

## RFA-RM-04-001

# Development of High Resolution Probes for Cellular Imaging

- Support of multi-investigator teams to develop new technologies to enable higher sensitivity biological imaging in living cells
- Emphasis on creation of fundamentally new probes with enhanced spectral characteristics with the goal of improving sensitivity and detection schemes by a factor of 10 to 100
- P20 mechanism (Exploratory Center Grants) currently supporting 9 centers

**RFA-RM-04-001**  
**Funded Centers**

**Kevin Burgess, Texas A&M University**

*Fluorescent Probes for Multiplexed Intracellular Imaging*

**Robert M. Dickson, Georgia Institute of Technology**

*Sub-nm Dendrimer-Metal Nanoclusters as Ultrabright Raman and Fluorescence Labels*

**William Moerner, Stanford University**

*Single-molecule Fluorophores for Cellular Imaging*

**Shuming Nie, Emory University**

*Bioaffinity Nanoparticle Probes for Bioimaging*

## **Funded Centers (cont.)**

**David Piston, Vanderbilt University**

*Probes for Quantitative Optical and Electron Microscopy*

**Sanford Simon, Rockefeller University**

*Imaging Single Proteins in Vivo with Quantum Dots*

**Robert Singer, Albert Einstein College of Medicine**

*Light-activated Gene Expression in Single Cells*

**Alice Ting, Massachusetts Institute of Technology**

*Library-based Development of Optical Imaging Probes*

**Roger Tsien, University of California, San Diego**

*Genetically Targetable Labels for Light and Electron Microscopy*

## PAR-07-234

# Molecular Probes for Microscopy of Cells

- To evaluate promising but unproven enabling technologies for the routine detection by microscopy of single molecules and single molecular events inside living cells
- Broadened emphasis
- Modified R01 mechanism
- 10-page research plan
- Specific aims to address proof of principle and potential impact
- Preliminary studies specifically excluded