

*Working 15 Years...*



SCIENCE & TECHNOLOGY  
CENTER IN UKRAINE



*...For a Safer and Better World*

# ANNUAL REPORT

# 2009

For a Safer and Better World,  
Supporting the Transition of Weapon  
of Mass Destruction Research into  
Peaceful Civilian Application



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# WELCOME FROM THE CHAIRPERSON OF THE STCU GOVERNING BOARD



**Anneli Pauli,**  
**Chairperson of the STCU Governing Board**

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The past year has seen the beginning of a transition for the STCU. Indeed, the Governing Board made the decision to relocate the Secretariat Headquarters into a newly built, modern, and permanent building by 2012. Until the construction of this new facility is completed, the Secretariat Headquarters is hosted in new temporary premises located on the campus of the Kyiv Polytechnic Institute. The relocation was carried out in a very short time in early 2009, thus allowing the STCU to continue providing its services to the former weapon scientists from Azerbaijan, Georgia, Moldova, Ukraine, and Uzbekistan, and to work with its Funding Parties and Partners with minimal disruptions.

Within the STCU's activities, it is worth noticing the further extension of the very successful Targeted Research & Development Initiatives (TRDI) Program to Moldova. The first cycle of this program with the Moldovan Academy of Sciences was inaugurated with the approval of six projects co-financed equally by Moldova and the Funding Parties (Canada, the European Union, and the United States), for a total of approximately \$300,000 USD. The TRDI Program is now up and running in Azerbaijan, Georgia, Moldova, and Ukraine and saw in 2009 the selection of 38 projects matched by equal funding amounts from each of these four Recipient Parties and from the Funding Parties. Such a co-financing set-up would have been unimaginable 10 years ago and demonstrates how, progressively, the STCU successfully initiated a transition from the traditional donor-recipient approach to a partnership approach.

The traditional support to regular research projects continued, allowing the scientists to carry out innovative scientific and technological research activities in collaboration with scientists from Canada, the EU, and the U.S. While the TRDI Program was primarily designed to encourage the transition toward self-sustainability of the Ukrainian, Georgian, and other CIS scientists, the regular project scheme was the traditional means to support a broad community of former weapon scientists to advance science in all thematic areas, and to help integrate these former weapon scientists into the international scientific community. As in the past year, the accent was put on thematic areas of priority interest to respond to the socio-economical and environmental needs of the recipient countries.

In a year of difficult economic conditions following the international economic and financial crisis, the Partner Program has shown resilience with a continued strong activity and funding amounting to more than half of the total STCU financial commitments to projects in 2009. This vitality demonstrates once again that STCU appears as a reliable partner for firms, small- and medium enterprises, and governmental entities to help them answer their civilian research needs by facilitating their access to formerly defense-oriented, high-level scientific and technological expertise from Ukraine, Azerbaijan, Georgia, Moldova, and Uzbekistan.

The STCU now enters its 15th year of operation and has all reasons to celebrate this anniversary in 2010. While it keeps on carrying out effectively its mission of non-proliferation of scientific knowledge of WMD, the STCU constantly adapts to an evolving environment by developing innovative programs and approaches. The STCU remains an asset that the Governing Parties will strive to bring into the future by revising its strategic plan in an effort to better address the contemporary non-proliferation, regional stability and security issues corresponding to the needs of its member countries and the international community.

It is therefore with great pleasure that I invite you to look at the various events that will mark this anniversary during the year 2010, including especially the dedicated 15th Anniversary event planned to take place in conjunction with the 31st Governing Board Meeting in the latter half of 2010.

At a time when peace, stability and security remain major concerns, the STCU provides an example of how cooperation through science can contribute to address these difficult challenges. Therefore, on behalf of all the members of the Governing Board, I would like to sincerely thank those who have made this possible, starting in particular with our Executive Director, Andrew Hood. I wish also to commend the other members of the STCU Management Committee, all the STCU staff in Kyiv and in the STCU regional offices, as well as the Parties delegations and the scientific advisors for their hard work and their efforts to ensure the success of STCU. Finally, the scientists of Ukraine, Azerbaijan, Georgia, Moldova, and Uzbekistan deserve our appreciation for their contributions to peace and prosperity through their scientific research and cooperation.



*Artist Conception of Proposed New Building Where STCU Will Be Located After 2012*

# WELCOME FROM THE STCU EXECUTIVE DIRECTOR



**Andrew Hood**

**STCU Executive Director**

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The year 2009 began with a major relocation of the STCU Headquarters (HQ) office to temporary premises offered by the Ukrainian government, in keeping with the decision of the 27th Governing Board Meeting on 18 November 2008. That Governing Board decision also posed a major challenge for the STCU staff, in that this office relocation had to be done in a manner that maintained “uninterrupted operations”. Surmounting this challenge became even more daunting when it became clear that the temporary premises at 7A Metalistiv Street (on the campus of Kyiv Polytechnic Institute) would be smaller than anticipated in the preliminary planning, and would not be ready for occupancy until mid-February 2009.

In spite of the many obstacles, by the end of February 2009 (just 2 weeks after the physical relocation was started) the STCU HQ office was operational in its new temporary offices. To the knowledge of the STCU Secretariat, none of the STCU’s many customers and stakeholders felt any impact during the relocation period.

Thus, I want this 2009 Executive Director Statement to reflect my utmost gratitude to the amazing professionalism displayed by the entire STCU Kyiv-based staff: they were given a significant challenge and, in my opinion, they met that challenge better than any Executive Director could ask. My thanks to:

- Mr. David Cleave, Chief Administrative Officer (and lead manager on the physical relocation)
- Mr. Victor Rossikhin, Chief Maintenance Officer
- Mr. Charles Rostron, Head of Information Technology Group
- Mr. Curtis Bjealjic, Chief Financial Officer
- Dr. Landis Henry, Deputy Executive Director (Canada)
- Mr. Michel Zayet, Deputy Executive Director (European Union)
- Mr. Victor Korsun, Depute Executive Director (United States)

And, while too numerous to mention by name, I want to extend my grateful appreciation for the effort, patience, and teamwork displayed by every member of the STCU staff, both in Kyiv and in our Regional Offices. Without their dedication to their jobs and their profession, STCU could not have met the Governing Board mandate for “uninterrupted operations” during this relocation. Further, the STCU HQ staff has shown great versatility and flexibility in fitting into their new office spaces.

Throughout this relocation, officials from the Ukrainian Ministry of Education and Science and from the National Technical University of Ukraine “Kyiv Polytechnic Institute” made their best efforts to support STCU. One can say that the Ukrainian government reaffirmed its long-term commitment to STCU by issuing a Cabinet of Ministers Decree (22.22.22) to provide STCU, at Ukrainian government expense, with modern, permanent, and suitable office premises by 2012. Architectural plans and construction permits for this permanent facility at Kyiv Polytechnic Institute had been finalized by the end of 2009, and both the Ukrainian government and Kyiv Polytechnic Institute repeated their intent to see STCU moved into these new premises by 2012. For these positive statements, and for its high-level commitment of support to STCU, the STCU Secretariat is grateful to the Ukrainian Party.

