

## 2015 Strategic Priorities

### Clinical Imaging Steering Committee (CISC)

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It is an important mission of the NCI to promote and support clinical trials that incorporate advanced clinical imaging and which result in improved preventative, diagnostic and therapeutic outcomes. To facilitate this mission, the CISC has developed strategic priorities that are aligned with those of the NCTN, NCORP and other NCI-sponsored cancer therapeutics networks and therefore will lead to improved clinical outcomes.

The Clinical Imaging Steering Committee's 2015 Strategic Priorities are:

#### **1) Employment of advanced imaging methods to predict and/or measure therapeutic response**

- a. Optimization of techniques and post-processing
- b. Prediction of response to a specific therapy (baseline scans)
- c. Use imaging to select patients likely to respond prior to, during, or at end of therapy
  - (e.g. differentiation of pseudo-progression from true tumor progression)

#### **2) Imaging as an integral *predictive* biomarker**

- a. Imaging as a tool to select and stratify patients for precision medicine-based therapies
- b. Imaging as an early biomarker of response and surrogate for established endpoints
- c. Quantitative imaging research investigations
  - MRI and/or PET imaging in measuring therapeutic outcome of novel agent combinations
  - Qualification of imaging biomarkers

- Standardization of quantitative imaging in large multicenter trials

### **3) Clinical trials of imaging to inform cancer management**

- a. As a means for cancer detection (presence/absence/characterization)
- b. As a surveillance technique to identify cancer recurrence or the transformation of lesions to different biological subtypes.
- c. Incorporation of imaging to guide response adaptive trials
  - Trials to alter or adapt patient management can be exploratory or definitive, the latter of which could include a comparator arm not using imaging to inform/adapt therapy. Collection of data on quality of life, resource utilization, quantitative imaging and outcomes is encouraged as a trial component to provide meaningful patient-centered and societal outcomes

### **4) Refinement of imaging response criteria and promotion of imaging endpoints**

- a. Redefine RANO (2.0) (definition of RANO (2.0))
- b. Define response evaluation in bone
- c. Employ volumetric based tumor burden quantitation
- d. Seek automated methods that are accurate and precise and easy to use across commercial scanner platforms
  - Comparison of standard and novel criteria with downstream outcomes

### **5) Molecular mechanism for quantitative functional imaging**

- a. Develop improved physiologic imaging methods
  - Metabolomic, perfusion and diffusion techniques

- b.** Seek the biological underpinnings of imaging phenotypes with imaging-pathology correlations
  - Genomic correlates
  - Proteomic correlates
  - Metabolomic correlates

**6) Imaging as a tool to measure pharmacokinetics**

- a.** To reliably determine if and when drug hits a target
- b.** To determine blood-brain-barrier integrity