



Principal Investigators

M
MICHIGAN
ENGINEERING

Shuichi Takayama, PhD
Biomedical Engineering



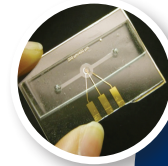
Collaborators

M
MICHIGAN
MEDICAL SCHOOL

Rodney Daniels, MD
Pediatrics-Intensive Care

Mark Meyerhoff, PhD
Chemistry

Compatible with potentiostat reader and future device with embedded screen for result reporting



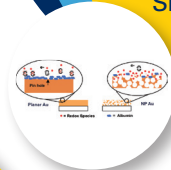
DISPOSABLE CARTRIDGE



MICROFLUIDIC DEVICE

NANOPOROUS GOLD ELECTRODE SENSOR

Non-permeable to oxygen/air



- Measures whole blood redox
- Resists biofouling
- Maintains sensitivity

Point-of-Care Platform Using Redox as a Sepsis Biomarker

Redox microfluidic diagnostic device that detects sepsis severity and gauges response to therapy

Team

Technology

Competitive Advantage

Commercialization Roadmap



SPEED

5-minute bedside diagnostic using redox as a biomarker



MULTI-USE

Detect sepsis severity + monitor therapy + prognostic measure



PORTABLE

Hand-held device for use at hospital, ambulatory and long-term care facilities



SENSITIVITY

Technology maintains sensitivity for accurate & precise redox measurements in whole blood



NEW BIOMARKER

Enables new therapies for sepsis treatment that target redox

Potential Partners

Abbott
Werfen Group
Epocal

Class II Device

510(k) PMA regulatory pathway



License Technology or New Startup Company

PROJECT MILESTONES

- Test platform via swine shock model
- Optimize electrode for microfluidic integration

MONTH 1

- Test platform via swine shock model
- Further optimize electrode for microfluidic integration

MONTH 3

- Test microfluidic/electrode device
- Design for manufacturing of microfluidic platform

MONTH 4

Begin initial prototype development

- Test prototype in critical care setting
- Refine prototype design

MONTH 5

- Finalize prototype
- File patent disclosure

MONTH 6