1 Budget Justification -FY04 -FY07 (4-1-04 to 3-31-07)

A.1-4. Four faculty supported for two summer months each to perform research full-time and to direct students. The summer commitments are:

FY04
(a) L. Cremaldi: BABAR 70%, CMS 30%, 05% MUON
(b) R. Kroeger: BABAR 100%
(c) D. Summers: BABAR 60%, CMS 10%, MUON 30%
(d) B. Quinn: D0 100%

FY05
(a) L. Cremaldi: BABAR 60%, CMS 40%, 05% MUON
(b) R. Kroeger: BABAR 100%
(c) D. Summers: BABAR 60%, CMS 10%, MUON 30%
(d) B. Quinn: D0 100%

FY06
(a) L. Cremaldi: BABAR 60%, CMS 40%, 05% MUON
(b) R. Kroeger: BABAR 100%
(c) D. Summers: BABAR 60%, CMS 10%, MUON 30%
(d) B. Quinn: D0 100%

(Academic year support, with reduced teaching loads, is provided by the University.)

A.6. Two months summer salary for Dr. David Sanders, Research Scientist/Computer System Manager. Dr. Sanders is supported 10 months by the physics department. He spends greater than 50% time on the UMHEP computing, RAID Arrays, supporting UMiss systems at SLAC, performing physics analyses. Two months support is requested so he can continue his support of BABAR (systems, RAID arrays, etc.), some software development for CMS, and bring up our D0/CMS computing. Sander’s also supports test beam operations at CERN for our group. In his absence for research purposes, the department pays a student for backup (13.2K per yr.). The Department contributes about 5 months of Dr. Sander’s salary, and with the student totals an in-kind contribution of $33K + 25.04% fringe.

B.1 Three postdoctoral associate are supported full-time:
FY04
(a) J. Bauer: 100% BABAR
(b) H. Zhao: 100% BABAR
(c) R. Godang: 90% BABAR; 10% MUON
FY05
(a) post doc 100% D0/CMS
(b) H. Zhao: 100% BABAR
(c) R. Godang : 90% BABAR; 10% MUON

FY06
(a) post doc: 100% D0/CMS
(b) H. Zhao: 100% BABAR
(c) R. Godang : 90% BABAR; 10% MUON

B.3 One graduate student, V. Eschenburg, is doing his dissertation in residence at SLAC and needs full support. One dissertation student, E. Aitala, is supported by the University and no support is requested for him. Aruniva Roy and Bashali Ray are working 50% department and 50% DOE, and will need future support upon full commitment to HEP. (FY04, FY05,FY06)

B.4 Two undergraduate students receive hourly compensation to operate the high energy physics computer farm and assist in data analysis and detector construction. (FY04, FY05,FY06)

C. Fringe benefit rate: 25.04% of salary for Senior Personnel and Post Doctoral Associates; 3% of salary and wages for undergraduate and graduate students. (All salaries and wages and fringe benefits are consistent with guidelines established by the University.)

D. Permanent Equipment

FY04 12 dual processor CPU’s ($1500 ea) will be purchased for the D0/CMS Linux Computer farm. A 3TB RAID array ($6K ea) will be networked to the farm and analysis work stations (BaBaR,D0,CMS) through a high speed switch ($1K). 25000

FY05 5 Desktop workstations ($10000) will be purchased to both replace existing models and for D0/CMS analyses. One system will be needed at Fermilab and one system at CERN. We will require $5000 for Farm Replacement and Upgrade Equipment and $5000 for grid disk caches for BaBaR, D0, CMS) GRID computing. 20000

FY06 5 Desktop workstations ($10000) will be purchased to both replace existing models and for D0/CMS analyses. Systems needed at Fermilab and CERN. We will require $5000 for Farm Replacement and Upgrade Equipment and $5000 for grid disk caches for BaBaR, D0, CMS) GRID computing. 20000
E.1 Domestic Travel (3 faculty, 1 research scientist, 3 postdocs, 1 student)

( All domestic travel costs are based on average cost of such trips in FY03 corrected for inflation and are consistent with university policy and regulations. )

FY04
BABAR:
(a) Two faculty for one summer months each at SLAC 6000
(b) Supplement for student for 12 months at SLAC 8000
(c) One faculty 1 trip/3-months to SLAC during academic year to run shifts, direct students and consult with postdocs 4500
(d) 3 student or postdoc to University from SLAC during academic year 3600
(e) Two physicists at two national meetings (DPF,IEEE) to present papers 4500
(f) Partial support for three faculty per two collaboration meetings. 4500

