Center for Cancer Research Update

Robert H. Wiltrout, Ph.D., Director

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December 9, 2008

NCAB

NATIONAL CANCER INSTITUTE

CCR Is An Integral Part of NCI

National Cancer Institute

Intramural Divisions

CENTER FOR CANCER RESEARCH

Division of Cancer Epidemiology and Genetics

Extramural Divisions

Division of Cancer Treatment and Diagnosis

Division of Cancer Control and Population Sciences

Division of Cancer Prevention

Division of Cancer Biology

Office of Centers, Training, and Resources

Center to Reduce Cancer Health Disparities

CCR Vision

Integrate basic, translational, and clinical research to make cancer preventable, curable, or chronically manageable.

CCR Mission:
Focused On The Patient

To inform and empower the entire cancer research community by making breakthrough discoveries in basic and clinical cancer research and by developing them into novel therapeutic interventions for adults and children afflicted with cancer or infected with HIV.

CCR Seeks to Achieve Its Mission By:

- **Performing rigorous basic scientific research to discover fundamental mechanisms of biology and cancer**
- **Translating these advances rapidly from the laboratory to the clinic**
- **Developing innovative technologies that enable more accurate detection, diagnoses, and treatments**
- **Pioneering novel interventions for underserved patient populations**
- **Sharing expertise, scientific data and technologies to broaden the impact of our work and enhance the overall productivity of the cancer research community**
- **Providing a unique environment to cultivate and train future physician-scientists and biomedical researchers**

CCR ScientificPresenations to the 148th Meeting of the NCAB

- **Dr. Natasha Caplen - Defining the Cancer Genome using RNAi Analysis and Screening**
- **Dr. Stephan Ambs - Application of Genomic Profiling to Identify Factors that contribute to Cancer Health Disparities**
- **Dr. Terry Van Dyke - Cancer Models: From Insight to Improved Care**
- **Dr. Marston Linehan – The Genetic Basis of Kidney Cancer: Opportunity for Targeted Approaches to Therapy**

Center for Cancer Research Update – Closed Session

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Distinctive Qualities of CCR

- **Critical mass of basic and clinical scientists solving complex scientific problems**

- **Can quickly redeploy resources to address:**
  - (a) NCI mission goals-reduce the burden of cancer
  - (b) Urgent public need-response to AIDS epidemic
  - (c) New opportunities-decoding of the human genome

- **Access to NIH Clinical Center**

Center for Cancer Research: Organization

Center for Cancer Research

Clinical Branches

Basic Laboratories

Cellular Oncology	Populations Genetics
Cell & Cancer Biology	Immune Cell Biology
Resistance Mechanisms	Macromolecular Crystallography
Molecular Pharmacology	Cancer & Inflammation
Cancer Biology and Genetics	Cell & Developmental Signaling
Cancer Prevention	Nanobiology
Genomic Diversity	Basic Research
Cell Biology	Molecular Biology
Molecular Pharmacology	Structural Biophysics
Medicinal Chemistry	Protein Dynamics & Signaling
Molecular Targets Discovery	Experimental Immunology
Molecular Cell Biology	Comparative Carcinogenesis
Cell Regulation & Carcinogenesis	Molecular Immunoregulation
Experimental Carcinogenesis	Cancer & Development Biology
Human Carcinogenesis	Mouse Cancer Genetics
Retroviral Replication	HIV Drug Resistance
Mammary Biology & Tumorigenesis	Receptor Biology and Gene Expression
HIV Drug Resistance	Cellular Carcinogen & Tumor Prom
Gene Regulation & Chromosome Biology	Cellular & Molecular Biology
Biochemistry & Molecular Biology	

