History of CMR at Penn

**Pioneers of MRI at Penn**

- William Cline
- Elton Chance
- Eugene S. Odhner

**Radiology Faculty and Fellows 1982-1993**

- Nathaniel Reichek, MD
- Joao Lima, MD
- Gerry Aurigemma
- Linda Palmer
- Chris Kramer
- Victor Ferrari
- Leon Axel
- Herb Kressel
- Robin Mezrich
- Bob Lenkinski
- Albert de Roos
- Mark Scheibler
- Phil Berger
- Peter Choyke
- Hiroto Hatabu
- Eric Hoffman
- Alistair Young
- Larry Doughterty

**Cardiology Faculty & Fellows 1982-1992**

- Nathaniel Reichek, MD
- Joao Lima, MD
- Gerry Aurigemma
- Linda Palmer
- Chris Kramer
- Victor Ferrari

**Good Ideas!**

- Myocardial Tagging (1991)

**Ferrari / Zhou Labs**

1. Ventricular remodeling
   - Characterization of the right and left ventricular response to pulmonary hypertension, infection, and valvular disease using MRI, echocardiography, and PET/CT in preclinical models and clinical disease states.

2. Developmental cardiomyopathy
   - Assessment of cardiac morphometry and function using MRI and echocardiography including dox, DOX, and in-situ heart transplantation models. Use of RNA, CR, and echocardiography in the evaluation of preclinical congenital heart disease.

3. Stem cell tracking
   - Evaluation of stem cell localization after intravenous injection or transplantation into the myocardium using MRI and PET imaging. Assessment of local survival and myocardial function following stem cell treatment of post-infarcted myocardium.

**Chirinos Lab**

- The focus of the lab is the role of the hemodynamic function of the arterial tree in the heart's ability to autoregulate, differentiate Alzheimer’s and Parkinson’s disease and alcoholic hepatitis.
- Current Lab Members
  - Giovanni Chirinos, MD, PhD
  - Kaiyuan Chen, MD, PhD
  - Almerindo de Sousa, MD, PhD
  - Jatin Gajjar, MD, PhD
  - Alex London, PhD
  - Hao Zhang, MS
  - Yanhui Zhang, MS

**Litt Lab**

- Imaging of patients with implanted devices
- Program has scanned over 3500 patients
- Optimization of CMR in device patients and those with arrhythmia
- Modeling of cardiac motion as an image registration problem
- Automated disease classification by shape analysis

**Witschey Lab – Advanced Cardiovascular Imaging Lab**

- **Self-gated MRI of arrhythmias**
  - Cardiac CT of Magic: Model 2008
  - McCarthy, et al. JMRI 2011
  - Suryaputra, et al. JMRI 2011

- **VT/SCD risk assessment in arrhythmia patients**

- **Tl MRI of ischemic and non-ischemic heart disease**

**RV studies**


**Nanazarian Lab**

- The lab focuses on cine imaging and lesion detection.
- Imaging of patients with coronary artery disease.
- Optimization of CMR in device patients and those with arrhythmia
- Modeling of cardiac motion as an image registration problem
- Automated disease classification by shape analysis