PARTNER PROJECT AGREEMENT P508
(LBNL-T2-0226-GE)

between

DOE's Initiative for Proliferation Prevention Program

the Science and Technology Center in Ukraine,

and

National Center for Disease Control of Georgia

Kyiv

Operative Commencement Date: _____

The Science and Technology Center in Ukraine (STCU) (hereinafter referred to as **"the Center"**),
the U.S. Department of Energy (DOE) Initiatives for Proliferation Prevention (IPP) Program (hereinafter referred to as **" the Partner"**), and
the leading Institution National Center for Disease Control of Georgia,

(hereinafter referred together as **"the Recipient(s)"**)
represented for the purpose of the signature of this Partner Project Agreement (hereinafter referred to as **"the Agreement**") by their authorized representatives, (with the Center, the Partner, and the Recipient(s) hereinafter referred to collectively as **"the Signatory Parties"**),

TAKING INTO ACCOUNT THE FOLLOWING CONSIDERATIONS:

The United States of America, Canada, Sweden and Ukraine signed the agreement establishing the Science and Technology Center in Ukraine on October 25, 1993 (referred to as **"the STCU Agreement**"),

The European Union has acceded to the STCU Agreement on November 26, 1998, and in so doing, replaced Sweden as a Party to the Agreement,

Additional States may accede to the STCU Agreement to participate in the activities of the Center. Georgia acceded to the STCU Agreement on March 18, 1998; Uzbekistan acceded to the STCU Agreement on December 29, 1997, Azerbaijan acceded to the STCU Agreement on June 27, 2003, Moldova acceded to the STCU Agreement on December 7, 2004,

The Center is a legal entity and has been accredited by the Ministry of Foreign Affairs of Ukraine as an intergovernmental organization with its headquarters in Kiev,

The Partner, established under the law of the United States of America is a legal entity that has been approved by the Center's Governing Board to participate in Center activities,

The Recipient(s) is a legal entity within Georgia,

The Governing Board of the Center approves a project to be funded by the Partner through the Center in the domain covered by the Agreement,

The Partner has agreed to provide financial support for such project,

As set forth in the STCU Agreement, funds received by a legal entity in connection with the Center's projects shall be excluded in determining the profits of that organization for the purpose of tax liability, and funds received by persons in connection with the Center's projects shall not be included in these persons' taxable incomes,

HAVE AGREED AS FOLLOWS:

Article 1 - Scope of the Agreement

The Recipient(s) shall carry out the work plan set forth in Annex 1 according to the conditions of the Agreement, subject to the provisions of the STCU Agreement, and the Statute of the Center (hereinafter referred to as **"the STCU Statute"**) which govern in case of conflict. The activities carried out under the Agreement are entitled Yersinia monitoring in Georgia (hereinafter referred to as **"the Project"**). The scopes of work and relevant budget lines for each recipient entity are identified in the Annex 1. All Project Activities subject to this Agreement are to be executed by the Recipient(s), using only funding provided by the Center and/or sources approved by the Center. The Recipient Entity(ies) shall notify the Center immediately if it and /or other participating institutions determine at any time to utilize any other funding sources to execute such Project activities.

Article 2 - Duration of the Project

The duration of the Agreement shall be from the date of entry into force of the Agreement (hereinafter referred to as "the Operative Commencement Date") until completion of the Agreement. Subject to the applicable requirements in Article 6 "Audit and Monitoring of the Agreement", Article 7, "Ownership and Exploitation of Results from the Agreement," and Annex III herein, the Agreement shall be deemed to have been completed upon approval by Partner of all deliverables required by the Agreement and final payment to Recipient or termination of the Agreement pursuant to Article 11 herein, whichever is earlier. The duration of the Agreement is estimated to be 12 months.

Article 3 - Financial Contribution of the Partner through the Center

3.1 The total cost of the Project to the Center shall not exceed 120000$. This total includes the cost of items described in Articles 3.2, 3.3, and 3.4 below.

3.2 The Center shall pay for items ordered by the Recipient, represented by the project manager: equipment, materials, subcontracts, other direct costs, and travel. The amount of such payments is estimated to be 65696$.

3.3 The Center shall make grant payments directly to individual participants in the Project. The amount of such payments is estimated to be 48600$. This total amount may be increased with the concurrence of the Partner and Center provided that such increase results from additional time worked on the project, rather than an increase in the rate of pay, and an offsetting reduction is made to the cost of items in article 3.2.

3.4 The Center will pay overhead to the Recipient(s), represented by its Director(s), in the amount of 4.99% of the direct project costs.

3.5 The Center will receive a fee for its service in the amount of 0% of the total project costs. This amount should be calculated in addition to the total cost of the project.

3.6 The Partner will deposit to Center's account funding for first year of the project in accordance with Article 7 of Annex 2. Project funds will be sent annually contingent upon a positive review of the project progress by the Partner. The entire amount of Partner's commitment is equal to 120000$ that is the total cost of the project plus STCU's fee in accordance with Articles 3.1 and 3.5.

3.7 Within Ukraine, all cash payments will be made in the national currency of Ukraine. Conversion of US dollars to the national currency of Ukraine will be according to the exchange rate of the Interbank Rate of Ukraine. Within Georgia, Uzbekistan, Azerbaijan, and Moldova all cash payments will be made in U.S. Dollars or Euros where possible.

3.8 Title to the property purchased for performance of this Agreement in accordance with Article 3.2 shall be determined in Annex 1 by applying one of the following clauses:

3.8.1 title will vest in the participation institution at the time of delivery or

3.8.2 title will remain with the Center until termination or completion of the project, at which time title will be vested in accordance with Article 8 - Special Conditions or following to additional agreement between the STCU, Partner and Recipient(s) replacing Special Conditions.

3.9 Title to any goods (deliverables) purchased by Partner under this Agreement shall pass directly from Recipient to Partner at the time of delivery, subject to Partner's right of rejection upon inspection.

Article 4 - Cost Statements, Reports, and other Project Outputs

Quarterly cost statements shall be submitted by the Recipient to the Center. The quarterly cost statements will include a representation that all projects activities conducted by the Recipient during the preceding quarter were funded only with funding provided by the Center and that no other source of funding was utilized in carrying out such activities.

Quarterly progress reports shall be submitted by the Recipient to the Center, to the Partner and/or to the Technical Monitor as designated by the Partner and identified in Annex I - Work Plan (in English and Ukrainian (optional) or Russian (optional, if the project is located only in other CIS states)), in hard copy and in electronic format in accordance with Annex 3 - Reports. The format of the cost statements and quarterly progress reports will be provided by the Center.

Technical reports and other deliverables that are requested by the Partner shall be submitted by the Recipient to the Partner and/or Technical Monitor in accordance with Annex I and Annex III.

Article 5 - Confidentiality

5.1 All reports or portions of reports properly marked as invention information or Business Confidential Information by the Recipient in consultation with the Partner shall be protected from public dissemination unless otherwise agreed by the Recipient(s) and the Partner.

5.2 Subject to any obligations under this Agreement and in accordance with applicable laws and regulations, the Signatory Parties agree to keep confidential any invention information or Business Confidential Information communicated to them by other Signatory Parties or third parties in relation to the execution of this Agreement, unless such information so disclosed is or becomes legitimately available to the receiving Signatory Party through other sources without any covenant as regards its confidentiality.

Article 6 - Auditing and Monitoring

6.1 Access by the Center and the Partner, through the Center, to the project site to carry out on-site monitoring and for the evaluation and the verification of the progress of the Project activities, and to do audits of costs shall be granted by the Recipient(s) including access to (a) portions of facilities where the Project is being carried out and to all equipment, documentation, information, data systems, materials, supplies, personnel, and services which concern the Project, and (b) technical and cost information concerning the management and progress of the Project.

6.2 The Center will give the Recipient(s) up to 10 days advance notice of any intended on-site monitoring of the project.

6.3 The Recipient(s) has the right to protect those portions of facilities that are not related to the Project.

6.4 All documentation and records, including those associated with equipment, data systems, materials, supplies, and services utilized on the project must be maintained and made available for review by the Center, the Partner, or their representatives, for up to two years following the project's completion or termination.

Article 7 - Ownership and Exploitation of Results

7.1 The allocation of intellectual property arising from this Agreement and the responsibilities for protecting and exploiting such intellectual property should be established between the Recipient(s), the Partner and/or Technical Monitor, on behalf of the Partner, in the form of Annex 4.

7.2 Exploitation of results shall be limited to applications for peaceful purposes. In this regard, the Recipient(s) and the Partner shall ensure that any results which could result in concerns over proliferation of weapons technology and transfer of sensitive technologies will be protected in accordance with relevant laws of Georgia and international agreements and conventions to which Georgia is a party.

Article 8 - Special Conditions

8.1 The special conditions specified in this Article shall prevail over other conditions specified in the Agreement.

8.2 Partner, upon agreement with Center and Recipient(s), may at any time, by written notice, make changes within the scope of this Agreement. If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the work under this Agreement, whether or not changed by the order, or otherwise affects any other terms and conditions of this Agreement, Partner shall make an equitable adjustment in the Project Price, the delivery schedule, or both, and shall modify the Agreement.

8.3 [This clause should be deleted if Partner determines that no property purchased for performance of this Agreement in accordance with Article 3.2 should be a subject of this clause] The Center agrees to procure specific components that cost more than $2,500, materials, and service contracts, identified by the Partner, from specific vendors identified by the Partner. The Center also agrees that these procurements will be made without following the standard STCU procurement procedures. Prior to conducting these procurements, however, the Partner must provide to the Center, in writing, a listing of the specific vendors and the components, materials, and service contracts that each identified vendor will supply. Partner will be responsible for the selection of these vendors and all equipment performances, guarantees, and other vendors' obligations. The Center shall not be liable for any nonperformance or damages resulting from these components, materials, and service contracts.

8.4 <enter other special conditions here>.

Article 9 - Liability

9.1 The Signatory Parties accept the project team for the execution of the project and accept the project manager as the leader of the project team. The project manager shall be responsible for scientific, technical, personnel and financial activities related to the project, and shall have exclusive rights to handle all goods and services related to the project during its term. The director(s) of the institution(s) is liable for provision of general administrative and legal support to the project manager in connection with the execution of the Agreement.

9.2 The Center shall not be liable for nonperformance by the Partner or the Recipient(s) of their obligations under the Agreement.

9.3 The Center and Partner shall not be liable for any material loss, damage, or injury of any nature arising from, or in connection with, the performance of the work under the Agreement.

Article 10 - Disputes

Disputes arising during performance of the Agreement including, in particular, (1) a claim by the Recipient(s) for any payments deemed due; (2) an interpretation of a provision of the Agreement; or (3) a request for relief or approval related to the Agreement, shall be subject to the following procedure.

The Recipient(s) shall submit any claim, demand, or request in writing to the Partner and to the Center. The Partner and the Center will prepare a joint response. The written decision of the Partner and the Center shall be delivered to the Recipient within four weeks of the receipt of the submission.

Exceptionally, the Recipient(s) may appeal the Partner's and Center's decision in writing through the Executive Director of the Center to the Governing Board of the Center within four weeks of the communication of the Partner's and Center's decision.

The decision of the Governing Board shall be final and binding (unless otherwise provided). Pending the final settlement of disputes, the Recipient(s) shall, nevertheless, proceed diligently with the performance of the Agreement.

Article 11 - Suspension and Termination of the Agreement

11.1 Each Signatory Party shall reserve the right to suspend the Project or its part by issuing to the other Signatory Parties a notification of suspension which specifies the problem, the effective date, and the period of the suspension.

11.2 When the Project is suspended by the Center, and the period of the suspension expires and the Center and the Recipient are unable to find a solution, the Center shall, in consultation with the Partner, terminate the Project or a part of the Project.

11.3 When the Project is suspended by the Recipient, and the period of the suspension which is specified in the Recipient's notification expires and the Recipient and the Center are unable to find a solution, the Recipient shall terminate the Project.

11.4 Notwithstanding the termination, the Recipient shall submit reports and cost statements covering the period up to the termination and the following provisions of the Agreement shall continue to apply: Article 10, and Annex 2.

11.5 When Force Majeure situations occur which make the Project implementation impossible, the Center in consultation with the Partner and the Recipient(s) may terminate the Project with application of similar procedures as specified above.

11.6 When the Recipient(s) has committed actions, which obviously violate the national laws of Georgia or which obviously are contrary to the objectives specified under the STCU Agreement, the Center shall terminate the Project with immediate effectiveness upon written notification of termination to the Recipient. In this case, the Recipient(s) shall promptly return to the Center all payments and goods previously provided to the Recipient(s).

Article 12 - Amendments, Variations, or Additions

The provisions of the Agreement and its annexes may be amended or supplemented by means of a written agreement signed by authorized representatives of the Signatory Parties. However, operational changes in Annex 1, other than changes in the project manager, the institution, and the overall schedule, can be made by agreement between the Center and the Recipient(s) upon approval by Partner requested in accordance with applicable clauses of Annex 1.

Article 13 - Annexes

The Annexes are an integral part of the Agreement. They are:
Annex 1 - Work Plan
Annex 2 - Financial Provisions
Annex 3 – Reports
Annex 4 – Intellectual Property

Article 14 - Entry into Force of the Agreement

The Agreement shall enter into force on the first of the month following the date this Agreement is signed by the last signature of Signatory Parties or the date Partner deposited its commitment in accordance with Article 3.6 to Center's account, whichever is later, i.e. on "the Operative Commencement Date".

Prepared in Kyiv in the English and Ukrainian languages (Russian optional, if the project is located only in other CIS State). In the event of inconsistencies between the English and other texts, the English text shall take precedence.