With great regret, STCU was not able to engage Uzbekistan or our Uzbek colleagues during 2009, as has been the case going back to 2006. This unfortunate situation led to the final STCU-Uzbek projects being completed, as scheduled, in 2009. The STCU Secretariat continues to hope that this situation will change, and that the mutually successful cooperation between Uzbekistan and STCU can soon be re-established.

During 2009, STCU continued to implement all of its programs with steady delivery and measurable progress. STCU held its 28th Governing Board Meeting in Baku, Azerbaijan, and is grateful for the hospitality of the Azeri government and the Azeri National Academy of Sciences (the 29th Governing Board Meeting was held in Kyiv, hosted by Kyiv Polytechnic Institute). STCU also held numerous events and workshops in Ukraine, Georgia, and Moldova, and sponsored promotional missions to France, the Czech Republic, Sweden, Canada, and the United States.

STCU experienced an overall decline in approved project funding in 2009, compared to 2008. This decline was due to a sharp decline in Regular Project funding, which comes from the traditional ex-WMD scientist redirection programs of the STCU Funding Parties (Canada, the EU, and the United States). But this reduction was partially offset by better-than-expected results from the Partners Program and the expansion of the Targeted R&D Initiatives Program. STCU also implemented the first 3 projects of its pilot Institute Sustainability Program.

Partner Project funding reached levels comparable to the 2008 levels, which was much higher than expected given the global economic situation in 2009. STCU also successfully started the first co-financed Targeted R&D Initiatives projects with Moldova, which made 2009 the highest level of Targeted R&D Initiative projects and project funding since the program began in 2005. Targeted R&D Initiatives is now active in 4 of the 5 STCU Recipient Parties, exemplifying the STCU’s “evolution to partnership” between its Funding and Recipient Parties.

STCU saw a subtle (and yet to be confirmed) shift in the position of Regular Projects versus the other project categories—a situation STCU has not experienced in its entire history. The open-call Regular Projects, which had always been the dominant category of new project activity, gained the smallest share of the total approved projects in 2009, falling behind the more deliberately solicited and focused Partner- and Targeted Initiative projects.

This shift in project balances underlines the challenge to the STCU to adapt to the evolving strategic environment surrounding global WMD nonproliferation. On its own initiative, the STCU Secretariat has begun to take small steps in exploring possible adaptations. In 2009, STCU proposed a new Targeted Research Program; a pilot program to better position STCU to meet STCU Party program priorities in contemporary threat reduction and regional stability. STCU is also working with its Governing Parties to better implement bilateral Party supplemental programs, which are targeting areas of priority interest for individual Parties.

In all, the year 2009 started with completing unfinished business related to the STCU headquarters offices, but ended with satisfactory progress in all of its programs, and included some new pilot programs to better prepare for the future. The year 2010 marks the 15th Anniversary of STCU operations, and the STCU Secretariat looks forward to celebrating this milestone by continuing its professional service to its stakeholders, and aligning itself to better serve its stakeholders in the future.

# 2009 HIGHLIGHTS AND ACCOMPLISHMENTS

## SEMINAR ON POTENTIAL USES AND COMMERCIAL APPLICATIONS OF GALILEO IN KYIV



On 4-5 February, STCU officials participated in a European Union-National Space Agency of Ukraine “Twinning Project” aimed at boosting Ukrainian-European Union space cooperation. STCU Senior Deputy Executive Director (Ukraine) Igor Lytvynov and Deputy Executive Director Michel Zayet (EU) attended this seminar. The seminar focused on possible Ukraine involvement with the GALILIEO European Global Navigation Satellite System. There is a strong interest from the newly formed European Global Navigation Satellite System Regulatory Authority to include Ukraine in the achievement of a fully operational GALILEO system.

## STCU DEEPENS ITS COOPERATION WITH NATIONAL SCIENCE ORGANIZATIONS



On 2 -11 March, STCU Deputy Executive Director (Canada) Landis Henry had a series of meetings with national science officials of Moldova, Georgia and Azerbaijan, to discuss the future plans for the STCU Targeted Initiatives Program in each of these STCU Recipient Parties. At the Moldovan meetings, a draft Statement of Intent to Cooperate was finalized with the Moldovan Academy of Sciences, which paved the way to launch the new STCU-Moldovan Targeted Initiatives Program.



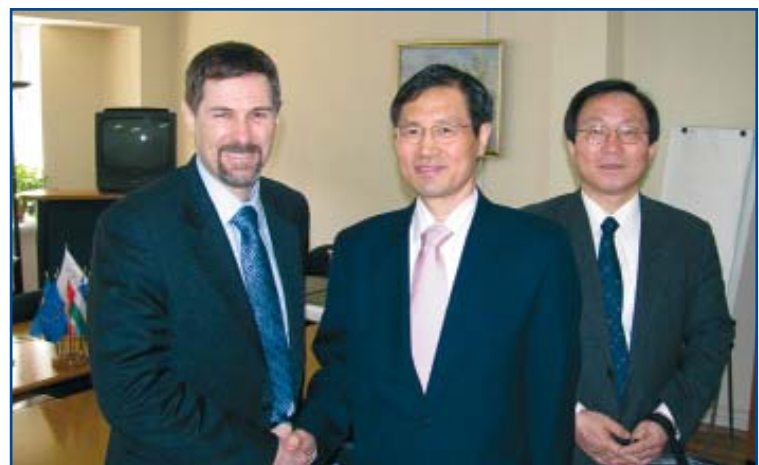
## COMMERCIALIZATION ROUND-TABLE MEETING HELD IN AZERBAIJAN

On 30 March, an STCU Commercialization Round Table was conducted at the Institute of Physics (Baku, Azerbaijan) for STCU-trained Chief Technology Commercialization Officers (CTCOs). STCU Deputy Executive Director (USA) Vic Korsun led STCU presentations on strategic growth for R&D institutes, commercial R&D matchmaking & Promotional Event Support, and “value drivers” in the commercial R&D marketplace. Dr. Shafiga Topchieva, a CTCO from Institute of Zoology in Baku, presented an update on the activity of Agency for Technology Transfer of Azerbaijan.



## SOUTH KOREAN AMBASSADOR VISITS STCU

On 15 April, H.E. Ambassador Park Ro-byug of the Republic of Korea met with STCU Executive Director Andrew Hood to become familiar with the STCU mission and its activities. Mr. Kim Hyun-Duk (Minister Counsellor, Embassy of the Republic of Korea in Ukraine) also attended the meeting. AMB Park noted that there was growing interest in South Korea to expand S&T partnership activities and other forms of cooperation in Ukraine, and that this included some discussions of South Korea working with STCU in the future.





# 2009 HIGHLIGHTS AND ACCOMPLISHMENTS

## PARTNER PROMOTIONAL MISSION TO HANNOVER MESSE



On 21-25 April, a group of scientists from Azerbaijan, including Dr. Adalat Hasanov (STCU Information Officer in Baku), and Elbek Babayev (CTCO from Institute of Chemical Additives) participated in an STCU-organized Partnership Promotion mission to the Hannover Messe Technology Exhibition in Hannover, Germany. The Azeri scientists presented new technologies developed by institutes of Azerbaijan National Academy of Sciences, including innovations developed as a result of STCU projects.

