

SUMMARY PROPOSAL BUDGET

YEAR 1

ORGANIZATION University of South Florida				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR Charles Connor				AWARD NO.	Proposed	Granted	
				A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)			
	CAL	ACAD	SUMR				
1. Laura Connor - Res. Assoc. - Comp Sci	1.00	0.00	0.00		7,405		
2.							
3.							
4.							
5.							
6. (0) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	0.00	0.00	0.00		0		
7. (1) TOTAL SENIOR PERSONNEL (1 - 6)	1.00	0.00	0.00		7,405		
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. (0) POST DOCTORAL SCHOLARS	0.00	0.00	0.00		0		
2. (0) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	0.00	0.00	0.00		0		
3. (1) GRADUATE STUDENTS					21,000		
4. (0) UNDERGRADUATE STUDENTS					0		
5. (0) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)					0		
6. (0) OTHER					0		
TOTAL SALARIES AND WAGES (A + B)					28,405		
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)					3,336		
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)					31,741		
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT					0		
E. TRAVEL					1,300		
1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS)							
2. FOREIGN					0		
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS \$ _____					0		
2. TRAVEL _____					0		
3. SUBSISTENCE _____					0		
4. OTHER _____					0		
TOTAL NUMBER OF PARTICIPANTS (0)				TOTAL PARTICIPANT COSTS	0		
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES					0		
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION					900		
3. CONSULTANT SERVICES					0		
4. COMPUTER SERVICES					0		
5. SUBAWARDS					0		
6. OTHER					10,344		
TOTAL OTHER DIRECT COSTS					11,244		
H. TOTAL DIRECT COSTS (A THROUGH G)					44,285		
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) MTDC (excluding tuition) (Rate: 49.5000, Base: 33527)							
TOTAL INDIRECT COSTS (F&A)					16,596		
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)					60,881		
K. RESIDUAL FUNDS					0		
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)					60,881		
M. COST SHARING PROPOSED LEVEL \$ 0				AGREED LEVEL IF DIFFERENT \$			
PI/PI NAME Charles Connor				FOR NSF USE ONLY			
ORG. REP. NAME* Heather Morr				INDIRECT COST RATE VERIFICATION			
		Date Checked	Date Of Rate Sheet	Initials - ORG			

SUMMARY PROPOSAL BUDGET

YEAR **2**

ORGANIZATION University of South Florida				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR Charles Connor				AWARD NO.	Proposed	Granted	
				A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)			
				CAL	ACAD	SUMR	
1.				0.00	0.00	0.00	
2.							
3.							
4.							
5.							
6. (0) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00	0
7. (1) TOTAL SENIOR PERSONNEL (1 - 6)				0.00	0.00	0.00	0
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. (0) POST DOCTORAL SCHOLARS				0.00	0.00	0.00	0
2. (0) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	0.00	0
3. (1) GRADUATE STUDENTS							21,000
4. (2) UNDERGRADUATE STUDENTS							9,600
5. (0) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)							0
6. (0) OTHER							0
TOTAL SALARIES AND WAGES (A + B)							30,600
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							2,230
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							32,830
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							0
E. TRAVEL							3,400
1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS)							
2. FOREIGN							0
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS	\$		0				
2. TRAVEL			0				
3. SUBSISTENCE			0				
4. OTHER			0				
TOTAL NUMBER OF PARTICIPANTS (0)							
TOTAL PARTICIPANT COSTS							0
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES							0
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION							1,800
3. CONSULTANT SERVICES							0
4. COMPUTER SERVICES							0
5. SUBAWARDS							0
6. OTHER							10,344
TOTAL OTHER DIRECT COSTS							12,144
H. TOTAL DIRECT COSTS (A THROUGH G)							48,374
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) MTDC (excluding tuition) (Rate: 49.5000, Base: 37616)							
TOTAL INDIRECT COSTS (F&A)							18,620
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							66,994
K. RESIDUAL FUNDS							0
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							66,994
M. COST SHARING PROPOSED LEVEL \$ 0				AGREED LEVEL IF DIFFERENT \$			
PI/PI NAME Charles Connor				FOR NSF USE ONLY			
ORG. REP. NAME* Heather Morr				INDIRECT COST RATE VERIFICATION			
		Date Checked		Date Of Rate Sheet		Initials - ORG	

