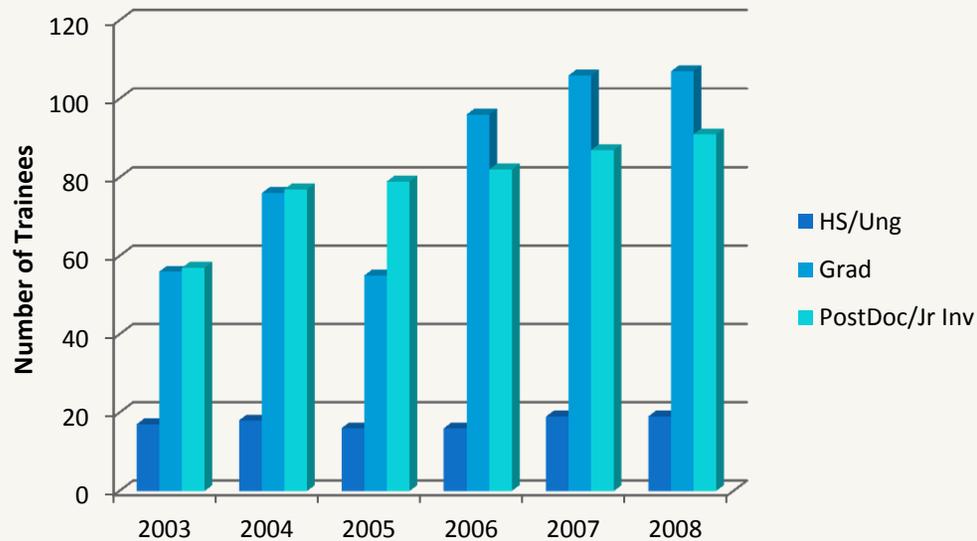
Review and Advisory Members

Mock Review Participation	64
NCI Ad hoc Review Subcommittee Manpower & Training (IRG)	32
NCI/NIH IRG and CSR Review Committees Subcommittees: F (training), G (education), I (career), J (population and patient-oriented) NCI Molecular Oncology SBIR Cancer Imaging SPORE Experimental Therapeutics	28
NCI Advisory/Review Committees: NCI Board of Scientific Counselors NCI Board of Scientific Advisor	2
Committees Outside NIH DoD Breast Cancer Research Program ASCO Science Committee Myeloma Research Foundation AACR Minority in Cancer Research	26

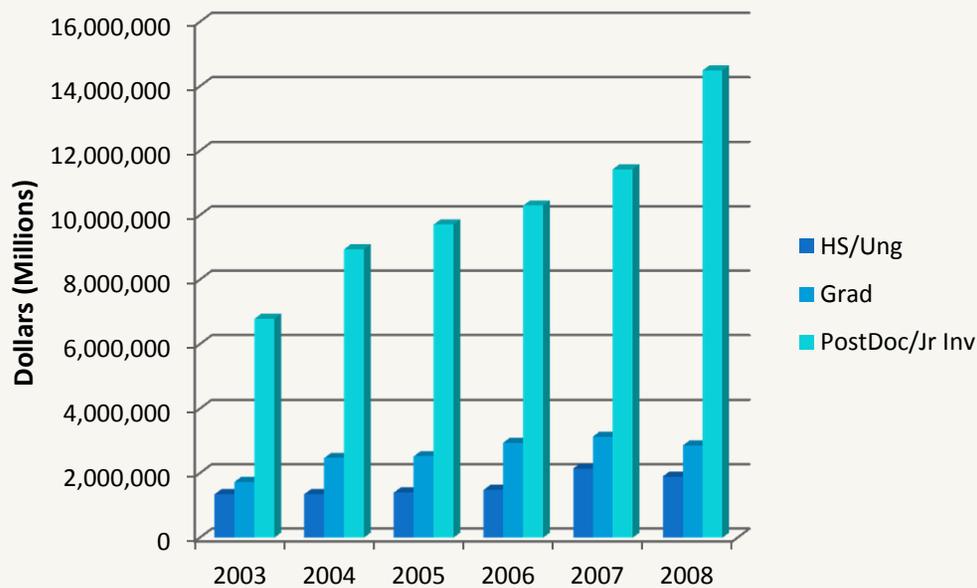
NCI Investment in CURE Training and Career Development



