JOYCE MASSEY TBI GRAND CHALLENGE
2016 Funded Research Projects

Funding was awarded based on the potential to impact the way traumatic brain injury is diagnosed and treated during the initial “golden hours” of care.

PROTECTING INJURED BRAIN CELLS WITH IMATINIB

THE TEAM

Daniel Lawrence, PhD
Cardiovascular Medicine

E. Joe Su, PhD
Cardiovascular Medicine

Geoffrey Murphy, PhD
Molecular & Behavioral Neuroscience

THE NEED

Platelet derived growth factor receptor alpha
Loss of blood-brain barrier control

TRAUMATIC BRAIN INJURY

TRIGGERS PDGFRα SIGNAL SYSTEM

FLUID RETENTION & BRAIN SWELLING

INCREASED ICP

BRAIN DAMAGE OR DEATH

THE TECHNOLOGY

FDA approved drug; inflammatory therapy

Imatinib drug therapy preserves the blood-brain barrier to reduce fluid retention and brain swelling in TBI patients

INTRAVENOUS IMATINIB

BLOCKS PDGFRα SIGNAL

REDUCES BRAIN SWELLING

PARTENERSHIPS

Drug Companies
LICENSE TECHNOLOGY/ THERAPY

INFORMATION

Preserves blood-brain barrier

COMPETITIVE ADVANTAGE

FAST TRACK
Utilizing FDA approved drugs with well-established safety profiles that block PDGFRα signals could rapidly transition into a clinical trial.

PROVEN DATA
The team’s preliminary data has shown that Imatinib treatment reduces brain fluid retention and improves outcomes after TBI in animal models.

NOVEL TBI THERAPY
There are currently no effective therapies for TBI patients. Imatinib could be a new therapy for TBI.

EXPANDED DRUG DELIVERY
Allowing for intravenous delivery of imatinib would expand treatment options for unconscious TBI patients.

COMMERCIALIZATION ROADMAP

INVESTIGATIONAL NEW DRUG (IND) regulatory pathway

LICENSE TECHNOLOGY/ THERAPY

POTENTIAL PARTNERS Drug Companies

PROJECT MILESTONES

Test IV Imatinib in animal model

Determine Imatinib dosage

Cognitive function studies

Publish Imatinib data