SUMMARY PROPOSAL BUDGET

YEAR 3

ORGANIZATION University of South Florida				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR Charles Connor				AWARD NO.	Proposed	Granted	
				A. SENIOR PERSONNEL: PI/PP, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)			
				CAL	ACAD	SUMR	
1.				0.00	0.00	0.00	
2.							
3.							
4.							
5.							
6. (0) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00	0
7. (1) TOTAL SENIOR PERSONNEL (1 - 6)				0.00	0.00	0.00	0
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. (0) POST DOCTORAL SCHOLARS				0.00	0.00	0.00	0
2. (0) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	0.00	0
3. (1) GRADUATE STUDENTS							21,000
4. (2) UNDERGRADUATE STUDENTS							9,600
5. (0) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)							0
6. (0) OTHER							0
TOTAL SALARIES AND WAGES (A + B)							30,600
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							2,230
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							32,830
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							0
E. TRAVEL 1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS)							3,400
2. FOREIGN							0
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS \$			0				
2. TRAVEL			0				
3. SUBSISTENCE			0				
4. OTHER			0				
TOTAL NUMBER OF PARTICIPANTS (0)				TOTAL PARTICIPANT COSTS			0
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES							0
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION							1,800
3. CONSULTANT SERVICES							0
4. COMPUTER SERVICES							0
5. SUBAWARDS							0
6. OTHER							10,344
TOTAL OTHER DIRECT COSTS							12,144
H. TOTAL DIRECT COSTS (A THROUGH G)							48,374
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) MTDC (excluding tuition) (Rate: 49.5000, Base: 37616)							
TOTAL INDIRECT COSTS (F&A)							18,620
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							66,994
K. RESIDUAL FUNDS							0
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							66,994
M. COST SHARING PROPOSED LEVEL \$ 0				AGREED LEVEL IF DIFFERENT \$			
PI/PP NAME Charles Connor				FOR NSF USE ONLY			
ORG. REP. NAME* Heather Morr				INDIRECT COST RATE VERIFICATION			
		Date Checked		Date Of Rate Sheet		Initials - ORG	

SUMMARY PROPOSAL BUDGET Cumulative

ORGANIZATION University of South Florida				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR Charles Connor				AWARD NO.	Proposed	Granted	
				A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)			
		CAL	ACAD	SUMR			
1.	Laura Connor - Res. Assoc. - Comp Sci	1.00	0.00	0.00	7,405		
2.							
3.							
4.							
5.							
6.	() OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	0.00	0.00	0.00	0		
7.	(1) TOTAL SENIOR PERSONNEL (1 - 6)	1.00	0.00	0.00	7,405		
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1.	(0) POST DOCTORAL SCHOLARS	0.00	0.00	0.00	0		
2.	(0) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	0.00	0.00	0.00	0		
3.	(3) GRADUATE STUDENTS				63,000		
4.	(4) UNDERGRADUATE STUDENTS				19,200		
5.	(0) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				0		
6.	(0) OTHER				0		
TOTAL SALARIES AND WAGES (A + B)					89,605		
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)					7,796		
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)					97,401		
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT					0		
E. TRAVEL 1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS)					8,100		
2. FOREIGN					0		
F. PARTICIPANT SUPPORT COSTS							
1.	STIPENDS \$ _____				0		
2.	TRAVEL _____				0		
3.	SUBSISTENCE _____				0		
4.	OTHER _____				0		
TOTAL NUMBER OF PARTICIPANTS (0) TOTAL PARTICIPANT COSTS					0		
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES					0		
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION					4,500		
3. CONSULTANT SERVICES					0		
4. COMPUTER SERVICES					0		
5. SUBAWARDS					0		
6. OTHER					31,032		
TOTAL OTHER DIRECT COSTS					35,532		
H. TOTAL DIRECT COSTS (A THROUGH G)					141,033		
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE)							
TOTAL INDIRECT COSTS (F&A)					53,836		
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)					194,869		
K. RESIDUAL FUNDS					0		
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)					194,869		
M. COST SHARING PROPOSED LEVEL \$ 0 AGREED LEVEL IF DIFFERENT \$							
PI/PD NAME Charles Connor				FOR NSF USE ONLY			
ORG. REP. NAME* Heather Morr				INDIRECT COST RATE VERIFICATION			
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C *ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

Budget Justification - USF

The main costs in the USF fraction of this proposal are stipend and tuition waiver for three graduate student years, funding for 2 undergraduates in each of years 2 and 3, and funding for one month of Senior Personnel (L. Connor) during Year 1.

Funding is requested for L. Connor in Year 1 because she is the primary author of the Tephra2 and Lava2 codes. She will devote one month to rewriting these codes following the modular design outlined in the proposal and embedding flexibility to allow for code reuse and modification. This is a Year 1 activity and will be carried out in close collaboration with UB personnel (hence trips to UB are scheduled as part of the USF budget).

In Year 1 a graduate student will participate in development and implementation of the Gauss-Newton procedure with the Levenburg-Marquardt modification for inverting tephra accumulation to estimate eruption parameter distributions. Doctoral student Jeremy White will be funded for one year under this activity. Jeremy has already implemented these inversion methods in python for gravity inversion and inversion problems in hydrogeology. We think this will be completely manageable in one year, working with L. Connor who is most familiar with the Tephra2 code.

