

*Nonproliferation Through Science  
Cooperation*



# **International Science and Technology Center: Support for Decontamination and Counter Terrorism**

M.G. Valentine – Senior Project Manager, Partner Dept.  
S.V. Genisaretskaya – Senior Project Manager, Global Security Dept.

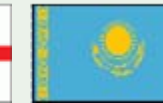
19-22 May 2008

# Core Objectives



- ***Redirect*** former WMD scientists of FSU
- Reinforce the ***transition to the market*** economy
- Help ***integrate WMD scientists*** into the global scientific community
- Contribute to ***solving*** national/global science & technology ***problems***
- Support basic and applied ***research***

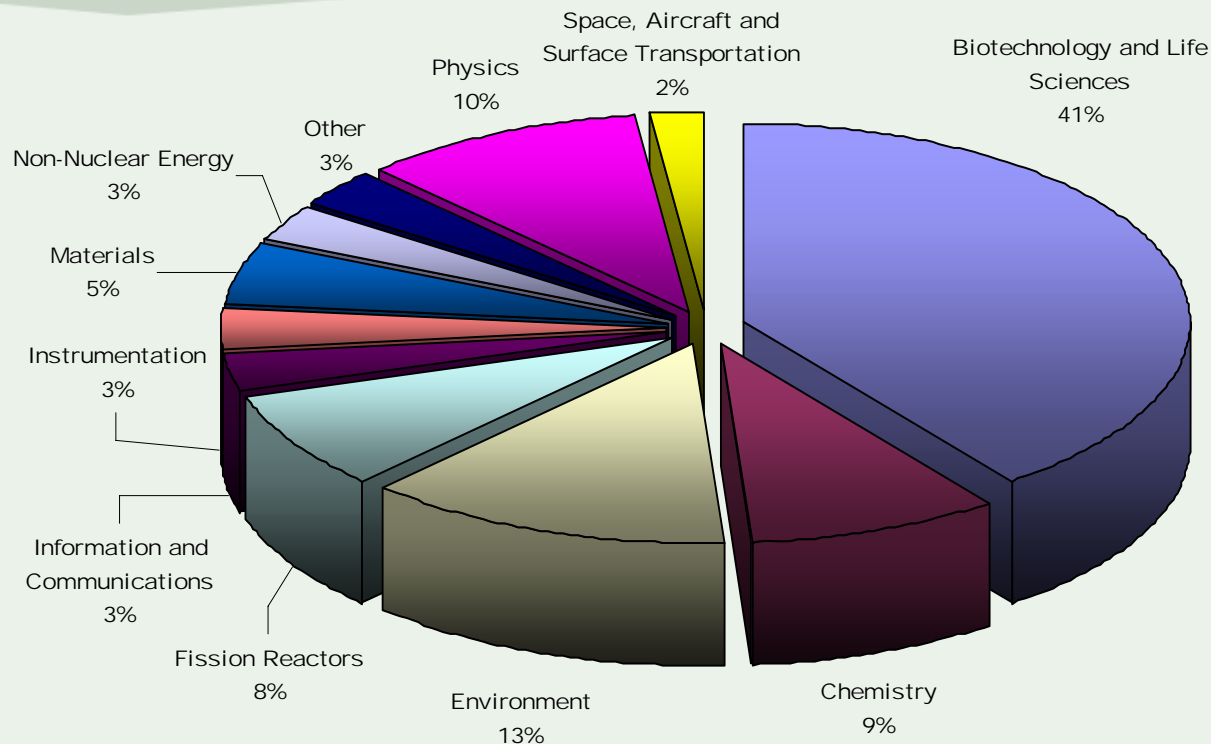
# History



- **Founded in 1992 by the governments of the EU, Japan, the USA and Russia; operations began in 1994 in Moscow**
- **ISTC now has 37 member countries (25 from EU), representing the FSU, Europe, Asia, and North America**
- **Parties and Partners select and fund scientific projects in FSU**
- **ISTC manages projects and directs supporting programs for project participants and institutes**

