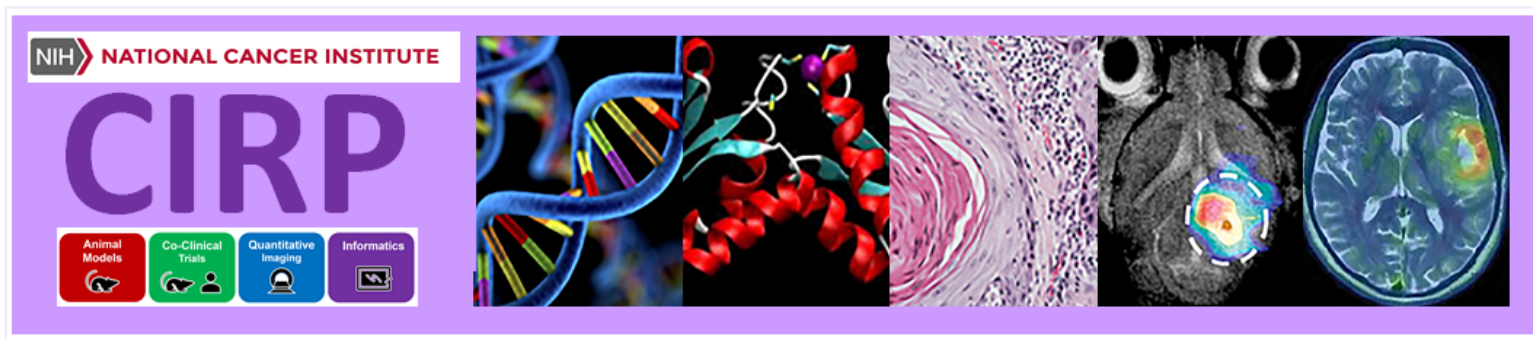




NCI Virtual Meeting via Webex Event | June 22-23, 2020

June 22, 2020, Day 1

- 8:30 am Introduction**
Huiming Zhang, PhD, DCTD, NCI
- 8:35 am Welcome**
Janet Eary, MD, Associate Director, DCTD, NCI

Part I **CIRP Program**

Moderator: Huiming Zhang, PhD

- 8:40 am Session I CIRP program and individual teams**
CIRP Status Update
Huiming Zhang, PhD, DCTD, NCI
- 9:00 am New CIRP Team presentations**
UNIVERSITY OF MICHIGAN QUANTITATIVE CO-CLINICAL IMAGING RESEARCH RESOURCE
Brian Ross, PhD, University of Michigan
- 9:30 am INTEGRATING OMICS AND QUANTITATIVE IMAGING DATA IN CO-CLINICAL TRIALS TO PREDICT TREATMENT RESPONSE IN TRIPLE NEGATIVE BREAST CANCER**
Mike Lewis, PhD, Baylor Medical Colleges

10:00 am Break

- 10:15 am CIRP team progress**
VU Predict
Charles Manning, PhD, Vanderbilt University
- 10:45 am PENN QUANTITATIVE MRI RESOURCE FOR PANCREATIC CANCER**
Rong Zhou, PhD, University of Pennsylvania
- 11:15 am THE DUKE PRECLINICAL RESEARCH RESOURCES FOR QUANTITATIVE IMAGING BIOMARKERS**
Cristian Badea, PhD, Duke University
- 11:45 am WASHINGTON UNIVERSITY CO-CLINICAL IMAGING RESEARCH RESOURCE**
Kooresh Shoghi, PhD, Washington University at St Louis

12:15 pm Lunch Break

1:15 pm Session II Demonstration of Web-accessible Research Resources

Moderator: Huiming Zhang, PhD

1:15 pm Development of the Co-Clinical Database (CCDB) based on XNAT

Jenny Gurney, Washington University at St Louis

1:30 pm Duke VoxPort: A Web Accessible Repository

Cristian Badea, PhD, Duke University

1:45 pm Open Source Web Browser PET Data Visualization Tool Demonstration

Charles Dupont, PhD, Vanderbilt University

2:00 pm An integrated Platform for Analysis and Visualization of Omic and Imaging Data