## SWEDISH AMBASSADOR VISITS STCU



On 7 May, H.E. Ambassador Stefan Gullgren of Sweden met with STCU Executive Director Andrew Hood to discuss STCU activities and possible new types of STCU-Swedish cooperation in fields such as bio-security, climate change, and general science cooperation. Mr. Ulf Sor (Counsellor of the Embassy of Sweden in Ukraine) also attended. Sweden is one of the four Founding Parties of the STCU, and while Sweden relinquished its STCU position to the European Union in 1998, Sweden retained a close relationship with STCU and is now looking to re-energize that relationship.



## INSTITUTE SUSTAINABILITY PROGRAM PROPOSALS PRESENTED

On 7 May, in the framework of STCU pilot Institute Sustainability Program (ISP), representatives of 6 Ukrainian institutes presented their ISP project proposals at STCU Advisory Committee Meeting in Ottawa, Canada. The delegations included Directors, Deputy Directors and Chief Technology Commercialization Officers (CTCOs) of the proposing institutes. The delegation also made presentations about their institutes' capabilities at the Environmental Canada Laboratory and at the Institute for Micro-structural Sciences and Aerospace Research, an institute of the National Research Council of Canada.



## PARTNERSHIP PROMOTION MISSION TO THE TECHCONNECT SUMMIT

On 3-7 May, STCU sponsored three scientists to attend and make pitch presentations at the TechConnect Summit, Investment Conference, and Exhibition (Houston Texas, USA). The three scientists were selected to participate by the TechConnect Organizing Committee based on the scientists' submissions that STCU helped prepare. The TechConnect Summit brings together the world's top technology transfer offices, companies, and investors (business angels and venture capitalists) to locate the most promising technologies and early stage companies from across the globe.



# 2009 HIGHLIGHTS AND ACCOMPLISHMENTS

## INTERNATIONAL CONFERENCE ON ATTRACTING EXTERNAL FINANCE FOR NEW ENTERPRISES



On 21-22 May in Astana, Kazakhstan, the UN Economic Commission for Europe organized a capacity-building event on facilitating external financing of new innovative enterprises in transition economies of the region. DED (US) Victor Korsun made a presentation on STCU experiences with barriers to commercialization of scientific results. STCU-trained CTCOs from Ukraine, Azerbaijan, and Georgia also attended to establish new business contacts and discuss promising ideas and projects.

## 28<sup>TH</sup> STCU GOVERNING BOARD MEETING HELD IN BAKU



The STCU Governing Board convened its 28th meeting on 4 June in Baku, Azerbaijan. At this meeting, the Board approved 10 Regular Projects totaling \$833,758 USD plus EURO 859,618, 13 new Partner Projects totaling \$1,934,464 USD, and 11 Partner Project contract extensions \$484,785 USD and EURO 192,144. The Board also approved STCU funding for 11 Targeted Initiative projects (\$231,622 USD plus EURO 109,421) co-financed with Georgia and 12 Targeted Initiative projects (\$373,854 USD plus EURO 161,292) co-financed with Ukraine. The Board also reviewed the 6 submitted proposals of the pilot Institute Sustainability Program and approved 3 of them for a total of \$998,964 USD.



## NUCLEAR FORENSICS EXPERTS WORKSHOP

On 8-9 June, STCU held a Nuclear Forensics Experts' Workshop in Tbilisi (Georgia), gathering specialists in this field from Azerbaijan, Canada, EU, Georgia, Ukraine, and the United States. The workshop is part of the new STCU Targeted Research Program pilot. The purpose of this workshop was to identify R&D capabilities, priorities, and potential sources of funding available for establishing collaborative nuclear forensics projects to help fight illicit nuclear material trafficking. Over 40 people participated, including experts from Lawrence Livermore National Laboratory (USA), and the Institute for Transuranium Elements (Germany).



## STCU AND NATIONAL SPACE AGENCY OF UKRAINE COOPERATION

On 12 June, the STCU and the National Space Agency of Ukraine (NSAU) signed a memorandum of understanding, outlining the directions of mutual cooperation between the two organizations for the future. Many ex-USSR ballistic missile systems experts of interest to STCU work in institutes and organizations under the NSAU. The memorandum calls for STCU and NSAU to develop joint sponsorship of conferences, publications, and other activities, and to agree on co-financing of such activities.



# 2009 HIGHLIGHTS AND ACCOMPLISHMENTS

## BIOSAFETY/BIOSECURITY EXPERTS' WORKSHOP



On 25-26 June, STCU held its second Targeted Research Program Experts workshop, this time on the subject of biosafety & biosecurity. This Expert's Workshop took place in Annecy, France, and involved more than 30 participants from the 10 countries and international organizations. As with the Nuclear Forensics Experts Workshop, this workshop was to identify the unmet R&D needs and priorities in the biosafety/biosecurity field and to create the basis for the new projects in STCU Recipient countries to address those priority needs.

## UKRAINIAN TECHNOLOGY TRANSFER ASSOCIATION ESTABLISHED



On 25 June, the first meeting of the Association of Professionals for Commercialization of Technology in Ukraine (APCT) was held, after its official registration as a not-for-profit organization in Ukraine. STCU's Ukrainian Chief Technology Commercialization Officers (CTCOs) created this Association as a post-CTCO training initiative, and with the encouragement of STCU. This association is similar to groups established by CTCOs in Azerbaijan and Georgia, and is a major step toward developing Ukrainian technology transfer capabilities.



## STCU PARTICIPATES IN FISA 2009 IN THE CZECH REPUBLIC

On 22-24 June, STCU and a delegation of 9 Ukrainian scientists joined the International Science and Technology Center (ISTC) in the FISA 2009 workshop (Prague, Czech Republic). FISA is a European Commission/EURATOM meeting on nuclear technology, physics and related areas. The STCU delegation prepared 5 posters presenting targeted research achievements of Ukrainian scientific organizations. STCU presented an overview on STCU involvement in past and future cooperation between the EU and Ukrainian scientists. A proposal was developed for possible joint cooperation between EURATOM and National Academy of Sciences of Ukraine through the STCU-Ukrainian Targeted Initiative Program.



## STCU – KYIV POLYTECHNIC INSTITUTE COOPERATION AGREEMENT

On 28 July, STCU Executive Director Andrew Hood and Academician Mikhail Zgurovsky (Rector, National Technical University of Ukraine “Kyiv Polytechnic Institute”, KPI) signed a statement of cooperation establishing the frame for future STCU-KPI cooperation. This framework clarifies the areas and manner in which STCU ex-weapon scientist redirection programs will interact with KPI academic R&D and technology transfer efforts. Many in the KPI faculty have professional backgrounds in the ex-USSR military weapons R&D complex, and KPI has participated in many previous STCU projects.



# 2009 HIGHLIGHTS AND ACCOMPLISHMENTS

## EUROPEAN COMMISSION DELEGATION HEAD VISITS STCU



On 3 September, H.E. Ambassador Jose' Manuel Pinto Teixeira (Head of the Delegation of the European Commission to Ukraine) paid a courtesy call on STCU and met with STCU Executive Director Andrew Hood. Mr. Hans Rhein and Mr. Andriy Bandura (of the EC Delegation in Kyiv) accompanied Ambassador Pinto Teixeira to the meeting. Mr. Hood gave an overview of STCU to Ambassador Pinto Teixeira, and both discussed STCU future activities and potential program areas where STCU and EU agencies might find mutual interests.

