

1. CONTRACTOR- RESEARCH FOUNDATION OF CUNY ON BEHALF OF CITY COLLEGE (FOUNDATION):
COLLEGE: CITY COLLEGE OF CITY UNIVERSITY OF NEW YORK
ADDRESS FOR INVOICES: 138TH STREET AT CONVENT AVENUE, NEW YORK, NY 10031

2. SUBCONTRACTOR-
NAME: UNIVERSITY OF PUERTO RICO
ADDRESS: MAYAGUEZ CAMPUS, PO BOX 9001, MAYAGUEZ, PR 00681-9001

3. PROJECT DESCRIPTION-
SPONSOR: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)
TITLE: NOAA COOPERATIVE CENTER FOR REMOTE SENSING SCIENCE AND TECHNOLOGY (CREST)
SPONSOR ID: NA17AE1625 CFDA #: 11.481

4. KEY PERSONNEL/PROJECT DIRECTOR-
RFCUNY: DR. REZA M. KHANBILVARDI
SUBCONTRACTOR: DR. RAMON VASQUEZ

4a. KEY PERSONNEL/PROJECT DIRECTOR
TELEPHONE #-
RFCUNY:
SUBCONTRACTOR: 787-832-4040 EXT. 3822

5. BUDGET- YEAR 3

<u>PERSONNEL-</u>	
SALARY-	\$ 264,178
FRINGE BENEFITS-	29,684
TOTAL PERSONNEL-	\$ 293,862
<u>TRAVEL</u>	
	\$ 22,000
<u>EQUIPMENT</u>	
	\$ 25,428
<u>MATERIALS AND SUPPLIES</u>	
	\$ 10,000
TOTAL DIRECT-	\$ 351,290
<u>INDIRECT COSTS @25%</u>	
	\$ 53,465
<u>TOTAL BUDGET-</u>	\$ 404,755

[SEE APPENDIX B FOR DETAILED BUDGET.]

6. ATTACHMENTS:
APPENDIX A- SCOPE OF WORK
APPENDIX B- BUDGET
APPENDIX C- SPECIAL TERMS & CONDITIONS
APPENDIX C-1: NOAA'S SPECIAL TERMS & CONDITIONS
APPENDIX C-2: NOAA'S REVISED STANDARD AWARD CONDITIONS
APPENDIX D- GENERAL TERMS & CONDITIONS
APPENDIX E- INVOICE
6a. CONDITION PRECEDENT- Payment to the Foundation from the NOAA for performance of this subcontract is a condition precedent to Subcontractor's right to payment, hereunder. The Subcontractor relies on the credit of the NOAA, not the Foundation, for payment of its work. The Subcontractor agrees that its right to payment extends to only those funds made available by the NOAA pursuant to this subcontract cover sheet.

7. SUBCONTRACT TERM- OCTOBER 1, 2003 TO SEPTEMBER 30, 2004

ADDITIONAL TERMS- Prospective funding is contingent upon availability of funds and satisfactory performance on the current and/or previous award and is at the sole discretion of NOAA. The Award Agreement No. NA17AE1625 between NOAA and City College of CUNY is hereby incorporated by reference into this Subcontract. This Subcontract is governed by the Administrative Principles of A-110 and the Cost Principles of A-21.

IN WITNESS WHEREOF, the parties agree to be bound by the terms and conditions of this agreement.

RESEARCH FOUNDATION OF CUNY
BY: [Signature]
(Signature)
NAME: RICHARD F. ROTHBARD
(Printed Name)
TITLE: PRESIDENT
(Printed Title)
DATE: 1/22/04
CITY COLLEGE OF CUNY
BY: [Signature]
(Signature)
NAME: REGINA MASTERSON
(Printed Name) DIRECTOR, OFFICE OF
TITLE: RESEARCH ADMINISTRATION
(Printed Title) THE CITY COLLEGE OF CUNY
DATE: 1/21/04

SUBCONTRACTOR
BY: [Signature]
(Signature)
NAME: Jorge Ivan Velez Arocho
(Printed Name)
TITLE: Chancellor
(Printed Title)
DATE: March 2, 2004

3/marz/04
Recogio este doc.
Vanessa del ICIS
787-833-3323

Appendix A - NOAA CREST
Description of Research Work for Year 2

Participating Institution: University of Puerto Rico, Mayagüez Campus

Title: Modeling of atmospheric, water and land processes using remote sensing

Institutional PI

Dr. Ramon Vasquez

Dean of Engineering

Office of the Dean of Engineering

University of Puerto Rico

Mayagüez, PR 00681

Ph: (787) 832 4040 x 3822

Email: reve@ece.uprm.edu

Contact Information (for contract and payment processing):

Dr. Fernando Bird

Director, R&D Center

University of Puerto Rico at Mayaguez

P O Box 9001

Mayagüez, PR 00681-9001

Voice: 787-832-4040 ext. 2402

787-831-2065 (direct)

Fax: 787-831-2060

Email: fbird@uprm.edu

For Sub-Contract Signature:

Dr. Jorge I. Velez Arocho

P.O. Box 9000

Mayagüez, PR, 00681-9000

Voice: 787-265-3878

Fax: 787-834-3031

Email: rector@rectoria.uprm.edu

brenda@rectoria.uprm.edu

Brief Statement of Research Work:

Research efforts include modeling for air and water quality. This includes modeling of air mixtures based on both equilibrium and non-equilibrium conditions. The work will also examine and model aeration processes in coastal waters. The work will implement algorithms that make use of remote sensing data to extract and estimate parameters for atmospheric models and texture algorithms for cloud cover detection. A study of bio-optical properties of the Mayagüez Bay will be conducted to develop new algorithms for water quality. Algorithms will be developed for removing noise from GPR (Ground Penetrating Radar) and for using this data in land cover and soil moisture studies. Land

cover and land use classification using images obtained from multispectral and radar sensors will be performed.

