

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: CFDA #: 11.481

4. KEY PERSONNEL/PROJECT DIRECTOR-

RFCUNY: DR. REZA M. KHANBILVARDI
SUBCONTRACTOR: DR. RAMON VASQUEZ

4a. KEY PERSONNEL/PROJECT DIRECTOR

TELEPHONE #-
RFCUNY: 212-650-8009
SUBCONTRACTOR: 787-832-4040 EXT. 3822

5. BUDGET- YEAR 5

<u>PERSONNEL-</u>	
SALARY-	\$ 202,561
FRINGE BENEFITS-	<u>9,776</u>
TOTAL PERSONNEL-	\$ 212,337
TRAVEL	\$ 32,611
MATERIALS AND SUPPLIES	\$ 20,542
<u>TOTAL DIRECT-</u>	\$ 265,490
<u>INDIRECT COSTS @25%</u>	\$ 56,397
<u>TOTAL BUDGET-</u>	\$ 321,887

[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, 2005 TO SEPTEMBER 30, 2006

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, including but not limited to Department of Commerce Financial Assistance Standard Terms and Conditions (1/05) and any special or revised award conditions. 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: 12/15/05

CITY COLLEGE OF CUNY

BY: [Signature]
(Signature)

NAME: REGINA MASTERSON
(Printed Name)

TITLE: DIRECTOR, OFFICE OF RESEARCH ADMINISTRATION THE CITY COLLEGE OF CUNY
(Printed Title)

DATE: 12/13/05

SUBCONTRACTOR

BY: [Signature]
(Signature)

NAME: Jorge Veloz - Amoches
(Printed Name)

TITLE: Chancellor
(Printed Title)

DATE: Nov 20, 2005

Appendix A – NOAA CREST
Description of Research Work for Year 5

Participating Institution: University of Puerto Rico, Mayaguez 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
Mayaguez, PR 00681
Ph: (787) 832-4040 x3822
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
Mayaguez, P.R. 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
Mayaguez, P.R. 00681-9000
Voice: 797-265-3878
Fax: 787-834-3031
Email: rector@rectoria.uprm.edu
brenda@rectoria.uprm.edu

Brief Statement of Research Work:

Research efforts include the continuation of soil moisture measurements using remote sensing. The work will implement algorithms that make use of remote sensing data to extract and estimate parameters for atmospheric models and algorithms for cloud cover detection and soil moisture mapping. A study of bio-optical properties of the Mayaguez Bay is continuing to develop new algorithms for water quality. Algorithms will continue being developed for converting GPR(Ground Penetrating Radar) data to soil moisture content and soil type, for usage in land cover and soil moisture studies, validation of satellite passive/active sensors. Land cover and land use classification using images obtained from multispectral and radar sensors will continue to be performed. In coordination with scientist from NESDIS a hydro estimator will be validated for Puerto Rico.

Description of Research work

1- Soil Moisture Measurements (Nazario and Vasquez)

- Use remote sensing and *in-situ* observations to estimate soil moisture. Vegetation index and land surface temperature is obtained from MODIS, hourly rainfall from NEXRAD, soil texture from NRCS information, elevation and surface slope from USGS.
- Develop a soil texture map for Puerto Rico.
- Use a transfer function model to express the spatial and temporal variation of soil moisture.
- Apply artificial neural networks to estimate soil moisture using the variables rainfall, soil texture, vegetation index, gradient temperature, elevation and surface slope as input patterns.

2- Radar Based Soil Moisture Measurements (Parsiani)

- Ground Penetrating Radar measurements of soil moisture for in open fields, based on MCFD & training of Neural Network.
- Soil moisture determination based on Radar measurements of dielectric constants, by modeling the signal-soil characteristics.
- Produce swift soil moisture measurements using simultaneous antennas (at two distinct frequencies to eliminate soil vegetation cover) pulled by a van.
- Modeling the GPR height variations and surface irregularities.
- Use RadarSat images, and validate satellite-land moisture measurements.
- Work on a mathematical model relating active and passive measurements.
- Borrow the modified 12 channel GPS receiver which belongs to Colorado State University, and validate its results over a region in PR on a vast scale using GPR. Both GPS and GPR are of 1.5 GHz electromagnetic wave radiations (active L-band).