Center for Cancer Research: Organization

Center for Cancer Research

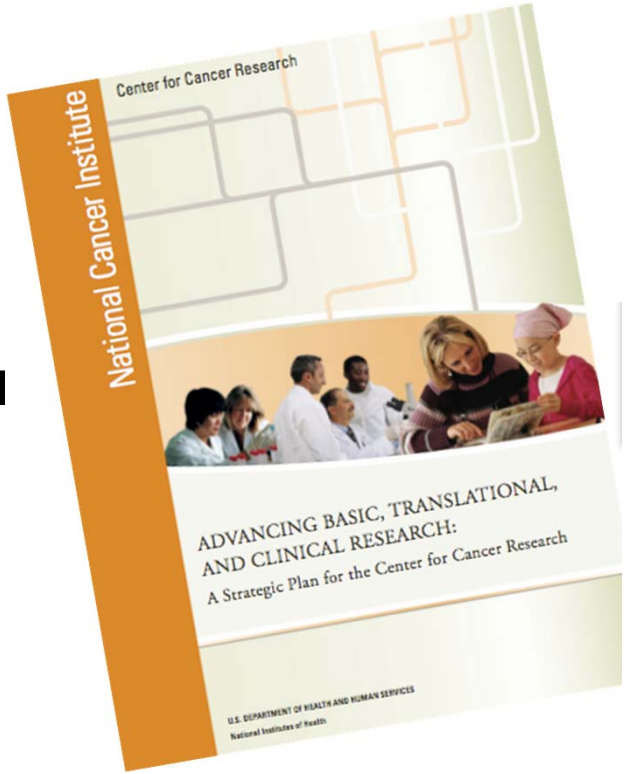
Clinical Branches

Basic Laboratories

Dermatology	Genetics
Medical Oncology	Neuro-Oncology
Urologic Oncology	Pediatric Oncology
Experimental Transplant. Immunol.	Surgery
Experimental Immunology	Radiation Oncology
Tumor Immunol. & Biology	Radiation Biology
HIV & AIDS Malignancy	Pathology
Metabolism	Molecular Imaging
Biostatistics & Data Mgmt	Vaccine

CCR Labs and Branches Are Woven Together Around Strategic Priorities

- **Understand the Cancer Process from Initiation to Metastasis**
- **Interrogate the Molecular Genetics of Cancer**
- **Improve Cancer Prevention, Early Detection, and Diagnostic Approaches**
- **Develop and Validate Novel Molecularly Targeted Interventions**
- **Harness the Immune System to Combat Cancer**
- **Discover and Develop Approaches to Combat HIV/AIDS and AIDS-associated Malignancies**



Centers of Excellence serve as Focal Points for Bench to Bedside Translation

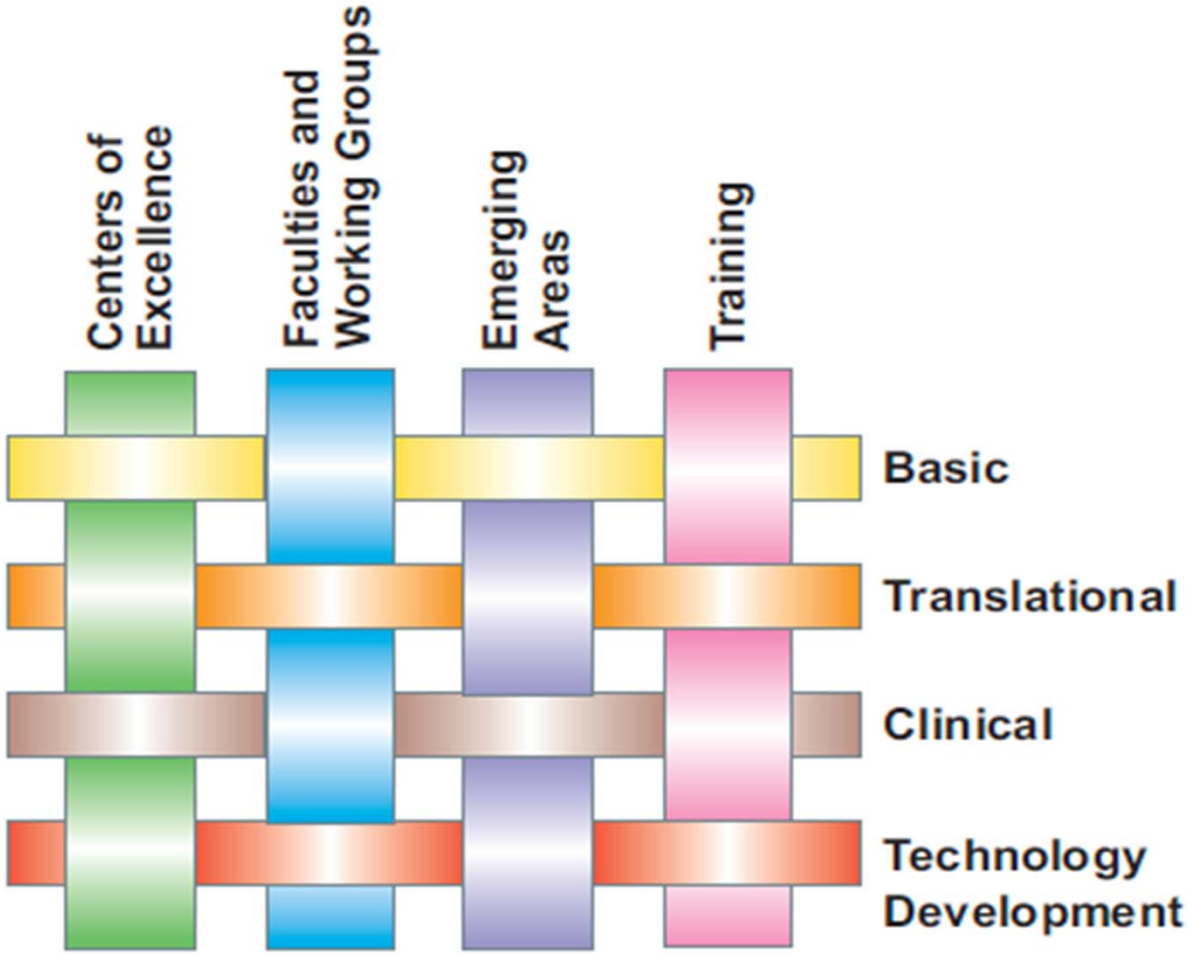
- **Centers of Excellence serve to support the IRPs dedication to long-term, high-risk, innovative basic, clinical, and epidemiologic research**
  - Immunology - *Robert Wiltrout, Head*
  - Chromosome Biology – *Gordon Hager, Head*
  - HIV/AIDS and Cancer Virology - *Stuart LeGrice, Head*
  - Molecular Oncology - *Giuseppe Giaccone, Pat Steeg, Head*
  - Integrative Biology*, Snorri Thorgeirsson, Head*