Description of Research work

1. The proposed work involves the modeling of the aeration process using the non-equilibrium model and the comparison of the prediction with the experimental data. The coastal waters will be specifically studied. We plan to compare the experimental data with the numerical predictions of the non-equilibrium model that involve mass transfer calculations. This will enable us to be able to determine the rate of oxygen flow required for the aeration. Dr. Sridhar has published several articles on work involving this model and has developed a lot of software for performing calculations. Also, remote sensing image data will be used to estimate parameters for the models.
2. This research work will concentrate on developing algorithms and applying them to remote sensing images to extract parameters to be used in the models of step 1. The research will make use of images from different types of sensors. Image analysis and pixel processing algorithms will be developed to estimate parameters from Landsat, SAR and multispectral sensors. Dr. Ramon Vasquez's research group has developed existing and new methods for image texture analysis and has published several papers applying them to remote sensing images. Existing and new texture algorithms will be implemented for performing land cover and land use classifications.
3. The research work of Dr. Parsiani will be done in collaboration with Dr. Eric Harmsen of the UPRM Agricultural & Biosystem Engineering. Dr. Parsiani will be developing image processing algorithms which will denoise, enhance, and analyze images (data) obtained by the Ground Penetrating Radar. 2-D, and 3-D images of the subsurface will be developed. The data will be used to extract soil moisture content, which is needed for developing, calibrating, and validating subsurface flow models. The spatially continuous GPR data will have to be converted accurately into moisture content distribution with the aid of the Agricultural Department's Time Domain Reflectometer (TDR) point soil moisture measurement device. The subsurface data from our test-bed in Puerto Rico will be shared with other NOAA collaborators for further model improvements.
4. Dr. Fernando Gilbes will conduct the coastal marine research of the Mayaguez Bay. New approaches, new methods and new instruments will be used to allow consideration of all sources responsible for the optical variability in the interpretation of the remote sensing signal. Inverse modeling of the reflectance curve is an alternative approach that has been suggested for coastal remote sensing (Gould and Arnone, 1997). In this procedure, the different spectral contributors of the light field are separated and their effects in the remote sensing reflectance are evaluated (Lee et al., 1994). The available data demonstrate that improved algorithms and different remote sensing techniques are necessary for this coastal region. The results of these efforts will be shared with other NOAA collaborators in the coastal waters of Long Island, New York.

List Specific Issues to be addressed in year 2:

1. The development of models for aeration processes for air and water quality will continue.
2. Remote sensing image data will continue to be analyzed to extract parameters that will be input to the models. Image data will be used to acquire potential information about water and land constituents. SAR, AVHRR and Landsat image data will be used for the above tasks.
3. Texture analysis algorithms will continue to be developed for extraction useful parameters such as temperature and composition from images for use in aeration models.
4. Soil moisture studies using GPR (Ground Penetrating Radar) will continue. This involves removing the noise from the GPR data and developing algorithms to interpret the data from GPR.
5. Bio-optical instruments will be used to measure profiles of different water properties. New methods and instruments will be used to study the bio-optical properties of the Mayagüez Bay. The results will be compared with similar efforts in coastal waters of the Long Island area.

Expected results from FY2 work (should conform to proposed work)

1. Development and refinement of algorithms for remote sensing image analysis for parameter extraction.
2. Implementation of texture based algorithms for coastal classification.
3. Models for atmospheric aeration processes.
4. Obtain continuous spatial GPR data of subsurface test-bed, develop methods to denoise, and enhance the GPR data for its use in soil, and water characterizations.
5. Profiles of different water properties.

Student Recruitment and Training Plans, including existing students (must conform to NOAA requirements)

Graduate and undergraduate students have been recruited for performing research. Preparation of modules in existing courses that creates awareness in NOAA's objectives, is on schedule.

Relevance to NOAA interests and Collaboration with NOAA entities (within the overall context of the proposal)

Collaborations with NOAA entities will be initiated. A call for abstracts for papers has been issued. A NOAA-CREST Symposium is being organized and will be held on Jan. 9-10 2003 at the University of Puerto Rico at Mayagüez. All NOAA-CREST Partners will participate.

Collaborations with Industry

Collaboration exists and will continue in the form of a proposed Joint Institute with NASA, PR-EPSCoR and other entities.

Equipment Acquisitions

1. Purchase of GPR has been completed. The Ground Penetrating Radar (GPR) is being used to collect continuous spatial subsurface soil moisture data from our test-bed area in P.R.
2. Additional Computing workstation and PCs have been acquired
We will need 2 workstations and 2 personal computers for each investigator. These will be used by 2 graduate students (1 MS and 1 PhD) and 2 undergraduate research students. The undergraduate students will test the software developed by the graduate students.

Expected Deliverables FY2

Number of students – 8 graduate (4 MS and 4 PhD) ; undergraduate students supported by other climate related projects are covered as an in-kind contribution to the NOAA-CREST program.

Graduate students will play an active role in data analysis, modeling, and algorithm development activities. Undergraduate students will be involved in performing experiments which involve data collection and calibration. The students will acquire the skill to program in Matlab, C-language, and Fortran (as needed), for performing above tasks. The research results will be presented and published in international conferences. Regular reports will be submitted to the technical committee.

Goals and Expected results from FY2 Efforts

The models developed will be tested with the data obtained from remote sensing images. Collection of data that will be useful for our modeling from other satellites such as MODIS and Hyperspectral sensors will be undertaken. Image processing and data classification will be done. Data from GPR and other devices such as magnetometer, and conductivity sensors will be used for calibrating remote sensing data from satellite for soil moisture estimation. Infrastructure will be evaluated and improved as needed by the researchers. Collaboration with CREST program partners will be continued. Student training and recruitment will be continued. Courses and modules of courses that train students in NOAA sciences will be developed and offered. Research work will be presented in reputed international conferences and published. An annual CREST meeting/conference will be organized and held in Puerto Rico. The NOAA-CREST Congressional visit and associated activities planned for January 8, 9 and 10, 2003 will result in additional expenses not covered in the original budget. **The total additional amount requested is \$25,000 + 25%.**

Future Plans

Integration, testing and validation of all the individual research components will be performed. Collaboration with CREST program partners will be continued. Infrastructure will be evaluated and improved as needed by the researchers. Student training and recruitment will be continued. Research work will be presented in reputed international conferences and published. A NOAA-Crest Symposium is being organized. Six months Progress reports will be submitted.

