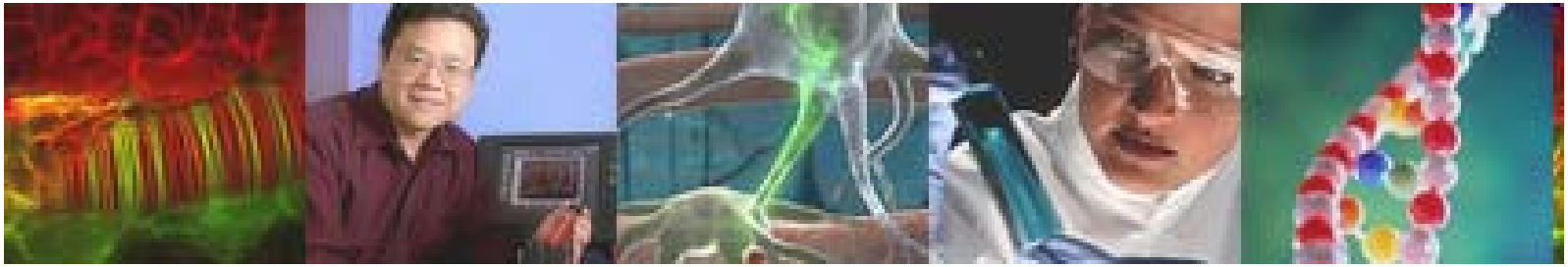
How to Leverage Science and Technology to Strengthen the BWC and Nonproliferation Norms: Experience of the Science and Technology Center in Ukraine



STCU Senior Specialist in Bio area Dr. Vlada Pashynska

Global Forum on Scientific Advances Important to the BTWC,

Geneva, Switzerland, December 3, 2018

Great recent progress in science and technology resulted in a great number of benefits for the human society, in particular in communication, transport, energetic areas and in the health care.

However this S&T progress has also resulted in **arising of the risks of weapons-of-mass-destruction** (WMD) development and distribution; increase of **Chemical, Biological, Radiological, and Nuclear (CBRN)** threats and risks of "dual-use" technologies illegal usage, including chemical and biological terrorism.

How to mitigate the WMD and CBRN risks?

How to control the "dual-use" technologies development and usage?

How to leverage science and technology to strengthen the BWC?

Addressing these questions and engaging the scientists into the civilian R&D and training projects are the main directions and prior activities of my organization.

Science and Technology Center in Ukraine - STCU is an intergovernmental organization with the status of a diplomatic mission, established in 1993.

The STCU was created to deter the spread of weapons-of-mass-destruction (WMD) knowledge by assisting former WMD experts in their transition to self-supporting, peaceful activities in the international science and business communities.

STCU current mission is

Chemical, Biological, Radiological, and Nuclear (CBRN) risks mitigation by supporting civilian science and technology partnerships and collaboration that address global security threats and advance non-proliferation.

STCU realizes the Mission through the following mechanisms:

- Supporting the integration of scientists with WMD applicable knowledge into global scientific and economic communities through national, regional, and international research collaboration in civilian R&D projects;
- Development of sustainable culture of nonproliferation and CBRN security awareness and responsibility through education, mentorship, and training;
- Promoting the international best practices and security culture to mitigate CBRN security threats.