## STCU SPONSORED CONFERENCE ON PREVENTION OF ANIMAL INFECTIOUS DISEASES



On 14-17 September, STCU co-sponsored an international conference on “Monitoring, Forecast, and Prevention of Animal Infectious Diseases Using Up-to-date Methods of Epidemiology”, in Feodosiya (Crimea, Ukraine). Participants came from Ukraine, Russia, Kazakhstan, Moldova, Tajikistan, Poland, France, and Serbia discussed a variety of veterinary-based biosafety & biosecurity concerns. At the invitation of STCU, Dr. Marie-Francoise Saron (biosafety / biosecurity expert of the Administration of Prime Minister of France) participated in the conference.



## STCU'S TECHNOLOGY TRANSFER OFFICER PROGRAM BEGINS IN MOLDOVA 19-23 OCTOBER

As a next step of CTCO Program in Moldova 19-23 October STCU conducted assessment of commercialization potential of 10 Institutes and Universities, involved in CTCO program. STCU invited experts prof. Pavlo Tsybulev, Institute of Intellectual Property and Rights of Ukraine and Volodymyr Gusev, North-East Regional Center of Innovative Development, State Agency of Ukraine for Investments and Innovations to conduct the assessment.

The aim of the assessment was to explain the concept of market pull vs. technology push for respect to academic institutions, discuss current status of technology commercialization and marketing efforts by the institute, analyze current structure of institute's efforts and potential portion of demand-driven research contracts (vs. sales of previously completed projects and products), discuss and analyze Institute's experience working with Moldavian and foreign industrial partners, ensure good understanding of potential benefits for the institutes as a result of their participation in this initiative.



## STCU CONDUCTS TECHNOLOGY TRANSFER WORKSHOP WITH OXFORD UNIVERSITY

On 26-27 October, STCU held a Technology Transfer Workshop with experts from Oxford University (UK) at Kyiv Polytechnic Institute. Tim Hart (CEO, Zyoxel Ltd. at the Centre for Innovation & Enterprise, Oxford University) and Dr Chris Moody, (Isis Innovation Limited, the tech transfer company of the Oxford University) made presentations to the 60 participants on tech transfer principles, licensing and negotiation, and case studies.





# 2009 HIGHLIGHTS AND ACCOMPLISHMENTS

## STCU SIGNS COOPERATION STATEMENT WITH UKRAINIAN MEDICAL SCIENCES ACADEMY



On 12 November, the STCU Executive Director Andrew Hood and the Vice-President of the National Academy of Medical Sciences of Ukraine, Prof. Yuriy Kundiev signed a statement of cooperation establishing the framework for future cooperation between the two organizations. Discussions were held on the possibilities to cooperate in the areas of biosafety and biosecurity, carrying out joint scientific and technical conferences, and support of commercialization and advancement of the S&T development of organizations in the Ukrainian medical community.

## 29<sup>TH</sup> STCU GOVERNING BOARD MEETING HELD IN KYIV



The STCU Governing Board convened its 29th meeting on 19 November in Kyiv, Ukraine. The Board approved 9 new regular projects for a total of \$250 thousand plus EURO 1.0 million, and approved 17 new Partner Projects (valued at \$1.8 million and EURO 700 thousand) plus 14 Partner Project extensions (valued at \$1.4 million and EURO 572 thousand). The Board also approved 9 STCU-Azeri Targeted Initiative projects, totaling \$370,409 and EURO 50,711 (with \$445,401 in matching funds from the Azeri National Academy of Sciences), and for the first time, 6 STCU-Moldovan Targeted Initiative projects, totaling \$124,989 and EURO 16,906 (with \$149,991 in matching funds from the Moldovan Academy of Sciences).



## SEED FORUM IN KYIV

On 26 November, three STCU scientists from Kyiv, Dnipropetrovsk and Kharkiv participated in Seed Forum Investment Event in Kyiv - an event sponsored by Royal Norwegian Embassy in Ukraine. Each scientist took part in an earlier Pitch Training Seminar organized by the Seed Forum. Then the scientists made their pitch presentations during the Forum. The Seed Forum gives start-up companies seeking capital an opportunity to present their business concepts to investors at investor matchmaking forums.



## WORKSHOP ON CARBON FINANCE MECHANISMS IN UKRAINE

On 24-27 November, STCU and the Ukrainian Institute of Engineering Thermophysics & Scientific Engineering Centre Biomass, with financial support from the U.S. Environmental Protection Agency (EPA), jointly organized a training workshop on "Carbon Finance Mechanisms in Ukraine". Approximately 60 representatives from more than 30 institutions all over Ukraine attended the workshop.



# FINANCIAL ACTIVITY

The year 2009 saw a continued reduction in the overall annual amount of new STCU project funding, compared with the record funding year 2006. In 2009, the STCU Governing Board approved over \$13.9 million (USD equivalent) in new projects, a decrease of approximately \$1.2 million (USD equivalent) in total new project funding compared with 2008, and a decrease of approximately \$5.9 million (USD equivalent) compared with the STCU's record year of 2006.

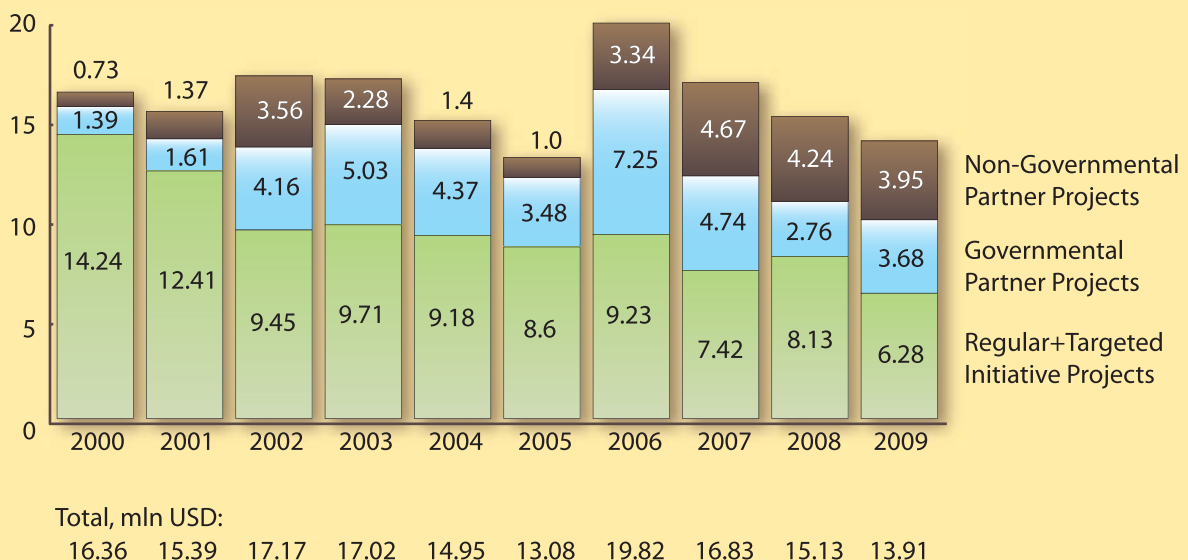
New Partner Project funding in 2009 saw a slight increase in levels as compared to that achieved in 2008, but still well below the record-highs of 2006 and 2007. The \$7.6 million USD in total new Partnership Project funding that was approved by the STCU Governing Board in 2009—as with 2008—was in line with amounts that were recorded by STCU in the early 2000s (2002 and 2003). In 2009, new project funding from all Partner organizations represented 54.9% of the total amount of new STCU project funding approved during the year. Thus, in three of the last four years (2008 being the exception), Partner Project funding represented more than half of the overall total funding, and underlines the important role played by the Partners in STCU activities.