Personnel Efforts

1. Dr. Ramon Vasquez will be performing remote sensing image analysis and development of algorithms for extracting suitable parameters for the models.
2. Dr. Hamed Parsiani will be involved in analyzing Ground Penetrating Subsurface radar data for continuous soil characterization and in extracting useful land and water parameters for the models.
3. Dr. Lakshmi Sridhar will be involved in developing and implementing the models
4. Dr. Eric Harmsen, an associate from Agricultural Engineering, has begun research work on soil moisture analysis and is assisting Dr. Hamed Parsiani in developing, calibrating, and validating subsurface flow models.
5. Dr. Robin Williams, a visiting faculty member, is supporting the Atmospheric Sciences Research and Remote Sensing Applications programs at the College of Engineering. His duties will include teaching graduate and undergraduate courses in atmospheric sciences, conducting research in collaboration with the investigators of NOAA-CREST projects and assisting in the supervision of undergraduate and graduate students.
6. A new recruitment director, Dr. J.D. China Rivera has been appointed for the academic year 2002-2003.
7. Dr. Fernando Gilbes will be conducting studies to improve the remote sensing techniques for a better estimation of water quality parameters in coastal waters. Cross-validation of the results with similar efforts in coastal waters of the Long Island area will be carried out.
8. Dr. Jorge Gonzalez will be in charge of organizing the NOAA-CREST Symposium, Climate Modeling and the conceptualization of a Joint Institute for Caribbean Climate Studies.

APPENDIX B: BUDGET

University of Puerto Rico, Mayaguez Campus

	Budget Category	Cost	Cost	Cost
		Year 1	Year 2	Year 3
	Direct Labor			
	Senior Personnel			
	Principal Investigator - Ramon E. Vasquez Espinosa	\$ 27,694	\$ 29,632	\$ 31,706
	Co-Investigator - Hamed Parsiani	\$ 21,792	\$ 23,318	\$ 24,950
	Co-Investigator - Sridhar	\$ 18,720	\$ 20,030	\$ 21,433
	Staff			
	GIS Specialist	\$ 20,000	\$ 21,400	\$ 22,898
	RS Specialist	\$ 20,000	\$ 21,400	\$ 22,898
A.	TOTAL DIRECT LABOR	\$ 108,206	\$ 115,780	\$ 123,885
B.	FRINGE BENEFITS (9.4% Senior Personnel + 30% Staff)	\$ 18,411	\$ 19,700	\$ 21,079
	Other Direct Labor (No Fringe or Overhead)			
	Undergraduate Students (3 Ph.D. + 3 mos.)	\$ 93,000	\$ 93,000	\$ 93,000
	Graduate Students	\$ 28,800	\$ 28,800	\$ 28,800
C.	TOTAL OTHER DIRECT LABOR	\$ 121,800	\$ 121,800	\$ 121,800
	Other Direct Costs			
	Travel (18 * 1500)	\$ 27,000	\$ 27,000	\$ 27,000
	Equipment			
	One unix server + 6 unix workstation	\$ 64,929	\$ 24,000	\$ 24,000
	Printers	\$ -	\$ 5,000	\$ 5,000
	PC High Performance Computing (6)	\$ -	\$ 24,000	\$ 24,000
	Total Equipment	\$ 64,929	\$ 53,000	\$ 53,000
	Material and Supplier			
	a. Medias, etc	\$ 5,000	\$ 5,000	\$ 5,000
	b. Software	\$ 7,000	\$ 7,000	\$ 7,000
	Total Material and Supplies	\$ 12,000	\$ 12,000	\$ 12,000
D.	TOTAL OTHER DIRECT COSTS	\$ 103,929	\$ 92,000	\$ 92,000
E.	TOTAL DIRECT COSTS (A+B+C+D)	\$ 352,346	\$ 349,280	\$ 358,764
F.	INDIRECT COSTS @ 25% OF MTDC	\$ 41,404	\$ 43,620	\$ 45,991
	TOTAL BUDGET COSTS	\$ 393,750	\$ 392,900	\$ 404,755

**RESEARCH FOUNDATION OF CITY UNIVERSITY OF NEW YORK
APPENDIX C: SPECIAL TERMS/CONDITIONS**

- Article 1: Scope of Work
- Article 2: Project Control
- Article 3: Key Personnel
- Article 4: Inspection
- Article 5: Price, Payment & Submission of Invoices
- Article 6: Authorized Funding
- Article 7: Period of Performance
- Article 8: Policies
- Article 9: Allowable Costs
- Article 10: Rebudgeting of Funds
- Article 11: Accounts, Audit and Records
- Article 12: Program Income
- Article 13: Equipment Accountability & Disposition
- Article 14: Patents and Inventions
- Article 15: Reports
- Article 16: Publications
- Article 17: Subcontracts
- Article 18: Termination
- Article 19: Modifications
- Article 20: Notices
- Article 21: Non-Discrimination/EEO Provisions
- Article 22: Protection of Human Subjects
- Article 23: Care of Laboratory Animals
- Article 24: Recombinant DNA Molecules
- Article 25: Clean Air and Water
- Article 26: Certification Regarding Debarment Suspension, Ineligibility and Voluntary Exclusion
- Article 27: Certification Regarding Lobbying

THIS AGREEMENT is executed by and between Research Foundation of City University of New York ("Foundation") and the Sub-Contractor ("Subcontractor") named in the Cover Sheet of Sub-Contract ("Cover").

WITNESSETH:

WHEREAS, the U.S. Government agency ("Sponsor") has made the award described in the Cover ("Prime Agreement") to Foundation of which the Subcontractor has proposed a project in collaboration with the Research Foundation of CUNY as detailed in the application for said Prime Agreement (The "Application"); the Subcontractor has skilled personnel and facilities available to undertake such a program; Foundation desires to have the Subcontractor conduct work in connection with this project; the Subcontractor and Foundation desire this Agreement and the work to be performed under it to fully comply

with all pertinent Federal laws, regulations and policies;

NOW THEREFORE, the parties agree as follows:

PROGRAMMATIC CONSIDERATIONS

1. Scope of Work - Subcontractor agrees to perform the work described in Appendix A, such work being an integral part of the Scope of Work of the Prime Agreement.
2. Project Control - The Project Director and Representative of Foundation named on the Cover Sheet is responsible for the technical scientific, or programmatic aspects of this Agreement.
3. Key Personnel - The individual(s) named as Keyperson(s) on the Cover Sheet shall be responsible for the conduct of work by the Subcontractor under this Agreement. The Subcontractor shall not replace these individuals without prior consultation with and approval by the Foundation.
4. Inspection - Designated Representatives of Foundation shall have the right to inspect and review the progress of the work performed pursuant to this Agreement. All reasonable facilities, including access to relevant data test results and computations used or generated under this Agreement shall be made available when such inspections are conducted. Inspections shall be conducted in a manner as to not unduly delay the progress of the work and Foundation shall give the Subcontractor reasonable notice prior to conducting any such inspection.