CURE Trainees by Academic Level



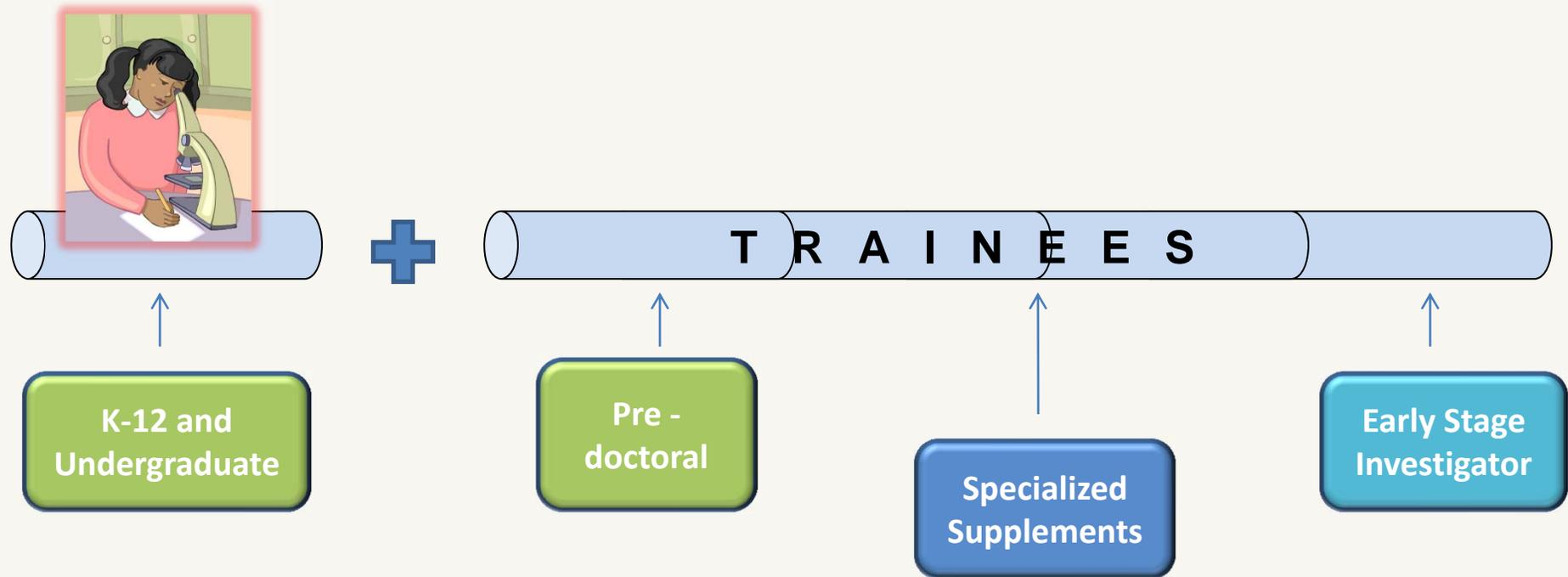
CURE Dollars Awarded by Academic Year



**More
Meritorious
Applications than
Awards**

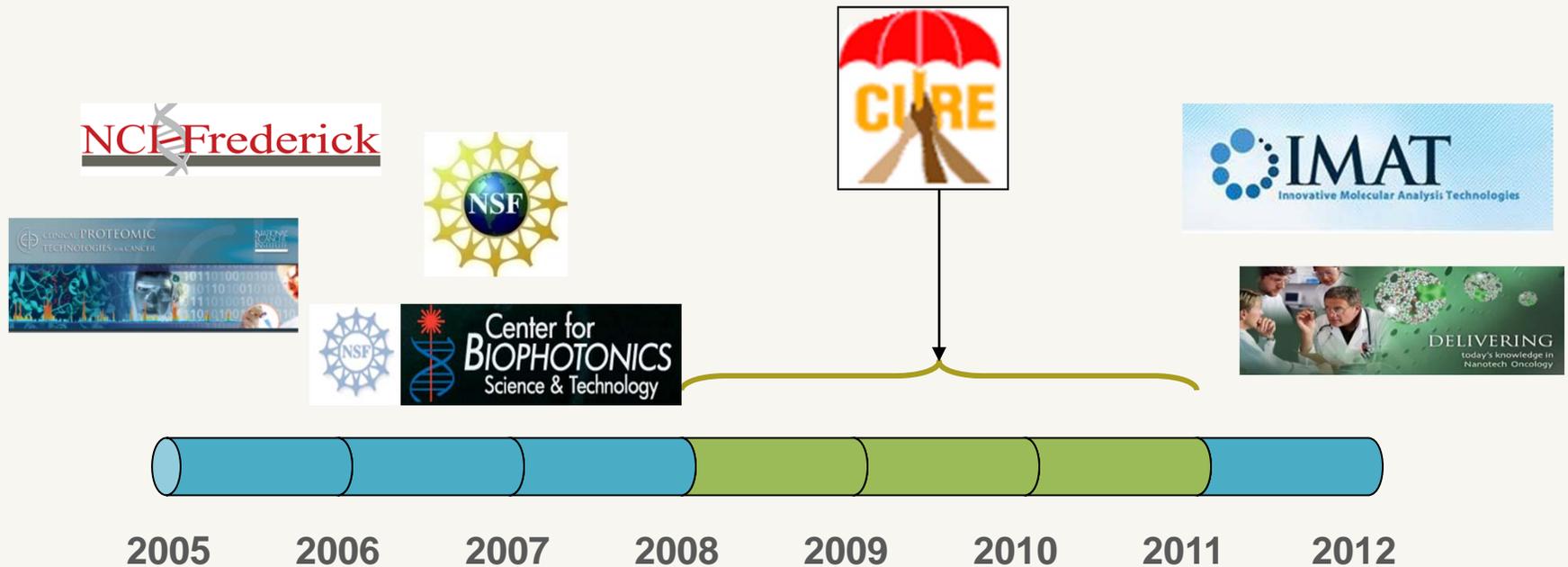
CURE Evolution: K to 12 Program

Provide early stimulating, state-of-art, hands-on engagement and exposure to science and careers in cancer research.



CURE Evolution: Emerging Technology

Emerging Technology ET CURE



- ✓ Enhance competitiveness
- ✓ Expand ET expertise