For the Center	For the Partner	For the Recipient(s)
20.06.11	16 June 2011	1 June 2011
Date of Signing (REQUIRED):	Date of Signing (REQUIRED):	Date of Signing (REQUIRED):
Andrew Hood Executive Director Science and Technology Center in Ukraine 7a Metalistiv Street, Kyiv 03057, Ukraine Tel/Fax: +380(44) 490-7150/45	Regina Carter Director Global Initiatives for Proliferation Prevention Office of Global Security Engagement and Cooperation National Nuclear Security Administration 1000 Independence Avenue SW Washington, D.C. 20585-1615 Tel: (202) 586-8648 Fax: (202) 586-21-64 E-mail: regina.carter@nnsa.doe.gov	David Tsereteli Project manager Approved Nato Avaliani Director National Center for Disease Control of Georgia 9, M.Asatiani st, Tbilisi 0177, Georgia Tel: +995 32 398946 Fax: +995 32 311485

Annex I - Work Plan

1. Project Title P508
Yersinia monitoring in Georgia

2. Project management

2.1 Project Manager:

Name: Tsereteli David Giorgi (PhD)
Title: Chief Researcher
Institution: National Center for Disease Control of Georgia
Phone: (+995.32) 398946
Fax: (+995.32) 311485
E-mail: Dr.Tsereteli@gmail.com

2.2 Name of leading institution/address:

Name: National Center for Disease Control of Georgia
Address: 0177, 9, M.Asatiani st, Tbilisi, Georgia
Phone: (+995.32) 398946
Fax: (+995.32) 311485
E-mail: Dr.Tsereteli@gmail.com

2.3 Name of participating institution(s)/addresses:

2.3.1 Participating institution Manager:

2.4 Technical Monitor (partner's designee to oversee project progress, review project reports and other deliverables):

Institution: Lawrence Berkeley National Laboratory
Name: Tamas Torok
Phone: (+1.510) 4865808
Fax: (+1.510) 4865172
Address: Berkeley, California 94720, United States of America
E-mail: ttorok@lbl.gov

3. Introduction and Overview

The genus *Yersinia* includes three species: *Y. enterolitica, Y. pestis*, and *Y. pseudotuberculosis*. *Y. pestis* is the causative agent of plague. Plague had a special place in human history. Numerous references in art and literature attest to the horrors and devastation of past plague epidemics. Three pandemics happened in history that killed millions: the Justinian plague in 541 A.D., the “black death” in 1347, and the most recent one, which is believed to have originated in 1892 in Asia and spread by merchant ships.

The historic devastation imprinted the fear of plague in our minds. A plague outbreak today would certainly incite mass panic and bring much of the world's economy to a temporary standstill.

Due to *Y. pestis*' easy dissemination within the human population and its past use in some country's biological warfare program, this microorganism has been in the focus of biodefense and emergency preparedness and is considered a potential bioterrorism agent. *Y. pestis* used in an aerosol attack may cause cases of pneumonic plague, in which stage the disease becomes contagious. In nature, plague cycles in its enzootic and epizootic foci, circulating between small mammals and fleas. The bacterium occurs in most parts of the world and causes human infections. Human outbreaks mostly occur in rural communities or in the cities. They are usually associated with infected rats and rat fleas. Globally, the World Health Organization reports 1,000 - 3,000 cases of plague every year.

Recent molecular typing studies have provided insight in *Yersinia* evolution and fresh tools for epidemiological studies. These studies suggested that *Y. pestis* may have risen from *Y. pseudotuberculosis* through clonal expansion and lack of sequence diversity. Discriminatory markers that can track the spread of particular strains are needed to subdivide *Y. pestis* for the purpose of both epidemiological studies and bioforensics. Due to the lack of sequence diversity, sequencing several housekeeping genes usually yields little information about intra-species richness. Instead, any typing technique has to survey the whole genome. Some of the molecular typing methods, such as pulse field gel electrophoresis (PFGE), IS-element fingerprinting, indel analysis, multi-locus VNTR analysis (MLVA), CRISPR analysis, *etc*., have their shortcomings, such as difficult to standardize, distortion by homoplasy -- a genetic change that occurred independently on multiple occasions -- and not enough resolution. As re-sequencing technologies progress, single nucleotide polymorphism (SNP) analysis holds great promise: whole genome SNP analysis for a taxon with a genome size of around 4 Mb usually provides thousands of SNPs for genotyping.

Objectives

- Collect and isolate *Yersinia* spp. strains from endemic foci
- Extract genomic DNA from already maintained in collection and newly collected *Yersinia* spp. Strains
- Validate surveillance protocol(s) designed for the region

Organization, Qualification and Staffing

National Center for Disease Control and Public Health (NCDC) of Georgia is a primary national public health center responsible for public health surveillance and response of communicable and non communicable diseases.

NCDC was built on the foundation of the Georgian Station for Plague Control, established in 1937; Research Center for Especially Dangerous Pathogens since 1992; NCDC with integrated epidemiological units from SES since 1996; Integration of Center of Medical Statistics with the NCDC in 2003; Integration of the functions of MoH Public Health Department to the NCDC in 2007.

The main activities and responsibilities of the Center includes: surveillance and control of infectious and non infectious diseases, control and prevention of public health diseases, outbreak investigations, IHR National Focal Point, National Immunization Programme, National Referral Laboratories; National

Repository of EDP's, Medical statistics; Health promotion; Training and continuing education; Ensuring biosecurity and biosafety, development of didactic and regulatory documents on surveillance, control and prevention of diseases; collection and exchange of information inside and outside of the country.

Communicable diseases surveillance guidelines are developed and implemented based on the WHO recommendations (USAID funded project). They cover VPDs, diarrheal diseases, viral hepatitis, meningitis, and rabies and include: standard case definitions; case registration, notification, reporting requirements, data analysis; case/outbreak investigation and response; feedback and supervision of surveillance activities; protocols for sample collection, storage, and transportation for laboratory investigation.

In addition to rapid detection and response to outbreaks NCDC carry out molecular-epidemiological investigation and characterization of especially dangerous and other newly isolated pathogens compeered them with stored in the Live Culture Museum. Various molecular diagnostic and typing techniques are used like PCR, Real-Time PCR, Nested PCR, RAPD; IS-fingerprinting, PFGE, MLVA, RFLP, SNP, Sequencing.

International Collaboration:

- WHO- Sentinel Surveillance of Rotavirus Gastroenteritis; Sentinel Surveillance of Meningitis Laboratory Surveillance for Measles-Rubella; Laboratory Surveillance for Polio
- CDC - Surveillance and Response of Avian and Pandemic Influenza
- GFATM - Consolidation of achievements: Prevent Malaria Epidemic
- GAVI - Implement of Pentavalent vaccines, Enhancing the System
- VRF - Hepatitis B prevalence in Pregnant and Medical Workers
- BP - Monitoring of Pipeline Rout Epidemiological Situation
- NAMRU 3, DOD/DTRA - Laboratory Research of Fever Diseases
- DSTL, UK - Cell mediated-Immunity of Brucellosis
- EU/UNDP -Tobacco, Alcohol and Other Drugs Use in Georgian Students; pilot study rigorously following criteria of ESPAD
- UNFPA, UNICEF, USAID, CDC- Reproductive Health Survey (2000, 2005, 2010)
- USAID/Save the Children-US, Georgia Field Office - Nutritional Status of Children Under Five Years of Age in Six Regions of Georgia 2000-2001
- UNICEF -Georgia National Nutrition Survey 2009
- DHHS, CDC - Southern Caucasus Field Epidemiology and Laboratory Training Program
- UNIVERSITY of PATRAS, Greece – Iodine Deficiency survey
- EU TACIS - PRIMARY HEALTH CARE REFORM SUPPORT PROJECT
- Development of the Health Promotion Strategy and Implementation plan;
- Implementing standardized population behaviour risk-factor survey using WHO's STEPS instrument/methodology and analysis framework.

Completed and ongoing joint research projects at the NCDC:

- International Training and Research in Emerging Infectious Diseases – Fogarthy Center, NIH; University of Maryland , Baltimore, SUNY, Albany, NY
- Enhanced Epidemiologic and Laboratory Diagnostic Capacity for the Control of Botulinum Intoxication. Collaborator: CDC, Atlanta, GA.
- Prevention of Amebiasis and Creation of Diagnostic Test-Systems for *E. histolytica* Strains Isolated in Georgia. Collaborator: University of Virginia Health System, Charlottesville, VA.
- Molecular Epidemiology and Antibiotic-Resistance of Bacterial Infections. Collaborator: University of Maryland, Baltimore, MD.
- Clinical and Molecular Epidemiology of Drug-Resistant Tuberculosis in Georgia and the Caucasus. Collaborator: Emory University, Atlanta, GA.
- Epidemiology, Molecular Characteristics and Clinical Course of HCV Infection. Collaborator: Johns Hopkins University, Baltimore, MD.
- Epidemiological, Clinical and Microbiological Studies of Helicobacter pylori Infection and Public Health Diagnosis and Treatment to Reduce Burden of Clinical Illness. Collaborator: CDC, Atlanta, GA.
- Development of Surveillance System and Control Strategy for Leishmaniasis in Georgia by means of Epidemiological Investigation and Strengthening Laboratory Capacities. Collaborator: NIAID, Bethesda, MD.

- Improvement of Hospital Infection Control Practice in Georgia through Fundamental Change in the Medical Role and Economic Structure of Microbiology. Collaborator: Minnesota Department of Health, Minneapolis, MN.
- Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pestis* and *Francisella tularensis*. Collaborator: Lawrence Livermore National Laboratory, Livermore, CA.
- Clinical and Molecular Epidemiology of Meningitis Caused by Enteroviruses. Collaborator: CDC, Atlanta, GA.
- Salmonella Surveillance in Georgia. Collaborator: CDC, Atlanta, GA.
- Diagnostics, Laboratory and Epidemiological Assessment of Brucellosis in Georgia. Collaborators: U.S. Army Medical Institute of Infectious Diseases, Walter Reed Army Institute, Louisiana State University.

Tsereteli David – Chief Researcher, Division of Outbreak and Bioterrorism Response, NCDC.
Education and Qualification: 1989 – M.D., Tbilisi State Medical University; 1994 – Ph.D., Tbilisi State Medical University; 1990 - Postgraduate Education, Moscow Medical Academy; June, 2005 - Caroline University, Stockholm, Sweden.
Dr. David Tsereteli studies epidemiology of communicable and non-communicable diseases. During the period of the former USSR Dr. Tsereteli worked in Georgian Anti-plaque Station, which worked on secret projects. He has 21 Conference Papers & Presentations, 56 Scientific Publications and 3 textbooks. Dr. Tsereteli has several awards and grants from international organization (European Societies of Chemotherapy, 2nd European Congress of Chemotherapy and 7th Biennial Conference on Antiinfective Agents and Chemotherapy /May 8-11, 1998, Hamburg/. European Society of Clinical Microbiology and Infectious diseases, 9th European Congress of Clinical Microbiology and Infectious Diseases /March 21-24, 1999, Berlin/. British Society for Antimicrobial Chemotherapy - Young Investigators Award, 21st International Congress of Chemotherapy /4-9 July 1999, Birmingham/. European Society of Clinical Microbiology and Infectious diseases, 10th European Congress of Clinical Microbiology and Infectious Diseases, /May 28-31, 2000, Stockholm/. Federation of European Societies of Chemotherapy and Infection Award, 3rd European Congress of Chemotherapy /May 7-10, 2000. Madrid/. American Cancer Society, RITC, CTCRI /2004/ and etc.).
He was take part in many scientific projects (ISTC/BTEP G-596 “Molecular Epidemiology and Antibiotic Resistance of Bacterial Infections in Georgia” /2002-2005/. ISTC/BTEP G-1059 “Improvement of Hospital Infection Control Practice in Georgia through Fundamental Change in the Medical Role and Economic Structure of Microbiology” /2005-208/, and etc.).
In the frame of the project she will be Project Manager.

Mgeladze Gela – Chief Researcher, Department of biosafety, pathogen repository, vivarium and zooentomology, NCDC.
Education and Qualification: 1990 – M.D., Tbilisi State Medical University; 1989-1990 - Postgraduate Education, Institute of Plague and other Dangerous Disease, Saratov, USSR 1994 – Ph.D., Tbilisi State Medical University.
Dr. Gela Mgeladze studies dangerous infection. During the period of the former USSR Dr.Mgeladze worked in Georgian Anti-plaque Station.
He was take part in many scientific projects (P-142a, STCU, “Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pest*is and *Francisella tularensis* in the Republic of Georgia”/2006-2007; CBR 3GG-17/CRDF, GEB2-1962-TB-08 Clinical, Epidemiologic and Laboratory based assessment of Brucellosis in Georgia. USAMRIID, Walter Reed Army Institute of Research, Louisiana State University, USA /2008-2010/ and etc.).
In the frame of the project she will be Group Leader.

Imnadze Paata – Head of Scientific Board, NCDC. He is Professor and Head of Department of Public Health, Tbilisi State University.
Education and Qualification: 1976 – M.D., Tbilisi State Medical University; 1983 – Ph.D., Tbilisi State Medical University. Nov.1997-March.1998 - Research Associate-University of Maryland, Baltimore, US. He has 38 Conference Papers & Presentations, 76 Scientific Publications and 3 textbooks. He was take part in many scientific projects. Prof. Imnadze has several honours (1987 - Central Institute of Postgraduate Training for Doctors at the Ministry of Health USSR, Award for graduating of Management Course for Health Leadership, Moscow. 1995 - CDC Award for International Publications Management Course, Atlanta, US. 1999 - University of Minnesota; International Infection Control Institute. 2001 -

University of Minnesota; Summer Institute on International Public Health Topics. 2003 - Georgian State Order of Dignity).
Memberships: 1994-pres. Member Elect, Academician of Georgian Academy of Sciences of Preventive Medicine. 1999-pres Member of Board, Georgian Association of Public Health; 2001-2004 Member of the Society for Healthcare Epidemiology of America; 2003-2006 Member from WHO European Region – Joint Coordinating Board, UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases; 2004-pres Vice President, Scientific Association of Infectious Diseases, Parasitic Diseases, Epidemiology and Microbiology of Georgia; 2005-pres Member of the WHO European Technical Advisory Group of Experts on Immunization; 2006 Member of Editorial Board of the WHO policy document "Essential elements for the development of intersectoral Food Safety Strategies in Europe".
In the frame of the project he will be scientific consultant.