FISCAL CONSIDERATION

5. Price, Payment and Submission of Invoices - As compensation, Foundation agrees to reimburse the Subcontractor up to the total authorized funding of this Agreement. All costs incurred in the performance of this Agreement are subject to the limitation of other articles herein. Invoices from the Subcontractor shall be prepared using the Foundation Invoice which is attached hereto as Appendix E. Said invoice shall be forwarded to the individual named on the Cover Sheet. Payment will be made quarterly

for services performed in the previous quarter or as such other times as may be agreed upon between the Parties.

6. Authorized Funding - The total authorized funding provided to the Subcontractor is stated on the Cover Sheet. It is anticipated that this program will be continued for the number of years noted on the Cover Sheet. However, the extension of this Agreement is subject to continuation by the Sponsor with specific funds awarded for the Subcontractor's portion of the work.

7. Period of Performance - The period of performance of this Agreement shall be as set forth on the Cover Sheet and shall not extend beyond such period unless agreed to in writing by both parties hereto.

ADMINISTRATIVE CONSIDERATIONS

8. Policies - This agreement shall be governed by the following, based on the Subcontractors type of organization and the Sponsor:

Type of Organization	Administrative	Cost Principles
University	OMB A-110/A-133	OMB-A21
Hospital	OMBA-110	45CFR75,APP E
Non-Profit	OMB A-110/A-133	OMB A-122
Other Organizations-	Federal Acquisition Regulations 31.2 [48 CFR 31.2]	for commercial firms.
DED	-EDGAR	
DOE	-DOE General Terms and Conditions for Research Grants (GPRG-487) 10 CFR 600DHHS	
DHHS	-OHDS Terms & Cond. Rev 4/15/88	
DHHS	-PHS Grants Policy Statement Pub. No. (OASH) 94-50,000(4/1/94)	
EPA	-40 CFR 30,32,33 and 40	
NASA	-14 CFR Part 1260	
NEH	-General Provisions for Grants to Organizations -Rev. October 1985	
NSF	-Grant General Conditions (GC-1 (07/02))	
	-Cooperative Agreement General Conditions (CA-1 (7/02))	

Any flow-down clauses required by the applicable document listed above are deemed to be included herein, even if not specifically set forth in this document.

The Subcontractor's normal policies governing salaries, wages and fringe benefits shall apply to all of the Subcontractor employees paid from this Agreement. The Subcontractor's published policy on travel and travel reimbursement shall apply to all costs for travel and transportation charged to this Agreement and in accordance with applicable Sponsor regulations.

9. Allowable Costs - Allowable costs charged to this Agreement shall be determined by the application of the cost principles identified on the Cover Sheet. The estimated indirect costs of the Subcontractor is the amount stated, or included in the budget referenced, in Item 5 of the Cover and the rate used shall not exceed the Subcontractor's current government approved indirect cost which shall be considered a predetermined rate for the purposes of this Agreement. Subcontractor will provide Foundation with a copy of its' latest indirect cost rate negotiation agreement.

10. Rebudgeting of Funds - It is understood that the Subcontractor's budget contained or referenced on the Cover Sheet is an estimate and that there may be a need to depart from it to meet certain unanticipated requirements of the project. Rebudgeting between categories on the part of the Subcontractor must be in accordance with Sponsor policy. All rebudgeting actions that would require Sponsor approval if this Agreement were directly with the Sponsor shall be prepared and approved by the Subcontractor as if that were the case, and then forwarded to the Project Director for proper Foundation review and submission to the Sponsor, as necessary.

11. Accounts, Audit and Records - The Subcontractor shall maintain books, records, documents, and other evidence, accounting procedures, and practices, sufficient to reflect properly all direct and indirect costs of whatever nature claims to have been incurred for the performance of this Agreement. The foregoing constitutes "records" for the purposes of this clause. The Subcontractor's facilities, or such part thereof as may be engaged in the performance of this contract, and its records shall be subject at all reasonable times to inspection and audit either by methods as prescribed in the pertinent OMB Circular, the cognizant Federal audit agency or other authorized representatives of the Federal Government or of Foundation. The Subcontractor shall preserve, and make available his records in accordance with Sponsor requirements.

Subcontractor acknowledges that it is subject

to OMB Circular A-133 "Audits of States, Local Governments, and Non-Profit Organizations" if during its fiscal year, Subcontractor expends \$300,000 or more in federal awards, and certifies it is in compliance with the audit requirements of the Circular.

Subcontractor agrees to have a single or program-specific audit conducted in accordance with the provisions of Circular A-133. SUBCONTRACTORS that expend \$300,000 or more in a year in Federal Awards shall have a single audit conducted in accordance with Circular A-133, except when they elect to have a program-specific audit conducted. SUBCONTRACTORS may elect to have a program-specific audit conducted if it expends Federal funds under only one Federal Program (excluding R&D) and the Federal program's laws, regulations, or grant agreements do not require a financial statement audit.

Subcontractor shall submit to the Federal clearinghouse designated by U.S. Office of Management and Budget (OMB), the Data Collection Form for Reporting on Audits of States, Local Governments, and Non-Profit Organizations (Data Collection Form) and the Reporting Package, as described in Circular A-133. The Reporting Package shall include the: financial statements and the schedule of expenditures of Federal awards; the summary schedule of prior audit findings; the auditor's report; and, the corrective action plan.

Subcontractor shall provide written notification to the Foundation that: an audit of the Subcontractor was conducted in accordance with Circular A-133 (including the period covered by the audit and the name, amount, and CFDA number of the Federal award(s) provided by Foundation; the schedule of findings and questioned costs disclosed no audit findings relating to the Federal awards(s) that the Foundation provided; and, the summary schedule of prior audit findings did not report on the status of any audit findings relating to the Federal awards(s) that the Foundation provided.

In addition to the requirements herein, when the schedule of findings and questioned costs disclosed audit findings relating to Federal Awards that the Foundation provided or the summary schedule of prior audit findings reported the status of any audit findings relating to Federal awards that the Foundation provided, then Subcontractor shall submit a copy of the Reporting Package to the Foundation. Subcontractor will inform the Foundation of the corrective action that has

been or will be taken for audit findings related to the Foundation. In addition, Subcontractor will immediately inform the Foundation of material operational weaknesses disclosed in audits performed.