3- Cloud Top Properties Retrieval (Vasquez, Parsiani)

- Use of LIDAR instrumentation (ICESat) to validate MODIS cloud top heights, with the help of MISR.
- Validation of CALIPSO sensor using MODIS, MISR, and ICESat.

4- Bio-optical Properties and Remote Sensing of Mayaguez Bay (Gilbes)

- Continue sampling the Mayaguez Bay for evaluation of bio-optical variability
- Determine bio-optical contribution of cyanobacteria, CDOM, and suspended sediments

- Determine how CDOM signal is affected by the interaction with suspended sediments
- Find the spatial and temporal variability of the cyanobacteria populations
- Figure out how these cyanobacteria are related to the optical properties
- Compare these parameters with the bio-optical products derived from MODIS

5- Hydro-Estimation (Harmsen, Vasquez)

- Explain inaccuracies observed between the HE method and the rain gauges
- use one of NESDIS' five other rainfall products (Operational Auto-Estimator, Hydro-Estimator with Radar (HE-R), GOES multi-Spectral Rainfall Algorithm (GMSRA), GMSRA with Nighttime Rain Screen (GMSRA#2), and IR/Microwave Blended Algorithm).
- Identify sources of potential error in the HE validation process.
- Validation of the Hydro-Estimator for tropical conditions, by comparison with 120 stations in Puerto Rico.
- Consider the 6 climate divisions of NOAA and determine in which Climate Divisions the HE works well and in which the HE does not work well. The cloud types within each Climate Division will be identified.

List Specific Issues to be addressed in year 5:

1. 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. RadarSat, AVHRR, GPR, and Landsat image data will be used.
2. Continue the algorithm development for cloud top properties retrieval using MODIS, MISER, and GOES, ICESat., and CALIPSO. Provide a cross validation among the various sensors.
3. Develop soil moisture and texture map of Puerto Rico. Apply Neural networks for soil moisture estimation in PR.
4. Soil moisture measurement using GPR will expand to open field (with vegetation cover) measurements, using moving radar. Different soil types will be determined. Validation of GPR instrument results of soil moisture will take place with RadarSat, and ALOS (if operational) data. Develop a moisture database using GPRs in a moving van.
5. Continue the same field sampling in Mayaguez Bay during the dry and wet seasons. Continue the spatial and temporal analyses of bio-optical properties. Correlate the remote sensing reflectance with chlorophyll-a and suspended sediments. Continue performing field samplings in Mayaguez Bay for validation of the algorithms.
6. Develop a working hydro-estimator for PR, by identifying and correcting the sources of errors.

Expected results from FY 5 work (should conform to proposed work)

1. A database of soil moisture from open field, using fast moving radar.

2. Results of moisture validation using RadarSat, or ALOS (if operational)
3. Soil moisture map of western region of Puerto Rico
4. Tropical validation of the HE models, determination of inaccuracies
5. Comparison/validation algorithms for cloud cover over Caribbean region, using new sensors such as CALIPSO, and ICESat
6. Algorithm for estimation of spatial and temporal variability of the bio-optical properties of coastal waters of Mayaguez Bay. Results of cross-validation with efforts in Long Island.

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 create awareness in NOAA's objectives. NOAA-CREST Day will be celebrated in 2006.

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

Collaborations with NOAA entities and other Cooperative Centers must continue. Including the NWS in San Juan, Puerto Rico. Some of the collaboration already initiated and to be continue:

1. Pablo Clemente, NESDIS scientist – on RadarSat data
2. Norm Grody, NESDIS scientist – on Radar & soil moisture
3. W. Paul Mencil, NESDIS Scientist – on cloud cover
4. Rod Scofield and Bob Kuligowski, NESDIS scientists – precipitation validation
5. Bio-optical properties collaboration with CUNY for samplings in Long Island Bay
6. Validation of CALIPSO in collaboration with HU.

