

Tsui Lab

September 2020 | Issue 1

MISSION STATEMENT

The mission statement of Tsui Laboratory is to integrate healthcare and patient data and develop end-to-end real-time decision support for direct impact to hospital staff, patients, and public health by decreasing costs, morbidity, and mortality, well increasing efficiency and quality of care.

FUNDERS AND PROJECTS

September is Suicide Prevention Month, and the Tsui Laboratory is proud to be involved in projects aimed at reducing the risk of suicide:

- **NIMH R21:**
Predicting youth suicide attempts with EHR and PNC data (PIs: Dr. Barzilay and Dr. Tsui).
- **NIMH R01:**
Emergent Assessment of Suicidal Youth research study (Subaward PI: Dr. Tsui).
- **NIMH P50:**
Automated Prediction of Patient-Health-Questionnaire Outcomes from Longitudinal Electronic Health Records (Subaward PI: Dr. Tsui).
- **RK MELLON:**
Infant mortality initiatives (Subaward PI: Dr. Tsui).

ADDITIONAL PROJECTS

- **Expertise Knowledge Platform (EKP):**
Provides an overview of expertise, opportunities, and additional resources information at the department, enterprise and community levels. EKP, collaborated with Innovation Ecosystem, aims to reach a connected CHOP.

RISK-REDUCTION SYSTEM DEVELOPMENTS

- **Suicide Risk Prediction:**
September is Suicide Prevention Month, and the Tsui Lab has developed a suicide

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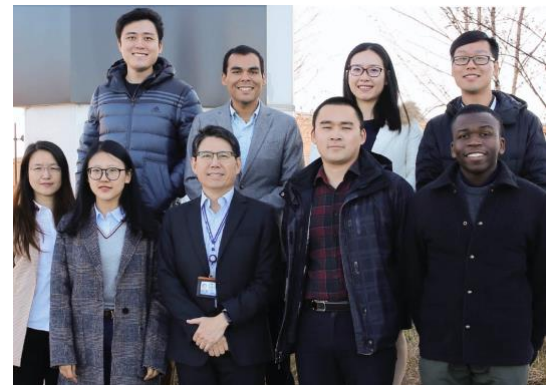
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risk prediction system. This system employs a large, data-driven approach utilizing electronic health records and social media. The aim is to predict flagged or urgent individual suicide risk level from longitudinal posts on online suicide watch forums such as Reddit and the SuicideWatch community. A highly detailed look at the Suicide Risk Prediction system can be found on the Tsui Lab website at www.research.chop.edu/tsui-laboratory.

- **IMPreSIv:**
To reduce risks of infant mortality in pre-natal and post-natal care, Dr. Tsui and the Tsui Laboratory have developed and are seeking to implement their Infant Mortality Prediction System with Intervention management (IMPreSIv). To develop infant mortality prediction models and intervention strategies, the Tsui Lab will collect and analyze infant birth/death records, immunization records, pregnancy and infant health interventions, family involvement in social services and public agencies, and environmental quality.

NEWSMAKERS

- **Two AMIA submissions from Tsui Lab accepted**
- **Dr. Tsui's student Ye finalist for AMIA doctoral dissertation award**
- **Tsui Lab awarded 3rd place in NLP competition**
- **IEEE elected Dr. Tsui as Senior Member**
- **Dr. Tsui serves as JAMIA OPEN inaugural editorial board member**



The Tsui Lab is affiliated with the Department of Biomedical and Health Informatics (DBHi), the Department of Anesthesiology and Critical Care Medicine at the Children's Hospital of Philadelphia (CHOP). Under the direction of Prof. Tsui, the lab works closely with hospitals and frontline clinicians to collect and analyze big clinical data that leads to new hypotheses, patient outcome prediction, management, and risk reduction.