Shavishvili Merab – Senior Researcher, Department of biosafety, pathogen repository, vivarium and zooentomology, NCDC.
Education and Qualification: 1982 – M.D., Tbilisi State Medical University; 1982-1983 - Postgraduate Education, Anti-plague Institute, Almaty.
Dr. Merab Shavishvili studies bacteriology of dangerous infection. During the period of the former USSR Dr. Shavishvili worked in Georgian Anti-plaque Station.
He was take part in many scientific projects (P-142a, STCU, “Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pestis* and *Francisella tularensis* in the Republic of Georgia”/2006-2007; CBR GG-1/CDRF CEB2 – 1953 TB-05 Ecology, Genetic Clustering and virulence of *Yersinia pestis* strains in Georgia./2005-2008/ and etc.).
In the frame of the project, he will carry out the following works: preparation and design work, sample collection and bacteriology studies.

Kekelidze Merab – Chief Researcher, Department of Laboratory, NCDC.
Education and Qualification: 1978 – M.S. Biology, Tbilisi State University; 1978-1981 – M.S. Molecular Biology, Institute of Physiology of Academy of Sciences of Georgia; 1986 – Ph.D. Molecular Biology, Institute of Molecular Biology of Academy of Sciences of USSR, Moscow; 1998-1999 – Advanced studies, Molecular Biology, University of Maryland, Baltimore, US; 2003 – Advanced studies, Molecular Biology, Lawrence Livermore National Laboratory (LLNL), CA, USA.
Work responsibilities: Molecular Fingerprinting of different infectious agents using PFGE, RAPD, PCR/ Real-Time PCR based MLVA and SNP methodologies.
He was take part in many scientific projects (G-597, BTEP / ISTC - “Molecular Epidemiology and Antibiotic-Resistance of Bacterial Infections in Georgia” /2002-2005/; P-142a, STCU, “Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pestis* and *Francisella tularensis* in the Republic of Georgia”/2006-2007/; G-1462, DHHS BTEP/ISTC, “Establishment of National Sentinel-Site, Laboratory-Based Salmonella Surveillance System and Outbreak Response Capacity for Enhanced Control of Foodborne Disease in the Republic of Georgia” /2007-2010/ and etc.).
In the frame of the project, he will carry out the following works: molecular-level identification of *Yersinia* spp. in samples and confirmation of newly isolated strains real-time PCR (RT-PCR) technique, isolate genomic DNA from existing and newly collected isolates.

Zangaladze Ekaterine – Head of Department of Laboratory, NCDC.
Education and Qualification: 1980 – M.D., Tbilisi State Medical University; 1990 – Ph.D., Tbilisi State Medical University; Postgraduate Education; 1981, 1983 - Ivanovsky Institute of Virology, Russian Academy of Sciences; 1984, 1986 -Institute of Poliomyelitis and Viral Encephalitides of Russian AMS.
During the period of the former USSR Dr. Zangaladze worked in Georgian Anti-plaque Station.
Work responsibilities: Molecular Fingerprinting of different infectious agents using PFGE, RAPD, PCR/ Real-Time PCR based MLVA methodologies.
She was take part in many scientific projects (BTEP#12; ISTC#G-610p “Clinical and Molecular Epidemiology of Drug-Resistant TB in the Republic of Georgia and the Caucasus” /2001-2005/; BTEP #72; ISTC# A-998p “Development of Multiple Drug Resistant Tuberculosis (MDR TB) Surveillance and National TB Program (NTP) Evaluations, Republics of Armenia and Georgia” /2004-2008/; BTEP#97; ISTC #G-1310p “Clinical and Molecular Epidemiology of Meningitis caused by Enteroviruses in Georgia” /2006-2009/ and etc).

In the frame of the project she will carry out the following works: molecular-level identification of Yersinia spp. in samples and confirmation of newly isolated strains RT-PCR technique, isolate genomic DNA from existing and newly collected isolates.

Beridze Levan – Bacteriologist
Education: 1963 – M.D., Tbilisi State Medical University.
During the period of the former USSR Dr. Beridze worked in Georgian Anti-plaque Station.
He was take part in project P-142a, STCU, "Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pestis* and *Francisella tularensis* in the Republic of Georgia"/2006-2007/.
In the frame of the project, he will carry out the following works: sample collection and bacteriology studies.

Giorgadze Tamara – Senior Researcher, Department of Laboratory, NCDC.
Education: – M.D., Tbilisi State Medical University.
During the period of the former USSR Dr. Giorgadze worked in Georgian Anti-plaque Station.
She was take part in project P-142a, STCU, "Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pestis* and *Francisella tularensis* in the Republic of Georgia"/2006-2007/.
In the frame of the project she will be bacteriologist.

Grdzelidze Marine – Senior Researcher, Department of biosafety, pathogen repository, vivarium and zooentomology, NCDC.
Education: – M.D., Tbilisi State Medical University.
During the period of the former USSR Dr. Grdzelidze worked in Georgian Anti-plaque Station.
She was take part in many scientific projects (Project G-1081, DHHS BTEP / ISTC, "Development of Surveillance System and Control Strategy for Leishmaniasis in Georgia by Means of Epidemiological Investigation and Strengthening of Laboratory Capacities" /2005-2008/; P-142a, STCU, "Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pestis* and *Francisella tularensis* in the Republic of Georgia"/2006-2007; Clinical, Epidemiologic and Laboratory based assessment of Brucellosis in Georgia. USAMRIID, Walter Reed Army Institute of Research (WRAIR), Louisiana State University, Department of Veterinary Science, USA /2008-2010/ and etc.).
In the frame of the project she will be bacteriologist.

Shalutashvili Irakli – Specialist of Zoo-entomology.
During the period of the former USSR Shalutashvili Irakli worked in Georgian Anti-plaque Station.
He was take part in project P-142a, STCU, "Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pestis* and *Francisella tularensis* in the Republic of Georgia"/2006-2007/.
In the frame of the project, he will carry out the following works: zoo-entomology studies.

Dzneladze Archil – Senior Specialist-entomologist, of the Batumi branch at the NCDC.
During the period of the former USSR Manvelian Julieta worked in Georgian Anti-plaque Station.
He was take part in project P-142a, STCU, "Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pestis* and *Francisella tularensis* in the Republic of Georgia"/2006-2007/.
In the frame of the project, he will carry out the following works: zoo-entomology studies.

Manvelian Julieta – Specialist, Department of biosafety, pathogen repository, vivarium and zooentomology, NCDC.
During the period of the former USSR Manvelian Julieta worked in Georgian Anti-plaque Station. She was take part in project P-142a, STCU, "Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pestis* and *Francisella tularensis* in the Republic of Georgia"/2006-2007/.
In the frame of the project, she will carry out the following works: zoo-entomology studies.

Kikaleishvili Konstantine – Specialist, Department of biosafety, pathogen repository, vivarium and zooentomology, NCDC.

During the period of the former USSR Kikaleishvili Konstantine worked in Georgian Anti-plaque Station. He was take part in project Project G-1081, DHHS BTEP / ISTC, “Development of Surveillance System and Control Strategy for Leishmaniasis in Georgia by Means of Epidemiological Investigation and Strengthening of Laboratory Capacities” /2005-2008/.
In the frame of the project, he will carry out the following works: zoo-entomology studies.

Safarova Jana – Specialist, Department of biosafety, pathogen repository, vivarium and zooentomology, NCDC.
During the period of the former USSR Safarova Jana worked in Georgian Anti-plaque Station.
She was take part in project P-142a, STCU, “Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pestis* and *Francisella tularensis* in the Republic of Georgia”/2006-2007/.
In the frame of the project, she will carry out the following works: zoo-entomology studies.

Kodiashvili Rusudan – Laboratory Assistant, Department of biosafety, pathogen repository, vivarium and zooentomology, NCDC.
During the period of the former USSR Kodiashvili Rusudan worked in Georgian Anti-plaque Station.
She was take part in project P-142a, STCU, “Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pestis* and *Francisella tularensis* in the Republic of Georgia”/2006-2007/.
In the frame of the project, he will carry out the following works: assistant bacteriology studies.

Shanidze Manana – Laboratory Assistant.
During the period of the former USSR Shanidze Manana worked in Georgian Anti-plaque Station.
In the frame of the project, he will carry out the following works: assistant bacteriology studies.

Zhgenti Ekaterine – Senior Researcher, Department of Laboratory, NCDC
Education and Qualification: 1998 – M.S. Biology Tbilisi State University; July-August, 2003 - Lawrence Livermore National Laboratory (LLNL), CA, USA; March, 2005 - Laboratory Training, US AFRIMS, Bangkok, Thailand; May, 2005 - Laboratory Training, US AMRIID, Tbilisi, Georgia; October, 2008 - Laboratory Training, London School of Hygiene & Tropical Medicine, London, UK
Work responsibilities: Molecular Diagnostic and Fingerprinting of different infectious agents using PCR, Real-Time PCR, PFGE, RAPD, MLVA, SNP methodologies.
She was take part in many scientific projects (G-597, BTEP / ISTC - “Molecular Epidemiology and Antibiotic-Resistance of Bacterial Infections in Georgia” /2002-2005/; P-142a, STCU, “Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pestis* and *Francisella tularensis* in the Republic of Georgia”/2006-2007/ and etc).
In the frame of the project she will carry out the following works: molecular-level identification of Yersinia spp. in samples and confirmation of newly isolated strains RT-PCR technique, isolate genomic DNA from existing and newly collected isolates.

Chanturia Gvantsa – Senior Researcher, Department of Laboratory, NCDC.
Education and Qualification: 1994 - M.S. Biology, Tbilisi State University; February, 2005 - General Biosafety Course, Bechtel National, Tbilisi, Georgia; March, 2005 - Laboratory Training, US AFRIMS, Bangkok, Thailand; May-June, 2006/2007 - Project manager, P-142a, STCU, “Application of Molecular Fingerprinting to Geographical Characterization and Epidemiological Surveillance of Natural foci of *Yersinia pestis* and *Francisella tularensis* in the Republic of Georgia”; 2006 - Training on MLVA methodology, Lawrence Livermore National Laboratory (LLNL), CA, USA; June, 2008 - BTRP/TADR Human Laboratory Field Testing Exercise, USAMRIID, DTRA, Tbilisi, Georgia; Sep-Oct, 2008 - Management for International Public Health, DHHS, CDC, SMDP, Atlanta, Georgia, USA; March, 2009 - Laboratory Quality Management System, CDC, NCDC, Tbilisi, Georgia; June, 2009 - Tularemia Wet-Lab Exercise, Tularemia Diagnostic Training, WHO, FOI, Umea, Sweden; October, 2009 - Short Term Scholarship, Collaborative Work on SNP Discovering and Typing of Georgian *Francisella tularensis* strains, Northern Arizona University, Flagstaff, AZ, USA.
Work responsibilities: Molecular Diagnostic and Fingerprinting of different infectious agents using PCR, Real-Time PCR, PFGE, RAPD, MLVA, SNP methodologies.
In the frame of the project she will carry out the following works: molecular-level identification of Yersinia spp. in samples and confirmation of newly isolated strains RT-PCR technique, isolate genomic DNA from existing and newly collected isolates.

4. Expected Results

The results will provide phylo-geographical and ecological information and down-select the thousands of SNPs to a smaller set for epidemiological studies, source tracking, and surveillance of *Yersinia* spp. endemic foci specific to the Georgia and beyond.

Deliverables	Due date (by the end of Month # __)	Point (address) of delivery
Quarterly reports, progress report and final report	by the end of Month #3, 6, 9 and 12	STCU, DOE
Researcher from NCDC is sent to LBNL to train on microarray technique and process Georgian DNA samples	Month # 5-6	STCU, DOE
Presentation in meeting	Month # 10	STCU, DOE
Publication(s)	Month # 12	STCU, DOE

5. Scope of Activities

For implementation of the project it is planned following stages:

Stages	**Milestones**	**Executor**
Collect and isolate *Yersinia* spp. strains from endemic foci	Environmental (rodents and fleas) and clinical samples will be collected *Yersinia* spp. strains will be isolated and identified Confirmation of isolated strains will be done using PCR.	NCDC
Extract genomic DNA from already maintained in collection and newly collected *Yersinia* spp. strains	Genomic DNA from existing isolates will be extracted and sent to Lawrence Berkeley National Laboratory (LBNL) for further investigation on SNP and design primer for detection *Y. pestis* and *Y.*	NCDC

	pseudotuberculosis in Georgia Genomic DNA from newly collected *Yersinia* spp. strains will be extracted and sent to LBNL	
Validate surveillance protocol for the region	Specific primers for *Yersinia* spp. will be designed Protocols for *Yersinia* spp. surveillance will be developed	NCDC

6. Technical Approach and Methodology

- *Collect and isolate Y. pestis and Y. pseudotuberculosis strains from endemic foci*

In natural foci, *Y. pestis* and *Y. pseudotuberculosis* gather in rodent carriers of plague. For this aim, in the natural foci we will capture rodents and extract their nests. Then, in the laboratory we will collect fleas from rodents, identify them, and describe the conditions. Using divided samples, the bacteriological work will proceed according to SOWs. Necropsy will be performed on the rodents; their organs will be investigated for bacteriology. Microbial cultures will be investigated for cell and colony morphology and gram staining. Suspicious colonies will be investigated using biochemical tests and phage lyses for identification. Metadata will be provided with each isolate; information on host, location and time of isolation, etc.