Collaborations with Industry

Collaboration with Raytheon will continue in the form of internships and coop for our students.

Expected Deliverables FY5

- One proposal per researcher seeking leverage funding.
- Two peer reviewed conference papers per researcher.
- One journal paper per researcher.
- Two students graduating with BS degrees,
- Two students graduating with MS degrees,

Goal and Expected results from FY5 Efforts

The models will continue being developed and tested with the data obtained from remote sensing images. Data from GPR will be used for calibrating remote sensing data from satellite for soil moisture estimation. Infrastructure will continue being evaluated and improved as needed by the researchers. Collaboration with CREST program partners will be continued. Effort to write collaborative proposals on relevant research areas to NOAA scientist will be pursued. A four-course certificate in the area of applied remote sensing to atmospheric science will be implemented. Students training and recruitment will be continued. Research work will be presented and published in peer reviewed proceedings and journals.

Future Plans

Integration, testing and validation of all the individual research components will be performed. Collaboration with CREST program partner 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 and national conferences and published.

A workshop on soil moisture, precipitation, and cloud pressure and height reconstruction will be planned, inviting interested scientists from NOAA and cooperative centers. Write a collective proposal with NOAA-CREST for 5 year research program continuation.

Personnel Efforts

1. Ramon Vasquez will be performing remote sensing image analysis and development of algorithms for extracting suitable parameters for the models and soil moisture.
2. Hamed Parsiani will be involved in analyzing Ground Penetrating Subsurface radar data for continuous non-invasive soil characterization and in extracting useful land and moisture parameters for the model, and as an open field database for validation of active satellites.
3. Nazario Ramirez will continue efforts in the area of Soil Moisture Measurements and Climate Data Analysis.
4. Fernando Gilbes will continue to conduct 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.
5. Eric Harmsen will join efforts in developing an accurate Hydro-estimation program for PR.
6. Ms. Yakaira will continue as outreach and student coordinator.

Appendix B: NOAA-CREST Budget for Year 5

University of Puerto Rico, Mayaguez Campus

A. Senior Personnel	
i. Ramon Vasquez –PI	
ii. Hamed Parsiani – Deputy-PI	
iii. Nazario Ramirez – Co-PI	
iv. Fernando Gilbes – Co-PI	
v. Eric Harmsen – Co-PI	
vi. Student Outreach & Website coord.	
Total Senior Personnel	\$ 86,261
B. Staff	
i. Administrative staff	
ii. Assistant	
Total Staff	\$ 20,000
Total Senior and Staff	\$106,261
Fringe Benefit (9.2% SP + 9.2% Staff)	\$ 9,776
C. Students	
i. (2 PhD + 4 MS + 5 UG)	\$ 96,300
Total Students	\$ 96,300
D. Travel for Students and Faculty	\$ 32,611
F. Material and Supplies	
i. Medias, etc	
ii. Software	
Total Material and Supplies	\$ 20,542
Equipment	\$ 0
Indirect Cost 25% as Subcontract	\$ 56,397
Total Cost	\$ 321,887

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: Privacy and Security of Personal Health Information
Article 24: Care of Laboratory Animals
Article 25: Recombinant DNA Molecules
Article 26: Clean Air and Water
Article 27: Certification Regarding Debarment Suspension, Ineligibility and Voluntary Exclusion
Article 28: 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	45CFR74,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 (06/15/05)) -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.

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: Privacy and Security of Personal Health Information
Article 24: Care of Laboratory Animals
Article 25: Recombinant DNA Molecules
Article 26: Clean Air and Water
Article 27: Certification Regarding Debarment Suspension, Ineligibility and Voluntary Exclusion
Article 28: 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 Key person(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	OMB A-110	45CFR74,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 (06/15/05))
	-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 \$500,000 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 \$500,000 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 questions 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, 230 West 41st Street, 7th Floor, New York, New York, 10036 (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 \$500,000 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 subcontract.

