**Budget for Point-of-Care Screening and diagnosis of liver cancer in Chinese population**

Momiao Xiong (15%, 1-2; 25% 3-5 ) $

Student (Nan Lin) (1-5) $23,000

Programmer (40%, 3-5) $24,000

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Li Jin, Ph. D

Professor

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**Equipment**

Qty Price

Mobi us Ultrasound system 3 $9,000 (first year)

6 $9,000 (Third year)

**Supplies:**

Computer Media and Printer Supplies: $ 1,000

Software $ 1,000

Communication fees: $ 1,000

Publication Fees: $ 3,000

**Travel:**

3,000 for Investigator X 2 times $ 6,000

### BUDGET JUSTIFICATION

**PERSONNEL:**

Momiao Xiong (1.8 cal mo/year, 3.0 cal mo/year), Ph. D., Professor, Division of Biostatistics, Human Genetics Center, at the School of Public Health at The University of Texas Health Science Center at Houston, will devote 15% of effort in the first two years and 25% of effort in the last three years to the proposed research as Principle Investigator. He has developed numerous statistical methods for biomarker identification, classification, disease risk prediction, image analysis, RNA-seq and miRNA-seq analysis of cancer, pathway analysis, and computational systems biology. Dr. Xiong will have overall responsibility for directing all aspects of the research and for communicating critical issues with the entire investigative team . He will interact on a regular basis with Dr. Li Jin, professor, Member, Chinese Academy of Sciences, vice president at the Fudan University, China. Dr. Xiong will have primary responsibility for to using mobile health (mHealth), biosensors, imaging, and nanopore-sequencing to develop low cost and user-friendly devices or assays for screen and early detection of liver hepatocellular carcinoma in Chinese population and validate their analytical and clinical performance. Dr. Xiong will also supervise the software development for cancer screening and detection by ultrasound and a combination of biomarkers. Dr Xiong will supervise his student to conduct real data analysis for screen and early detection of liver cancer.

Nan Lin (6 cal mo/year). A Ph D. student will devote 50% of effort to the proposed research for developing statistical methods and algorithms for image analysis, screen and early detection of liver cancer, conduct simulations and real data analysis. He will also develop software for implementing the proposed methods for image analysis and cancer diagnosis. He will assist with writing of research reports and articles.

**Equipment**

One aim of this application is to adapt the ultrasound technologies which can plug into smartphones and tablets to develop a new generation of high-performance, low-cost and portable ultrasound scanner for detection and screen of liver hepatocellular carcinoma in Chinese population. The analytical and clinical performance for early detection of living cancer will be validated in large cohort from Chinese populations. We will purchase 3 Mobus Ultrasound systems for clinical use in China.

**Subcontract with Harvard University**