For molecular-level identification of *Yersinia* spp. in samples and as a confirmation of newly isolated strains real-time PCR (RT-PCR) technique will be used.

DNA isolation directly from specimens from endemic foci and from newly isolated *Yersinia* spp. strains will be performed using Qiagen Genomic DNA Extraction kit (G500; catalog # 10262). For real-time PCR *Yersinia* spp. specific primers and probes, Invitrogen Master Mixes and Roche Light Cycler machine will be used. *Yersinia* spp. specific primers and probes will be developed and validated at LBNL based on SNP typing of Georgian strains.

- *Isolate genomic DNA from existing and newly collected isolates, and ship DNA samples to Lawrence Berkeley National Laboratory (LBNL) for further processing*

DNA isolation from *Yersinia* spp. strains existing at NCDC repository will be performed using Qiagen Genomic DNA Extraction kit (G500; catalog # 10262). Extracted DNA will be sent to LBNL for further investigation and for primer design for the detection *Yersinia* spp. in Georgia.

By the end of the project, DNA will have been extracted from all newly isolated strains and already maintained culture collection strains using the same kit, and the genomic DNA will be sent to LBNL.

- *Validate surveillance protocol(s) designed for the region*

SNPs specific for strains circulating in Georgia will be identified. Based on a downsized set of biomarker SNPs, primers for the detection of *Yersinia* spp. will be designed, validated, and ssurveillance protocol(s) for the region developed, validated, and approved by NCDC.

Role of Foreign Collaborators/Partners

Collaborator will provide continuous assistance in study, design, and development of study instruments, laboratory methods, data analysis, interpretation results, joint publication(s) and presentation in meeting(s). It will design and acquire the SNP genotyping microarray, produce genotyping results and analyses, provide training in microarray use and data processing, and develop protocols for surveillance.

7. Project Location and Facilities

National Center for Disease Control and Public Health

Address: 9, M. Asatiani st., Tbilisi, 0177, Georgia

The work will be carried out in laboratories and rooms (#202, 204, 206) located in building I and building II (#210, 601-603, 702-704).

The following equipment is available for experimental and research activities:

Biological Safety Cabinet, Class II, type 2A/B3

Incubators

Refrigerators

Thermocycler GENIUS, Techne

Light Cycler 2.0, Roche

Thermo-mixer, Eppendorf

Ultracentrifuge

Centrifuge

Electrophoresis apparatus

Gel documentation and analysis system

Pulse field gel electrophoresis horizontal apparatus

Capillary Electrophoresis System, DNA Sequencer CEQ 8000 Beckman Coulter

Spectrophotometer Genesys 10, Thermo Scientific

8. Financial Information

Table 1 presents Work schedule specified for each participating institution as identified by I-Code.
Table 2 presents Work schedule chart.

Budget categories (allowable direct cost) are specified in the following tables:
Grant payments: Table 3
Equipment: Table 4

Materials: Table 5

ODC: Table 6

Travel: Table 7

Tables 8 and 9 present financial summary including overhead for participation institutions.

Tables S8 and S8 present financial summary for each participating institution separately.

Table 1. Work Schedule / Таблиця 1. Розклад робіт

Stages / Substages*				Estimate Work Days													Milestones	
# Stages	#.# Stages	Name	Institution short name	Qtr1	Qtr2	Qtr3	Qtr4	Qtr5	Qtr6	Qtr7	Qtr8	Qtr9	Qtr10	Qtr11	Qtr12	Total by stage	Name	months
1		Collect and isolate Yersinia spp. strains from endemic foci														483	Environmental (rodents and fleas) and clinical samples will be collected Yersinia spp. strains will be isolated and identified Confirmation of isolated strains will be done using PCR.	6
	1,1	Collect and isolate Yersinia spp. strains from endemic foci	NCDC	242	241	0	0	0	0	0	0	0	0	0	0		Environmental (rodents and fleas) and clinical samples will be collected Yersinia spp. strains will be isolated and identified Confirmation of isolated strains will be done using PCR.	
2		Extract genomic DNA from already maintained in collection and newly collected Yersinia spp. strains														638	Genomic DNA from existing isolates will be extracted and sent to Lawrence Berkeley National Laboratory (LBNL) for further investigation on SNP and design primer for detection Y. pestis and Y. pseudotuberculosis in Georgia Genomic DNA from newly collected Yersinia spp. strains will be extracted and sent to LBNL	12
	2,1	Extract genomic DNA from already maintained in collection and newly collected Yersinia spp. strains	NCDC	210	210	110	108	0	0	0	0	0	0	0	0		Genomic DNA from existing isolates will be extracted and sent to Lawrence Berkeley National Laboratory (LBNL) for further investigation on SNP and design primer for detection Y. pestis and Y. pseudotuberculosis in Georgia Genomic DNA from newly collected Yersinia spp. strains will be extracted and sent to LBNL	
3		Validate surveillance protocol for the region														206	Specific primers for Yersinia spp. will be designed Protocols for Yersinia spp. surveillance will be developed	12
	3,1	Validate surveillance protocol for the region	NCDC	0	0	103	103	0	0	0	0	0	0	0	0		Specific primers for Yersinia spp. will be designed Protocols for Yersinia spp. surveillance will be developed	
		Total Work Days:		452	451	213	211	0	0	0	0	0	0	0	0	1327		
				452	451	213	211	0	0	0	0	0	0	0	0	1327		

Table 2. Work Schedule Chart / Таблиця 2. Діаграма етапів проекту

Stage number	Beginning date	Duration, months	Q1			Q2			Q3			Q4			Q5			Q6			Q7			Q8			Q9			Q10			Q11			Q12		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1 Stage	1	6																																			
			Collect and isolate Yersinia spp. strains from endemic foci																																		
2 Stage	1	12																																			
			Extract genomic DNA from already maintained in collection and newly collected Yersinia spp. strains																																		
3 Stage	7	6																																			
			Validate surveillance protocol for the region																																		
4 Stage																																					
			#N/A																																		
5 Stage																																					
			#N/A																																		
6 Stage																																					
			#N/A																																		
7 Stage																																					
			#N/A																																		
8 Stage																																					
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24 Stage																																					
			#N/A																																		

Table 3. Personal Commitment / Таблиця 3. Участь персоналу

#	Surname (in English)	First Name	Codes I-Code	Date of birth	W.Code	Place in Project	Acad. Rank	V-Code	Daily Rate	Days Qtr1	Qtr2	Qtr3	Qtr4	Qtr5	Qtr6	Qtr7	Qtr8	Qtr9	Qtr10	Qtr11	Qtr12	Total days	% of Time	Cost Qtr1	Qtr2	Qtr3	Qtr4	Qtr5	Qtr6	Qtr7	Qtr8	Qtr9	Qtr10	Qtr11	Qtr12	Total Cost
1	Tsereteli	David	1	29.10.1964	1.3	PM, EI, TI	PhD	P	65	31	31	31	30	0	0	0	0	0	0	0	0	123	56	2015	2015	2015	1950	0	0	0	0	0	0	0	7 995
2	Mgeladze	Gela	1	06.01.1962	1.3	GL, EI, TI	PhD	P	50	33	32	32	32	0	0	0	0	0	0	0	0	129	59	1650	1600	1600	1600	0	0	0	0	0	0	0	6 450
3	Imnadze	Paata	1	11.02.1953	1.3	CT	Professor	P	45	13	13	13	13	0	0	0	0	0	0	0	0	52	24	585	585	585	585	0	0	0	0	0	0	0	2 340
4	Shavishvili	Merab	1	03.01.1959	1.3	EI	Specialist	P	35	33	33	0	0	0	0	0	0	0	0	0	0	66	30	1155	1155	0	0	0	0	0	0	0	0	0	2 310
5	Kekelidze	Merab	1	16.12.1955	1.3	EI, TI	PhD	P	40	30	30	30	30	0	0	0	0	0	0	0	0	120	55	1200	1200	1200	1200	0	0	0	0	0	0	0	4 800
6	Zangaladze	Ekaterine	1	01.01.1956	1.3	EI, TI	PhD	P	35	29	29	29	28	0	0	0	0	0	0	0	0	115	52	1015	1015	1015	980	0	0	0	0	0	0	0	4 025
7	Beridze	Levan	1	01.01.1938	1.3	EI	Specialist	P	30	23	23	0	0	0	0	0	0	0	0	0	0	46	21	690	690	0	0	0	0	0	0	0	0	0	1 380
8	Giorgadze	Tamara	1	07.10.1947	1.3	EI	Specialist	P	30	20	20	0	0	0	0	0	0	0	0	0	0	40	18	600	600	0	0	0	0	0	0	0	0	0	1 200
9	Grdzelidze	Marine	1	29.06.1950	1.3	EI	Specialist	P	30	18	18	0	0	0	0	0	0	0	0	0	0	36	16	540	540	0	0	0	0	0	0	0	0	0	1 080
10	Shalutashvili	Irakli	1	16.05.1942	1.3	EI	Specialist	P	28	23	23	0	0	0	0	0	0	0	0	0	0	46	21	644	644	0	0	0	0	0	0	0	0	0	1 288
11	Dzneladze	Archil	1	31.01.1940	1.3	EI	Specialist	P	28	23	23	0	0	0	0	0	0	0	0	0	0	46	21	644	644	0	0	0	0	0	0	0	0	0	1 288
12	Manvelian	Julieta	1	23.01.1948	1.3	EI	Specialist	P	28	23	23	0	0	0	0	0	0	0	0	0	0	46	21	644	644	0	0	0	0	0	0	0	0	0	1 288
13	Kikaleishvili	Konstantin	1	24.05.1950	1.3	EI	Specialist	P	28	11	11	0	0	0	0	0	0	0	0	0	0	22	10	308	308	0	0	0	0	0	0	0	0	0	616
14	Safarova	Jana	1	09.05.1949	1.3	LA	Specialist	P	25	22	22	0	0	0	0	0	0	0	0	0	0	44	20	550	550	0	0	0	0	0	0	0	0	0	1 100
15	Kodiashvili	Rusudan	1	09.08.1966	1.3	LA	Specialist	P	25	22	22	0	0	0	0	0	0	0	0	0	0	44	20	550	550	0	0	0	0	0	0	0	0	0	1 100
16	Shanidze	Manana	1	03.09.1961	1.3	LA	Specialist	P	25	22	22	0	0	0	0	0	0	0	0	0	0	44	20	550	550	0	0	0	0	0	0	0	0	0	1 100
17	Zhgenti	Ekaterine	1	23.09.1975	0	EI, TI	Specialist	P	30	38	38	39	39	0	0	0	0	0	0	0	0	154	70	1140	1140	1170	1170	0	0	0	0	0	0	0	4 620
18	Chanturia	Gvantsa	1	31.10.1972	0	EI, TI	Specialist	P	30	38	38	39	39	0	0	0	0	0	0	0	0	154	70	1140	1140	1170	1170	0	0	0	0	0	0	0	4 620
																						0	0	0	0	0	0	0	0	0	0	0	0	0	0
																						0	0	0	0	0	0	0	0	0	0	0	0	0	0
																						0	0	0	0	0	0	0	0	0	0	0	0	0	0
																						1327		15620	15570	8755	8655	0	0	0	0	0	0	0	48 600

Short Institution Name	I-Code	Total People		Qtr1	Qtr2	Qtr3	Qtr4	Qtr5	Qtr6	Qtr7	Qtr8	Qtr9	Qtr10	Qtr11	Qtr12	Total days	% of Time	Qtr1	Qtr2	Qtr3	Qtr4	Qtr5	Qtr6	Qtr7	Qtr8	Qtr9	Qtr10	Qtr11	Qtr12	Total Cost
NCDC	1	18	Total:	452	451	213	211	0	0	0	0	0	0	0	0	1327		15620	15570	8755	8655	0	0	0	0	0	0	0	0	48600
	2	0	Total:	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	Total:	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
	4	0	Total:	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
	5	0	Total:	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
FWS:	Total	16	Sub-total(FWS:)	376	375	135	133	0	0	0	0	0	0	0	0	1019		13340	13290	6415	6315	0	0	0	0	0	0	0	0	39360
NFWS:	Total	2	Sub-total(NFWS:)	76	76	78	78	0	0	0	0	0	0	0	0	308		2280	2280	2340	2340	0	0	0	0	0	0	0	0	9240
Total:	Total	18	Grand Total:	452	451	213	211	0	0	0	0	0	0	0	0	1327		15620	15570	8755	8655	0	0	0	0	0	0	0	0	48600

Project Codes: PM - Project Manager, PIM - Participating institution manager, GL - Group leader, EI - Experimental investigation, TI - Theoretical investigation, TD - Technology development, DN - Designing, SL - Simulation, CT - Consulation, TL - Translator, LA - Laboratory assitant, SP - Support person,

