

# Radiology and CBI Research Kickoff

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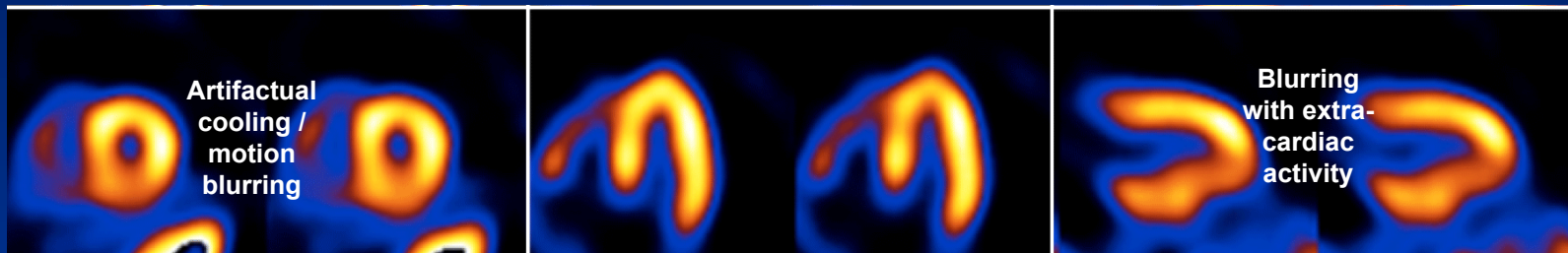
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# NIH Grant Funding

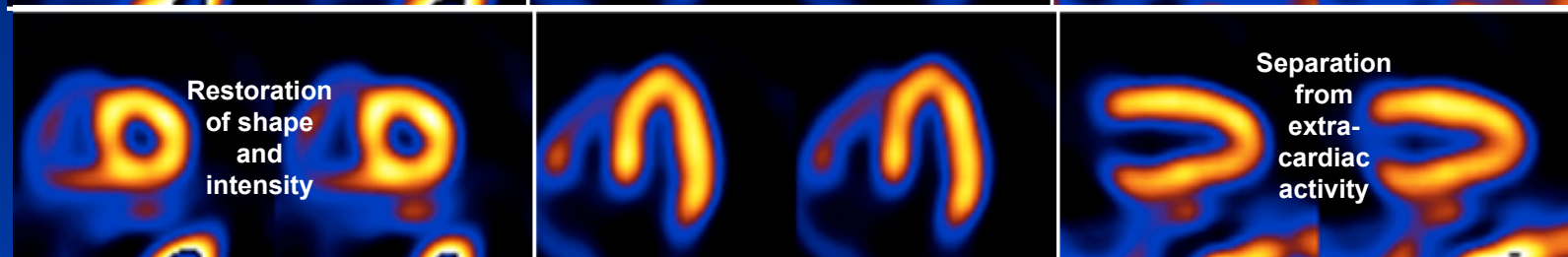
- 1. NIH, No R01-HL122484, Probing Dose Limits in Cardiac SPECT with Reconstruction and Personalized Imaging. M. N. Wernick of IIT contact PI, M. A. King UMass MPI, 5/1/2014-4/30/2019
- 2. NIH, No R01-EB022092, Combined Multi-Pinhole and Fan-Beam Brain SPECT. M. A. King, PI, 5/18/2016-2/29/2020
- 3. NIH, No. R01 EB022521, AdaptiSPECT-C: A Next-Generation, Adaptive Brain-Imaging SPECT System for Drug Discovery and Clinical Imaging, M. A. King, contact PI, L. Furenlid, MPI, G. Zubal, MPI, 9/1/2016-8/30/2021
- 4. NIH, No. K25-EB019032, Body Surface Tracking of Complex Motion with Obstructed Viewing in Hybrid Imaging, C Lindsay, PI, 9/1/2015-5/31/2019
- Skills: Medical Physics, Engineering, Mathematics, Computer Science and Image Processing - We are not good with cell cultures and chemicals

# What Problems Does Respiratory Motion Cause in SPECT/CT?

2 cm  
Resp  
Motion



Corrected  
Resp  
Motion



- Patient respiratory motion results in:
  - Loss of contrast / spatial resolution in directions aligned with motion
  - Distortion in shape
  - Merging with nearby structures
- 1200+ Patient Studies thus far – Aim to see how low in injected activity we can go and not change diagnosis

# Design a Multi-Detector Multi-Pinhole SPECT Brain System