As in previous years, external auditors from both Lubbock Fine and the Defense Contract Audit Agency audited the financial management and accounting systems, as well as the system of internal controls for both the operations of the STCU administration and STCU-funded projects. Furthermore, in 2009, the STCU was audited by the Office of the Inspector General of the Government of Canada. This was the first time that the STCU was audited by this agency, and the results of this audit can be found on the STCU's website at: [www.stcu.int/documents/stcu\\_inf/reports/audit/2009/](http://www.stcu.int/documents/stcu_inf/reports/audit/2009/).

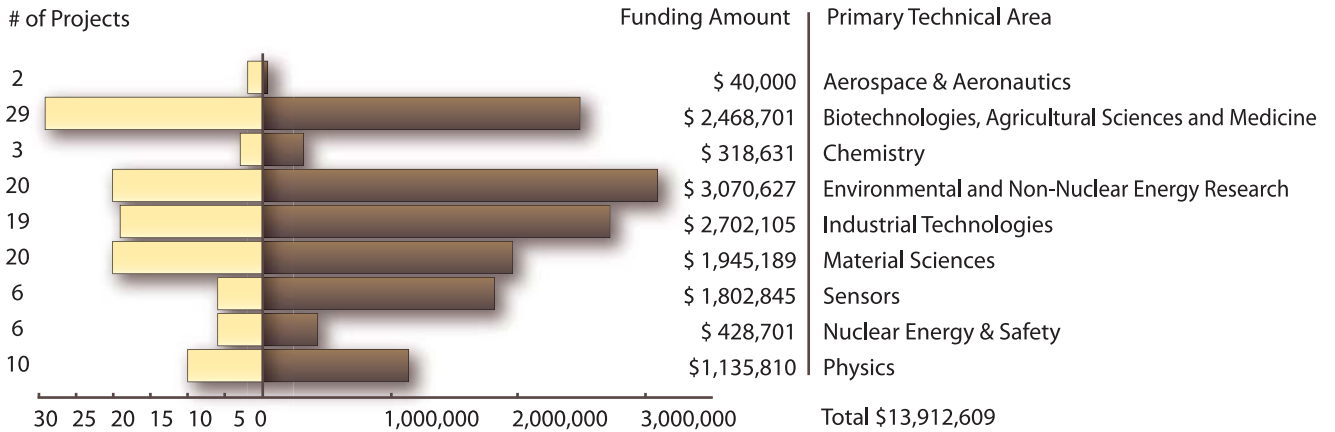
Lubbock Fine Chartered Accountants audited the 31 December 2009 financial statements, a copy of which may be obtained in the Document Center of the STCU website at: [www.stcu.int/documents/stcu\\_inf/reports/audit/2009/](http://www.stcu.int/documents/stcu_inf/reports/audit/2009/). Some weaknesses were identified in conjunction with the 31 December 2009 financial statement audit and will be corrected during the course of 2010.

The Defense Contract Audit Agency audited six projects during 2009, and worked closely with technical auditors from various organizations (e.g., the U.S. Department of Energy) on most of these DCAA audits to produce both financial and technical audit findings. The project audits performed by DCAA and the technical auditors identified only minor weaknesses which also will be corrected during 2010.

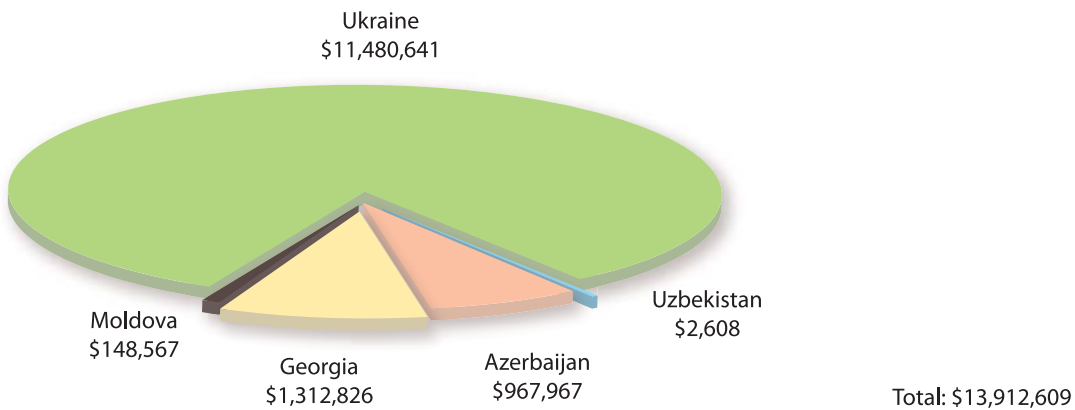
**New Regular/Partnership Projects Approved for Funding, 2000-2009 (funding in millions USD):**



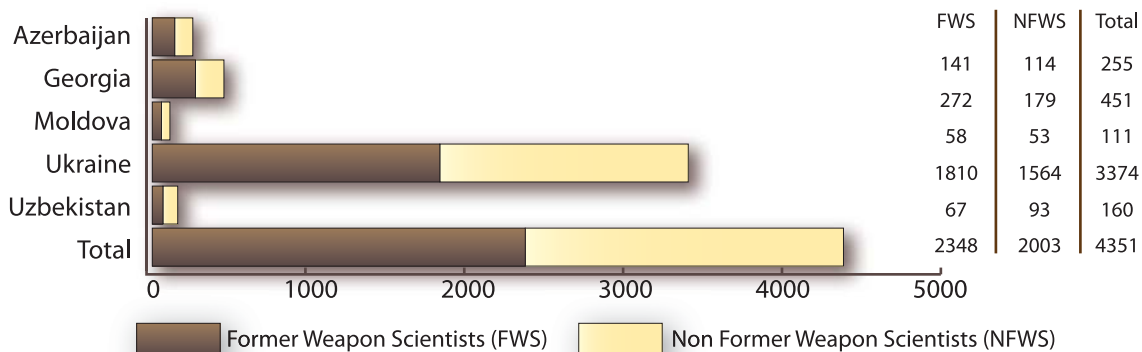
New Project Funding in 2009 by PRIMARY TECHNICAL AREA:



New Project Funding in 2009 by LOCATION OF RECIPIENT ORGANIZATION:



Participants Redirected on STCU Projects in 2009 by Country:



# PROJECT ACTIVITY SUMMARY

Overall, new approved project funding for STCU declined again in 2009, compared to the previous year. This was due to a decline in the level of Regular Project activity, which was greater than the slight increase in the combined level of Partner and Targeted Initiative projects. Thus, the year 2009 continued the steady downward trend in total new project funding that STCU has seen since its peak year of 2006 (see Financial Section for details).