  Program/Initiative

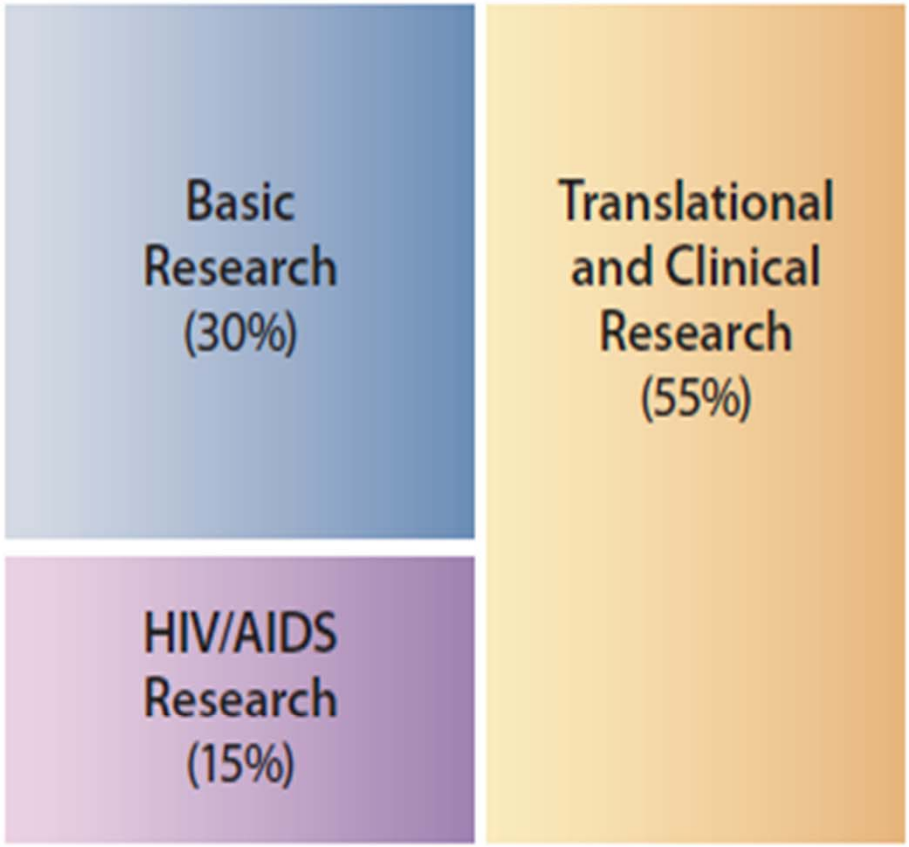
  - *Cancer and Inflammation – Giorgio Trinchieri, Head*