# Technology Areas

*Bio, environment, physics, key areas for ISTC funding for several years*



***The ISTC has engaged more than 74,000 scientists on scientific projects worth over \$790 million in funding***

# ISTC Support for CWD – Decon, Monitoring, Clean-up

## **Funded Travel to CWD 2008; see presentations:**

- **GosNIIOKhT**
- **RIHOPHE**
- **RIHTOP**
- **RACEM (Kirov, Russia)**
- **Company “Kaustik” (Pavlodar, Kazakhstan)**
- **Udmurtia State Univ. (Izhevsk, Russia)**
- **AIPET (Almaty, Kazakhstan)**
- **Inst. Microbiology and Virology (Almaty, Kazakhstan)**

# Global Security



## *In 2005, ISTC adds new department Global Security and Strategic Planning*

New GS department will *not just redirect* former weapons scientists, but *specifically redirect* them towards science and technology that addresses counter-terrorism, disarmament, non-proliferation, and CBRN security issues:

- Safety and security of facilities
- Transportation and containment of dangerous goods
- Destruction and conversion of dangerous materials
- Material and process controls
- Detection and enforcement products
- **DECONTAMINATION STANDARDS**

# Examples: ISTC Regular Projects

- 3316 **“Surface Decontamination after Chemical Terrorism: Safety Standards Development”** - *Scientific Research Institute of Hygiene, Toxicology and Occupational Pathology, Volgograd, Russia*

## **Goal:**

*to develop appropriate methodology and to determine main methodical techniques of the specified standards substantiating .*

## **Expected results:**

*Safety standards for chemical agents residues onto building structures' surfaces after decontamination. Regulatory and methodical document on decontamination safety standards .*

## Examples: ISTC Regular Projects

- 3645 “**Experimental Substantiation of Maximum Allowable Soil Contamination after Chemical Terrorist Acts**” - *Scientific Research Institute of Hygiene, Toxicology and Occupational Pathology, Volgograd, Russia*

### **Goal:**

*experimental substantiation of maximum allowable soil contamination after chemical terrorist acts.*

### **Expected results:**

*the algorithm and methodological recommendations for determination of maximum allowable sarin contamination in basic types of soil taking into account their main functions.*

# Examples: ISTC Regular Projects

- 3320 “**Development of Analytical Methodology for Quantitative Determination of Organophosphorus Chemical Agents in Air**” - *Scientific Research Institute of Hygiene, Toxicology and Occupational Pathology, Volgograd, Russia*

## **Goal:**

*to develop analytical methodology for quantitative determining of OP chemical agents in atmospheric air (at the level of rated safety standards:  $5 \times 10^{-8} \text{mg/m}^3$  -  $2 \times 10^{-7} \text{mg/m}^3$ ).*

## **Expected results:**

*The methodology will form the basis for metrologically certificated techniques for sarin, soman, and Vx analysis in air, and creation of the systems for these substances monitoring in the districts of chemical weapons destruction facilities location.*

# Examples: ISTC Regular Projects

- 3106 “**Development of Multi-Purpose Technology for Detection of Toxic, Explosive and Radioactive Chemical Compounds and Inactivation of Organisms**” - *Khlopin Radium Institute, St Petersburg, Russia*

## **Goal:**

*to develop the procedure for extraction of toxic substances from the paper surface (prevention of mail terrorism)*

## **Expected results:**

*An integrated technology for inactivation and extraction of toxic chemical compounds and radionuclides from the paper surface and their partial destruction. The technology can be used for detection and neutralizing of post enclosures.*

# Examples: ISTC Regular Projects

- **G-1408 “Creation of a Novel Complex Phytoremediation Technology for Rehabilitation of Soils and Waters Polluted with Explosives”** - *Durmishidze Institute of Biochemistry and Biotechnology, Tbilisi, Georgia*