However, there may be signs of a possible transition in the types of projects within the STCU portfolio of active projects. The past dominance of the Regular Projects (i.e., projects funded by the original ex-Soviet WMD scientist engagement programs of Canada, the EU, and the U.S.) has gradually been replaced by the more narrowly targeted Partners Projects and Targeted R&D Initiative Projects.

This trend, if sustained, could push STCU to adjust its administrative approach and organizational profile towards managing fewer, more tailored projects. In fact, preparing for this possible transition is part of the reason that the Secretariat proposed designing a Targeted Research Program in 2009 (which is now in its pilot development phase).

In 2009, the STCU Governing Board approved and financed 115 new projects, totaling approximately \$13.9 million (USD equivalent; \$5.92 million USD plus EURO 3.66 million). In addition to this \$13.9 million USD amount from the STCU Funding Parties, approximately \$1.6 million USD in project co-financing was contributed separately by the STCU Recipient Parties of Ukraine, Azerbaijan, Georgia, and Moldova, under the 2009 Targeted Initiative Program.

## REGULAR PROJECT ACTIVITY

The Governing Board approved 19 Regular Projects in 2009, totaling approximately \$3.7 million (USD equivalent; \$1,083,758 USD plus EURO 1,880,128). This is nearly a 47% decline from the total Regular Project funding received in 2008. The approved Regular Projects for 2009 covered numerous scientific research areas, with the primary interest reflected in environmental/non-nuclear energy technologies, industrial technologies, and biotechnology/agricultural sciences/medicine. These new Regular Projects will engage 219 former weapon scientists in collaboration with scientific colleagues from Canada, Europe, and the United States.

In addition to these 19 Regular Projects, there were 3 approved Institute Sustainability Projects (totaling \$998,964 USD equivalent) that were the first such projects to be funded under the pilot Institute Sustainability Program. Rather than focused on collaborative S&T research, these 3 Institute Sustainability projects are focused on improv-



ing the existing capabilities of institutes that employ large numbers of former weapon scientists. The goal of these projects is to strengthen the ability of institutes to become successful and self-reliant in attracting multiple sources of research work and funding, so that these organizations can continue employing their cadre of scientists in peaceful, civilian work (including their senior scientists that once worked on Soviet WMD and advanced military weapons R&D).

Of the many examples of Regular Projects approved in 2009, two projects are highlighted below:

- STCU Project 4841 (financed by Canada, \$299,870) is assessing various materials for use in supercritical water convection loops for the next generation of nuclear reactors. The supercritical water reactor (SCWR) is included in the Technological Roadmap for Generation IV Nuclear Systems, and SCWR research and technology development is included in Canada's plans for the next evolutionary step in CANDU nuclear reactor technology. In Project 4841, scientists from Canada's AECL-Chalk River Laboratories are collaborating with 27 scientists (14 of whom are former weapon scientists) from the Ukrainian National Science Center, Kharkiv Institute for Physics and Technology (KIPT) to develop advanced tools and methodology for assessing the behavior of candidate structural materials subjected to neutron irradiation in water under high pressure and outlet temperatures of up to 550°C. The advanced skills of KIPT experts in structural materials design and testing, along with experience in simulation of reactor irradiation using gamma-, electron- and ion- irradiation, will be employed for reactor materials characterization. A specially designed Supercritical Water Convection Loop with an irradiation cell coupled to an electron accelerator at KIPT (8-10 MeV, 10 kW) will be the primary facility for corrosion and mechanical tests of materials under electron irradiation. Computer simulations and investigations of specimens before and after irradiation in the convection loop will provide the design-relevant data. The comparatively short set-up and irradiation time, the low cost compared to nuclear reactors and the possibility to investigate the irradiated materials out of hot cells will make the proposed methodology very efficient.
- In Project 3802 (financed by the European Union, EURO 201,384), which was completed in 2009, European researchers from the University of Hohnheim (Germany) collaborated with a joint Azeri-Georgian scientific team to develop a biotechnology that combined selected plants and microorganisms to clean oil-polluted soils in an environmentally safe manner. The innovation of this new phytoremediation method is the joint and synergistic application of both bacterial microorganisms and the plants' ecological potential, which allows oil-polluted soils to be cleaned more intensively and completely than under current remediation methods. The



# PROJECT ACTIVITY SUMMARY

joint team includes 10 Georgian scientists (including 6 former weapon scientists) from the Durmishidze Institute of Biochemistry and Biotechnology (Tbilisi) and 9 Azeri scientists (including 5 former weapon scientists) from the Institute of Microbiology (Baku). The team demonstrated the effectiveness of their phytoremediation method through several model experiments, with oil contamination in experimental ground plots being reduced by some three times their initial levels over a 6-week period. The technology is effective both for areas with long-term oil pollution and in cases of accidental spills.



*Before introduction of plants & bacteria*



*6 months after introduction of plants & bacteria*

## PARTNER PROJECT ACTIVITY

In spite of fears that the global economic crisis would negatively impact STCU Partner activity, 2009 turned out to be relatively successful for the STCU Partners Program. For all of 2009, 55 new Partner Projects and Partner Project Extensions were approved by the STCU Governing Board—as opposed to 43 projects in 2008—all totaling approximately \$7.6 million (USD equivalent; \$5.59 million USD plus EURO 1.46 million euros). This is only slightly below the \$7 million (USD equivalent) reached in 2008. Further, the approximately \$3.95 million (USD equivalent) in new Non-Governmental Partner Project funding (i.e., projects financed by private-sector and academic Partners) made 2009 the third highest annual funding total for STCU in this important category (following the all-time high of \$4.67 million USD in 2007 and the \$4.24 million USD reached in 2008). Of great importance is a fact that these 55 Partner Projects engaged 447 former weapon scientists in outsourced research directed toward specific industrial and scientific market needs. Working with western Partners gives these former weapon scientists valuable experience of bringing their scientific capabilities to the international industrial and scientific markets.

Fourteen new Partners (3 Governmental and 11 Non-Governmental) joined STCU in 2009, thus bringing the total number of STCU Partner organizations to 203: 26 Governmental Partners and 177 Non-Governmental Partners.