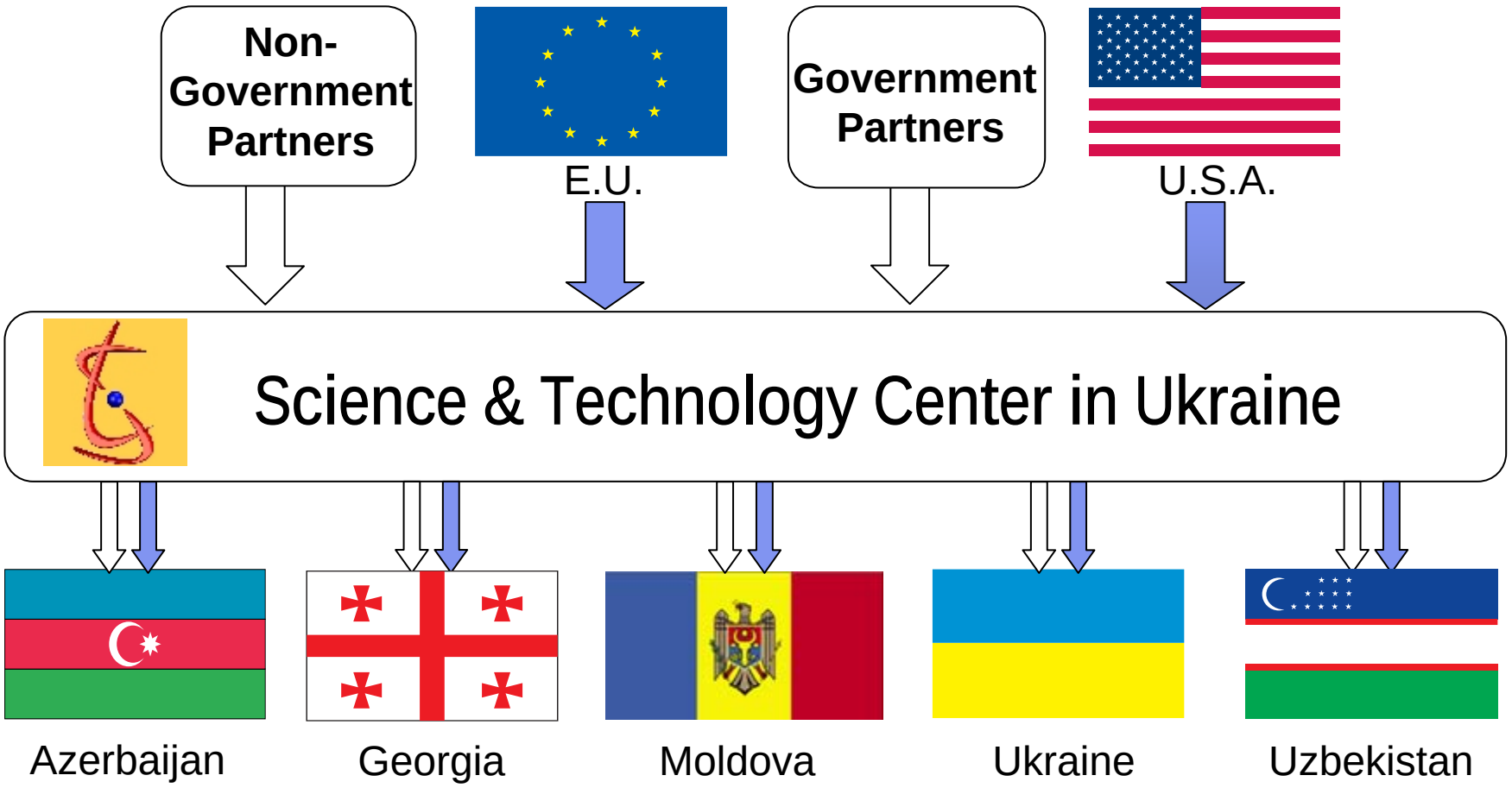
STCU Membership Includes Five Recipient Countries

Over 1,000 Scientific and Technical Institutes

Approximately **20,000** scientists were involved

STCU has engaged about **12,000 former weapons scientists**, plus 5,000 other scientific personnel

The Financing and Recipient Parties Mechanism



STCU Core Programs and Services

- **Partner Projects Program**
  - **Regular Projects Program (TRDI co-funded projects)**
- Institute Sustainability Program
- Patenting Program
- Partner Promotion Program
- Workshops and Scientific Seminars support
- Travel Grants (related to supported events)
- Communication Support Program

Main STCU Advantages

- Direct, tax-free payments (grants) to researchers' personal bank accounts.
- Customs clearance assistance provided; procurement of equipment and materials free of duties and taxes.
- Host government concurrence and security review.
- Professional project management, including technical and financial monitoring.
- Knowledge of Recipient Parties' R&D communities and their capabilities.
- Support for peaceful, civilian research.

Monitoring of the STCU projects progress - mechanism of the “dual-use” technologies control

- Regular projects reporting: technical and financial reports (Quarter progress reports, Annual, Technical stage and Final reports)
- Projects technical/financial audits on the places of the projects implementation (annually)
- Every day communication (e-mail, phone, skype, etc) with the STCU project coordinator and other related staff
- Post-projects engaging with the projects teams by the assistance in the Partners (investors) search, technology transfer assistance, etc.