Mike Lewis, PhD, Heidi Dowst, Bing Zhang, PhD, Baylor College of Medicine,
Daniel Rubin, MD, Stanford University

2:20 pm Break

Part II CIRP Network and Working Groups

2:30 pm Session III CIRP Network, status and progress

Moderator: Charles Manning, PhD

CIRP Network Update

Cristian Badea, PhD

3:00 pm Session IV AMCT WG: progress, directions and challenges

Moderator: Charles Manning, PhD

Working group updates

Ann Richmond, PhD, Vanderbilt University

3:30 pm Presentations:

Using genetically engineered mouse models of cancer for imaging and co-clinical trials

David Kirsch, MD/PhD, Duke University

3:45 pm Fidelity of Patient-derived Xenografts in Pre-clinical Trials

Mike Lewis, PhD, Baylor Medical College

4:00 pm Humanized PDX mouse models –Useful for co-clinical trials?

Ann Richmond, PhD, Vanderbilt University

4:15 pm Michigan CIRP: Bone Marrow Transplant Model of Myelofibrosis

Gary Luker, MD, University of Michigan

4:30 pm Relevancy of preclinical studies to clinical trials

Peter O'Dwyer, MD, University of Pennsylvania

4:45 pm Role of co-clinical trials in improved outcomes for patients: Is there one?

Jordon Berlin, MD, Vanderbilt University

5:00 pm Panel discussions:

Moderator: Charles Manning, PhD

Panel Members: David Kirsch, MD/PhD, Michael Lewis, PhD, Ann Richmond, PhD,
Gary Luker, MD, Peter O'Dwyer, MD, Jordon Berlin, MD, Shunqiang Li, PhD

5:30 pm End of the 1st day

June 23, 2020, Day 2

8:30 am Session V IADP WG: progress, directions and challenges

Moderator: Rong Zhou, PhD

Working group updates

Stephen Pickup, PhD, University of Pennsylvania

9:00 am Presentations

Role of Phantoms in Co-Clinical Trials

Tom Chenevert, PhD, University of Michigan

9:18 am Pre-clinical Abdominal Imaging in the Presence of Respiratory Motion

Stephen Pickup, PhD, University of Pennsylvania

9:36 am Dynamic Contrast Enhanced MRI: Challenges and Promise

Joseph Ackerman, PhD, Washington University at St Louis

9:54 am Pharmacokinetic analysis of glutamine-centric PET tracers in CRC

Gary Smith, MD, Vanderbilt University

10:12 am Deep learning approaches to improve preclinical imaging

Cristian Badea, PhD, Duke University

10:30 am Panel discussions

Moderator: Rong Zhou, PhD

Panel Members: Tom Chenevert, PhD, Stephen Pickup PhD, Cristian Badea, PhD, Gary Smith, PhD, Joe Ackerman, PhD, Julie DiCarlo, PhD

11:00 am Break

11:15 am Session VI Invited Briefing from Other Programs

Moderator: Huiming Zhang, PhD

11:17 am Generation of a novel organoid based murine platform for co-clinical development of personalized medicine in cancer

Dr. Sean Clohessy, PhD, BIDMC

11:24am NCI's Patient Derived Models Repository (PDMR)

Yvonne Evrard, PhD, NCI

11:31 am Patient Derived Orthotopic Xenograft (PDOX) Mouse Models of Pediatric Brain Tumors

XiaoNan Li, MD/PhD, Northwestern University

11:38 am Imaging of Children with Cancer with 18F-FDG PET/MRI

Lucia Baratto, PhD, Stanford

11:45 am Phantoms for Clinical, Preclinical and Micro MRI

Stephen Russek, PhD, NIST

11:52 am The Cancer Imaging Archive (TCIA): FAIR Data Sharing for Cancer Imaging

Justin Kirby, PhD, NCI

11:59 am National Cancer Institute Imaging Data Commons

Andriy Fedorov, PhD, BWH

12:06 pm The Cancer Research Data Commons (CRDC)

