**BUDGET JUSTIFICATION**

Personnel:

**Sawsan Khuri, Ph.D.** Principal Investigator (1.2 calendar months)

Dr. Khuri is the Bioinformatics Lead Scientist at the Center for Computational Science, and Assistant Research Professor, Dr. John T. Macdonald Foundation Department of Human Genetics, University of Miami Miller School of Medicine.  Dr. Khuri has 10 years experience in bioinformatics, covering a wide spectrum of areas including the regulation of gene expression, predicting the functional relevance of rare or common variants, and more recently, next generation sequence (NGS) data assembly and visualization.  Dr. Khuri will train and work directly with the Bioinformatics postdoc to develop the analysis strategies that will be required for all projects.  In particular, she will develop strategies for gene expression analysis and rare variant characterization and provide bioinformatics support for NGS data and the other bioinformatics needs of the program as they arise.  20%FTE is requested for all years.

**Nicolas Tsinoremas, Ph.D.** (Co-Investigator) (1.2 calendar months)

Dr. Tsinoremas is the Director of the Center for Computational Science and a Research Professor with the Departments of Medicine and Computer Science. Dr. Tsinoremas will ... 10% FTE is requested for all years.

**Stuart Young, Ph.D.** Post Doctoral Associate (12 calendar months)

Dr. Young has 4 years experience in bioinformatics research, covering deleterious mutation prediction in proteins, the design and implementation of bioinformatics database interfaces, and sequence annotation using machine learning and other methods. In particular, he will develop strategies for optimizing short read assembly, expression analysis, gene network and variant characterization workflows, and develop the system software.  Dr. Young will handle the day-to-day project management and the other bioinformatics needs of the program as they arise. 100% FTE is requested for all years.

**Chris Mader**, Software Advisor (1.2 calendar months)

Mr. Mader is the Director of Application Systems Development at the Center for Computational Science. Mr. Mader will supervise software engineering for the project and provide guidance and advice on systems design and code.

**Deepthi Puram,** Software engineer (6 calendar months)

Deepthi Puram is … . Ms. Puram will develop object-oriented, modular code for the project, along with test suites and developer/user documentation. She will also assist in the iterative modification of the software design and deployment of the system.

**TBA,** Software engineer (12 calendar months)

The software engineer will develop object-oriented, modular code for the project, along with test suites and developer/user documentation. He/she will also assist in the iterative modification of the software design and deployment of the system.

**EQUIPMENT**

The budget includes a budget of $100,000 over two years to cover the purchase of

1. 16-node cluster

2. Multi-gigabit routing switch

2. Production web server

3. Production database server

4. Development web server

5. Development database server