ELECTROCARDIOMATRIX (ECM)

NEW TECHNIQUE FOR IMPROVED ACCURACY AND EFFICIENCY IN CARDIAC ARRHYTHMIA & ISCHEMIA DETECTION

UNMET NEED
The Electrocardiogram (ECG) has been commonly used for diagnosis of cardiac diseases for more than a century.

However, using an ECG to automate the detection of arrhythmias such as atrial fibrillation (AFIB) and atrial flutter (AFL) over long periods of time is time consuming and often inaccurate. Physicians are faced with two choices: rely on computerized interpretations which frequently produce false positives, or go through the time consuming process of manually interpreting the ECG signal strips. Similar challenge exist for detecting ECG changes associated with myocardial ischemia.

SOLUTION
Collaborating with engineers in her laboratory, MCIRCC member, Jimo Borjigin, PhD, developed a new method that organizes 2D-ECG signals into 3D electrocardiomatrix (ECM) to permit accurate, intuitive, and efficient detection of cardiac abnormalities.

Investigators have tested the effectiveness of ECM in detection of AFIB in patients as well as ischemia. Data demonstrated that ECM helps to reduce both false positive and false negative AFIB detection in stroke patients. They believe that the ECM will increase the detection accuracy and speed of all cardiac abnormalities that traditionally relied on ECG data. Clinical testing is ongoing.

COMPETITIVE ADVANTAGE
ECM-dependent AFIB, AFL, and ischemia detection is accurate and highly sensitive, surpassing ECG-dependent manual inspection, the current gold standard.