- ✓ Foster successful careers in Jr. Investigators

Continuing

Umbrella



Research

Experiences

CONTINUING UMBRELLA OF RESEARCH EXPERIENCES

HS

Undergrad

Predocloral

Postdoctoral

Junior Investigator

Diversity Research Supplements

Supplements to the CURE:

Cancer Center Grant: P30

54 Applications
15 from CURE (28%)

6 Fundable
3 from CURE (50%)

NRSA Fellowships: F31

NRSA Training Grants: T32

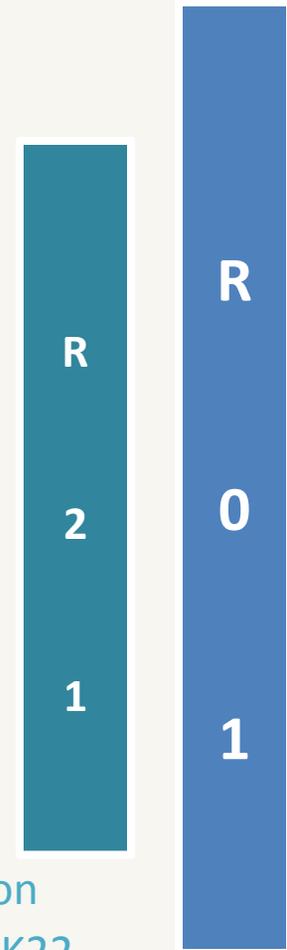
R25T: Prevention and Control

P50 Translational Cancer Center: P30 MD/POR :