Keyvan Farahani, PhD, NCI

12:13 pm Questions

12:15 pm Lunch break

1:00 pm Session VII IMOR WG, Progress, Directions and Challenges
Moderator: Cristian Badea, PhD

WG Updates
 Dan Ayers, Vanderbilt University

1:30 pm Metadata needs to support co-clinical imaging research
 Kooresh Shoghi, PhD, Washington University at St Louis

2:00 pm Presentations
Co-Clinical radiomics to interrogate tumor heterogeneity
 Kooresh Shoghi, PhD, Washington University at St Louis

2:15 pm Integrating Biomarkers Across Scales
 Anum Syed, UT Austin

2:30 pm Big (image) data and the tumor microenvironment
 Al Johnson, PhD, Duke University

2:45 pm Correlation of imaging and pathology to further the understanding of tumor microenvironment in pancreatic cancer
 Emma Furth, MD, University of Pennsylvania

3:00 pm Panel discussions
Moderator: Cristian Badea, PhD
Panel Members: Kooresh Shoghi, PhD, Anum Syed, Al Johnson, PhD,
 Emma Furth, MD, Dariya Malyarenko, PhD, Daniel Ayers, Daniel Rubin, MD

3:20 pm Break

3:30 pm Session VIII CIRP Power Pitch (Poster Briefing)
Moderator: Huiming Zhang, PhD

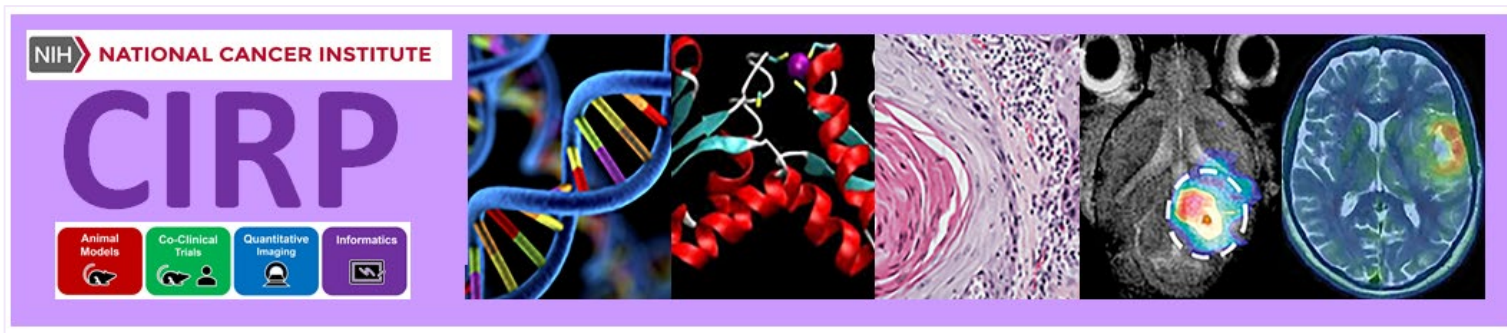
4:30 pm Session IX CIRP Network: integration issues from WGs
Chair & Moderator: Cristian Badea, PhD, Charles Manning, PhD

AMCT WG Briefing, Charles Manning, PhD
IADP WG Briefing, Rong Zhou, PhD
IMOR WG Briefing, Cristian Badea, PhD
 Emerging ideas and methods
 Issues from CIRP network prospective
 Recommendations

Part III CIRP Management and Business

5:00 pm Session X Business Meeting
All SC members and NCI PDs
Chair/moderator: Huiming Zhang, PhD, Cristian Badea, PhD, Charles Manning, PhD

5:30 pm End of the 2nd day.