Strategies for Programmatic Integration

Translational Infrastructure Is Collaborative



Research Emphasis Today



Commercial Successes in Fighting Cancer and HIV

Vaccines and Therapeutics

2-F-AraA - Fludara (April 18, 1991) Berlex
Videx (October 9, 1991) Berlex Lab
Hivid (June 19, 1992) BMS
Paclitaxel (Dec. 29, 1992) BMS
Trimetrexate – Neu Trexin (Dec. 17, 1993)
Zenapax (Dec. 10, 1997) Hoffman La Roche
Vitravene (Aug. 26, 1998) Isis Pharma
Kepivance (Dec. 15, 2004) Amgen
Zevalin (Feb. 19, 2002) IDEC Pharma
Gardasil (June 8, 2006) Merck
Prezista (June 23, 2006) Tibotec Pharma

Diagnostics

Serological Detection of Antibodies to HIV-1 (March 1, 1985)
Serologic Detection of Antibodies to HTLV-1 (Nov. 29, 1988)
DNA Probe for Breast Cancer Diagnosis (Dec. 11, 1998)
Multi-replica Blotting Kit for Proteins

Instrumentation/Devices

Laser Capture Microdissection

CENTER FOR CANCER RESEARCH

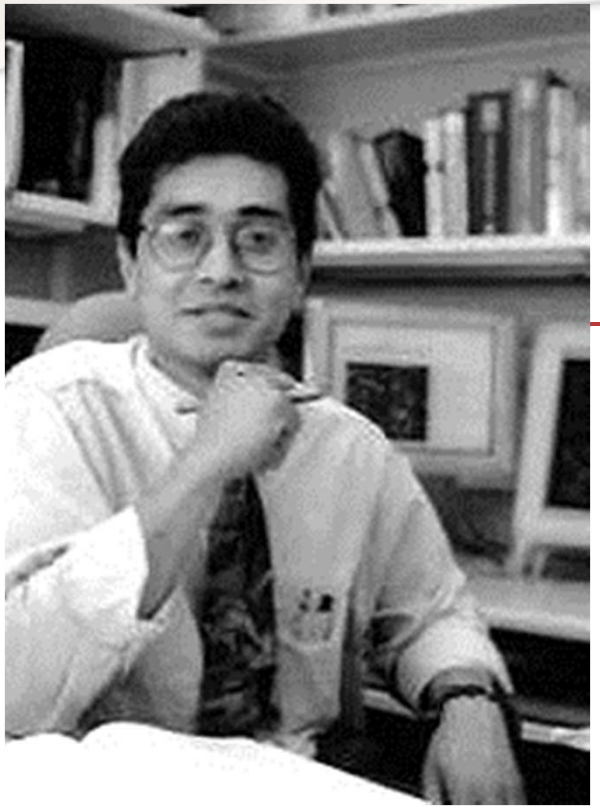
Newly Tenured

Jairaj Acharya, MBBS, Ph.D.

