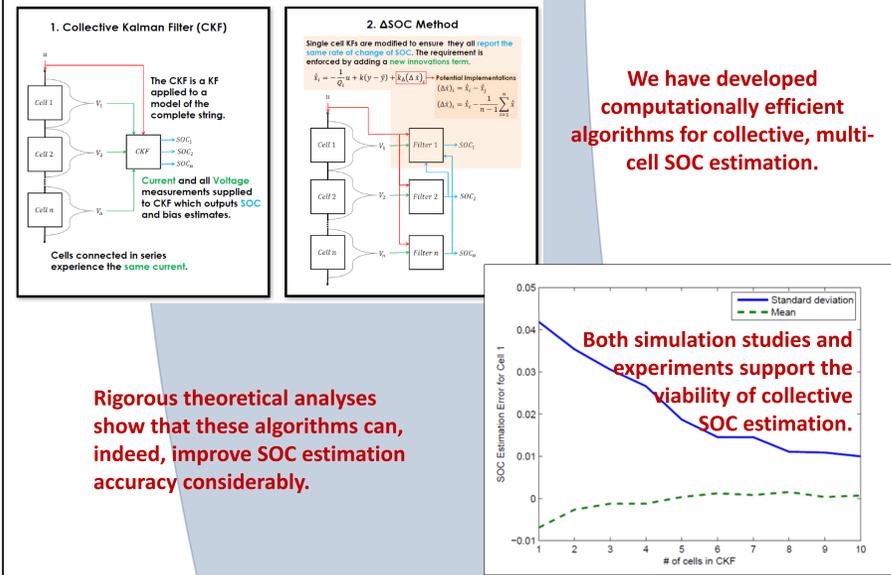


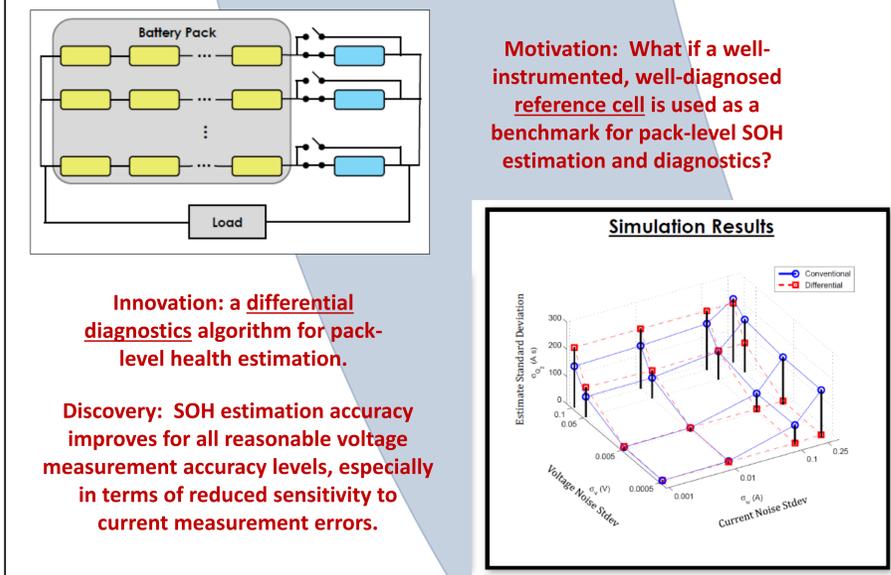
# A MULTI-PURPOSE, INTELLIGENT, AND RECONFIGURABLE BATTERY PACK MANAGEMENT SYSTEM