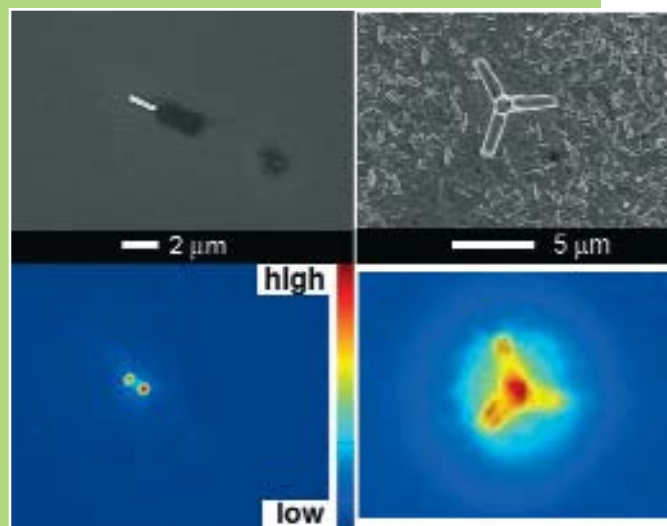


## NEW RANDOM LASER MEDIA FROM SEMICONDUCTOR NANOCOMPOSITES

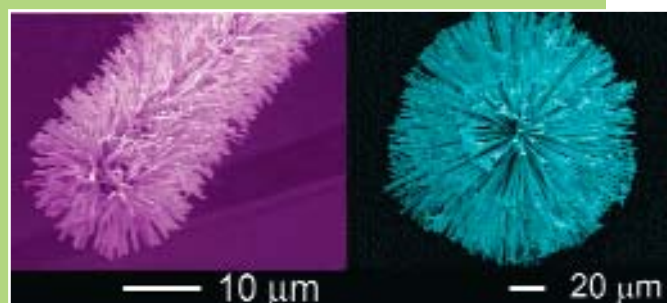


A new class of random laser media has been developed as a result STCU Project 4034, a project financed by the EU for EURO 94,360. Nine Moldovan scientists (including 6 former weapon scientists) from the Institute of Applied Physics (Chisinau) developed these laser media based on semiconductor/oxide nanocomposites produced using electrochemical technologies. The proposed technology has advantages in its compatibility with optoelectronic and photonic circuit integration, simplicity, and cost effectiveness. A variety of nanolasers and microlasers have been developed using zinc oxide (ZnO) nanostructures such as hexagonal nanorods, cylinders, tetrapods, and other specific nanostructures. A fascinating property of the technology is the possibility of these nanostructures self-assembling into microstructures like cylindrical, spherical or planar assemblies. The developed nanolasers and microlasers can be used as coherent radiation sources in optoelectronic microcircuits, photonic systems, identification and security systems.

Project 4034 caught the interest of other institutions, such as Alexander von Humboldt Foundation (Germany) and the U.S. Civilian Research & Development Foundation (CRDF). In fact, both of these organizations provided additional financing for the purchase of specialized equipment to expand the technology. The Moldovan Academy of Sciences also provided extra financial support to the team's research. Finally, building on the results of Project 4034, the team has prepared two EU Framework Program 7 proposals, one of which includes the French collaborator on Project 4034 (from CNRS, France) as the FP7 project coordinator.



**Figure 1. Nanolasers on Zinc Oxide (ZnO) nanorods and tetrapods developed under Project 4034.**



**Figure 2. Zinc Oxide (ZnO) Microstructures Assembled from Nanostructures as Laser Media.**





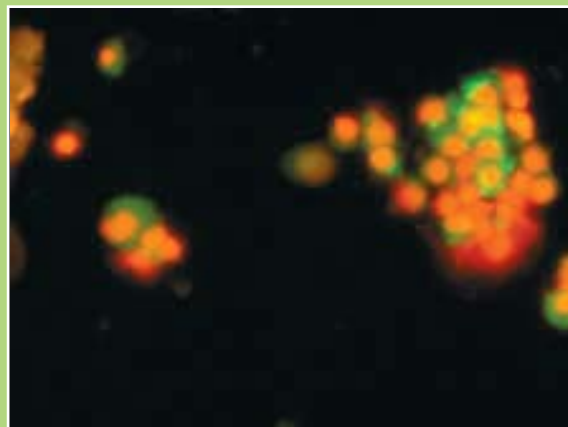
### NEW METHOD OF “SIDE POPULATION” PROGENITOR CELL IDENTIFICATION



Under Project 3919 (funded by the European Union, EURO 161,000), nine Ukrainian scientists from the Institute for Problems of Cryobiology and Cryomedicine, and the Institute for Scintillation Materials, jointly developed new technologies for preparing and transplanting endocrine gland specific stem cell material (“side population” cells) to treat severe endocrine deficiency and to recover damaged hormone functions. Transplantation of isolated “side population” cells from adult and newborn endocrine glands resulted in some hormone level recovery in laboratory animals in controlled experiments. The project team elaborated a new strategy for stem/progenitor cell isolation from the adrenal and thyroid glands using advanced methods of fluorescent dyes cell staining and fluorescent activated cell sorting. The success of side population cell transplantation in animal experiments gives hope for a new medical approach to treating human patients suffering from severe hormonal deficiencies.



*Thyroid side population cells grafted under the kidney capsule of rat on the 26th day after transplantation.*



*Fluorescent microscopy of adrenal cells that were stained by DiOC(3)18; nuclei counter-staining by PI.*

# PROJECT ACTIVITY SUMMARY

Among the new Partner Projects approved in 2009 were:

- An STCU Partner Project, financed by a U.S. company, is developing high quantum efficiency organic luminescent materials for use in electronic displays and screens. The project team consists of 6 scientists (among them 3 former weapon scientists) at Institute of Single Crystals (Kharkiv, Ukraine). The project goal is to develop new original and patentable luminescent materials having high quantum efficiency for use as the light converters in flat-panel displays, light sources for many applications, and other uses where highly fluorescent materials provide an application advantage. These materials can be useful to produce electroluminescent displays, organic light emitting diodes (OLEDs), lighting, and many other electroluminescence-based displays, devices, and products.
- Under STCU Partner Project P347 (\$150,000 USD), the U.S. Department of Health and Human Services' Biotechnology Engagement Program is financing the work of a team of 18 scientists (9 of them former weapon scientists) from the Ukrainian Institute of Epidemiology and Hygiene (Lviv) and Central Sanitary-Epidemiological Station (Kyiv) to create a model Geoinformational System for epidemiological surveillance of tuberculosis in the western Ukrainian region of Lviv. For the first time in Ukraine, this project will use Geographical Information Systems (GIS) to analyze the geographical distribution of tuberculosis and assess relationships with environmental features that contribute to the spread of the disease. GIS is valuable for developing and improving TB prevention and control strategies, for analyzing geographic distribution of disease through time to reveal trends, patterns, and relationships that are difficult to elucidate using other analytical methods. The Ukrainian team will analyze drug resistant tuberculosis in the Lviv region, define "high-risk" zones in the region, define social demographic, epidemiological characteristics of TB foci, and cross-correlation between them and TB population morbidity.

## NEW SOURCE OF IONS AND NANOPARTICLES FROM SEMICONDUCTOR MATERIALS



STCU Project #4520 is a STCU-Azeri Targeted Initiative project, co-financed by the United States (\$24,966 USD) and the Azeri National Academy of Sciences (\$24,966 USD). The project engages 7 scientists (5 of whom are former weapon scientists) of the Institute of Physics (Baku) to create a new ion source on the basis of pure semiconductors and their compounds as the working substance. The purpose of the project is to obtain ions and charged nanoparticles of semiconductor substances for creation of surface quantum structures and vacuum technology. For the first time, nanometer-scale semiconductor particles will be produced by means of an edge source with a porous tip.