Subcontractor shall submit written notification and the Reporting Package (if appropriate) to: The Research Foundation of City University of New York, 555 West 57th Street, 11th Floor, New York, New York, 10019 (Attn: Controller's Department).

Subcontractor understands that if, in the opinion of the FOUNDATION and/or SPONSOR, it fails to comply with the audit requirements, appropriate sanctions may be imposed, including, but not limited to those in Circular A-133. Subcontractor agrees that the Subcontractor will reimburse any penalties or expenditure disallowances imposed on the Foundation resulting from instances of noncompliance with Federal laws and regulations.

If the Subcontractor expends less than \$300,000 a year in Federal awards, or if Subcontractor is a For-Profit organization, then Subcontractor is exempt from the requirements of Circular A-133 for that year. However, records must be made available for review or audit as requested by appropriate officials of the Foundation, Sponsor, and other Federal agencies, including Inspector Generals and General Accounting Office.

12. Program Income - Subcontractor is required to maintain such records as may be necessary to comply with the Sponsor's requirements. Any such income generated under this Agreement shall be used to reduce the expenditures chargeable thereto.

13. Equipment Accountability and Disposition - Title to, inventory and accountability for, and disposition of equipment purchased under this agreement, will be determined in accordance with Sponsor's policy. Should the Subcontractor Key person, named in the Cover, and the work called for by this Agreement, move to another institution, the Subcontractor agrees to the transfer of all equipment purchased with Agreement funds to the new institution.

14. Patents & Inventions - 37 CFR, Part 401 "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts, and Cooperative Agreements" shall be applicable under this Agreement. Any requirements set forth in the documents listed in Article 8 above are incorporated herein by reference.

15. Reports - Subcontractor shall render such reports as required by the Project Director. This includes an annual report that shall be incorporated in the progress report of the continuation application for the Prime Agreement, and any additional data required in order for the Foundation to meet Sponsor's reporting requirements.

16. Publications - All research reports and other publications relating to the work under this Agreement shall bear proper acknowledgment of the support provided by the Prime Agreement referenced in the Cover Sheet.

Subcontractor further agrees that should it issue statements, press releases, requests for proposals, bid solicitations, and other documents describing programs or projects funded in whole or in part with Federal money, all grantees receiving Federal funds, including but not limited to State and local governments, shall clearly state (1) the percentage of the total costs of the program or project which will be financed with Federal money, (2) the dollar amount of Federal funds for the program or project, and (3) percentage and dollar amount of the total costs of the program or project that will be financed by non-governmental sources.

17. Subcontracts - Subcontractor will not subcontract any of the effort required under this Agreement without prior written approval of the Foundation. Any subcontract so issued will include the clauses stipulated in the pertinent OMB Circular.

18. Termination - If any time the Prime Agreement is terminated during the performance of this Agreement, or should the Prime Agreement funding for support of this Agreement be deleted or reduced, the Foundation may in written notice to the Subcontractor terminate this Agreement upon reasonable notice consistent with the termination of the Prime Agreement. The Foundation shall also have the unilateral right to terminate this Agreement, upon ten (10) day written notice, for the Subcontractor's failure to meet any substantive requirement or obligation of this Agreement should it fail to cure or correct said deficiency within the said ten (10) days or such longer period as the parties may mutually agree. The Subcontractor shall be reimbursed for noncancellable obligations properly incurred prior to the date of notice of termination and allowable costs up to and including date of termination. Nothing in this paragraph is intended to abrogate the Parties' right to

mutually terminate this Agreement on such terms as may be agreed upon.

19. Modifications - The parties agree that the terms and provisions of this Agreement shall be modified in writing and executed by the parties hereto, to reflect any additional requirements or changes mandated by the Sponsor as a condition of receiving a sub-contract.

20. Notices - Notices required to be given under this Agreement shall be in writing, sent by Certified Mail. Return Receipt Requested, to the representatives named in the Cover Sheet as well as the FOUNDATION.

21. Non-Discrimination / Equal Employment Opportunity Provisions - It is agreed that during the performance of this Agreement, the Contractor: (a) will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin; (b) will take affirmative action to ensure that applicants are employed and the employees are treated during employment, without regard to their race, color, religion, sex, or national origin; (c) will comply with all provisions of Executive Order No. 11246 entitled "Equal Employment Opportunity," as amended by Executive Order 11375 and as supplemented in Department of Labor regulations (41 CFR, Part 60); (d) must ensure the Foundation that they have a valid Assurance of Compliance with the Civil Rights Act of 1964 on file with the DHHS (form HEW 441); and (e) by acceptance of this Agreement, certifies that it will comply with the requirements of the Rehabilitation Act of 1973. In the event of the Contractor's noncompliance with the Equal Opportunity clause of this contract or any of the said rules, regulations, or orders, this Agreement may be canceled, terminated or suspended, in whole or in part, as deemed appropriate by the Foundation.

22. Protection Of Human Subjects - If this Agreement involves the use of Human Subjects the Subcontractor (a) agrees that the right and welfare of human subjects will be protected in accordance with Sponsor policies set forth in the documents described in the Cover Sheet (b) agrees to provide certification to the Foundation at least annually, that an appropriate institutional committee has reviewed and approved the procedures which involve human subjects; (c) shall bear full responsibility for the proper and safe performance of all work and services involving the use of human subjects under this contract.

23. Care Of Laboratory Animals - If the work under this Agreement involves the use of laboratory animals, The Subcontractor agrees that it will comply with the Laboratory Animal Welfare Act of 1966, as amended (7 USC 2131 et seq.), and the regulations promulgated thereunder by the Secretary of Agriculture (9 CFR subchapter A. Parts 1, 2, 3, and 4) pertaining to the care, handling, and treatment of vertebrate animals held or used for research, teaching, or other activities supported by Federal awards. The Contractor is expected to ensure that the guidelines described in Department of Health and Human Services (DHHS) Publication NO. (NIH) 85-23, "Guide for the Care and Use of Laboratory Animals," are followed and to comply with the U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research and Training" (included as an Appendix to the NIH Guide).

24. Recombinant DNA Molecules - If The work under this Agreement requires performing research involving recombinant DNA molecules and/or organisms and viruses containing recombinant DNA molecules Subcontractor agrees by acceptance of this Agreement to comply with the National Institutes of Health "Guidelines for Research Involving Recombinant DNA Molecules," "6-83 (48 FR 24556) or such later revision of those guidelines as may be published in the Federal Register.

