Cures Acceleration Network Review Board (CAN RB) Update

• Virtual CAN RB Meeting held December 11, 2015

• The agenda included:
  - NCATS Director’s Update
    - Pamela McInnes, D.D.S., M.Sc. (Dent.), Deputy Director, NCATS, delivered this update for Christopher P. Austin, M.D., NCATS director
    - The primary update concerned the fiscal year (FY) 2016 budget request
  - Concept Clearances
    - Dan Tagle, Ph.D., Associate Director for Special Initiatives, NCATS presented seven concepts; 3 previously considered and 4 new

• Robust discussion followed presentation of each concept

• All concepts were approved with suggestions and comments noted
CAN RB Update Concepts

• Previously Approved
  - Increasing Access to Compounds and Toxicity Data
  - Proof of Principle (POP) Awards
  - Sensors and Devices to Detect Clinical Outcomes

• New
  - SaME Therapeutics: Targeting Shared Molecular Etiologies Underlying Multiple Diseases to Accelerate Translation
  - 3-D Bioprinting of Human Tissues for Drug Screening
  - Proteomic Profiling for Clinical Applications
  - Tissue Chip Testing Centers: Validating Microphysiological Systems
CAN RB Update
Previously Approved Concepts

- **Increasing Access to Compounds and Toxicity Data**
  - To access compounds that did not have a safety signal in pre-clinical studies but later were shown to have toxicity in humans, to investigate underlying mechanisms for human toxicity and why pre-clinical tools failed, and to incorporate this information into predictive modeling to benefit drug development.

- **Proof of Principle (POP) Awards**
  - To support promising pre-clinical research projects that were not previously funded due to the lack of a specific piece of translational data.

- **Sensors and Devices to Detect Clinical Outcomes**
  - To advance the integration of real-time data from multiple devices and sensors to meaningfully inform the assessment of clinical outcomes.
**CAN RB Update**
**New Concepts**

- **SaME Therapeutics: Targeting Shared Molecular Etiologies Underlying Multiple Diseases to Accelerate Translation**
  - To develop a matrix of diseases and molecular etiologies to identify shared molecular etiologies (SMEs) underlying multiple diseases and to stimulate the identification of SME-targeted drugs and conduct clinical trials of these agents.

- **3-D Bioprinting of Human Tissues for Drug**
  - To establish a multidisciplinary NIH-based Center that uses 3-D bioprinting to generate high-throughput screenable assay models of human tissues for drug discovery.
  - To enable extramural investigators to access the NIH 3-D bioprinting core group to establish human tissue models and protocols for the generation and differentiation of human induced pluripotent stem cells (iPSCs) for the tissue cells of interest.
**CAN RB Update**

**New Concepts cont.**

- **Tissue Chip Testing Centers: Validating Proteomic Profiling for Clinical Applications**
  - To establish new clinical tests and protein biomarkers based on quantitative proteomics, phosphoproteomics and validated antibodies;
  - To optimize technical and analytical tools and easy-to-use resources and databases for physicians and other clinical staff;
  - To integrate analysis of genetic and proteomic data for decision making in personalized health care; and
  - To achieve better understanding and longitudinal monitoring of pathophysiology and drug effects by quantitative proteomic readouts.

- **Tissue Chip Testing Centers: Validating Microphysiological Systems**
  - To create tissue chip testing center(s) that will be responsible for testing a select group of compounds using predefined assays according to FDA and pharmaceutical industry standards