

# NIBIB RESEARCH FOCUS AREAS

## Group 3



Moderators:

William Hendee (Wisconsin)

Donald Giddens (GA Tech)

Cartier/Tiffany Salons

December 17 – 8:30 AM

# Session Focus

---

Determine the highest priority research focus areas that the NIBIB can support to address a critical biomedical research or health care need in the next five to ten years.



# Philip Alderson, PhD

Columbia University

---

## NIBIB Impact

Support multi-disciplinary research training and infrastructure.

## Highest priority

Molecular Imaging.



# Laurence Clarke, PhD

NIH/NCI

---

## NIBIB Impact

Promote multi-center cooperative agreements to network existing centers and private sector to accelerate technology development, validation, regulation, and translation to clinical application.

## Highest priority

Next generation optical imaging systems for measurement of multi-spectral signatures; next generation IGI systems that meet the challenges posed by molecular imaging for improved target recognition and response measurement.



# Donald Giddens, PhD

## Georgia Institute of Technology

---

### NIBIB Impact

Develop technologies to image structure and function from the molecular to organ level and associated computational models that enable prediction of system function.

### Highest priority

Bioengineering for the understanding of mechanisms of tissue growth and regeneration.



# Warren Jones, PhD

## NIH/NIGMS

---

### NIBIB Impact

Substantially increase the number of engineers that are supported by NIH, foster graduate programs that create scientists and engineers who can address biomedical problems with quantitative approaches.

### Highest priority

Work closely with NCI to develop imaging techniques which will facilitate early cancer detection.



# Robert Lenkinski, PhD

Beth Israel Deaconess Medical Center

---

## NIBIB Impact

The creation of “Centers of Imaging Excellence” where an environment is established that fosters technical development, translation, and clinical research.

## Highest priority

High-field MRI: development of physiological and metabolic methods.



# Michael Marron, PhD

## NIH/NCRR

---

### NIBIB Impact

Biomaterials & Tissue Engineering – create new, smart or self-monitoring materials designed for cell-, drug-, and gene-based therapies.

### Highest priority

Nanotechnology – create & characterize functional materials, devices and systems, as well as exploitation of novel properties and phenomenon at this scale.





# Larry McIntire, PhD

## Rice University

---

### NIBIB Impact

Develop training programs that produce graduates capable of integration of quantitative bioengineering, cell and molecular biological, and clinical sciences.

### Highest priority

Establish inter-disciplinary centers for the development of cellular and tissue engineering through real applications.



# Bernhard Palsson, PhD

University of California – San Diego

---

## NIBIB Impact

HT data (chemical and biological)  
integrated through large scale models.

## Highest priority

In silico modeling procedures that  
bioengineers currently practice.



# Anne Roberts, PhD

UCSD Medical Center

---

## NIBIB Impact

Utilizing imaging for guiding therapy – encompassing multiple technologies and across multiple disease processes.

## Highest priority

Image guidance for percutaneous therapy of solid cancer, including functional information regarding behavior of cells.



# Bruce Tromberg, PhD

University of California - Irvine

---

## NIBIB Impact

Create a culture which emphasizes 1) initiation and discovery and 2) translation and dissemination.

## Highest priority

Multi-dimensional functional imaging with integration/co-registration of complementary information from multiple platforms.