25. Clean Air and Water - (Applies only if this award exceeds \$100,000, or a facility to be used has been the subject of a conviction under the Clean Air Act [42 U.S.C. 1857 c-8(c)(1) or the Federal Water Pollution Control Act [33 U.S.C. 1319(c)] and is listed EPA, or the award is not otherwise exempt.) The Subcontractor agrees: (a) to comply with all the requirements of Section 114 of the Clean Air Act [42 U.S.C. 1857 et seq., as amended by PL 91-604] and Section 308 of the Federal Water Pollution Control Act [33 U.S.C. 1251 et seq., As amended by PL 92-500], respectively, relating to inspection, monitoring entry, reports, and information, as well as other requirements specified in Section 114 and Section 308 of the Clean Air Act and the Federal Water Pollution Control act, respectively, and all regulations and guidelines issued thereunder before the award of this Agreement; (b) that no portion of the work required by this Agreement will be performed in a facility listed on the Environmental Protection Agency list of Violating Facilities on the date that this Agreement was awarded unless and until EPA eliminates the name of such facility or

facilities from such listing; (c) to use its best efforts to comply with clean air standards and clean water standards at the facility in which this Agreement is being performed; and (d) to insert the substance of the provisions of this article into any nonexempt subcontract.

26. Certification Regarding Debarment, Suspension, Ineligibility And Voluntary Exclusion - Subcontractor agrees: (a) that its signature on this Agreement constitutes a certification to the best of its knowledge and belief, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency; (b) to provide immediate written notice to the person referenced in ARTICLE 20 above, if at any time Subcontractor learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances; (c) that it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction unless authorized by the department or agency with whom this transaction originated; (d) to include a similar clause in all lower tier covered transaction.

27. Certification Regarding Lobbying - Subcontractor agrees: (a) that its signature on this Agreement constitutes a certification to the best of its knowledge and belief, that no Federal appropriated funds have been paid or will be paid, by or on behalf of the Subcontractor, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan or cooperative agreement; (b) if any funds other than Federal appropriated funds have been paid or will be paid to any persons for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an employee of any agency, a Member of Congress, an officer or employee of Congress in connection with the Prime Agreement the Contractor shall complete and submit Standard form - LLL, "Disclosure Form to

Report Lobbying," in accordance with its instruction; (c) to include a similar clause in all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, or cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

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APPENDIX C-1: NOAA's SPECIAL TERMS AND CONDITIONS

The National Oceanic and Atmospheric Administration (NOAA) has awarded a grant to City College of the City University of New York, in support of this project. The Research Foundation of the City University of New York acts on behalf of the City College of the City University of New York (hereinafter referred to as "FOUNDATION"). This SUBCONTRACT is pursuant to requirements set forth in Department of Commerce Financial Assistance Standard Terms and Conditions (10/98), consistent with Articles J. and any special conditions pertinent to this award. The FOUNDATION, as the direct and primary recipient of NOAA grant funds, is accountable to NOAA for the performance of the project, the appropriate expenditure of grant funds by all parties, and all other obligations of the grantee. In general, the requirements that apply to the FOUNDATION also apply to the SUBCONTRACTOR.

SPECIAL TERMS AND CONDITIONS

SUBAWARD, CONTRACT, AND SUBCONTRACT

1. Applicability of Award Provisions to Subrecipients

All subrecipients, including lower tier subrecipients, under the award are required to comply with the provisions of the award including applicable cost principles, administrative, and audit requirements.

2. Competition and Codes of Conduct for Subawards

- a. All subawards will be made in a manner to provide, to the maximum extent practicable, open and free competition. The Subcontractor shall be alert to organizational conflicts of interest as well as other practices among subrecipients that may restrict or eliminate competition. In order to ensure objective subrecipients performance and eliminate unfair competitive advantage, subrecipients that develop or draft work requirements, statements of work, or requests for proposals shall be excluded from competing for such awards.
- b. The Subcontractor shall maintain written standards of conduct governing the performance of its employees engaged in the award and administration of subawards. No employee, officer, or agent shall participate in the selection, award, or administration of a subaward supported by Federal funds if a real or apparent conflict of interest would be involved. Such a conflict would arise when the employee, officer, or agent, any member of his or her immediate family, his or her partner, or an organization which employs or is about to employ any of the parties mentioned in this section, has a financial interest or other interest in the organization selected for a subaward. The officers, employees, and agents of the Subcontractor shall neither solicit nor accept anything of monetary value from subrecipients. However, the Subcontractor may set standards for situations in which the

financial interest is not substantial or the gift is an unsolicited item of nominal value. The standards of conduct shall provide for disciplinary actions to be applied for violations of such standards by officers, employees, or agents of the Subcontractor.

3. Applicability of Provisions to Subawards, Contracts, and Subcontracts

- a. The Subcontractor is subject to and shall include the following notice in each request for application or bids:

Applicants/bidders for a lower tier covered transaction (except for goods and services under the \$100,000 simplified acquisition threshold and where the lower tier Recipient will have no critical influence on or substantive control over the award) are subject to 15 CFR Part 26, Subparts A through E, "Governmentwide Debarment and Suspension (Nonprocurement). In addition, applicants/bidders for a lower tier covered transaction for a subaward, contract, or subcontract greater than \$100,000 of Federal funds at any tier are subject to 15 CFR Part 28, "New Restrictions on Lobbying." Applicants/bidders should familiarize themselves with these provisions. Including the certification requirements. Therefore, applications for a lower tier covered transaction must include a "Certifications Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions and Lobbying" (CD-512) completed without modification.

- b. All subrecipients, including lower tier subrecipients are subject to Executive Order 12549, "Debarment and Suspension" and DoC implementing regulations published at 15 CFR Part 26, Subparts A through E, "Governmentwide Debarment and Suspension (Nonprocurement)," which generally prohibit entities that have been debarred, suspended or voluntarily excluded from participating in Federal nonprocurement transactions either through primary or lower tier covered transactions.
- c. The Subcontractor is subject to and shall include a statement in all lower tier covered transactions (subawards, contracts, and subcontracts) exceeding \$100,000 in Federal funds, that the subaward, contract, or subcontract is subject to Section 319 of Public Law 101-121, which added Section 1352, regarding lobbying restrictions, to Chapter 13 of Title 31 of the United States Code as implemented at 15 CFR Part 28, "New Restrictions on Lobbying." The subrecipient, contractor, or subcontractor is also required to submit a completed "Disclosure of Lobbying Activities" (SF-LLL) regarding the use of non-Federal funds for lobbying. The SF-LLL shall be submitted from tier to tier until received by the Foundation. The Subcontractor must submit all disclosure forms received, including

those that report lobbying activity on its own behalf, to the Foundation within 15 days following the end of the calendar quarter.