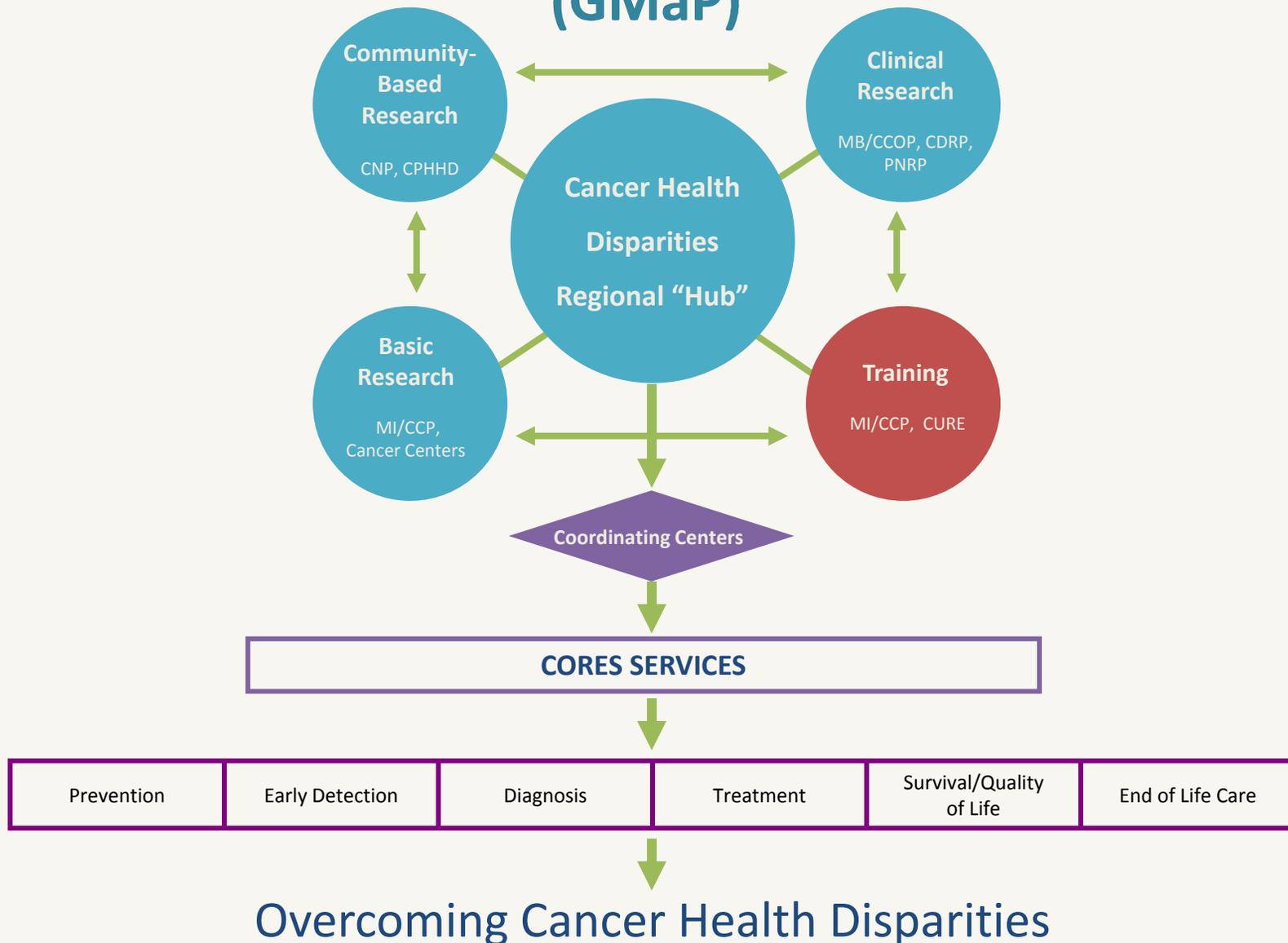
Clinical Oncology Training Grants: K12

Career Awards: K01 K08 K23

Transition Career: K22



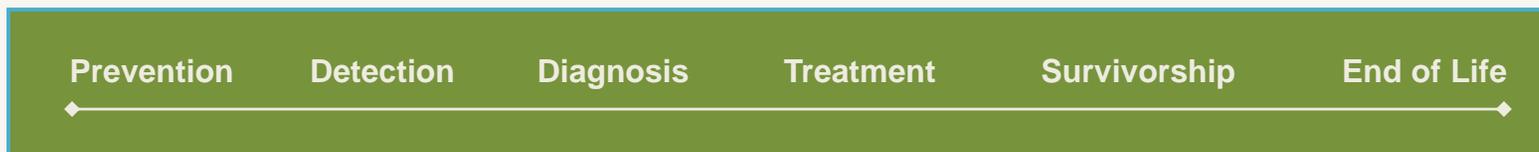
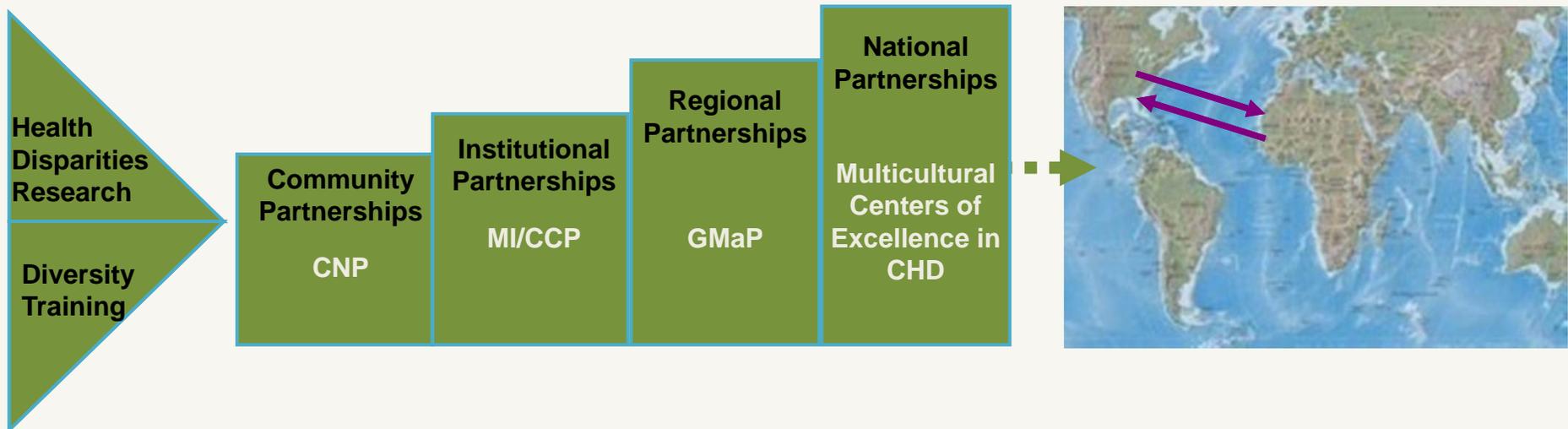
Building Critical Mass through Training: Cancer Health Disparities Geographic Management Program (GMaP)



Building Critical Mass through Training: Global Partnerships

Domestic Partnerships

Global Partnerships



Pathway from integration of research and training through partnership growth and development to the globalization of cancer health disparities reduction.

CURE Growth



First CURE Trainees

- Where are they now? -



**Elaine Alarid,
Ph.D.**

R01

*Associate Professor
of Oncology*

University of
California, Berkeley



**Manuel
Penichet,
M.D., Ph.D.**

R01

*Associate Professor
of Surgery,
Microbiology,
Immunology, and
Molecular Genetics*

University of
California, Los
Angeles



**Alex Adjei,
M.D., Ph.D.**

R01

*Senior Vice
President of
Clinical Research &
Chairman of the
Department of
Medicine*