>20 Years of Progress and Results

STCU has engaged:

- Nearly **1,000** Scientific Technical Institutes.
- Over **20,000 scientists**, of which over **12,000** were Former Weapons Scientists during the Soviet times.

Total Funding:

- Over 1700 Projects (over $274 Million USD)

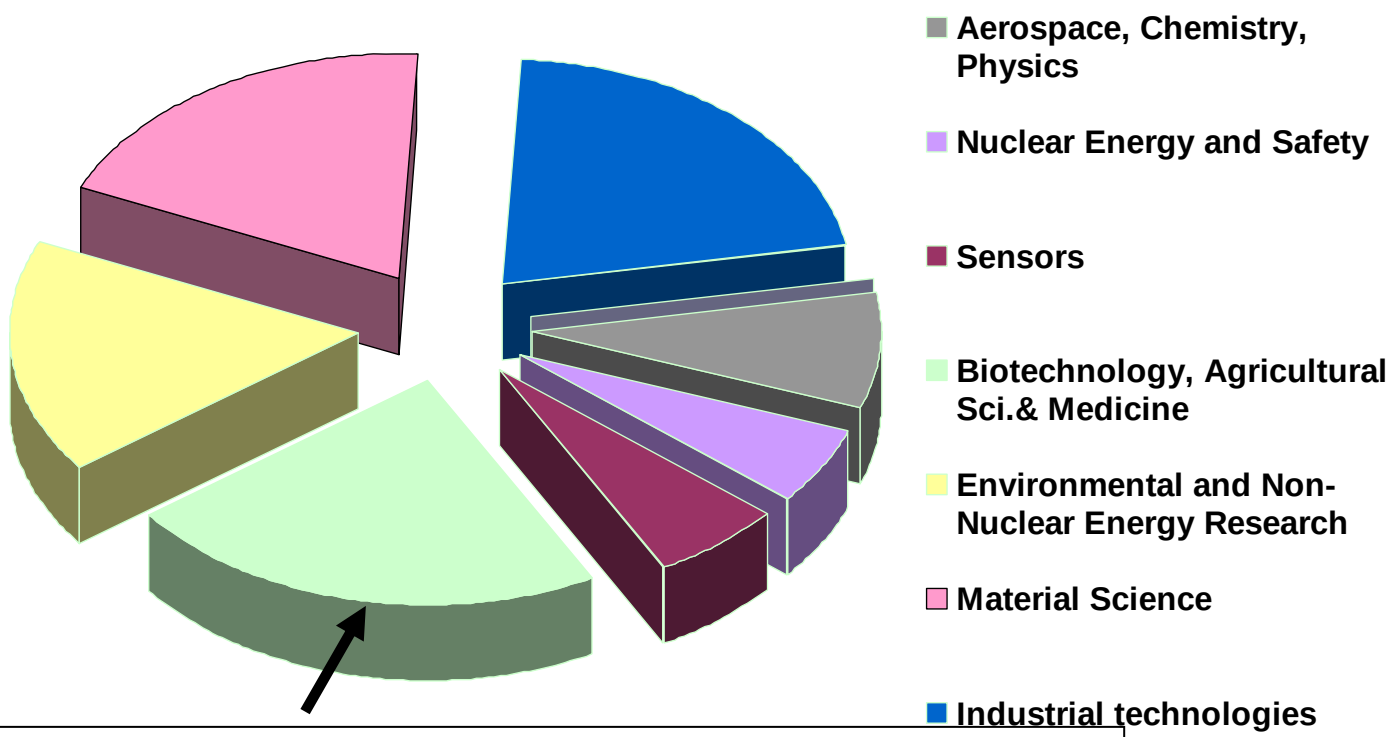
- Over 276 Partner Organizations Funding 630 Partner Projects (over $124 Million USD)

Supplemental activities:

- Over 270 Patent Applications on STCU Project Results
- Conferences support - $4Million
- Travel support - $ 1,2Million

"Biotechnology, Agricultural Sciences and Medicine" is one of the prior STCU projects area and now it is a leader in funded project amount

STCU Regular and Partner Projects by Disciplines



STCU funded for today more than 440 projects in Bio-area

More than two thousand scientists and specialists involved in Biological Weapon related investigations in Soviet Union times were redirected by engaging in the STCU projects

STCU Biosafety & Biosecurity and BWC Recent Initiatives

In the context of the main non-proliferation and CBRN security threats reduction mission and understanding the extremely importance of international cooperation on Biosafety in modern global word the STCU enhances the efforts in this area and declares the activity in Biosafety and BWC implementation as prior.