4. Minority and Women-Owned Business Enterprise

DoC encourages Foundation and Subcontractor to utilize minority and women-owned firms and enterprises in contracts under financial assistance awards. The Minority Business Development Agency will assist Recipients in matching qualified minority and women-owned enterprises with contract opportunities. For further information contact:

U.S. Department of Commerce
Minority Business Development Agency
Herbert C. Hoover Building
14th Street and Constitution Avenue, N. W.
Washington, D.C. 20230

5. Subaward and/or Contract to a Federal Agency

- a. The Subcontractor, subrecipient, and/or contractor shall not sub-grant or sub-contract any part of the approved project to any agency of the DoC and/or other Federal department, agency or instrumentality, without the prior written approval of NOAA's Grants Officer.
- b. Requests for approval of such action must be submitted to the Foundation who will in turn forward the request to the Federal Program Officer who shall review and make a recommendation to the Grants Officer. The Grants Officer shall make the final determination and will notify the Recipient in writing of the final determination.

RESEARCH FOUNDATION OF THE CITY UNIVERSITY
OF NEW YORK

GENERAL TERMS AND CONDITIONS FOR FEDERAL SUBCONTRACTS
APPENDIX D

1. COVENANTS OF SUBCONTRACTOR

- A. All experts, consultants or employees of the Subcontractor who are employed by the Subcontractor to perform work under this subcontract are not employees of Foundation. Subcontractor alone is responsible for their work, direction, compensation and personal conduct while engaged under this subcontract. Nothing in this contract shall impose any liability or duty on Foundation for the acts, omissions, liabilities or obligations of the Subcontractor or any person, firm, company, agency, association, corporation or organization engaged by the Subcontractor as expert, consultant, independent contractor, specialist, trainee, employee, servant, or agent.
- B. The Subcontractor shall be solely responsible for all physical injuries or death to its agents, servants, or employees or to any other person or damage to any property sustained during its operations and work on the project under this subcontract resulting from any act of omission or commission or error in judgment of any of its officers, trustees, employees, agents, servants, or independent contractors, and shall hold harmless and indemnify Foundation from liability upon any and all claims for damages on account of such injuries or death to any such person or damage to property on account of any neglect, fault or default of the Subcontractor, its officers, trustees, employees, agents, servants, or independent contractors. The Subcontractor shall be solely responsible for the safety and protection of all of its employees.

2. INDEPENDENT CONTRACTOR STATUS

- A. The Subcontractor and Foundation agree that the Subcontractor is an independent contractor and not an employee of Foundation. In accordance with such status as independent contractor, Subcontractor covenants and agrees that neither it nor its employees or agents will

hold themselves out as, nor claim to be officers or employees of Foundation by reason hereof, and that they will not by reason hereof, make any claims, demands or applications to or for any privilege applicable to an employee of Foundation.

3. ASSIGNMENT

- A. The Subcontractor shall not assign, transfer, convey or otherwise dispose of this subcontract or of Subcontractor's rights, obligations, duties, in whole or in part, or of its right to execute it, or its right, title or interest in it or any part thereof, or assign by power of attorney or otherwise, any of the monies due or to become due under this subcontract, unless the prior written consent of Foundation shall be obtained. Any such assignment, transfer, conveyance or other disposition without such consent shall be void.
- B. Failure of the Subcontractor to obtain any required consent to any assignment, shall be cause for termination for cause, at the option of Foundation; and if so terminated, Foundation shall thereupon be relieved and discharged from any further liability and obligation to the Subcontractor, its assignees or transferees, and all monies that may become due under the subcontract shall be forfeited to Foundation except so much thereof as may be necessary to pay the Subcontractor's employees.

4. TERMINATION

- A. Notwithstanding Appendix C, Article 18, Foundation shall have the right, upon ten days prior written notice, to postpone, delay, suspend or terminate the subcontract and the work or any part thereof which the Subcontractor is engaged to perform hereunder, at any time and for any reason deemed to be in Foundation's interest. In such event, the Subcontractor shall be paid allowable costs up to and including date of termination or such reasonable part of his fee as shall apply to services properly performed hereunder prior to the date of such postponement, suspension or termination. Such postponement, suspension or termination shall not give rise to any claims or cause of action against Foundation for damages or for other

or extra remuneration.

- B. The mailing of all notices, by registered mail, addressed to the Subcontractor at the address referred to in the opening paragraph of the subcontract, shall be deemed sufficient notices to the Subcontractor.

5. PATENT RIGHTS

- A. If any invention, improvement, or discovery of the Subcontractor is conceived or first actually reduced to practice in the course of or under this Subcontract and that invention, improvement or discovery is patentable under the laws of the United States of America or any foreign country, the Subcontractor agrees to notify the Foundation immediately and provide a detailed report.
- B. Unless the Federal Government later makes a contrary determination in writing, the rights and responsibilities of the Subcontractor and the Federal Government pertaining to that invention, improvement, or discovery will be determined in accordance with applicable Federal laws, regulations, including any waiver thereof. Rights to inventions made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements is governed by 37 C.F.R. Part 401.

6. RIGHTS IN DATA and COPYRIGHTS

- A. Definition. The term "subject data" means recorded information, whether or not copyrighted, that is delivered or specified to be delivered under the Grant, Contract or Cooperative Agreement. Examples include, but are not limited to: computer software, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identifications, and related information. The term "subject data" does not include financial reports, cost analyses, and similar information incidental to Project administration.
- B. In accordance with 49 C.F.R. 18.34 and 49 C.F.R. 19.36, the Federal Government reserves a royalty-free, non-exclusive and irrevocable license to reproduce, publish or otherwise use, and authorize others to use "subject data."
- C. SUBCONTRACTOR agrees that all original works of

authorship developed for FOUNDATION, including computer programs, pictorial, graphic and audiovisual works, prepared by or for SUBCONTRACTOR, either alone or jointly with others, in the performance of the Subcontract shall be works made for hire, and FOUNDATION shall own such Works and all copyrights therein. For any Works which, under the copyright laws of the United States, may not be considered works made for hire, SUBCONTRACTOR agrees to transfer, and hereby does transfer and assign, any and all copyrights therein to FOUNDATION.

