

## **Budget Justification**

### **Personnel and Benefits**

Funds are requested to provide 1 month of summer salary per year for the PI, Prof. Troy Carter and faculty Co-PIs Prof. Walter Gekelman and Prof. George Morales. Support for 1 month per year of Co-PI Dr. Steve Vincena is requested. The specific salaries and benefits for each individual are determined by strict guidelines set by the University of California and subject to rigorous review. Each listed salary is based on the individual's current level and increased each year for cost of living and merit increase (5% COLA for academic personnel, 4% COLA for staff, 7% for faculty merit increases which occur every few years). Benefits are the actual benefits of each employee. Fringe benefits are charged to all senior and other new personnel at a composite rate set by the Regents of University of California. PI and Co-I salaries are charged at a rate of 12.7%. Existing employee use actual rates. Benefit rates are increased 2% each fiscal year.

### **Equipment and Fabrication**

Funds are requested for fabrication of experimental apparatus and for continuing modification to current equipment. The actual needs in this category vary from year to year (e.g. repairing/replacing pump-down stations, mechanical and electrical components of the LAPD, etc.). Each year, equipment in support of user experiments and campaigns is designed and constructed by the BaPSF staff. The planned fabrication items include include plasma sources, amplifiers, high-power switches and probes. Funds are requested to support fabrication of apparatus for the LAPTAG outreach program.

### **Travel**

The travel budget allows the PIs to attend major national scientific meetings such as APS-DPP and to participate international meetings such as the International Conference on Plasma Physics (ICPP), the Interrelationship of Plasma Experiments in the Laboratory and Space (IPELS), the Trieste Summer School on Plasma Physics and major topical workshops. Travel to these various meetings is necessary to present the work done at BaPSF to wide audiences and to fulfill the "Broader Impact" goals of the proposal.

### **Other Direct Costs**

The materials and supplies category includes funds for necessary small replacement parts as well as for electrical supplies. Funds are allocated for scientific publications as a result of this project. The additional direct costs include the following. There are three laser systems (two Nd-Yag lasers and a pulsed tunable dye laser) used in support of several experiments and for diagnostics. All the lasers must be kept under service contract, as a single repair on any of them equals the price of a year-long service contract. The lasers are fragile and usually break more than once a year. The service contract also includes a yearly alignment to bring the laser up to its quoted specifications. Participant support costs are requested to facilitate travel of high school students and teachers participating in the LAPTAG outreach program. Travel to APS DPP and to AAPT meetings is envisioned.

The Technology Infrastructure Fee (TIF) is a consistently-applied direct charge that is assessed to each and every campus activity unit, regardless of funding source, including units identified as individual grant and contract awards. The TIF pays for campus communication services on the basis of a monthly accounting of actual usage data. These costs are charged as direct costs and are not recovered as indirect costs. TIF is based on a full time employee (FTE) and is calculated at \$33.28 per FTE per month.

## **Indirect Costs**

Facilities and Administration (F&A) costs are federally negotiated rate applied to projects as a percentage of the direct costs. The UCLA F&A rate on the Modified Total Direct Cost (MTDC) is 54%. MTDC consists of all salaries and wages, fringe benefits, materials and supplies, services, travel and the first \$25,000 of each subaward regardless of the period covered by the sub-grant or subcontract. Graduate student fee remissions, equipment over \$5,000, and participant support costs are excluded from MTDC. On April 27, 2011, the University of California and the United States Department of Health and Human Services (the responsible Federal audit agency) entered into a new facilities and administrative (F&A) cost rate agreement for UCLA. This agreement establishes facilities and administrative cost rates for the period July 1, 2010, through June 30, 2016. The F&A rate pertaining to this budget is 54% of Modified Total Direct Costs for on-campus research. A copy of the F&A rate agreement can be accessed at: [http://www.research.ucla.edu/ocga/Documents/F\\_A\\_Rate\\_Agreement\\_4-27-11.pdf](http://www.research.ucla.edu/ocga/Documents/F_A_Rate_Agreement_4-27-11.pdf).