Table 4. Equipment / Таблиця 4. Обладнання

#	Description	Inst.	Anticipated Use	V-Code	P-Code	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Total
Capital (Cost per item >= $2500)																		
																		0
																		0
Non_Capital (Cost per item < $2500)																		
1	Purple Minifuge, includes 1.5 and 0.2 ml tube adapters and 2 rotors	1	RT-PCR	P	R	400	0	0	0	0	0	0	0	0	0	0	0	**400**
2	NOTEBOOK / Samsung NP-R540	1	Data entry and analysis	P	R	740	0	0	0	0	0	0	0	0	0	0	0	**740**
3	Notebook Sony P688	1	Data entry and analysis	P	R	770	0	0	0	0	0	0	0	0	0	0	0	**770**
4	Purple Minifuge, includes 1.5 and 0.2 ml tube adapters and 2 rotors	1	RT-PCR	P	R	400	0	0	0	0	0	0	0	0	0	0	0	**400**
5	Notebook Sony P688	1	Data entry and analysis	P	R	770	0	0	0	0	0	0	0	0	0	0	0	**770**
6	NOTEBOOK / Samsung NP-R540	1	Data entry and analysis	P	R	740	0	0	0	0	0	0	0	0	0	0	0	**740**
																		0
																		0
Leased Equipment																		
																		0
																		0
					Total Costs:	**3820**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3820**

Table 5. Materials / Таблиця 5. Матеріали

#	#	Description	Inst.	Anticipated Use	V-Code	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Total
1		**Raw materials (metals, gases, oils etc)**																**0**
																		0
																		0
2		**Chemicals (reagents, solvents, salts, acids etc);**																**0**
																		0
																		0
3		**Laboratory supplies (electronic components, glassware, laboratory tools, photo materials etc);**																**0**
	3.1	CIN-Yersinia selective agar (20 plates) X 12	1	Bacteriology	P	600	0	0	0	0	0	0	0	0	0	0	0	**600**
	3.2	Endo agar (500g) X 2	1	Bacteriology	P	380	0	0	0	0	0	0	0	0	0	0	0	**380**
	3.3	Mac Cobkey agar (500g) x 2	1	Bacteriology	P	260	0	0	0	0	0	0	0	0	0	0	0	**260**
	3.4	Trypcase soy agar (500g) X 2	1	Bacteriology	P	260	0	0	0	0	0	0	0	0	0	0	0	**260**
	3.5	Buffered peptone water (500g) X 3	1	Bacteriology	P	300	0	0	0	0	0	0	0	0	0	0	0	**300**
	3.6	Blood agar base (500g) X 3	1	Bacteriology	P	510	0	0	0	0	0	0	0	0	0	0	0	**510**
	3.7	Triple sugar iron agar (500g) X 3	1	Bacteriology	P	390	0	0	0	0	0	0	0	0	0	0	0	**390**
	3.8	Api 20E 100 strip X 2	1	Bacteriology	P	660	0	0	0	0	0	0	0	0	0	0	0	**660**
	3.9	Api NaCl 0,85% Medium (5ml) 100 amp X 2	1	Bacteriology	P	220	0	0	0	0	0	0	0	0	0	0	0	**220**
	3.1	Api 20E Analitical profile index X 2	1	Bacteriology	P	340	0	0	0	0	0	0	0	0	0	0	0	**340**
	3.1	Tripcase soy broth (500g) X 2	1	Bacteriology	P	180	0	0	0	0	0	0	0	0	0	0	0	**180**
	3.1	Petri dishes (100x20mm) X 2	1	Bacteriology	P	320	0	0	0	0	0	0	0	0	0	0	0	**320**
	3.1	Color Gram 2, kit/4 x 240 ml X 2	1	Bacteriology	P	240	0	0	0	0	0	0	0	0	0	0	0	**240**
	3.1	QIAamp DNA Mini Kit, 250 X 2	1	DNA Extraction	P	1040	0	0	0	0	0	0	0	0	0	0	0	**1040**
	3.2	QIAGEN Genomic-tip 500/G, 10 columns X 8	1	DNA Extraction	P	2880	0	0	0	0	0	0	0	0	0	0	0	**2880**
	3.2	Genomic DNA Buffer Set X 8	1	DNA Extraction	P	1680	0	0	0	0	0	0	0	0	0	0	0	**1680**
	3.2	Taq PCR Master Mix Kit 1000 units X 2	1	PCR	P	1260	0	0	0	0	0	0	0	0	0	0	0	**1260**
	3.2	Filter tips, 1000 mkl ART 1000, (10rack) X 2	1	General laboratory use	P	320	0	0	0	0	0	0	0	0	0	0	0	**320**
	3.2	Filter tips, 200 mkl ART 200, (10rack) X 2	1	General laboratory use	P	320	0	0	0	0	0	0	0	0	0	0	0	**320**
	3.2	Filter tips, 20P mkl, ART 20, (10rack) X 2	1	General laboratory use	P	320	0	0	0	0	0	0	0	0	0	0	0	**320**
	3.2	Filter tips, 10 mkl, ART 10 Reach X 2	1	General laboratory use	P	320	0	0	0	0	0	0	0	0	0	0	0	**320**
	3.2	TabTop* Microcentrifuge Tubes, Sorenson BioScience, 1.5 mkl, Case of 10 X 2	1	General laboratory use	P	640	0	0	0	0	0	0	0	0	0	0	0	**640**
	3.2	Gel loading buffer, 5ML X 6	1	PCR	P	150	0	0	0	0	0	0	0	0	0	0	0	**150**
	3.2	Best® N-DEX® Free disposable nitrile gloves X 2	1	General laboratory use	P	1100	0	0	0	0	0	0	0	0	0	0	0	**1100**
	3.3	Primers for PCR	1	PCR	P	2300	0	0	0	0	0	0	0	0	0	0	0	**2300**
																		0
																		0
4		**Office supplies (stationery and other expendable materials:cartridges, toner, cleaning household goods etc)**																**0**
																		0
																		0
5		**Other**																**0**
																		0
																		0
					Total Costs:	**16990**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16990**

Table 6. Other Direct Costs / Таблиця 6. Інші прямі витрати

#	#	Description	Inst.	Anticipated Use	V-Code	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Total
1		**Computer software**																0
																		0
																		0
2		**Communication (Internet, phone, e-mail…)**																0
	2.1	Telephone	1	Tansfering of information	P	70	70	50	46	0	0	0	0	0	0	0	0	236
	2.2	Internet	1	Tansfering of information	P	40	40	40	30	0	0	0	0	0	0	0	0	150
																		0
																		0
3		**Security**																0
																		0
																		0
4		**Repairing/maintenance of equipment**																0
																		0
																		0
5		**Laboratory tests outside**																0
																		0
																		0
6		**Publications/translation**																0
																		0
																		0
7		**Transportation**																0
	7.1	Culture shipping	1	Investigation on SNP and design primer for detection Y. pestis and Y. pseudotuberculosis	P	2500	0	0	0	0	0	0	0	0	0	0	0	2500
	7.2	Culture shipping	1	investigation on SNP and design primer for detection Y. pestis and Y. pseudotuberculosis	P	0	2500	0	0	0	0	0	0	0	0	0	0	2500
																		0
																		0
8		**Patenting**																0
																		0
																		0
9		**Other**																0
																		0
																		0
					Total Costs:	**2610**	**2610**	**90**	**76**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5386**

Table 7. Travel / Таблиця 7. Відрядження

#	Country of Destination	City	Inst.	People	Institute of Destination	Purpose of Travel	V-Code	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Total
International																				
1	USA	Berkeley	1	3	Lawrence Berkeley National Laboratory	Developed study instruments and protocols. Train on microarray technique and process Georgian DNA samples	P	0	14500	0	0	0	0	0	0	0	0	0	0	**14500**
2	USA	Washington	1	5	10th ASM Biodefense Meeting	Participation and presentation in meeting	P	0	0	17100	0	0	0	0	0	0	0	0	0	**17100**
																				0
																				0
																				0
						Total International Costs:		**0**	**14500**	**17100**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**31600**
Domestic																				
1	Georgia	Ninotsminda	1	7	Ninotsminda Region	Environmental (rodents and fleas) and clinical samples will be collected	P	3950	0	0	0	0	0	0	0	0	0	0	0	**3950**
2	Georgia	Dedoplistskaro	1	7	Dedoplistskaro Region	Environmental (rodents and fleas) and clinical samples will be collected	P	0	3950	0	0	0	0	0	0	0	0	0	0	**3950**
																				0
																				0
																				0
						Total Domestic Costs:		**3950**	**3950**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7900**

Summary	
International:	**31600**
Domestic:	**7900**
Total:	**39500**

Table 8. Financial Summary / Таблиця 8. Зведена фінансова інформація

#	Item	Qtr1	Qtr2	Qtr3	Qtr4	Qtr5	Qtr6	Qtr7	Qtr8	Qtr9	Qtr10	Qtr11	Qtr12
1	Days - FWS	376	375	135	133	0	0	0	0	0	0	0	0
2	Days - NFWS	76	76	78	78	0	0	0	0	0	0	0	0
	Total Days:	452	451	213	211	0	0	0	0	0	0	0	0
1	Grants - FWS	13340	13290	6415	6315	0	0	0	0	0	0	0	0
2	Grants - NFWS	2280	2280	2340	2340	0	0	0	0	0	0	0	0
3	Grants total:	15620	15570	8755	8655	0	0	0	0	0	0	0	0
4	Equipment	3820	0	0	0	0	0	0	0	0	0	0	0
5	Materials	16990	0	0	0	0	0	0	0	0	0	0	0
6	Other Direct Costs	2610	2610	90	76	0	0	0	0	0	0	0	0
7	Travel International	0	14500	17100	0	0	0	0	0	0	0	0	0
8	Travel Domestic	3950	3950	0	0	0	0	0	0	0	0	0	0
9	Travel Total:	3950	18450	17100	0	0	0	0	0	0	0	0	0
10	Non-Labor Expenses:	27370	21060	17190	76	0	0	0	0	0	0	0	0
11	Total Expenses:	42990	36630	25945	8731	0	0	0	0	0	0	0	0
12	Overhead for the Institution	1426	1426	1426	1426	0	0	0	0	0	0	0	0
13	Tolal Project Cost:	**44 416**	**38 056**	**27 371**	**10 157**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Overhead for the Institution(s):	4.99
Project duration (quarters):	4

STCU fee - 5%	0	0
STCU fee -0% - *for this case delete 5 in a c*		
Total Project Cost		**120 000**

Table 9. Financial Summary (Cumulative)

#	Item	Qtr1	Qtr2	Qtr3	Qtr4	Qtr5	Qtr6	Qtr7	Qtr8	Qtr9	Qtr10	Qtr11	Qtr12
1	Days - FWS	376	751	886	1019	1019	1019	1019	1019	1019	1019	1019	1019
2	Days - NFWS	76	152	230	308	308	308	308	308	308	308	308	308
	Total Days:	452	903	1116	1327	1327	1327	1327	1327	1327	1327	1327	1327
1	Grants - FWS	13340	26630	33045	39360	39360	39360	39360	39360	39360	39360	39360	39360
2	Grants - NFWS	2280	4560	6900	9240	9240	9240	9240	9240	9240	9240	9240	9240
3	Grants total:	15620	31190	39945	48600	48600	48600	48600	48600	48600	48600	48600	48600
4	Equipment	3820	3820	3820	3820	3820	3820	3820	3820	3820	3820	3820	3820
5	Materials	16990	16990	16990	16990	16990	16990	16990	16990	16990	16990	16990	16990
7	Other Direct Costs	2610	5220	5310	5386	5386	5386	5386	5386	5386	5386	5386	5386
8	Travel International	0	14500	31600	31600	31600	31600	31600	31600	31600	31600	31600	31600
9	Travel Domestic	3950	7900	7900	7900	7900	7900	7900	7900	7900	7900	7900	7900
10	Travel Total:	3950	22400	39500	39500	39500	39500	39500	39500	39500	39500	39500	39500
11	Non-Labor Expenses:	27370	48430	65620	65696	65696	65696	65696	65696	65696	65696	65696	65696
12	Total Expenses:	42990	79620	105565	114296	114296	114296	114296	114296	114296	114296	114296	114296
13	Overhead for the Institution	1426	2852	4278	5704	5704	5704	5704	5704	5704	5704	5704	5704
14	Tolal Project Cost:	**44 416**	**82 472**	**109 843**	**120 000**	**120 000**	**120 000**	**120 000**	**120 000**	**120 000**	**120 000**	**120 000**	**120 000**

S8. Estimated expenditures by each participating institution /Кошторисні витрати організацій-учасників

	National Center for Disease Control of Georgia												Overhead 4.99%	
#	Item	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Total
1	Days - FWS	376	375	135	133	0	0	0	0	0	0	0	0	1019
2	Days - NFWS	76	76	78	78	0	0	0	0	0	0	0	0	308
	Total Days:	452	451	213	211	0	0	0	0	0	0	0	0	1327
1	Grants - FWS	13340	13290	6415	6315	0	0	0	0	0	0	0	0	39360
2	Grants - NFWS	2280	2280	2340	2340	0	0	0	0	0	0	0	0	9240
3	Grants total:	15620	15570	8755	8655	0	0	0	0	0	0	0	0	48600
4	Equipment	3820	0	0	0	0	0	0	0	0	0	0	0	3820
5	Materials	16990	0	0	0	0	0	0	0	0	0	0	0	16990
6	OtherDirectCosts	2610	2610	90	76	0	0	0	0	0	0	0	0	5386
7	Travel International	0	14500	17100	0	0	0	0	0	0	0	0	0	31600
8	Travel Domestic	3950	3950	0	0	0	0	0	0	0	0	0	0	7900
9	Travel Total:	3950	18450	17100	0	0	0	0	0	0	0	0	0	39500
10	Non-Labor Expenses	27370	21060	17190	76	0	0	0	0	0	0	0	0	65696
11	Total Expenses	42990	36630	25945	8731	0	0	0	0	0	0	0	0	114296
12	Overhead	1426	1426	1426	1426	0	0	0	0	0	0	0	0	5704
13	Total project cost	44416	38056	27371	10157	0	0	0	0	0	0	0	0	120000