Roswell Park Cancer
Institute, Buffalo, NY



**Chanita Hughes-
Halbert, Ph.D.**

R01, R24

*Associate Professor,
Department of
Psychiatry*

University of
Pennsylvania, Abramson
Cancer Center

First CURE Trainees

- Where are they now? -



**Eduardo Sotomayor,
M.D.**

R01

*Professor and Chair,
Department of Malignant
Hematology*

H. Lee Moffitt Cancer
Center & Research Institute

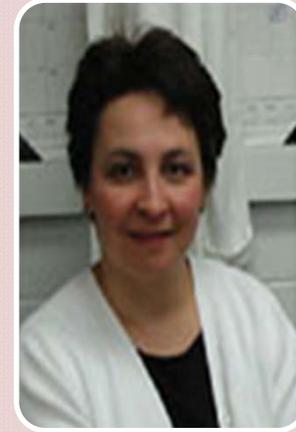


**Marcos Paiva, M.D.,
Ph.D.**

K22

*Assistant Professor,
Department of Surgery
Physician, Head and Neck
Surgery, Johnson
Comprehensive Cancer Center*

University of California,
Los Angeles



**Thais Salazar-Mather,
Ph.D.**

K22

*Assistant Professor of
Medical Science,
Department of Molecular
Microbiology and
Immunology*

University of California,
Berkeley

NIH Director's New Innovator Awardees



Levi Garraway M.D., Ph.D.

Mentored Award

K08

Defining Melanoma Therapeutic Avenues by Integrative
Functional Genomics



Dorothy Sipkins, M.D., Ph.D.

Mentored Award

K08

Stem Cell, Tumor and Bone Marrow
Microenvironment Cross-Talk *In Vivo*

Recent Junior Investigator R01s



Jennie L. Williams, Ph.D.

Mentored Award to R01

Current K01 to R01

Phosphosulindac, Mirnas and Cancer Racial
Disparity



Martina Buck, M.D., Ph.D.

Mentored Award

K22 to R01

ARRA Challenge Grant

C/EBP beta peptides for the Treatment of
Hepatic Fibrosis



Roberto Benzo, M.D.

Mentored Award

K23 to R01

Pulmonary Rehabilitation Before Lung Cancer
Resection



Christopher Li, M.D., Ph.D.

Mentored Award

K01 to 3 R01s

Depo-Provera And Breast Cancer:
Epidemiology/PathologyProtein
Biomarkers Of Cancer Risk In Older Persons
Risk Factors For Second Primary Breast Cancer Among DCIS
Survivors

CURE Noteworthy Promotions



Maria Elena Martinez, Ph.D.
K01, P30 Subproject

*Richard H. Hollen Professor of Cancer Research
Co-Director, Cancer Prevention & Control Program
Director, Cancer Health Disparities Institute
Professor of Epidemiology*

*NCI Board of Scientific Advisors (BSA) Nominee
Chair, Minority in Cancer Research, AACR*

Arizona Cancer Center



Miguel Villalona-Calero, M.D.
K01, R21, R01

*Director, Division of Medical Oncology,
Department of Internal Medicine*

Recognized in Experimental and Lung Cancer

Ohio State University Comprehensive Cancer Center

CURE Intramural/Extramural Investigators



Federico Bernal, Ph.D.

2004-2007 – Ruth L. Kirschstein National Research Service Award (F32)

2008-2011 – Career Transition Award (K22)

*Investigator, Metabolism Branch, Center for Cancer Research
National Cancer Institute*



Rafael Casellas, Ph.D.

NCI Mentored Career Development Award to Promote Diversity (K01)

*Adjunct Investigator, Center for Cancer Research
National Cancer Institute
Investigator, Molecular Immunology Branch, NIAMS*



John Ojeifo, M.D., Ph.D., M.B.A.

R01

*Health Science Administrator, Center to Reduce Cancer Health Disparities
National Cancer Institute*

Diversity Training Branch



Branch Chief, *Bakos*

Program Analyst, *Gaskins*



*Brian Kimes
Lester Gorelic
Eric Bailey
Belinda Locke
Mary Ann Van Duyn
Emmanuel Taylor*