Laboratory of Cell and Developmental Signaling

Phospholipid and sphingolipid signaling in Drosophila

Newly Tenured

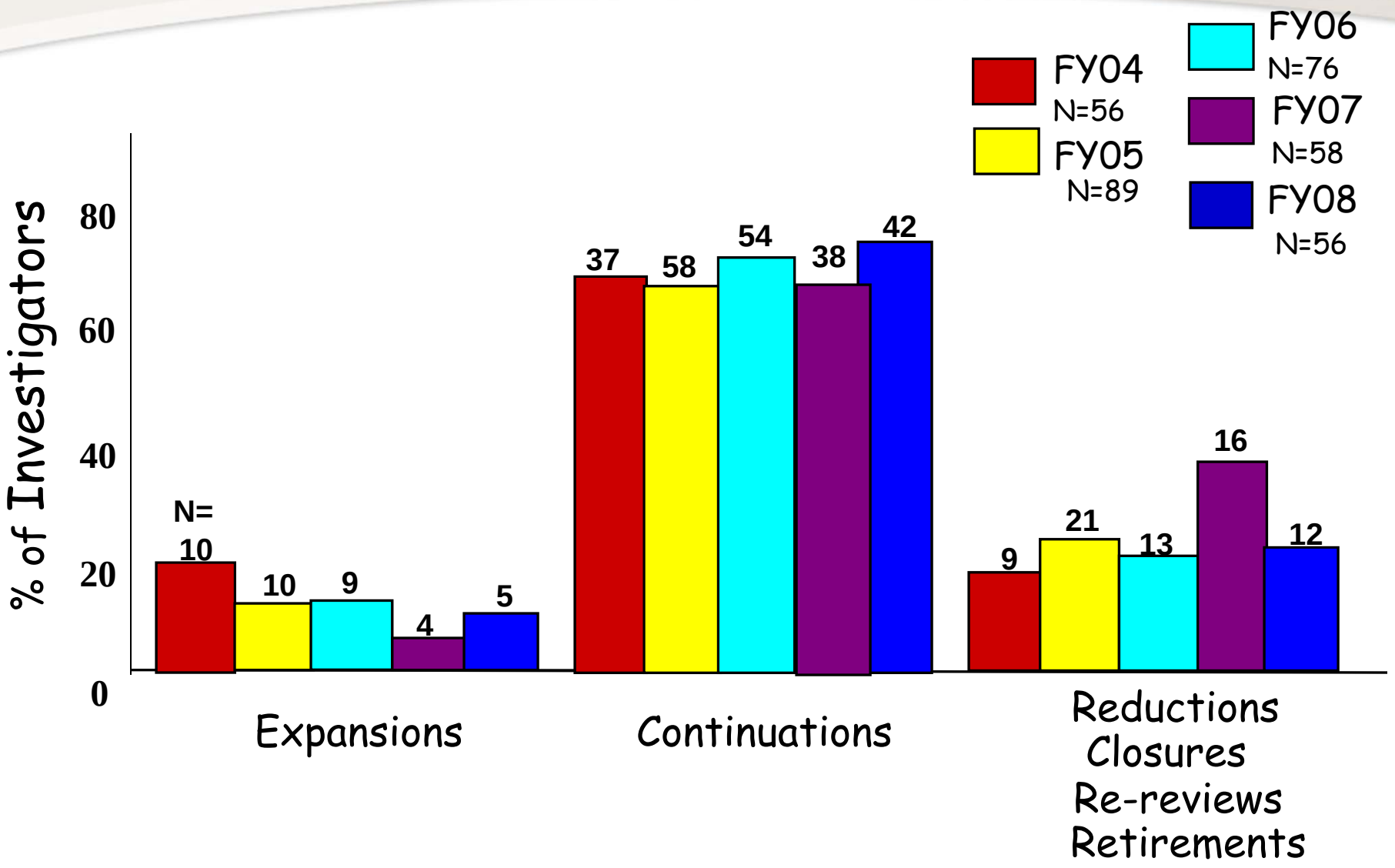


Javed Khan, M.D.