7. INFRINGEMENTS

The Subcontractor agrees to indemnify and hold Foundation harmless for any damage or loss or expense sustained by Foundation from any infringement by the Subcontractor of any copyright, trademark or patent rights or design, systems, drawings, graphs, charts, specifications or printed matter furnished or used by the Subcontractor in the performance of this subcontract.

8. HOLD HARMLESS AND INDEMNIFICATION

Subcontractor shall indemnify Foundation against and hold Foundation harmless from any and all claims, actions, proceedings, expenses, damages, or liabilities, including attorney fees and court costs, resulting from the negligent acts, fault or default of the Subcontractor.

9. INSURANCE

Subcontractor will at its expense maintain at all times during the terms of this subcontract, general liability insurance for property damage and bodily injury to cover the performance of this subcontract. In no event shall the insurance limits be less than \$1,000,000 per occurrence for property damage and bodily injury. The policy shall be obtained from an insurer licensed to do business in the State of New York and the insurer shall have a Best's rating of no less than B+. Each insurance policy will name Foundation as additional insured and will contain a clause requiring the insurer to give Foundation at least 30 days prior written notice of any alteration in the terms of such policy or the cancellation, thereof. Upon execution of this subcontract, Subcontractor will deliver to Foundation a certificate evidencing such insurance.

10. GENERAL RELEASE

The acceptance by the Subcontractor or any person under the direction of the Subcontractor of any payment made on the final invoice under this subcontract shall operate as and shall be a release to Foundation from all claims for payment to the Subcontractor, his successors, legal representatives and assigns for anything done or furnished under the provisions of this subcontract.

11. ONE YEAR LIMITATION

No action shall lie or be maintained against Foundation upon any claim based on this subcontract or arising out of this subcontract or out of anything done in connection with this subcontract unless such action shall be commenced within one year after the rendition of a final report by the Subcontractor or within one year after the termination or expiration of this subcontract. None of the provisions of Article 2 of the Civil Practices Law and Rules shall apply to any action against Foundation arising out of the subcontract.

12. FINAL INVOICE

The final invoice shall be submitted by the Subcontractor within thirty (30) days of the expiration of this Agreement, unless another time period is agreed upon between the parties. If the final invoice is not received within thirty (30) days of expiration or the agreed upon date of submission, it may be processed at the sole discretion of the Foundation.

In the event of termination, pursuant to Article 4, herein or Article 18 in Appendix C, the final invoice will be submitted in accordance with the terms and conditions stated in the notice of termination.

13. NOTIFICATION

The Subcontractor agrees to notify the Foundation immediately upon knowledge of any material facts or circumstances that may impede the progress of the

subcontract. A failure to notify the Foundation will relieve the Foundation of any duty to give notice of termination required herein, and relieve the Foundation of any other obligation imposed by this Agreement. The Foundation also retains all its remedies at law in the event of a breach of contract.

14. CONFLICT OF LAWS

All disputes arising out of this subcontract shall be interpreted and decided in accordance with the laws of the State of New York.

15. CONDITION PRECEDENT

No funds will be allocated to the Subcontractor until such time as Foundation is in receipt of an Insurance Certificate pursuant to Article 9 of these Terms and Conditions.

16. ORDER OF PRECEDENCE

In the event of a conflict in the terms of this document and its attachment the following order of precedence will be applied.

1. The Subcontract Cover Sheet
2. Appendix A: Scope of Work
3. Appendix B: Budget
4. Appendix C: Special Terms and Conditions
5. Appendix D: General Terms and Conditions

17. FUNDING

Subcontractor understands that the source of the funds for the payment of Subcontractor's services hereunder is a grant from or between the Foundation and the Sponsor, and that the execution of this agreement does not, nor does it purport to, bind the City University of New York or the State of New York.

18. NON-WAIVER CLAUSE

Any failure or delay of the Foundation in exercising or

enforcing the strict performance of any of the Subcontractor's obligations under this Agreement or in exercising or enforcing any right or remedy herein contained shall not be construed as a waiver or a relinquishment for the future of such obligation right or remedy. No waiver by the Foundation of any provision of this Agreement shall be deemed to have been made unless set forth in writing and signed by the Foundation.

19. ENTIRETY OF AGREEMENT

The Agreement with its attachments embodies the entire understanding of the parties and there are no other agreements or understandings between the parties relating to the subject matter herein.

20. PARAGRAPH HEADINGS

Paragraph headings are inserted only as a matter of convenience and for reference and in no way define, limit or described the scope or intent of this subcontract and in no way affect the subcontract.

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3/8/99

APPENDIX E: INVOICE

TO: Dr. Reza Khanbilvardi
 COLLEGE: City College of the City University of New York
 The International Center for Environmental Resources and Development
 ADDRESS: Convent Avenue and 138th Street
 New York, New York 10031
 FROM: University of Puerto Rico, Mayaguez Campus

SUBCONTRACT NO:

SUBCONTRACT AMOUNT TOTAL:

SUBCONTRACT PERIOD: FROM 10/01/2002
 TO 09/30/2003

INVOICE NO. _____ PERIOD: FROM: _____
 TO: _____

COST	AMOUNT FOR CURRENT PERIOD	CUMULATIVE FROM INCEPTION	MATCHING COST
PERSONNEL			
FRINGE BENEFITS			
TOTAL PERSONNEL COSTS			
TRAVEL			
EQUIPMENT			
SUPPLIES			
CONTRACTUAL			
STIPENDS			
OTHER			
TOTAL DIRECT COSTS			
INDIRECT COSTS			
TOTAL COSTS			

I hereby certify that to the best of my knowledge the itemized expenses herein contained on this invoice and for which compensation is requested, are for services actually performed and costs incurred pursuant to the terms of the agreement; and that no payment has heretofore been requested or received by me for any part thereof. I further certify that the documentation concerning this claim is on file and will be made available for audit purposes by the Foundation or any other person authorized by the Foundation including city, state, and federal auditors.

SIGNATURE

BY: _____
(Signature)
 NAME: _____
(Print ed Name)
 TITLE: _____
(Print ed Title)
 DATE: _____