**Budget Justification – Sub from Georgetown NSF 17-576**

Senior/Key Personnel:

Dr. Benjamin Fuller, PI, (Effort = 0.45 summer months for Years 1-3) will oversee construction of new distance-preserving encryption schemes and supervise research of the graduate assistant.

Other Personnel:

Graduate Assistant, TBN, (Effort = 12.0 calendar months for Years 1-3) will implement the new secure outsourced database schemes. In addition, the graduate assistant will participate in the evaluation of the usability and security of the proposed schemes.

Fringe benefits:

The fringe rates for the PI will be 26% in Year 1 and 27% in Year 2-3. The fringe rates for the Graduate Assistant will be20% in Year 1-2 and 21% in Year 3 for AY and 26% in Year 1 and 27% in Years 2-3 for summer. Fringe benefits are negotiated with the Department of Health and Human Services as part of the University’s Cost Rate Agreement and are calculated as a percentage of salaries.

Travel:

We are requesting $12,000 ($4,000in each Years 1-3) for domestic travel. This travel will be used for two purposes. First, the other PIs for this project are located in the DC metro area. Dr. Fuller and the graduate assistant will travel for semiannual progress meetings that are one week in duration. Project personnel will also travel to domestic conferences such as IEEE Security and Privacy to present research findings. Costs will comply with the applicable Federal regulations and per diem rates in effect for the destination cities when the costs are incurred. Travel costs may include airfare, hotel, per diem, registration fees and ground transportation.

Indirect Costs:

Indirect costs of 59.5% (Year 1) and 61% (Year 2-3) are assumed on the modified total direct costs (MTDC). The rates are based on the University’s federally negotiated cost rate agreement with the Department of Health and Human Services dated June 2, 2017.