NTR Research Support Cores

Each of the four NTR centers has identified specific needs that the Research Support Cores can provide. These are listed here.

1. Instrumentation and Industrial Relations Support Core.

Center Needs	***Core deliverables***
Involvement of industry in translational issues	**Formation of an industrial partners network.**
Education of academic administration to translational research issues	**Prepare presentations on methods for coordination with industry for translational research.**
Assistance with FDA approval of multi-modal imaging **Discussions concerning reimbursement**	**Coordinate with Standards & Compliance Core on guidance documents for FDA.**
Market analysis	**Engage business schools to develop business plans for Centers.**
Methods for instrument optimization	**Promote use of phantoms.**

2. Information Technology Support Core

Center Needs	*Core deliverables*
Data management **System integration**	**Extend DICOM to support NTR data types** • **Visible, SPECT, ultrasound, etc** • **Include image mosaicing** **Define NTR required DICOM small animal imaging formats**
Focus on methods to use caBIG to utmost potential. **Justification for use of imaging tools such as XIP**	**Adopt DICOM WG 23 application hosting (plug-in interface for software applications)** • **XIP extension to launch Matlab applications** • **XIP development environment** **Applications to support multi-modal image registration**
Cross-NTR information coordination	**Web communication support** **Training programs to explain available IT tools**

3. Chemistry Probes and Guided Therapeutics Support Core

Center Needs	***Core deliverables***
Animal models of disease	**Core members have the expertise to develop animal models of disease**
Genetically encoded reporters of cell signaling and protein **Nanoparticle characterization systems function** **NIR dyes and conjugation chemistries** **Shared reagents and probes**	**Core members will work on probe (including nanoparticles) validation** **Core is ready to synthesize new probes if needed and share probes and reagents that its members currently have**
Monitoring changing environment in pharmaceutical industry **Consultation in most relevant molecular targets**	**Evaluation of possible new probe as new areas emerge**
Consensus on focus areas of initial investigation	**Plan to have a web based system to discuss focus areas of investigation**

4. Validation and Clinical Studies Support Core

Center Needs	*Core deliverables*
Better histological diagnostic criteria **Suggestions of biomarkers that could be targeted.**	**Inventory of validation requirements across Centers** **Prioritization and recommendations for validation standards** • **Validation guidance document with quick to follow flow chart for SOPs, in vitro, ex vivo and in vivo imaging** • **Coordinate with Standards & Compliance Core**
Cross validation of sentinel lymph node mapping with other contemporary modalities. **Determination of spatial resolution needed for in vivo imaging.**	**Creation of database for validation findings.** **Principles for assessment of clinical utility and efficacy**