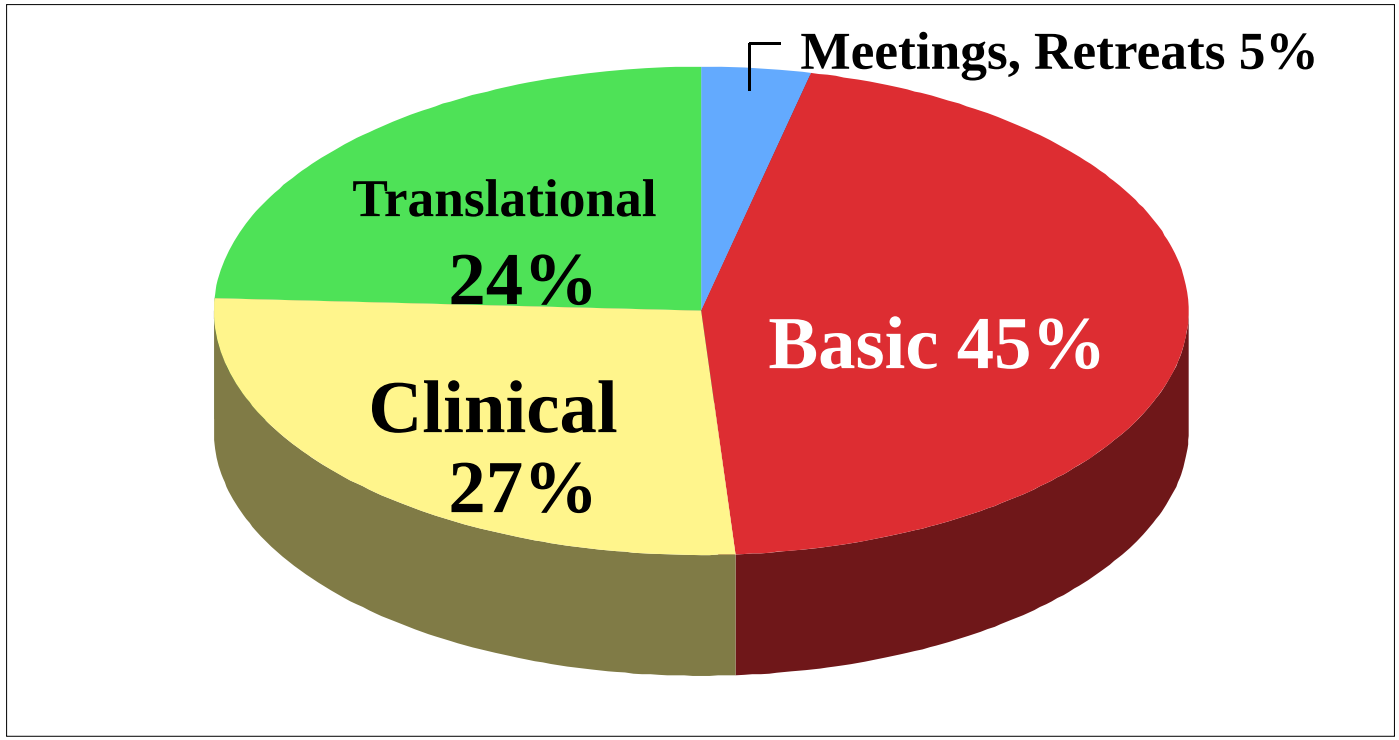
Pediatric Oncology Branch

Applying high throughput genomics and proteomics to characterize high risk pediatric malignancies, focusing on neuroblastoma.