FERMILAB- D0/CMS
(a) 10 trips to Fermilab for physicists on D0, CMS to take shifts(D0), discuss top analysis(D0), detector fabrication(CMS), test beam(CMS). 10000
(b) One physicist for 1 summer mo. at FNAL. (D0,CMS) 2500
(c) Two physicists to US CMS collaboration meetings 3000

MUON
(a) Two physicists to national meeting 3000

FY05
BABAR:
(a) Two faculty for one summer months each at SLAC 6000
(b) Supplement for student for 12 months at SLAC 8000
(c) One faculty 1 trip/3-months to SLAC during academic year to run shifts, direct students and consult with postdocs 4500
(d) 3 student or postdoc to University from SLAC during academic year 2400
(e) Two physicists at two national meetings (DPF,IEEE) to present papers 3000
(f) Support for three faculty for three collaboration meetings. 4500

FERMILAB- D0/CMS
(a) 12 trips to Fermilab for physicists on D0, CMS to take shifts(D0), discuss top analysis(D0), detector fabrication(CMS), test beam(CMS). 12000
(b) One physicist for 1 summer mo. at FNAL. (D0,CMS) 2500
(c) Two physicists to US CMS collaboration meetings 3000
(d) One physicist summer mo. at FNAL 2500

MUON
(a) Two physicists to national meeting 3000


FY06

BABAR:
(a) Two faculty for one summer months each at SLAC 6000
(b) Supplement for student for 12 months at SLAC 8000
(c) One faculty 1 trip/3-months to SLAC during academic year to run shifts, direct students and consult with postdocs 4500
(d) 3 student or postdoc to University from SLAC during academic year 2400
(e) Two physicists at two national meetings (DPF,IEEE) to present papers 3000
(f) Support for three faculty for three collaboration meetings. 4500

FERMILAB- D0/CMS
(a) 12 trips to Fermilab for physicists on D0, CMS to take shifts(D0), discuss top analysis(D0), detector fabrication(CMS), test beam(CMS) 12000
(b) One physicist for 1 summer mo. at FNAL. (D0,CMS) 2500
(c) Two physicists to US CMS collaboration meetings 3000
(d) One physicist summer mo. at FNAL 2500

MUON
(a) Two physicists to national meeting 3000

E.2 Foreign Travel (3 faculty, 1 research scientist, 3 postdocs)
(All foreign travel costs are based on average cost of such trips in FY00 corrected for inflation and are consistent with university policy and regulations.)

FY04

BABAR
(a) One collaboration meeting for two physicists 4000

FERMILAB-D0/CMS
(a) One collaboration or EPS meeting 2000
(b) Two CMS collaboration meetings/year at CERN for two physicists 4000
(c) One collaboration or EPS meeting for one physicists 2500
(d) One physicist to participate in the CERN test beam run 2000
(e) One PIXEL technical meetings - one physicist 2000

MUON
(a) One MICE or CERN collaboration meeting 2000

FY05

BABAR
(a) One collaboration meeting for two physicists 4000
FERMILAB-D0/CMS
(a) One collaboration or EPS meeting  
(b) Two CMS collaboration meetings/year at CERN for two physicists  
(c) One collaboration or EPS meeting for one physicists  
(d) One physicist to participate in the CERN test beam run  
(e) One PIXEL technical meetings - one physicist

MUON
(a) One MICE or CERN collaboration meeting

FY06
BABAR
(a) One collaboration meeting for two physicists

FERMILAB-D0/CMS
(a) One collaboration or EPS meeting  
(b) Two CMS collaboration meetings/year at CERN for two physicists  
(c) One collaboration or EPS meeting for one physicists  
(d) One physicist to participate in the CERN test beam run  
(e) One PIXEL technical meetings - one physicist

MUON
(a) One MICE or CERN collaboration meeting

G.1 Materials and Supplies
(a)Materials (tapes, supplies, software, licenses) for BABAR analyses

G.2 Publication Costs

G.6 OTI - Other Direct Costs
(a)Long distance charges – conference calls three a week for BABAR D0, CMS, MUON ; Shipping and mailing charges.

(b)Tuition remission is requested for each graduate research assistant at the Universitys standard rate of $1958 per semester (2 students @ 2 semesters per student @ $1958 per semester = $7832) x 3 years

Indirect costs are calculated in accordance with The University of Mississippis rate agreement with DHHS, dated February 3, 1999. Indirect costs for research are calculated at 43.5% of Total Direct Costs less equipment, tuition remission, and the
portion of each subgrant or subcontract in excess of $25,000. Under a special agreement with the University an indirect cost rate of 34% is applied on modified total direct costs except travel, on which a 10% rate is applied.