#	Item	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Total
1	Days - FWS	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Days - NFWS	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Days:	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Grants - FWS	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Grants - NFWS	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Grants total:	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Materials	0	0	0	0	0	0	0	0	0	0	0	0	0
6	OtherDirectCosts	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Travel International	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Travel Domestic	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Travel Total:	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Non-Labor Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Total Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Overhead	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Total project cost	0	0	0	0	0	0	0	0	0	0	0	0	0

#	Item	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Total
1	Days - FWS	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Days - NFWS	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Days:	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Grants - FWS	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Grants - NFWS	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Grants total:	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Materials	0	0	0	0	0	0	0	0	0	0	0	0	0
6	OtherDirectCosts	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Travel International	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Travel Domestic	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Travel Total:	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Non-Labor Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Total Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Overhead	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Total project cost	0	0	0	0	0	0	0	0	0	0	0	0	0

#	Item	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Total
1	Days - FWS	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Days - NFWS	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Days:	0	0	0	0	0	0	0	0	0	0	0	0	0
1	Grants - FWS	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Grants - NFWS	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Grants total:	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Materials	0	0	0	0	0	0	0	0	0	0	0	0	0
6	OtherDirectCosts	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Travel International	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Travel Domestic	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Travel Total:	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Non-Labor Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Total Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Overhead	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Total project cost	0	0	0	0	0	0	0	0	0	0	0	0	0

Table S9. Cumulative expenditures by each participating institution / Витрати організацій-учасників із зростаючим підсумком

National Center for Disease Control of Georgia													
#	Item	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
1	Days - FWS	376	751	886	1019	1019	1019	1019	1019	1019	1019	1019	1019
2	Days - NFWS	76	152	230	308	308	308	308	308	308	308	308	308
	Total Days:	452	903	1116	1327	1327	1327	1327	1327	1327	1327	1327	1327
1	Grants - FWS	13340	26630	33045	39360	39360	39360	39360	39360	39360	39360	39360	39360
2	Grants - NFWS	2280	4560	6900	9240	9240	9240	9240	9240	9240	9240	9240	9240
3	Grants total:	15620	31190	39945	48600	48600	48600	48600	48600	48600	48600	48600	48600
4	Equipment	3820	3820	3820	3820	3820	3820	3820	3820	3820	3820	3820	3820
5	Materials	16990	16990	16990	16990	16990	16990	16990	16990	16990	16990	16990	16990
6	OtherDirectCosts	2610	5220	5310	5386	5386	5386	5386	5386	5386	5386	5386	5386
7	Travel International	0	14500	31600	31600	31600	31600	31600	31600	31600	31600	31600	31600
8	Travel Domestic	3950	7900	7900	7900	7900	7900	7900	7900	7900	7900	7900	7900
9	Travel Total:	3950	22400	39500	39500	39500	39500	39500	39500	39500	39500	39500	39500
10	Non-Labor Expenses	27370	48430	65620	65696	65696	65696	65696	65696	65696	65696	65696	65696
11	Total Expenses	42990	79620	105565	114296	114296	114296	114296	114296	114296	114296	114296	114296
12	Overhead	1426	2852	4278	5704	5704	5704	5704	5704	5704	5704	5704	5704
13	Total project cost	**44416**	**82472**	**109843**	**120000**	**120000**	**120000**	**120000**	**120000**	**120000**	**120000**	**120000**	**120000**

0													
#	Item	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
1	Days - FWS	0	0	0	0	0	0	0	0	0	0	0	0
2	Days - NFWS	0	0	0	0	0	0	0	0	0	0	0	0
	Total Days:	0	0	0	0	0	0	0	0	0	0	0	0
1	Grants - FWS	0	0	0	0	0	0	0	0	0	0	0	0
2	Grants - NFWS	0	0	0	0	0	0	0	0	0	0	0	0
3	Grants total:	0	0	0	0	0	0	0	0	0	0	0	0
4	Equipment	0	0	0	0	0	0	0	0	0	0	0	0
5	Materials	0	0	0	0	0	0	0	0	0	0	0	0
6	OtherDirectCosts	0	0	0	0	0	0	0	0	0	0	0	0
7	Travel International	0	0	0	0	0	0	0	0	0	0	0	0
8	Travel Domestic	0	0	0	0	0	0	0	0	0	0	0	0
9	Travel Total:	0	0	0	0	0	0	0	0	0	0	0	0
10	Non-Labor Expenses	0	0	0	0	0	0	0	0	0	0	0	0
11	Total Expenses	0	0	0	0	0	0	0	0	0	0	0	0
12	Overhead	0	0	0	0	0	0	0	0	0	0	0	0
13	Total project cost	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

0													
#	Item	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
1	Days - FWS	0	0	0	0	0	0	0	0	0	0	0	0
2	Days - NFWS	0	0	0	0	0	0	0	0	0	0	0	0
	Total Days:	0	0	0	0	0	0	0	0	0	0	0	0
1	Grants - FWS	0	0	0	0	0	0	0	0	0	0	0	0
2	Grants - NFWS	0	0	0	0	0	0	0	0	0	0	0	0
3	Grants total:	0	0	0	0	0	0	0	0	0	0	0	0
4	Equipment	0	0	0	0	0	0	0	0	0	0	0	0
5	Materials	0	0	0	0	0	0	0	0	0	0	0	0
6	OtherDirectCosts	0	0	0	0	0	0	0	0	0	0	0	0
7	Travel International	0	0	0	0	0	0	0	0	0	0	0	0
8	Travel Domestic	0	0	0	0	0	0	0	0	0	0	0	0
9	Travel Total:	0	0	0	0	0	0	0	0	0	0	0	0
10	Non-Labor Expenses	0	0	0	0	0	0	0	0	0	0	0	0
11	Total Expenses	0	0	0	0	0	0	0	0	0	0	0	0
12	Overhead	0	0	0	0	0	0	0	0	0	0	0	0
13	Total project cost	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

0													
#	Item	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
1	Days - FWS	0	0	0	0	0	0	0	0	0	0	0	0
2	Days - NFWS	0	0	0	0	0	0	0	0	0	0	0	0
	Total Days:	0	0	0	0	0	0	0	0	0	0	0	0
1	Grants - FWS	0	0	0	0	0	0	0	0	0	0	0	0
2	Grants - NFWS	0	0	0	0	0	0	0	0	0	0	0	0
3	Grants total:	0	0	0	0	0	0	0	0	0	0	0	0
4	Equipment	0	0	0	0	0	0	0	0	0	0	0	0
5	Materials	0	0	0	0	0	0	0	0	0	0	0	0
6	OtherDirectCosts	0	0	0	0	0	0	0	0	0	0	0	0
7	Travel International	0	0	0	0	0	0	0	0	0	0	0	0
8	Travel Domestic	0	0	0	0	0	0	0	0	0	0	0	0
9	Travel Total:	0	0	0	0	0	0	0	0	0	0	0	0
10	Non-Labor Expenses	0	0	0	0	0	0	0	0	0	0	0	0
11	Total Expenses	0	0	0	0	0	0	0	0	0	0	0	0
12	Overhead	0	0	0	0	0	0	0	0	0	0	0	0
13	Total project cost	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Table 10. List of Personnel

Emp. Number	Number in Project	Surname (RU)	First Name (RU)	Second Name (RU)	Surname (EN)	Name (EN)	Passport Number	Project Number	Bank Account Number	Bank ID	Category Number	Advance	% of participation	Daily Rate	Tax ID Number	I-Code	Position at the organization	Participation in other STCU projects	state project numbers and % of participation
	1	Церетели	Давид	Гиорги	Tsereteli	David	G-0064039	P508	GE89VT7000000063883611	1	1	672	56	65	1015002004	1	Chief Researcher	Yes	#G-3992 - 23%
	2	Мгеладзе	Гела	Юри	Mgeladze	Gela	B-0007295	P508	GE41VT7000000000823611	1	1	550	59	50	1010001096	1	Chief Researcher	Yes	#P142 - 18%
	3	Имнадзе	Паата	Гиви	Imnadze	Paata	A-0093049	P508	GE40VT7000000061953611	1	1	195	24	45	103005827	1	Head of Scientific Board	Yes	#P142 - 11% #P142a - 10%
	4	Шавишвили	Мераб	Серго	Shavishvili	Merab	G-0137164	P508	GE11VT7000000002393611	1	1	385	30	35	1006006257	1	Senior researcher	Yes	#P142 - 36% #P142a - 58%
	5	Кекелидзе	Мераб	Геди	Kekelidze	Merab	G-0140848	P508	GE08VT7000000061623611	1	1	400	55	40	1024016802	1	Chief Researcher	Yes	#P142 - 11% #P142a - 27%
	6	Зангаладзе	Екатерине	Давид	Zangaladze	Ekaterine	B-0340093	P508	GE30VT7000000176613611	1	1	338	52	35	1001025415	1	Head of Department	No	
	7	Беридзе	Леван	Прокофи	Beridze	Levan	B-0209639	P508	GE05VT6600000279953611	1	1	230	21	30	1010009615	1	Researcher	Yes	#P142 - 36% #P142a - 23%
	8	Гиоргадзе	Тамара	Гиорги	Giorgadze	Tamara	D-0335805	P508	GE37VT7000000180353611	1	1	200	18	30	1025015113	1	Researcher	Yes	#P142a - 39%
	9	Грдзелидзе	Марине	Гиорги	Grdzelidze	Marine	B-0113931	P508	GE46VT7000000111853601	1	1	180	16	30	1026005417	1	Researcher	Yes	#P142a - 31%
	10	Шалуташвили	Иракли	Димитри	Shalutashvili	Irakli	D-0412181	P508	GE34VT6600000284223611	1	1	215	21	28	1030032691	1	Researcher	Yes	#P142 - 27% #P142a - 20%
	11	Дзнеладзе	Арчил	Михаил	Dzneladze	Archil	B-0378759	P508	GE73VT5500000162733611	1	1	215	21	28	61002014912	1	Researcher	Yes	#P142 - 27% #P142a - 20%
	12	Манвелян	Джулиета	Хосро	Manvelian	Julieta	G-0344268	P508	GE21VT7000000155453611	1	1	215	21	28	1011007704	1	Researcher	Yes	#P142 - 27% #P142a - 39%
	13	Кикалеишвили	Константин	Гиорги	Kikaleishvili	Konstantin	B-0441460	P508	GE93VT7000000364503611	1	1	103	10	28	1024025764	1	Researcher	No	
	14	Сафарова	Жана	Артем	Safarova	Jana	B-0142473	P508	GE35VT7000000715833611	1	1	183	20	25	1010007145	1	Laboratory assistant	Yes	#P142 - 24% #P142a - 39%
	15	Кодиашвили	Русудан	Шота	Kodiashvili	Rusudan	B-0684062	P508	GE16VT1000002255664506	1	1	183	20	25	10001043518	1	Laboratory assistant	Yes	#P142a - 41%
	16	Шанидзе	Манана	Иван	Shanidze	Manana	D-1056793	P508	GE28VT6600000001103611	1	1	183	20	25	1027024411	1	Laboratory assistant	No	
	17	Жгенти	Екатерине	Гурам	Zhgenti	Ekaterine	D-1071679	P508	GE79VT1000000715014506	1	2	380	70	30	1003015093	1	Senior Researcher	Yes	#P142 - 48% #P142a - 36%
	18	Чантурия	Гванца	Сосо	Chanturia	Gvantsa	D-0176723	P508	GE37VT1000000916094516	1	2	380	70	30	1025007943	1	Senior Researcher	Yes	#P142a - 45%
										Total grant advance:		**5207**							

1 VTB Bank of Georgia (VTB Georgia)
Chanturia #14, Tbilisi(0102) , Georgia

Bank Info
MFO UGEBGE 22
ZKPO None given
Transit Number 4354511

Annex 2 - Financial Provisions

Article 1 - Allowable Costs

1.1 Costs shall include actual costs incurred for the Project after the operative commencement date which are necessary for the performance of the project. Allowable costs may only include the cost categories defined in Articles 2 and 3 of this annex.

1.2 The original estimates of expenditures set forth in Annex I may be adjusted by the project manager between categories in consultation with the Center and Partner, and provided that the transfers do not fundamentally alter the scope or content of the project.

Article 2 - Direct Costs

2.1 Personnel

2.1.1 Personnel costs may be charged to the project as direct costs.

2.1.2 The institution and the project manager are responsible for certifying the times devoted to the Project by the individual participants, as reflected in project time cards prepared by individual participants. Personnel costs charged to the Project shall be in increments of one hour.

2.1.3 The project manager may increase the time commitments of personnel by up to 10 percent during one quarter of any individual without approval of the Center but may not change the daily rate without approval of the Center. The project manager may request more significant changes in personnel commitments, including changes in the names of personnel, at the beginning of each quarter. Such significant changes must be fully justified in writing. Changes in scientific personnel must provide for the new individual participants to have technical credentials and previous weapons experience comparable to those of the individual participants they replace. The Center, in consultation with the Partner, will respond promptly to such requests.

2.1.4 The Center will not pay personnel costs associated with holidays, vacations, overtime, or sick leave. Such additional costs, if any, are the responsibility of the Recipient(s).

2.1.5 Since the individual participants will remain employees of the institution, the Center's act of direct grant payments to the individual participants will not transfer from the Recipient(s) to the Center any liability for damages caused by the individual participants during execution of the projects or any liability for damages to the individual participants during execution of the Project.

2.1.6 The Recipient(s) is responsible for any medical expenses or compensation claims for injuries or other losses for personnel working on the project which are directly or indirectly related to the project.