## ARPA-E PROJECT 0675-1565 (FOR ADDITIONAL INFORMATION, PLEASE EMAIL: HKF2@PSU.EDU)

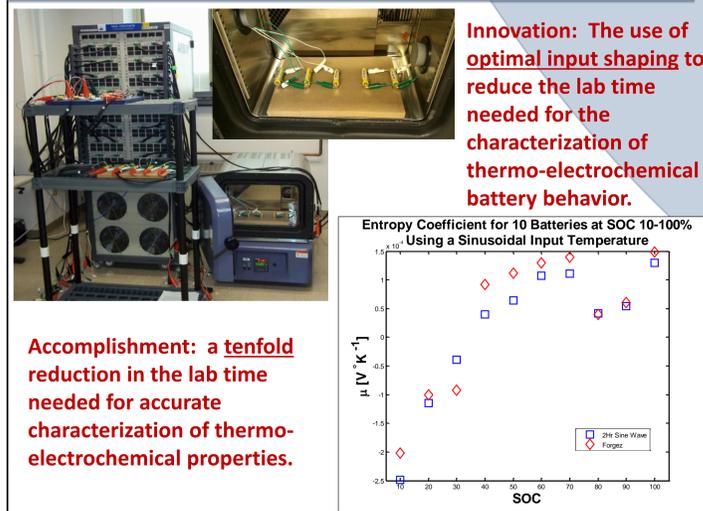
### 3. ACCOMPLISHMENT: COLLECTIVE SOC ESTIMATION



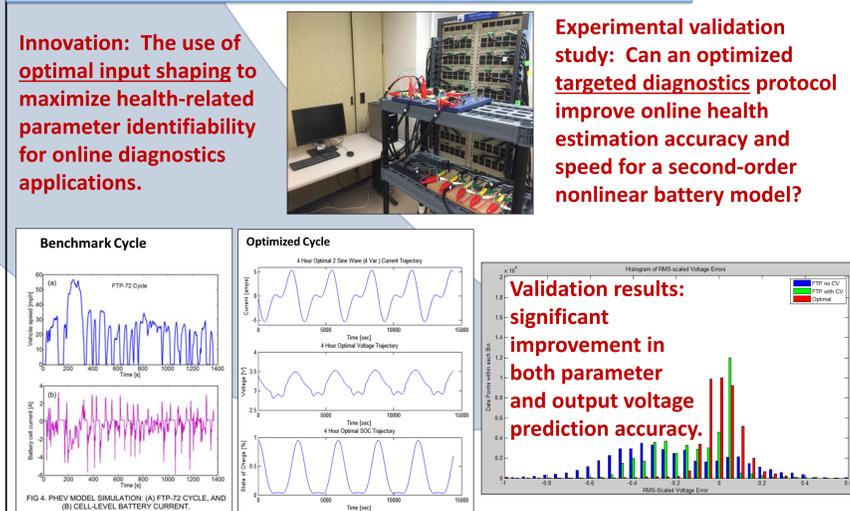
### 4. ACCOMPLISHMENT: DIFFERENTIAL SOH ESTIMATION