Career Development

*Bailey
Ojeifo*



**Diversity Supplements
Exploratory Grants
MBRS/SCORE**

*Ogunbiyi
Wali*



**CPRCHD (former MI/CCP)
NRSA**

*Aguila
Moten*



Dedication to Bobby Rosenfeld



Questions for Discussion

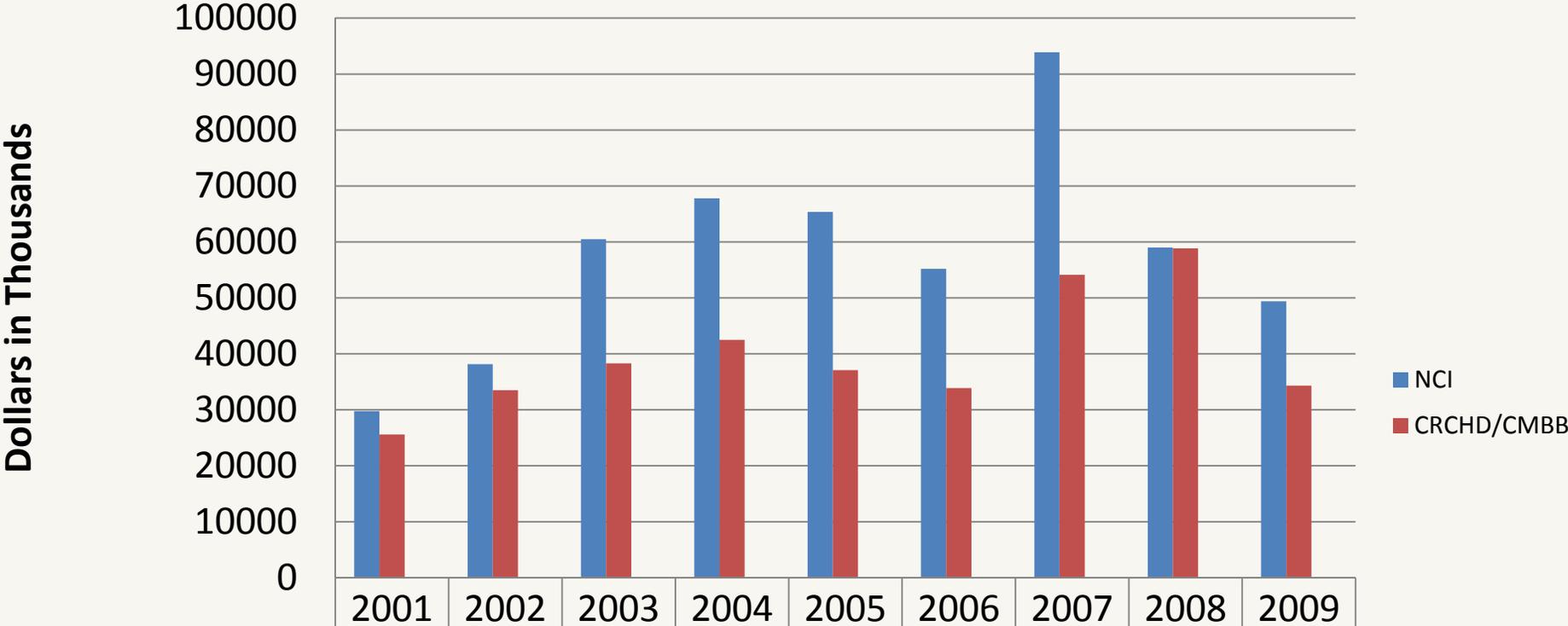
How do we incentivize the system in order to prevent losing a generation of potential future trainees during this period of flat budgets and fiscal constraints?

How do we continue to attract the “best and brightest” trainees from diverse backgrounds and retain them in the cancer research enterprise given the current restrictions (e.g. salary cap, R&D, indirect costs) in the career development program?

How should we promote and train the next generation of scientists from diverse backgrounds to engage in multidisciplinary collaborations and team science?

Extra Slides

CRCHD Compared to NCI Funding for Training



	2001	2002	2003	2004	2005	2006	2007	2008	2009
■ NCI	29773	38153	60495	67786	65366	55205	93901	59003	49404
■ CRCHD/CMBB	25600	33500	38300	42500	37100	33900	54135	58851	34335
■ % of NCI Funding	82.63	87.8	63.31	62.7	56.76	61.41	57.65	99.74	69.5