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. Privacy and Security of Personal Health Information - If Subcontractor is a covered entity pursuant to the Health Information Portability and Accountability Act of 1996 ("HIPAA"), 45 CFR, Part 160 and Subparts A and E of Part 164 or Pub. L. 104-191, 110 Stat. 1936., then Subcontractor represents and warrants that any individually identifiable personal health information used or disclosed in connection with this Agreement shall be protected in accordance with applicable statutes and regulations regarding the privacy and security of such information.

24. 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).

25. 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.

26. 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.

27. 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.

28. 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.

ref\std\app-c - rev 6/2/2003

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 (01/05), 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 procurement contracts for goods and services under \$25,000 not requiring consent of a DoC official) are subject to 15 CFR Part 26, Subparts C, "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 Form CD-512 "Certifications Regarding Lobbying – Lower Tier Covered Transactions," completed without modification.

- b. This award is subject to Subpart C of 15 CFR Part 26, "Governmentwide Debarment and Suspension (Nonprocurement)."
- 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 Form SF-LLL shall be submitted within 15 days following the end of the calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed. The Form 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.

APPENDIX C-2

NOAA'S REVISED STANDARD AWARD CONDITIONS AS OF 02/03

1. If the recipient has waived any portion of the approved indirect cost rate, no claim shall be made against this award at a later date.
2. To purchase equipment not specifically identified and justified in the recipient's proposal and approved budget which costs in excess of \$5,000 per unit and has a useful life of more than one year, the recipient must submit for prior approval to the Foundation which in turn will submit the request to the NOAA Program Officer who will forward the request to the Grants Officer.
3. Program income earned during the award period shall be retained by the recipient and shall be added to funds committed to the award and used for the purposes and under the conditions applicable to the use of the award funds.
4. Program income shall be reported to the Foundation, which will report it to NOAA in the frequency as required under the conditions of the award.
5. Publication of the results of the research project in the appropriate professional journals as an important method of recording and reporting scientific information. The recipient is required to submit a copy to the Foundation for submission to NOAA and when releasing information related to a funded project include a statement that the project or effort undertaken was or is sponsored by NOAA/DOC. The recipient is also responsible for assuring that every publication of material (including internet sites) based on or developed under an award, except scientific articles or papers appearing in scientific, technical or professional journals, contain the following disclaimer:

“This [report/video] was prepared by [recipient name] under award [number] from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of the National Oceanic and Atmospheric Administration or the Department of Commerce.”
6. This acknowledgment of sponsorship also applies to videos produced under DOC/NOAA financial assistance awards.
7. Notwithstanding Department of Commerce Financial Assistance Standard Terms and Conditions, Section L.02d., the recipient shall self-certify that exceptions to the Fly America Act are allowable and in accordance with the regulations implementing the Fly America Act (41 CFR Part 301-10). The recipient shall submit certification to the Foundation for subsequent submission to the Grants Officer in the same reporting period as the Financial

Reports for any reporting period in which the recipient uses foreign flagged air carrier(s) for travel.

8. This certification may be in any format and may even be an internal travel form used by the recipient which highlights and justifies the use of a foreign flagged air carrier and provides the information listed below (see 41 CFR 301-10.142):
 - (a) Traveler's name;
 - (b) Dates traveled;
 - (c) Origin and destination of the travel;
 - (d) Detailed itinerary of the travel, name of the air carrier, and flight number for each leg of the trip; and
 - (e) Statement explaining why one of the exceptions in Section 301-10.135, Section 301-10.136, or Section 301-10.137 was met or provide a copy of your organization's written approval that foreign air carrier service was deemed a matter of necessity in accordance with Section 301-10.138.

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.

ref:f:\standard\appends\app-d.fed
3/8/99

APPENDIX E: INVOICE

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

SUBCONTRACT NO: 49866-00 05 D (Year 5)

SUBCONTRACT AMOUNT TOTAL: \$321,887.00 SUBCONTRACT PERIOD: FROM 10/01/2005
 TO 09/30/2006

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: _____
(Printed Name)
 TITLE: _____
(Printed Title)
 DATE: _____