### 5. ACCOMPLISHMENT: TARGETED CHARACTERIZATION



### 6. ACCOMPLISHMENT: TARGETED ONLINE DIAGNOSTICS



### 1. PROJECT PARTICIPANTS

**Industrial advisor: Dr. Brian Sisk, Johnson Controls**

**Funded Partner: Gannon Motors and Controls, LLC**

**Funded Partner: The University of Michigan, Dearborn**

**Dr. Chris Mi, co-PI**

**Dr. Zhimin Xi, co-PI**

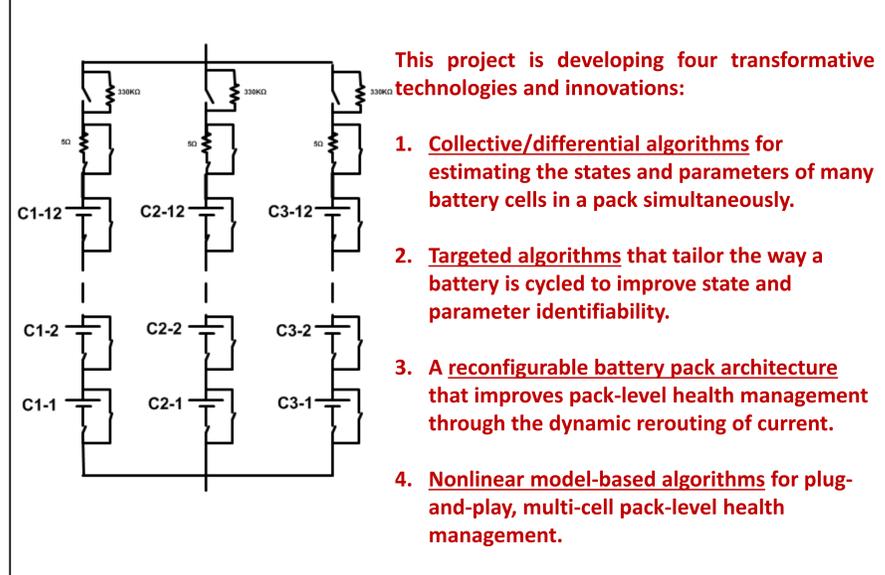
**Dr. Sean Brennan, co-PI**

**Dr. Hosam Fathy, PI**

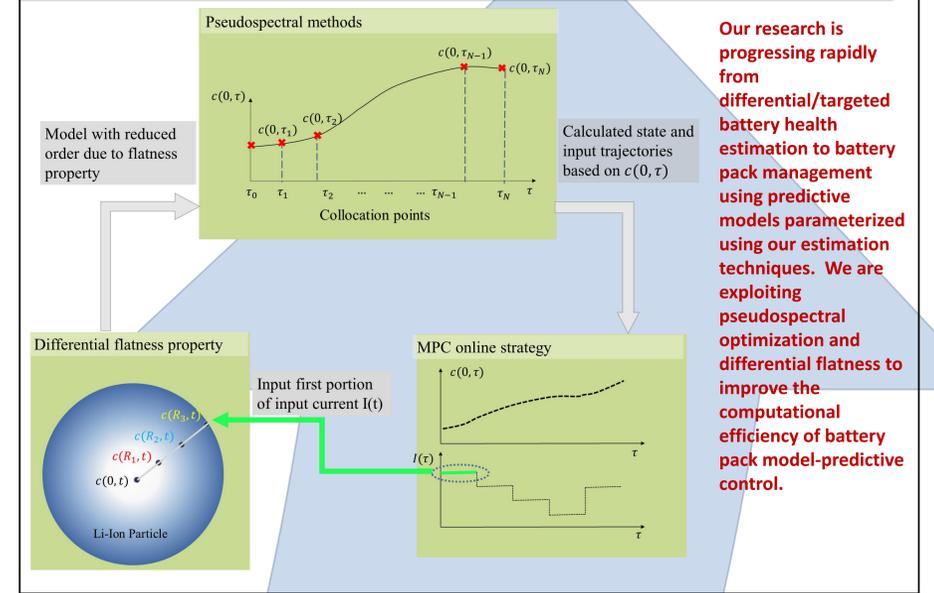
**Dr. Joel Anstrom, co-PI**

**Lead Institution: Penn State University**

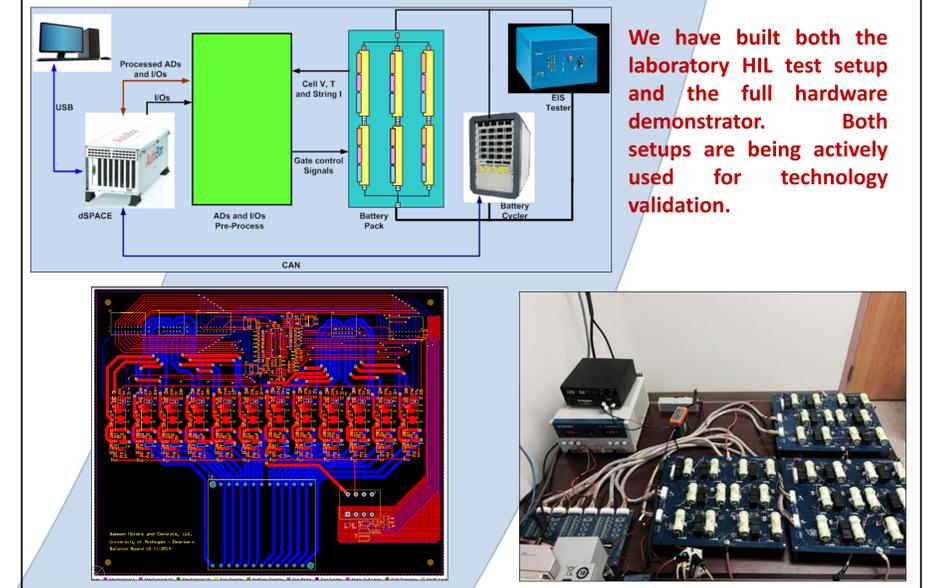
### 2. CORE VISION



### 9. PROGRESS: ONLINE HEALTH MANAGEMENT FRAMEWORK



### 8. ACCOMPLISHMENT: RECONFIGURABLE BATTERY PACK TEST BED



### 7. ACCOMPLISHMENT: ONLINE COMBINED DIFFERENTIAL/TARGETED DIAGNOSTICS