ESTABLISHMENT OF THE FIRST TRAINING CENTER IN BIOSAFETY AND BIOSECURITY IN UKRAINE AT THE I.I. MECHNIKOV UKRAINIAN RESEARCH ANTI-PLAGUE INSTITUTE

Program funding: the Government of Canada

2008 - 2011

US $360,000

Results of the Program:

- Designed the new training facility
- Completed a large-scale reconstruction of the training premises
- Purchased and installed equipment for the training facility
- Developed modern training programs in Biosafety, Biosecurity, and Biorisk management, as well as computer tests for the evaluation of the effectiveness of developed trainings
- Conducted a number of pilot trainings

Advanced STCU projects in B&B

Bio-safety and bio-security improvement at the Ukrainian Anti-Plague Station (UAPS) in Simferopol (Crimea): Securing Ukrainian Anti-Plague Station facility

BioSafety

Program funding: European Commission, DG DEVCO Directorate

In 2012-2013 years the STCU project 9800 “UAPS - Securing Existing Facility to Improve Biosecurity Level” was performed and completed successfully. **Large-scaling reconstruction** of the existing UAPS facility has been carried out on a budget about ***200,000 EUR*** to provide physical protection of the National Strains Collection and UAPS territory and to implement the modern international requirements in biosecurity including video surveillance and access control systems at the Station.

The established bordering premises walls.

Controlled access to the reference collection room.

The installed video surveillance cameras.

1 August, 2011 – 24 May, 2014

Education and awareness-raising in Ukraine

Project funding: Ministry of Defense, Great Britain

July 2014 – December 2017 ~USD 370,000

At the meeting of States Parties to the BTWC in December 2008, it was recognized that scientists working in the life sciences were not well aware of the Dual-Use and of possible use of their research with dangerous purposes. It was agreed that education and awareness raising amongst life sciences researchers could help to prevent malicious application of knowledge and achievements.

✓The official web-platform (www.bsseducation.com.ua) has been created for spreading the modern advanced information associated with the Project.

✓The special educational module 'Biosafety, Biosecurity & Bioethics' and appropriate educational materials were developed and trialled in a number of advanced Ukrainian universities.

✓Nine Regional and three International meetings 'Awareness raising and education on Biosafety&Biosecurity in Ukraine' conducted in the framework of the project.

✓ 43 universities in 17 regions of Ukraine were involved in the project activities, with a total of over 820 participants (international experts, representatives of Ukrainian governmental, research/educational institutions and life sciences university students).

US Government Partners: Biosafety& Biosecurity

U.S. Department of Defense / Defense Threat Reduction Agency (DTRA) (STCU Partner since 2001)

U.S. Department of Agriculture / Agriculture Research Service (STCU Partner since 2001)

U.S. Department of Energy /Initiatives for Proliferation Prevention Program (STCU Partner since 2001)

U. S. Environmental Protection Agency (STCU Partner since 2003)

U.S. Department of Health and Human Services/Biotechnology Engagement Program (DHHS/BTEP) (STCU Partner since 2004)

U.S. Department of State/Bio Industry Initiative (BII) Program (STCU Partner since 2005)

Summary: STCU invites all Stakeholders to cooperate in B&B and BWC implementation areas through the STCU projects

- **STCU provides CBRN risks mitigation and BWC implementation through engaging the life scientists into civilian R&D projects and through appropriate training and educational projects.**

- **STCU has great experience in development of cooperation and innovation in biotechnology, medicine, agriculture research as well as in Biosafety & Biosecurity and BWC implementation areas.**

- **STCU activities in the areas of Biosafety&Biosecurity and BWC implementation promote the introduction of international best practices and security culture to the STCU Recipient Countries aiming the mitigation or corresponding security risks.**

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