SV & BSC Recommendations

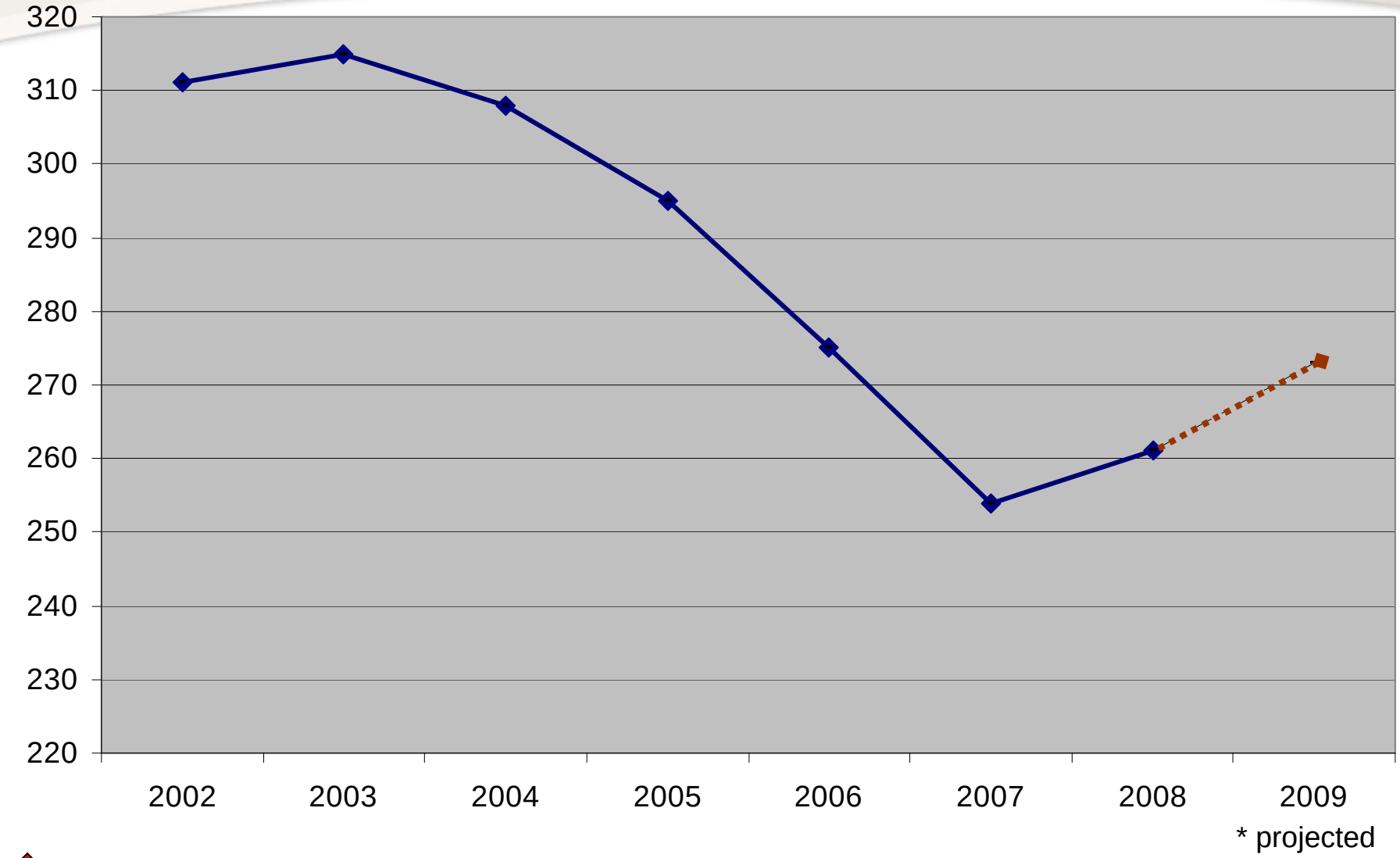


FY08 Reallocations of Recovered Funds



2.8 Million

Number of CCR PIs: 2000-2009



Projected 12 additional PIs in FY09

Rebuilding the Principal Investigator Community – FY2008

Senior Leadership

- Crystal Mackall, Chief, POB
- J. Carl Oberholtzer, Chief, LP
- Kevin Camphausen, Chief, ROB
- R. Andrew Byrd, Acting Director, Molecular Discovery Program
- Robert Yarchoan, Director for the NCI Office of HIV and AIDS Malignancies
- L. Michelle Bennett, Deputy Director CCR

Newly Hired Tenure Tracks

- Itzhak Avital, SB
- Peter Kalab, LCMB
- Udai Kammula, SB
- Yamini Dalal, LRBGE
- Yinling Hu, LEI
- Jing Huang, LCBG
- Jung-Hyun Park, EIB
- Li Yang, LCBG
- Joseph Ziegelbauer, HAMB
- Ola Landgren, MOB
- Mitchell Ho, LMB
- Brian Lewis, MB
- Chris Buck, LOC
- Deb Citrin, ROB
- King Kwong, SB

Open PI Positions (Nov 2008)

- **Mouse Cancer Genetics Program:** 2 Tenure Track or Tenured Positions
- **Laboratory of Human Carcinogenesis:** Tenure Track
- **Metabolism Branch:** 2 Tenure Track positions
- **Medical Oncology Branch:** Tenure Track in breast cancer
- **Laboratory of Biochemistry and Molecular Biology:** Tenure Track
- **Laboratory of Molecular Biology:** Tenure Track
- **Chronic Inflammation & Cancer:** Tenure Track
- **Neuro Oncology Branch:** Tenure Track

Major Searches (Nov 2008)

- **Stem Cell Program**
  - **29 applications received**
  - **15 top candidates reviewed by Search Committee**
  - **6 top candidates interviewed**

- **Chemical Biology Laboratory**
  - **Ad has been posted**

  Overwhelmingly positive response from 24 well-qualified applicants, interviews are scheduled with 8 top candidates

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The NCI Intramural Clinical Research Program

- **The NCI intramural clinical program *is not* a large volume, full-service cancer center**

- **The NCI intramural clinical program *is* the largest cancer-focused clinical research center (CRC) in the world, capable of performing patient-intensive clinical research focused on developing new approaches for prevention, diagnosis, and treatment of cancer.**

- **The NCI intramural clinical program is an important component of the nation's overall cancer program**