2.1.7 Individual participants must personally record the hours worked on STCU projects on time cards according to the following procedures:

Project Manager and Participating Institution Manager Responsibilities

Project managers and Participating Institution Managers are required to do the following:

i. Provide project participants with a separate time card for each STCU project that they will work on. Each time card must contain a project number.
ii. Ensure that project participants understand which time card must be used to record hours worked on each project.
iii. Ensure that all project participants correctly record the hours worked on STCU projects according to the procedure described in the project participant responsibilities section below.
iv. Transmit completed time cards to the STCU no later than the 10th of each month.
v. Control blank time cards provided by the STCU.
vi. Certify that the hours recorded on the time cards are true and accurate by signing them.
vii. Obtain signatures of two other project participants on their own (project managers' and participating institution managers') time cards in addition to their own signature.

Project Participant Responsibilities

Project participants are required to do the following:

i. Complete a separate time card for each STCU project that they work on. Time cards are for a period of one month.
ii. Personally complete their time cards **each working day** and **in ink**.

iii. Correct time cards by crossing out mistakes and inserting the correct information on the next line; no erasures may be made to time cards. Project workers must initial the corrections.
iv. Sign their own time cards at the end of each month.
v. Certify, on an as needed basis, that the hours recorded on the time cards of the project manager or participating institution manager are true and accurate by signing their cards.

2.1.8 Payments to individual participants will be based on properly completed time cards as described in Section 2.1.7 above

2.1.9 The Center will provide blank time cards for use on this project. Such time cards will be printed on card stock and will be serially numbered. Only time cards provided by the Center may be used to record hours worked on STCU projects; photocopied time cards are not acceptable.

2.1.10 Project participation is limited as described in the STCU Standard Operating Procedure XXIV – Project Participation in STCU Projects: A copy of the this procedure may be obtained on the STCU's website at the following address: http://www.stcu.int/documents/reports/financial/.

2.2 Equipment

2.2.1 The cost of equipment used in the project which is purchased, fabricated, or leased may be charged to the Project as a direct cost. The total lease costs may not exceed the purchase price of the equipment.

2.2.2 Equipment purchased in accordance with Article 3.3 of the Agreement will be preserved, accounted for, and maintained throughout the term of the Project by the Recipient(s).

2.2.3 . Equipment purchased for the project should be identified as described in the STCU Standard Operating Procedure XXIII - Identification Of Equipment Purchased For Stcu Projects. A copy of the this procedure may be obtained on the STCU's website at the following address: http://www.stcu.int/documents/reports/financial/.

2.3 Materials

The costs of materials required for the Project shall be allowable costs.

2.4 Services and Other direct costs

2.4.1 Costs associated with (1) testing facilities, (2) computer services, (3) communication, (4) security services, (5) repairing/maintenance of equipment, (6) laboratory tests outside, (7) publications, and (8) patenting, but excluding items covered by Article 4 of Annex 2, may be charged as direct costs to the project through cost allocation formulas approved by the Center, provided such facilities and services contribute to the project and are accessible for monitoring and auditing in accordance with Article 9 of this agreement.

2.5 Travel and per diem

The following travel costs may be charged to the project:

i. Airline Tickets. Reimbursement is limited to the cost of coach or economy class airfare by the most direct, cost-effective routing.
ii. Train Tickets. Reimbursement for first class rail fare is authorized.
iii. Lodging.
    A. Within Country of Residence, reimbursement is limited to the lower of the actual cost or $100.00 (taxes not included) per day.
    B. Outside Country of Residence, reimbursement is limited to the lower of the actual cost or the maximum amount allowed in the U.S. Joint Travel Regulations (taxes not included). If lodging is pre-arranged for the traveler because of conference participation funded by the STCU, then the maximum amount allowed in the U.S. Joint Travel Regulations may be exceeded by up to 25% (taxes not included). In those exceptional cases where there are no accommodations available within the maximum amount allowed or accommodations are unacceptable, then the most cost-effective accommodation is authorized with prior approval of the responsible Deputy Executive Director. Maximum lodging rates outside of a country of

residence may be obtained from the STCU treasurer or at http://www.state.gov/m/a/als/prdm/xxxx[1]

C. Lodging without receipt is not compensated.

iv. Meals and Incidental Expenses (M&IE).
   1. Within Country of Residence, the M&IE is $35.00 per day.
   2. Outside Country of Residence, the M&IE is $50.00 per day.

v. Other Costs. Actual cost of passports, visa, or conference registration is authorized with receipt. Withdrawal fees accepted by the STCU.

vi. Use of Privately Owned Vehicle. Reimbursement for the use of a privately owned vehicle to perform travel is authorized at the rate of $.10 per kilometer. Records must be kept for this activity, including destination and kilometers traveled, and odometer readings. Documents must be signed and approved by project manager.

vii. Local Travel. Reimbursement for the actual cost of local travel (taxi, bus, etc.) is authorized. Receipts must be obtained.

2.5.1 Additional Travel and per diem information is contained in STCU Standard Operating Procedure V – Project Participants Travel. A copy of the this procedure may be obtained on the STCU's website at the following address: http://www.stcu.int/documents/reports/financial/.

Article 3 - Overhead

3.1 A fixed amount may be charged for project overhead to cover the cost of such items as general administration, institutional management, depreciation of buildings and equipment, maintenance, utilities, staff training or any other cost at discretion of the institute management.

3.2 The total fixed amount may not exceed 10 percent of total direct costs, exclusive of the cost of items provided in-kind by the Center.

3.3 One half of the direct overhead costs will be retained by the Center until project completion.

.Article 4 - Costs not Allowed

4.1 Allowable costs shall not include: profit; contributions to pension, medical, or other social funds; provisions for possible future losses or liabilities; taxes, including profit tax, value added tax, personal income tax, local taxes, tariffs, dues, customs duties, import duties, or others; and costs allocable to another project.

Article 5 - Cash Payments by the Center

5.1 Within Ukraine, all cash payments will be made in the national currency of Ukraine. Conversion of US dollars or Euro to the national currency of Ukraine will be according to the exchange rate of the Interbank Rate of Ukraine. Within Azerbaijan, Georgia, Uzbekistan, and Moldova all cash payment will be made in U.S. Dollars or Euros where possible. The Center shall pay its financial contribution through special bank accounts established.

5.2 The Center shall pay the following financial contribution:

(a) An advance payment, which is one third of the first quarter grant payment to the project grantees, as soon as possible following the operative commencement date;

(b) Quarterly grant payments after approval by the Center of the cost statement for the last completed quarter and, upon Partner's request, after approval by the Partner the quarterly progress report.

(c) Pursuant to Article 3.4, the Center shall make payments of overhead to the participating institutions represented by their respective directors as a fixed payment. One half of the allowable overhead will be paid to the Recipient(s) represented by its director after approval of progress and cost reports. Retention shall be made by the Center of 50% of the allowable overhead for the Recipient(s). The retention shall be released to the Recipient(s) represented by its director within one month following the approval by the Center of the last technical or financial document or other deliverable required by the Agreement.

(d) Current payments directly to vendors in amounts, which are estimated in Annex 1. Such payments shall be based on vendor invoices and other documents delivered to the Center with written requests from the project manager.

[1] Where "xxxx" is the year the travel will begin. For example: 2004.

5.3 The Center shall make grant payments directly to private bank accounts of the project grantees in accordance (1) with Letters of agreement between the Center and with each project grantee and (2) payment level rates set forth in Annex 1 and the amount of time devoted to the project by each grantee as certified by the project manager.

5.4 If the Center considers that the work has not effectively been commenced within three months of the payment of the first advance, the Center may require the reimbursement of the advance, together with any interest earned on the advance.

5.5 If on completion or termination of the work, the payments made by the Center exceed the actual allowable costs, the Recipient(s) shall promptly reimburse the difference to the Center. Interest may be added to this amount at the prevailing market rate as determined by the Center one month after the reimbursement date specified by the Center. Any reimbursements and the unspent portion of the Total Cost of the Project will be returned to the Partner account.

5.6 When the suspension becomes effective, the Center shall pay grants to the individual participants for the period they were engaged in the Project before the Center's declaration of suspension becomes effective. Any other payments to the Recipient(s) shall in principle be suspended as long as the suspension remains in effect.

5.7 If the Project is terminated, costs shall be limited to the allowable costs incurred by the Recipient(s) prior to the suspension and other costs which the Center considers to be fair and reasonable having regard to commitments which have been reasonably entered into and which cannot be canceled or avoided.

Article 6 - Project Accounting

The Recipient(s) shall maintain financial documentation, such as invoices, shipping documents and copies of time cards to support and justify the costs reported.

Article 7 - Timing of Financing

7.1 Funds will be disbursed when the partner has deposited the specified amount of its funding commitment to the partner activity, including the STCU fee. Funds are to be deposited in US dollars or Euro in the following account:

Commitment in USD:
Deutsche Bank Trust Company Americas, New York
Partner Contribution Account #04-406-956
Fedwire ABA #021001033
SWIFT BIC: BKTRUS33

Commitment in Euro:
Fortis Bank, Montagne du Park 3, B-1000 Brussels, Belgium
Account No. 210-0777641-44
IBAN: BE55 2100 7776 4144
SWIFT: GEBABEBB

7.2 Interest earned on partner funds will be retained by the STCU.

7.3 Partner will deposit its commitment in accordance with the following schedule

Payment	Due Date	Commitment to the total cost of the project	STCU fee	Total commitment
First payment	Before the Operative Commencement Date			
Second Payment				

Annex 3 - Reports

Article 1 - Cost Statements

1.1. Quarterly cost statements covering each three-month period following the operative commencement date shall be submitted to the Center within 20 days after the end of each reporting period. The format for cost statements will be provided by the Center.

1.2 A consolidated cost statement shall be submitted by the recipient to the Partner and the Center within two months of the completion, cessation, or termination of the work financed by the Partner.

If such a statement is not submitted on time, the Center or the Partner may request in writing its submission. If the Center and the Partner do not receive the submission within thirty-days after such a written request, the Center, in consultation with the Partner, may consider the previously claimed costs to be final and determine to make no further reimbursement.

Article 2 - Reports

2.1 The Recipient shall submit the following reports:

(a) Quarterly progress reports covering each three-month period following the operative commencement date shall be submitted to the Center, to the Partner and/or to the Technical Monitor in accordance with Article 4 within one month after the end of each reporting period. The format for progress report will be provided by the Center.

(b) Technical reports, requested by the Partner, containing a description of the significant results according to the deliverables determined in the Annex I – Work Plan, to be submitted to the Partner and/or to the Technical Monitor within one month after significant results are achieved.

(c) A final report covering all the work, the objectives, the results, and the conclusions, including a suitable summary of all these aspects shall be submitted to the Partner and/or to the Technical Monitor within two months of the completion of the Project work plan or termination of the Agreement, or the agreed completion date of the Agreement, whichever is the earliest. A suitable unrestricted summary of the final report shall be submitted to the Center.

2.2 It is the responsibility of the Recipient, in consultation with the Partner and/or with the Technical Monitor/, to indicate clearly what parts of reports contain invention or business confidential information and specify any limitations on circulation. For each report, an unrestricted version shall also be provided. All reports containing invention or business confidential information shall be handled by the Center according to established internal procedures

2.3 The Recipient shall submit any additional reports or any other deliverables requested by the Partner and/or by the Technical Monitor and specified in Annex 1.

Annex 4 – Intellectual Property

I. NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT.

Recipient shall report to the Partner, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this Project Agreement of which Recipient has knowledge and shall furnish to the Partner, at the expense of the Partner, when requested by the Partner, all evidence and information in possession of Recipient pertaining to such claim or any resulting suit.

II. PATENT RIGHTS.

(a) Definitions

(1) "Subject Invention" means any invention or discovery of Recipient conceived or first actually reduced to practice in the performance of work under this Project Agreement.

(2) "Patent Counsel" means the U.S. Department of Energy (DOE) Patent Counsel assisting the Partner.

(b) Invention disclosures and reports

(1) Recipient shall furnish Center, the Technical Monitor, and Patent Counsel:

(i) A written report containing full and complete technical information concerning each Subject Invention within two months after conception or first actual reduction to practice, whichever occurs first, in the course of or under this Agreement, but in any event prior to any on sale, public use, or public disclosure of such invention known to Recipient. The report shall identify the Project Agreement and inventor and shall be sufficiently complete in technical detail and appropriately illustrated by sketch or diagram to convey to one skilled in the art to which the invention pertains a clear understanding of the nature, purpose, operation, and to the extent known, the physical, chemical, biological, or electrical characteristics of the invention.

(ii) Upon request, but not more than annually, interim reports on a DOE approved form listing Subject Inventions for that period and certifying that all Subject Inventions have been disclosed or that there were no such inventions; and

(iii) A final report on a DOE-approved form within 3 months after completion of the Project Agreement work listing all Subject Inventions and certifying that all Subject Inventions have been disclosed or that there were no such inventions.

(2) Recipient agrees that the U.S. Government and the Technical Monitor may duplicate and disclose Subject Invention disclosures and all other reports and papers furnished or required to be furnished pursuant to this Project Agreement.

(c) Rights to Subject Inventions

(1) In accordance with the STCU Statute, all rights worldwide to Subject Inventions belong to the Recipient. The Recipient and the Partner have agreed to protect and allocate such Subject Inventions as specified in paragraph (c)(2) below.

(2) The Recipient has title to Subject Inventions in the New Independent States. Recipient hereby grants to the Technical Monitor the entire right, title and interest

to Subject Inventions in all countries other than the New Independent States. Recipient acknowledges the right of the Technical Monitor to file applications and execute all documents necessary to obtain patents in said countries. Subject Inventions jointly made by Recipient and the Technical Monitor shall be jointly owned.