## **Goal:**

*to create a novel, original ecological technology for rehabilitation of soils and waters on the territories of hostilities, proving grounds, sites of dislocation of military compounds, armament factories, storehouses, etc.*

## **Expected results:**

*a biotechnology demanded in industry and commercial organizations concerned with remediation of chemically polluted sites, as well as policy makers - departments responsible for environmental monitoring.*

# New Decon Technologies and Counter-Terrorism Support

## **G8 Global Partnership Donor Participation**

- **Parties of ISTC have designated their contributions to ISTC as fulfilling Global Partnership pledges**
- **Majority of funds directed at first 3 Global Partnership priorities: submarine dismantlement, fissile material disposition, and CHEMICAL WEAPONS DESTRUCTION**
- **Through ISTC projects, CIS scientists can be active participants in nonproliferation, not just passive recipients of funds**
- **CIS science as resource for developing necessary technologies for GP work - Decontamination, Counter-Terrorism - “two birds with one stone” approach**

# ISTC Unfunded Projects: waiting for your support?

- 3840 **“Working out and Estimation of New Ways and Methods of Area Disinfection Contaminated as a Result of Bioterrorism at Low Temperature”** - *Research and Production Center for Environmental Monitoring "RACEM", Kirov, Russia*

**The main goal** is to create and to estimate such decontamination means and methods, which are able quickly to inactivate infectious bio-agents at lower temperature and under the field conditions.

*Contact information:*  
 Viktor M. Syutkin  
 racem@racem.org

# ISTC Unfunded Projects: waiting for your support?

- 3441 **“The Development of a Method and Creation of a Prototype Mobile Unit for Remediation of Soils Contaminated by Highly Toxic Unsymmetrical Dimethylhydrazine Upon Testing, Launching, Disposal of Missiles and Accidents”** - *Institute of problems of chemical-energetic technologies Siberian Branch of Russian Academy of Sciences, Biysk, Altay reg., Russia*

**The main goal** is to develop a technology and complex of technical devices for effective localization and decontamination of chemical and radioactive environmental pollutions by the method of removable polymeric covers.

*Contact information:*  
Sergey Il'yasov  
ipcetadm@yourline.ru

# ISTC Unfunded Projects: waiting for your support?



- **G-1581 “Development of Combined Physical-Chemical Method of Purification of Drinking Water of High Toxic Compounds and Pathogenic Microflora, Contaminated in Terrorist Acts or Man-Caused Accidents”** - *Georgian Technical University, Tbilisi, Georgia*

**The main goal** is to develop a new effective combined method of oxidation decomposition of high toxic compounds and water decontamination from pathogenic microorganisms, based on use of high intensity pulse ultraviolet continuous spectrum radiation and ozonators allowing to achieve gas ozone concentration of up to 200 mg/l.

*Contact information:*

Shalva Andguladze

shalvaandguladze@yahoo.com

# ISTC Unfunded Projects: waiting for your support?

- K-1174 “**Microbiological Way of Detoxication of Soil Polluted with Asymmetric Dimethylhydrazine**” - *Infracos-Ecos, Almaty, Kazakstan*

**The main goal** is to develop optimum conditions for microbiological decontamination of soils polluted with asymmetric dimethylhydrazine (ADMH).

*Contact information:*  
Zhailaubay Zhubatov  
infracos-ecos@nursat.kz

Conclusion



# **ISTC: International Support for Decontamination and Counter- Terrorism**

**Thank you for your attention**

**Questions and comments?**

# Contact



**[www.ISTC.ru](http://www.ISTC.ru)**

**Michael G. Valentine**

**Senior Project Manager**

**[Valentine@istc.ru](mailto:Valentine@istc.ru)**

**+7 495 982 3153**

**Svetlana V. Genisaretskaya**

**Senior Project Manager**

**[Genisaretskaya@istc.ru](mailto:Genisaretskaya@istc.ru)**

**+7 495 982 3260**