



○ Innovative Science

○ Breakthrough Therapies

○ Clinical Advances

Imaging in the CCR: From Molecules to Man

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CCR Vision

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

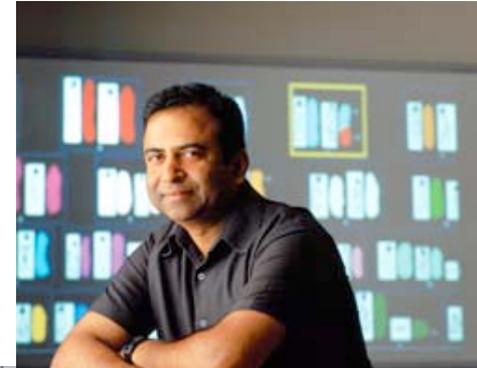
CCR Mission

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
- Translating these advances rapidly from the laboratory to the clinic
- Developing innovative technologies for detection, diagnoses, and treatment
- Pioneering novel interventions for underserved patient populations and rare cancers
- Sharing expertise, scientific data and technologies
- Training future physician-scientists and biomedical researchers





Imaging is a CCR Priority

- **Blur the line between imaging and pathology**
- **Develop novel imaging approaches and technology:**
 - Basic discovery research
 - Translational applications
 - Non-invasive patient care
- **Improve imaging techniques to enhance early detection, diagnosis, and treatment**
 - Preclinical model testing and validation
 - Clinical trial design and implementation
- **Develop novel imaging instrumentation**
- **Preemptive medicine**
 - Detect lesion
 - Determine pathway
 - Monitor for reactivation
 - Intervene upon re-activation, before gross tumor recurrence





Imaging in the CCR

Animal

- NIH Mouse Imaging Facility—
Bethesda Campus
- Small Animal Imaging Program
—Frederick Campus

Human

- Molecular Imaging Clinic
- Interventional Oncology
- ROB
- RBB

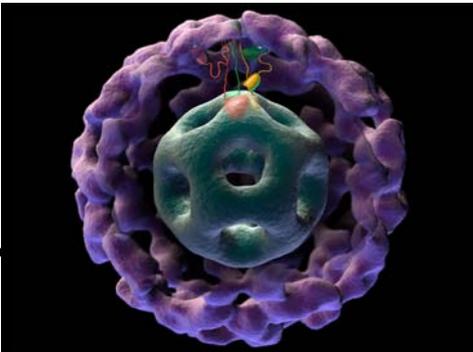
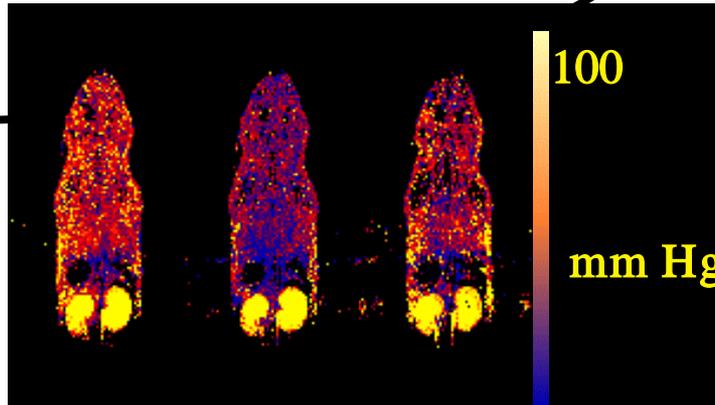
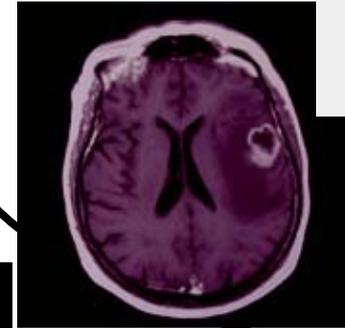
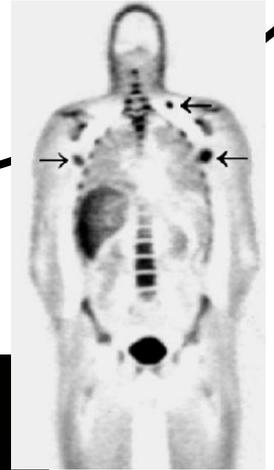
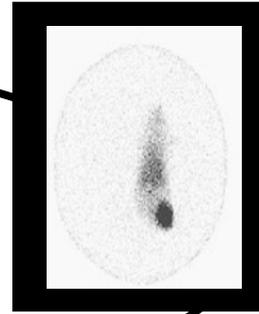
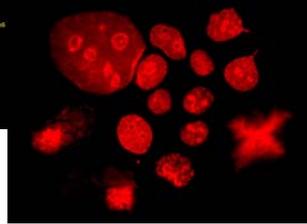
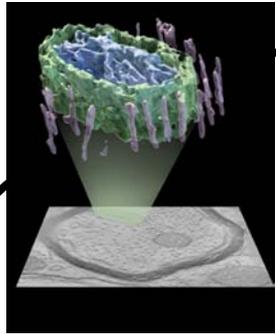
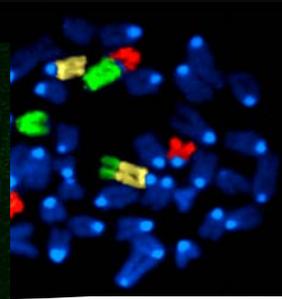
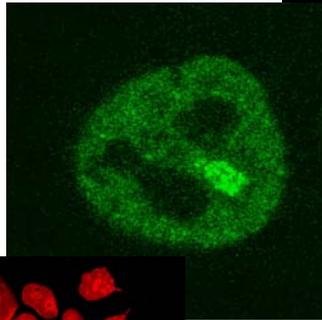
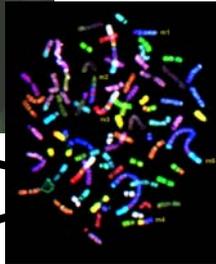
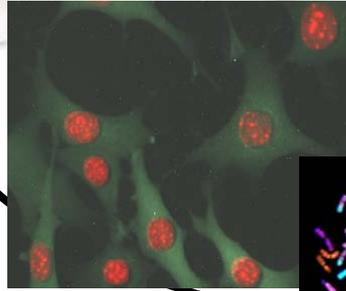
- Offers new and expanded opportunities to investigate cancer therapies that use imaging technology to diagnose and treat localized cancers in ways that are precisely targeted and minimally or non-invasive
 - Cutting edge technology
 - MRI, PET, CT
- Ideally and uniquely positioned to provide an interdisciplinary environment combining training, patient treatment, translational research and development in interventional oncology



- **Major program components will include:**
 - Interdisciplinary training and education in interventional oncology
 - Development of new image-guided methods for personalized drug investigations
 - Image-guided “dose-painting”—tailoring drug delivery based on disease location
 - Use of ‘medical GPS’ for tumor biopsy and treatment
 - First-in-human investigations involving new drugs, devices, molecular probes, nanoparticles, and targeted therapies
 - Interdisciplinary research involving novel technologies in interventional oncology



From Molecules to Man





Update on Prostate Cancer Imaging

- Introduction—
Marston Linehan



- Molecular Imaging of Prostate Cancer--
Peter Choyke



- Image Guided Biopsy of Prostate Cancer:
Implications for Diagnosis and Therapy --
Peter Pinto



