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

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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

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10:00 am **Break**

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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

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12:15 pm   **Lunch Break**
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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
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2:20 pm   **Break**
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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
           <u>**Working group updates**</u>
                Ann Richmond, PhD, Vanderbilt University

3:30 pm   <u>**Presentations:**</u>
           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   <u>**Panel discussions:**</u>
           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**
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June 23, 2020, Day 2

8:30 am   **Session V   IADP WG: progress, directions and challenges**
Moderator: Rong Zhou, PhD
<u>**Working group updates**</u>
Stephen Pickup, PhD, University of Pennsylvania

9:00 am   <u>**Presentations**</u>
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   <u>**Panel discussions**</u>
Moderator: Rong Zhou, PhD

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

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11:00 am   **Break**
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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**

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12:15 pm   Lunch break
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1:00 pm   Session VII IMOR WG, Progress, Directions and Challenges
Moderator: Cristian Badea, PhD

<u>**WG Updates**</u>
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   <u>Presentations</u>
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   <u>Panel discussions</u>
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
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3:20 pm   Break
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3:30 pm   Session VIII CIRP Power Pitch (Poster Briefing)
Moderator: Huiming Zhang, PhD
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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
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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.
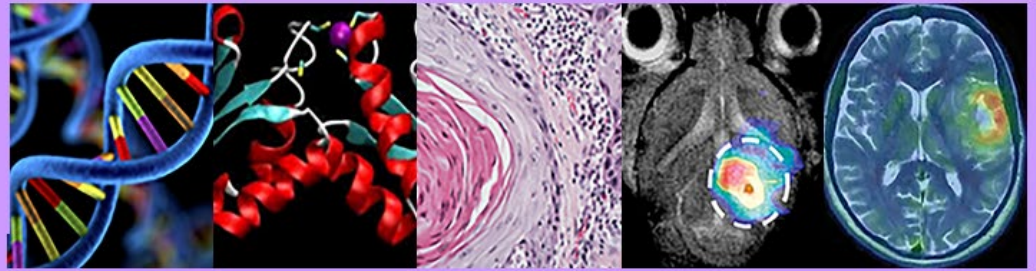
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Power Pitch for CIRP Posters, 3:30 - 4:30 pm, June 23, 2020

1. **MRI Assessment of a MouseMyelofibrosis 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. Blocker[1], 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