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Power Pitch for CIRP Posters, 3:30 - 4:30 pm, June 23, 2020

1. **MRI Assessment of a Mouse Myelofibrosis Model**
Tanner Robison, Ghoncheh Amouzandeh, et al., U Michigan
2. **Development of MRI Bone Marrow Biomarkers for Assessment of Treatment Response in a Mouse Myelofibrosis Model**
Kevin Heist, Ghoncheh Amouzandeh, et al., U Michigan
3. **Novel Glutamine Transport Inhibitor V-9302 Inhibits Melanoma Growth in Pre-Clinical Models**
Caroline Nebhan, Adria Payne, Vanderbilt University
4. **PET Imaging of Glutamine Metabolism in a Colorectal Cancer Co-Clinical Trial**
Allison S. Cohen, Adria Payne, et al., Vanderbilt University
5. **Bringing PET image analysis to average researchers**
Charles Dupont, Dan Ayers, et al., Vanderbilt University
6. **Co-clinical trial of mouse model of soft tissue sarcoma suggests a beneficial outcome of adding anti-PD1 antibody to the standard of care regimen of radiation followed by surgical resection**
R. Patel, Y. M. Mowery, et al., Duke University
7. **Decoding heterogeneous tumor MR signals: MR histology and cytometric feature mapping connects 2D pathology and *in vivo* MRI of sarcomas**
S.J. Blocker¹, J. Cook, et al., Duke University
8. **Automatic Segmentation with Radiomic Analysis of Sarcoma in Mice**
M. D. Holbrook, S. J. Blocker, et al., Duke University
9. **How the choice of PK model and AIF affect DCE-MRI detection of pancreatic cancer responses to stroma-directed drug?**
Jianbo Cao, Stephen Pickup, et al., University of Pennsylvania
10. **Radial sampling and KWIC-reconstruction reduce motion artifacts for DCE-MRI of mouse pancreatic cancer**
Stephen Pickup, PhD, Hee Kwon Song, et al., University of Pennsylvania
11. **Fast magnetic resonance imaging using adaptive convolutional neural networks for k-space data interpolation**
Yong Fan, PhD, Steven Pickup, et al., University of Pennsylvania
12. **Reproducibility of Diffusion-Weighted Radial vs. Conventional EPI Protocols in GEM Model of Pancreatic Cancer**
Hee Kwon Song, Jianbo Cao, et al., University of Pennsylvania
13. **Validation of quantitative imaging biomarkers with histopathological analyses**
Emma Furth, Yong Fan, et al., University of Pennsylvania
14. **Precision Imaging of Response to Therapy in Co-Clinical FDG-PET Imaging of Triple Negative Breast Cancer (TNBC) Patient-Derived Tumor Xenografts (PDX)**
Madhusudan A. Savaikar, Timothy Whitehead, et al., Washington University at St Louis

- 15. Intratumoral heterogeneity of radioisotopic FDG and pathology H&E images using earth mover distance and radiomics in TNBC PDX**
Sudipta Roy, Timothy Whitehead, et al., Washington University at St Louis
- 16. Precision and prediction of response to docetaxel/carboplatin therapy using machine-learning optimized radiomic features in preclinical FDG-PET imaging of TNBC Patient-Derived Tumor Xenografts**
Sudipta Roy, Timothy Whitehead, et al., Washington University at St Louis
- 17. Deep Learning based Segmentation of TNBC PDX MR Images and Sensitivity of Radiomics Features based on Segmentation Probability Boundaries**
Kaushik Dutta, Sudipta Roy, et al., Washington University at St Louis
- 18. Quantitative imaging for personalized mathematical models in oncology**
David A. Hormuth II, Angela M. Jarrett, et al., UT Austin
- 19. Biopsy Clips: Challenges to Quantitative Breast MRI**
Julie C. DiCarlo^{1,2}, Hayden Lydick, et al., UT Austin
- 20. PDXPORTAL as an integration tool for identifying image features indicative of treatment response in PDX models and Patients**
Heidi Dowst, Apollo McOwiti, et al., Stanford University, UT Austin, Baylor College of Medicine
- 21. Integrating Omics and Quantitative Imaging Data in Co-Clinical Trials: ePAD Platform for Extracting Image Features**
Daniel Rubin¹, Mete Akdogan, et al., Stanford University, UT Austin, Baylor College of Medicine