In Year 2 and 3, graduate student funding will shift to a new doctoral student (TBD) who will participate in development of new geophysical modules for the Tephra2 code, combining this activity with geophysical research on tephra deposition.

Undergraduate participation (as hourly, OPS work) is requested for Years 2 and 3. These undergraduates (4 total over two years) will participate in developing alternative modules for the Lava2 code, working under the direction L. Connor and C. Connor and working toward senior honors' theses. We regard this activity as essential for gaining the broader impacts in education and outreach outlined in the proposal description.

No salary is requested for C. Connor, who is currently on a 12 month appointment. Nevertheless, C. Connor has a 30% research assignment and sufficient time will be available to participate in all aspects of the project (estimated to be a one month per calendar year commitment). L. Connor will continue to participate after Year 1 by mentoring undergraduate and graduate students participating in the project and interfacing with UB faculty and Staff, all part of her on-going assignment as a Research Associate in the Department of Geology.

In addition, limited domestic travel funds (for travel to UB and to make presentations at AGU) and publication costs are requested.

No USF funding is required during Year 4 of the project because our role in code development and deployment will be finished.

YEAR 1

Senior personnel. We are requesting zero salary support for the project PI, who is on 12 month salary. One month salary is requested for Laura Connor, to modify the Tephra2 and Lava2 codes, on which she is primary author.

Other personnel. Support for one graduate student in Year 1 is requested to cover stipend. This graduate student will implement inversion algorithms.

Fringe benefits. Fringe benefits for L. Connor (Research Associate) is 15.59% based on current USF guidelines. Fringe benefit rate for the graduate student support is 0.5% plus health insurance of \$2078 annual.

Domestic travel. Domestic travel is requested for one trip by C and L. Connor to U Buffalo to collaborate with Abani Patra and colleagues.

Other Direct. Tuition is requested for the graduate student, totaling \$10344 for 24 hours. Publication costs are associated with one paper in Year 1, to cover the cost of publishing a paper on modularization of Tephra2 with inversion algorithms.

Indirect. USF institutional indirect costs for this time frame is 49.5%, not including graduate student tuition.

YEAR 2

Senior personnel. We are requesting zero salary for the PI and for Other Senior Personnel.

Other personnel. Support for one graduate student in Year 2 is requested to cover stipend. This graduate student will conduct research on implementing alternative physical models in Tephra2, using the revised modular structure of the code. Funding is requested for two undergraduates to participate in research in Year 2. These students will work on alternative modules for the Lava2 code: 2 students, 400 hours each, \$12 per hour:\$9600.

Fringe Benefit . Fringe benefit rate for the graduate student support is 0.5% plus health insurance of \$2078 annual. Undergraduate fringe benefit rate is 0.5%.

Domestic travel. Funding is requested for domestic travel for one trip to U Buffalo by the graduate student and two trips to Fall American Geophysical Union meeting to present (a) the modular version of Tephra2 and (b) results of undergraduate research on Lava2.

Other Direct. Tuition is requested for the graduate student, totaling \$10344 for 24 hours. Publication costs are associated with two papers in Year 2, to cover the cost of publishing two papers on modularization of Tephra2 with inversion algorithms using new physical models and applications to specific deposits.

Indirect. USF institutional indirect costs for this time frame is 49.5%, not including graduate student tuition.

YEAR 3

Senior personnel. We are requesting zero salary for the PI and Other Senior Personnel.

Other personnel. Support for one graduate student in Year 3 is requested to cover stipend. This graduate student will conduct research on implementing alternative physical models in Tephra2, using the revised modular structure of the code. Funding is requested for two undergraduates to participate in research in Year 3. These students will continue to work on alternative modules for the Lava2 code: 2 students, 400 hours each, \$12 per hour:\$9600.

Fringe Benefit . Fringe benefit rate for the graduate student support is 0.5% plus health insurance of \$2078 annual. Undergraduate fringe benefit rate is 0.5%.

Domestic travel. As in Year 2, funding is requested for domestic travel for one trip to U Buffalo by the graduate student and two trips to Fall American Geophysical Union meeting to present (a) the modular version of Tephra2 and (b) results of undergraduate research on Lava2.

Other Direct. Tuition is requested for the graduate student, totaling \$10344 for 24 hours. Publication costs are associated with two papers in Year 3, to cover the cost of publishing two papers.

Indirect. USF institutional indirect costs for this time frame is 49.5%, not including graduate student tuition.

YEAR 4

No USF funding is required in Year 4.

SAMPLE