(3) Recipient acknowledges that Partner may obtain title to each Subject Invention for which a patent application or applications are not filed by Recipient or the Technical Monitor and for which any issued patents are not maintained by Recipient and the Technical Monitor. To the extent that Partner acquires title to a Subject Invention, Recipient agrees to take such actions and execute all appropriate documents (at no expense to Recipient) to enable Partner to file, prosecute and maintain patent applications thereon.

(4) Recipient acknowledges that the U.S. Government retains a non-exclusive, nontransferable, irrevocable, paid-up license to practice or to have practiced by or on behalf of the U. S. Government every Subject Invention throughout the world.

(5) Recipient certifies that it has not entered, and will not enter**,** into an agreement with a third party that conflicts with this Project Agreement. To the extent that any subsequent agreement between Recipient and a third party conflicts with the allocation of rights in Subject Inventions under this Project Agreement, Recipient agrees that the terms of the Project Agreement will supersede the terms of the subsequent agreement.

(d) Publication

In order that information concerning scientific or technical developments conceived or first actually reduced to practice in the course of or under the Agreement is not prematurely published so as to adversely affect patent interests of the Technical Monitor, Recipient agrees to submit to the Technical Monitor for patent review a copy of each paper 60 days prior to its intended publication date. Recipient may publish such information after a 60-day period following such submission or prior thereto if specifically approved by the Technical Monitor, unless Recipient is informed in writing within the 60-day period, that in order to protect patentable subject matter, publication must further be delayed. In this event, publication shall be delayed up to 100 days beyond the 60-day period or such longer period as mutually agreed.

(e) Royalty Sharing

To the extent that the Technical Monitor licenses any Subject Invention to a third party which results in income therefrom, Recipient and the Technical Monitor will share the net income therefrom fifty percent (50%) to Recipient and fifty percent (50%) to the Technical Monitor. Net income is gross income less any expenses and costs associated with the licensing of a Subject Invention including, but not limited to, the cost of preparing, prosecuting and maintaining patents covering said Subject Inventions. The Technical Monitor will provide to Recipient annual reports setting forth the licensing activity for Subject Inventions by the Technical Monitor during the reporting period. The Technical Monitor will provide that any agreement to license a Subject Invention will be subject to the royalty sharing arrangement between the Technical Monitor and Recipient

(f) Employee Agreements

Recipient shall obtain agreements to effectuate the provisions of this Patent Rights clause from all persons in its employ who perform any part of the work under this Project Agreement except non-technical personnel, such as clerical employees and manual laborers.

III. RIGHTS IN DATA - GENERAL

(a) Definitions

(1) "Computer software," as used in this clause, means computer programs, computer databases, and documentation thereof.

(2) "Data," as used in this clause, means recorded information, regardless of form or the media on which it may be recorded. The term includes technical data and computer software. The term does not include information incidental to contract administration, such as financial, administrative, cost or pricing, or management information.

(3) "Form, fit, and function data," as used in this clause, means data relating to items, components, or processes that are sufficient to enable physical and functional interchangeability, as well as data identifying source, size, configuration, mating, and attachment characteristics, functional characteristics, and performance requirements; except that for computer software it means data identifying source, functional characteristics, and performance requirements but specifically excludes the source code, algorithm, process, formulae, and flow charts of the software.

(4) "Limited rights data," as used in this clause, means data (other than computer software) developed at private expense that embody trade secrets or are commercial or financial and confidential or privileged.

(5) "Technical data," as used in this clause, means data (other than computer software), which are of a scientific or technical nature.

(6) "Restricted computer software," as used in this clause, means computer software developed at private expense and that is a trade secret; is commercial or financial and is confidential or privileged; or is published copyrighted computer software; including minor modifications of such computer software.

(7) "Unlimited rights," as used in this clause, means the right of the U.S. Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so.

(8) "Limited rights," as used in this clause, means the rights of the U.S. Government and Partner in limited rights data as set forth in the Limited Rights Notice of paragraph (e)(2) of this clause.

(9) "Restricted rights," as used in this clause, means the rights of the U.S. Government and Partner in restricted computer software, as set forth in the Restricted Rights Notice of paragraph (e)(3) of this clause.

(b) Allocations of rights

(1)Except as provided in paragraph (c) below regarding copyright, Center, the U.S. Government and the Technical Monitor shall have unlimited rights in:

(i) Data first produced in the performance of this Project Agreement;

(ii) Form, fit, and function data delivered under this Project Agreement;

(iii) Data delivered under this Project Agreement (except for restricted computer software) that constitute manuals or instructional and training material for installation, operation, or routine maintenance and repair items, components, or processes delivered or furnished for use under this Project Agreement; and

(iv) All other data delivered under this Project Agreement unless provided otherwise for limited rights data or restricted computer software in accordance with paragraph (e) below.

(2) Recipient shall have the right to:

(i) Use, release to others, reproduce, distribute, or publish any data first produced or specifically used by Recipient in the performance of the Project Agreement, except to the extent provided in paragraph (d) below or otherwise expressly set forth in this Project Agreement;

(ii) Protect from unauthorized disclosure and use, those data which are limited rights data or restricted computer software to the extent provided in paragraph (e) below; and

(iii) Establish claim to copyright subsisting in data first produced in the performance of this Project Agreement to the extent provided in paragraph (c) below.

(c) Copyright

(1) In accordance with the STCU Statute, all rights worldwide to copyrights belong to Recipient. The Recipient and the Partner have agreed to protect and allocate such copyrights as specified in paragraph (c)(2) below.

(2) The Recipient has title to copyrights in the New Independent States. The Recipient hereby grants to the Technical Monitor the entire right, title and interest to copyrights in all countries other than the New Independent States. Recipient acknowledges the right of the Technical Monitor to execute all documents necessary to register copyrights in said countries. Copyrighted works jointly created by Recipient and the Technical Monitor shall be jointly owned.

(3) Recipient acknowledges that each of the Technical Monitor, the U.S. Government, Center, and each Party to this STCU Project Agreement has for itself and others acting on its behalf, a royalty-free, nonexclusive, irrevocable worldwide copyright license to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of each of them, all copyrightable works produced in the performance of this Project Agreement.

(4) For all copyrighted computer software produced in the performance of this Project Agreement, the party owning the copyright shall provide the source code, an expanded abstract, and the object code and the minimum support documentation needed by a competent user to understand and use the software to DOE's Energy Science and Technology Center, P.O. Box 1020, Oak Ridge, TN 37831. The U.S. Government shall have unlimited rights in said expanded abstract.

(5) Recipient agrees to place copyright and other notices, as appropriate for the protection of copyright, in human-readable form onto all physical media, and in digitally encoded form in the header of machine readable information recorded on such media such that the notice will appear in human-readable form when the digital data are off-loaded or the data are accessed for display or printout.

(6) Recipient shall not, without prior written permission of the Partner, incorporate in data delivered under this Project Agreement any data not first produced in the performance of it and which contains a copyright notice, unless Recipient identifies such data and grants to the U.S. Government, or acquires on its behalf, a license of the same scope as set forth in paragraph (3) above, provided, however, that if such data are computer software, the U.S. Government shall acquire a copyright license as set forth in paragraph (e)(3) below if included in this Project Agreement or as otherwise may be provided in a collateral agreement incorporated in or made part of it.

(d) Release, publication, and use of data

(1) Recipient shall have the right to use, release to others, reproduce, distribute, or publish any data first produced or specifically used by Recipient in the performance of this Project Agreement, except to the extent such data may be subject to the U.S. federal export control or national security laws or regulations, or unless otherwise provided below in paragraph (d)(2) or expressly set forth in this Project Agreement.

(2) Recipient agrees that to the extent it receives or is given access to data necessary for the performance of this Project Agreement, which contain restrictive markings, Recipient shall treat the data in accordance with such markings unless otherwise specifically authorized in writing by Partner.

(e) Protection of limited rights data and restricted computer software

(1) When data are specified to be delivered under this Project Agreement and qualify as either limited rights data or restricted computer software, if Recipient desires to continue protection of such data, Recipient shall withhold such data and not furnish them to the Technical Monitor, Partner or Center under this Project Agreement except as provided for in paragraphs (2) and (3) below. As a condition to this withholding, Recipient shall identify the data being withheld and furnish form, fit, and function data in lieu thereof. Limited rights data that are formatted as a computer database for delivery to the Technical Monitor or Partner are to be treated as limited rights data and not restricted computer software.

(2) Limited Rights [This paragraph can be deleted if it is determined that there is no necessity for delivery of Limited Rights Data under this Project Agreement.]

Partner may require by written request the delivery of limited rights data that has been withheld or would otherwise be withholdable. If delivery of such data is so required, Recipient may affix the following legend to the data and the Technical Monitor and the U.S. Government will thereafter treat the data in accordance with such Notice:

LIMITED RIGHTS NOTICE

These data are submitted with limited rights under STCU Project Agreement No. _____. These data may be reproduced and used by or on behalf of the U.S. Government with the express limitation that they will not, without written permission of Recipient, be used for purposes of manufacture nor disclosed

outside the (insert name of the Technical Monitor) or the U.S. Government; except that (insert name of the Technical Monitor) or Government may disclose these data outside (insert name of the Technical Monitor) or the U.S. Government for use and evaluation by other contractors and/or entities participating in the Government's program of which this Project Agreement is a part provided that (insert name of the Technical Monitor) or the U.S. Government makes such disclosure subject to prohibition against further use and disclosure.

(END OF NOTICE)

(3) Restricted Rights [This paragraph can be deleted if it is determined that there is no necessity for the delivery of Restricted Computer Software under the Project Agreement.]

The Project Agreement may identify and specify the delivery of restricted computer software, or Partner may require by written request the delivery of restricted computer software that has been withheld or would otherwise be withholdable. If delivery of such computer software is so required, Recipient may affix the following legend to the computer software and the Technical Monitor and the U.S. Government will thereafter treat the computer software in accordance with the Notice:

RESTRICTED RIGHTS NOTICE

(1) This computer software is submitted with restricted rights under STCU Project Agreement No. _____. It may not be used, reproduced, or disclosed by the Technical Monitor or the U.S. Government except as otherwise expressly stated in this Project Agreement.

(2) This computer software may be:

(a) Used or copied for use in or with the computer or computers for which it was acquired, including use at any Government installation to which such computer or computers may be transferred;

(b) Used or copied for use in a backup computer if any computer for which it was acquired is inoperative;

(c) Reproduced for safekeeping (archives) or backup purposes;

(d) Modified, adapted, or combined with other computer software, provided that the modified, combined, or adapted portions of the derivative software incorporating restricted computer software are made subject to the same restricted rights;

(e) Disclosed to and reproduced for use by any U.S. Government contractors in accordance with subparagraphs (2)(a) through (d) of this Notice, provided the DOE facility or the U.S. Government makes such disclosure or reproduction subject to these restricted rights; and

(f) Used or copied for use in or transferred to a replacement computer.

(3) If this computer software is published copyrighted computer software, it is licensed to the U.S. Government without disclosure prohibitions, with the minimum rights set forth in paragraph (2) of this Notice.

(4) This Notice shall be marked on any reproduction of this computer software, in whole or in part.
(END OF NOTICE)

(f) Royalty Sharing

To the extent that the Technical Monitor licenses to a third party any copyrighted work produced in the performance of this Agreement which results in income therefrom, Recipient and the Technical Monitor will share the net income therefrom fifty (50%) to Recipient and fifty percent (50%) to the Technical Monitor. Net income is gross income less any expenses and costs associated with the licensing and protection of the copyrighted work including, but not limited to, the costs of obtaining and maintaining the copyright. The Technical Monitor will provide Recipient annual reports setting forth the licensing activity for said copyrighted works by the Technical Monitor during the reporting period. The Technical Monitor will provide that any agreement to license a copyrighted work produced in the performance of this Agreement will be subject to the royalty sharing arrangement between the Technical Monitor and Recipient.

(g) Employee Agreements

Recipient shall obtain agreements to effectuate the provisions of this Rights in Data clause from all persons in its employ who perform any part of the work under this Project Agreement.

IV. ADDITIONAL DATA REQUIREMENTS [This clause can be deleted if all technical data requirements are known in advance of entering into the Project Agreement and are set forth in the Work Plan.]

(a) In addition to the data (as defined in Clause III, Rights in Data-General) specified elsewhere in this Agreement to be delivered, Partner may, at any time during Agreement performance or within a period of three years after acceptance of all items to be delivered under this Project Agreement, order any data first produced or specifically used in the performance of this Project Agreement.

(b) The Rights in Data-General clause included in this Agreement is applicable to all data ordered under this Additional Data Requirements clause. Nothing contained in this clause shall require Recipient to deliver any data the withholding of which is authorized by the Rights in Data-General clause of this Project Agreement, or data which are specifically identified in this Project Agreement as not subject to this clause.

(c) When data are to be delivered under this clause, Recipient will be compensated for converting the data into the prescribed form, for reproduction, and for delivery.

(d) Partner may release Recipient from the requirements of this clause for specifically identified data items at any time during the 3-year period set forth in paragraph (a) of this clause.

V. BACKGROUND INTELLECTUAL PROPERTY [This clause can be deleted if it is determined that no Recipient Background Intellectual Property is to be used during the performance of the Project Agreement.]

"Background Intellectual Property" is intellectual property (e.g., inventions, software, copyrights, trademarks) belonging to Recipient that was in existence before this Project Agreement. A background invention is an invention or discovery of the Recipient that was conceived outside of this Project Agreement and not first actually reduced to practice (i.e., demonstrated) under this Agreement. Recipient has identified the following Background Intellectual Property that may be used in the performance of this Project Agreement: