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Tissue Chips in Space 2.0

Dmitriy Krepkiy

Office of Special Initiatives

NCATS, NIH

Dmitriy.Krepkiy@nih.gov

National Center for Advancing Translational Sciences

Tissue Chips in Space 2.0

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Tissue Chips in Space 2.0: Translational Multi-Organ Tissue Chip Systems for Drug Efficacy, Toxicity Testing, and Personalized Medicine in Human Health, Aging and Associated Diseases (RFA-TR-24-025)

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- Develop complex organ systems that model dysfunction and aging-related disease in prolonged microgravity.
- Integrate tissue chip innovation with multidisciplinary expertise across engineering and biomedical sciences.
- Examine microgravity effects on human physiology.
- Translate space-based discoveries into therapies and public health advances on Earth.

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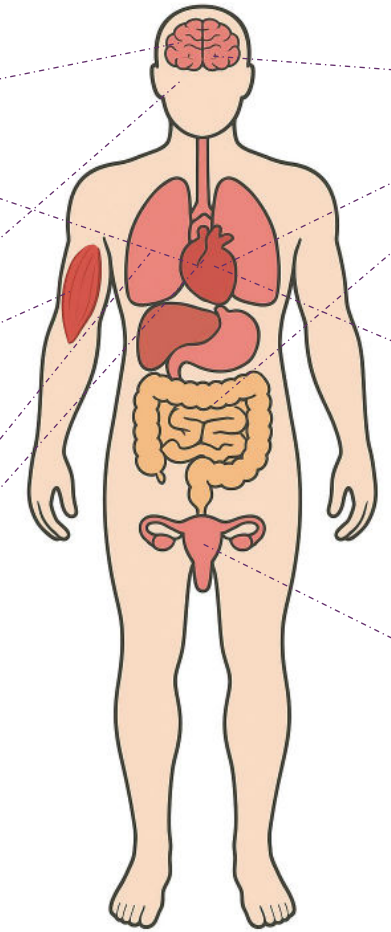
Brain-Heart:
PIs: Palaniappan Sethu, Krishna Bhat, and Prasanna Krishnamurthy, The University of Alabama at Birmingham

Brain-Muscle:
PIs: Mei He, University of Florida, and Luke Lee,, Brigham and Women's Hospital

Lung-Heart:
PI: Y. Shrike Zhang, Brigham and Women's Hospital



Heart-Gut-Brain:
PIs: Arun Sharma, and Clive Svendsen, Cedars-Sinai Medical Center

Heart-Vasculature:
PIs: Joseph Wu, Stanford University, and Afshin Beheshti, University of Pittsburgh

Reproductive health-Uterus PI: Carrie German, CFD Research Corporation

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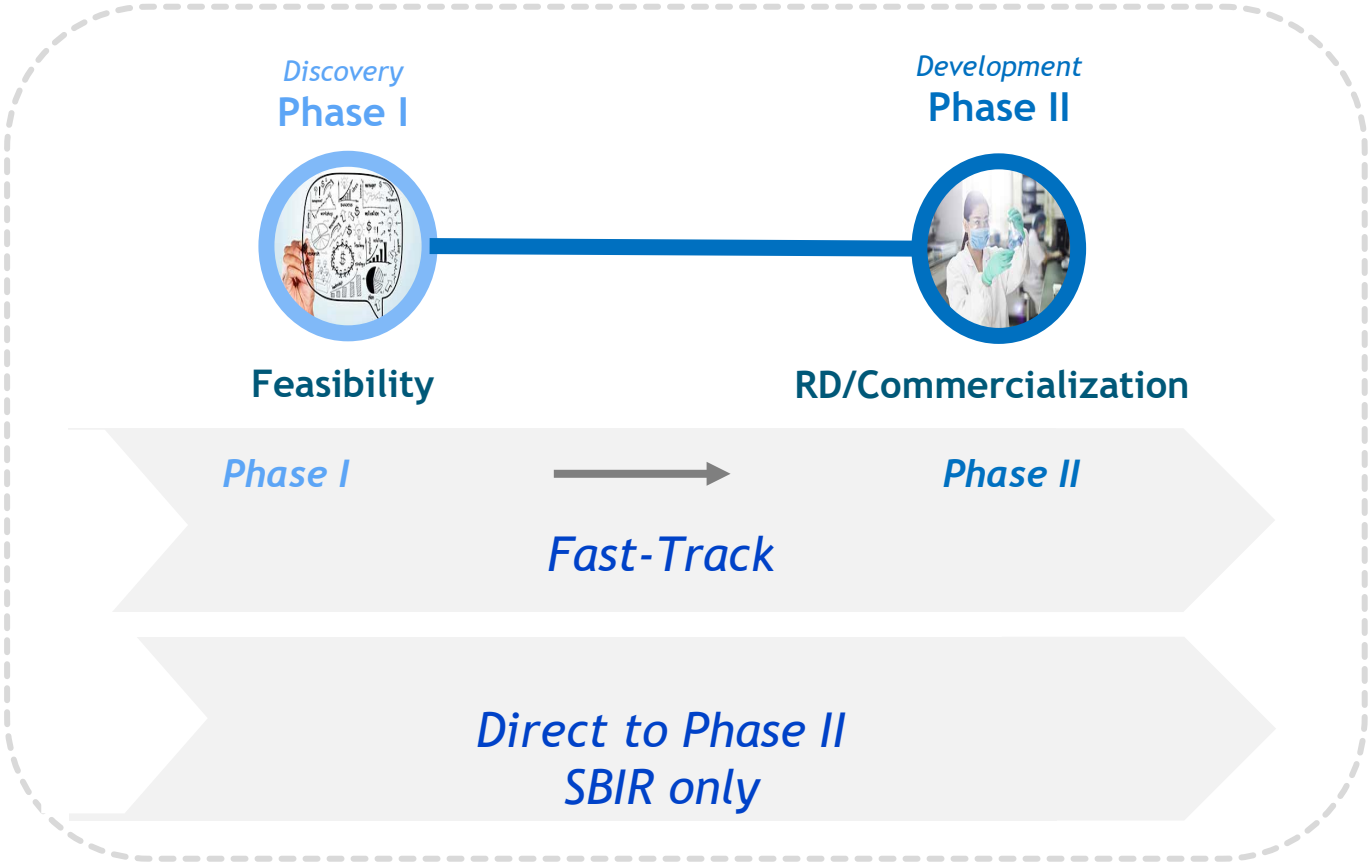
Miniaturization and Automation of Tissue Chip Systems (MATChS)

Translating lessons learned from Tissue Chips in Space program towards improved instrumentation

- The automation and miniaturization requirements for spaceflight created technological innovation and commercialization opportunities for tissue chip hardware and instrumentation
- Turnkey technologies and smaller footprint can lead to broader adoption and use of tissue chips on Earth

Cooperative agreements RFA-TR-23-017/018 (SBIR/STTR)



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