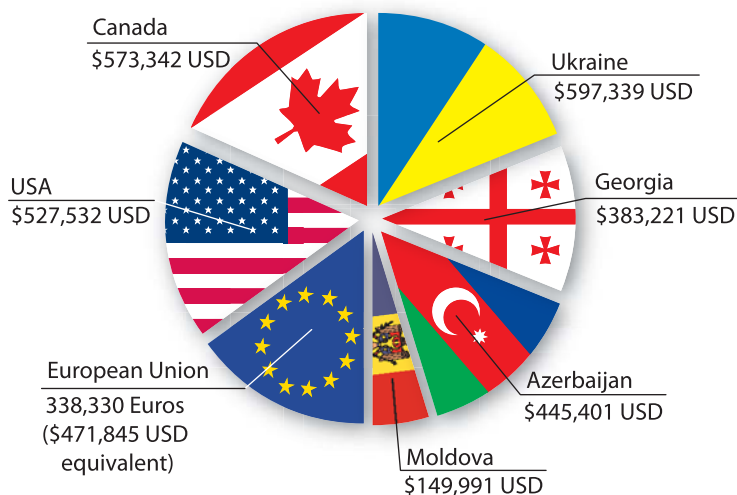
# PROJECT ACTIVITY SUMMARY

## TARGETED R&D INITIATIVES

The Targeted R&D Initiatives Program continued with cycles completed with Ukraine, Azerbaijan, and Georgia. More importantly, the first-ever Targeted Initiative cycle was completed in Moldova, with the Academy of Sciences of Moldova. All together for 2009, 38 Targeted Initiative projects were approved and jointly funded by the STCU and each of the Recipient Parties. For both the number of approved projects and the project funding amount, these are the highest totals ever achieved in the four-year-old Targeted Initiatives Program.

- For the fifth completed STCU-Ukraine Targeted Initiative cycle, 12 Targeted R&D Initiative projects were approved. The total amount of STCU funding for these 12 projects was \$373,854 USD plus EURO 161,292, with approximately \$597,340 USD in matching funds provided by the National Academy of Sciences of Ukraine.
- For the second completed STCU-Azerbaijan Targeted Initiative cycle, 9 Targeted R&D Initiative projects were approved. The total amount of STCU funding for these 9 projects was \$370,409 plus EURO 50,711, with approximately \$445,400 USD in matching funds from the Azeri National Academy of Sciences.
- For the third completed STCU-Georgian Targeted Initiative cycle, 11 Targeted R&D Initiative projects were approved. The total amount of STCU funding for these 9 projects was \$231,622 USD and EURO 109,421, with approximately \$383,220 USD in matching funds provided by the Georgian National Science Foundation.
- For the inaugural STCU-Moldovan Targeted Initiative cycle, 6 Targeted R&D Initiative projects were approved. The total amount of STCU funding for these 6 projects was \$124,989 USD and EURO 16,906, with approximately \$149,990 USD in matching funds from the Moldovan Academy of Sciences.

Funding Sources for 2009 Targeted Initiative Projects:



Targeted Initiatives Projects in:

- Ukraine - 12
- Azerbaijan - 9
- Georgia - 11
- Moldova - 6
- Total - 38

Total Amount of Funding:

STCU = \$1,572,719  
plus Recipients = \$1,575,952

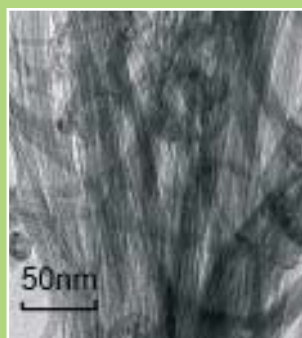


## NEW NANO-MATERIALS BASED ON PRESSURE-ORIENTED CARBON NANOTUBES



STCU Project 4359 is a STCU-Ukrainian Targeted Initiative project, totaling approximately \$100,000, with approximately \$25,000 from the U.S., EURO 18,324 from the EU, and approximately \$50,000 from Ukraine. A team of 10 scientists (7 of whom are former weapon scientists) from the B. Verkin Institute for Low Temperature Physics and Engineering (Kharkiv) and the Institute of Physics (Kyiv) developed a novel technology for the production of macroscopic samples of a new nanostructural material based on 1.1 GPa pressure-oriented single-walled carbon nanotubes (SWNT).

To take full advantage of the carbon nanotubes properties, a material is often needed in which the carbon nanotube bundles are oriented in the pre-assigned direction. The production of such a material is challenging, permitting only milligrams of material to be obtained. Project 4359 produced greater than 1 gram samples of properly-oriented single-walled carbon nanotubes. The obtained samples have been used to investigate the low temperature dynamics of the physical properties of carbon nanotubes. For the first time, the radial thermal expansion of single-walled nanotube bundles was measured at very low temperatures (2–120 deg K). The project team found that the physical properties of the carbon nanotubes bundles changed dramatically under the extremely low temperatures (less than 5.5 deg K). The data obtained are important for understanding how new carbon nanomaterials can be applied in aerospace hardware operating in low temperatures conditions.



# SUSTAINABILITY ACTIVITY

## INSTITUTE SUSTAINABILITY PROGRAM



In the 2009 pilot phase of the Institute Sustainability Program (ISP), 6 selected institutes were invited to prepare their institute sustainability proposals (and associated presentations) with the help of external consultants (the University of Missouri “International Technology Commercialization Institute”) and collaborators. A set of meetings were conducted to explain the Institute Sustainability Program, to educate institute leadership on importance of strategic planning, and to coach them throughout the process. Preliminary ISP assessments were conducted by external consultants, based on meetings and interviews with institute directors and senior management, and the institute draft proposals and presentations were reviewed and critiqued by STCU and the consultants. Finally, ISP program funds were used to support the travel of the institutes’ directors, vice-directors and Chief Technology Commercialization Officers to Canada, to make their Institute Sus-

tainability Project proposals to the Funding Party representatives during the 6 May Advisory Committee Meeting in Ottawa.

At the 28th Governing Board Meeting in Baku, 3 of the 6 ISP proposals were accepted for funding by the Funding Parties. These 3 ISP projects were started in the latter half of 2009 and will continue for approximately 2 years. At the first stage of the 3 ISP projects, institutes are concentrating on:

- Training of the project participants
- Audit of scientific and technical developments of the institute
- Preparing applications for research projects within the framework of international and regional programs
- Institute internal normative base improvement



## CHIEF TECHNOLOGY COMMERCIALIZATION OFFICERS (CTCO) PROGRAM

During 2009, Ukrainian CTCOs worked on establishing an Association of Professionals for Commercialization in Ukraine (APCU). The APCU Association was officially registered in Ukraine in April. The main aims of the APCU Association are:

- To assist CTCOs and former weapon R&D institutes in the development of R&D for civilian commercialization in Ukraine;
- To assist in the promotion of technology transfer interests and rights of specialists and professionals of technology transfer in Ukraine.

The APCU Association already received an invitation from Georgian CTCOs to join similar efforts and to work together. The Agency of Technology Transfer in Azerbaijan, which was formed by Azeri CTCOs in 2008, continues to hold regular monthly meetings to discuss ideas and to share new knowledge received by CTCOs. Georgian CTCOs decided to create a consortium of scientific institutes in facilitating the development of high-technology, small- and medium businesses in Georgia to promote science commercialization, innovation activity and launching research intensive production. Also, 15 Georgian and 14 Azerbaijan CTCOs took English language courses, with the courses co-financed by the CTCOs themselves and by STCU funding.



Finally in 2009, the development of the CTCO Program in Moldova began its next phase with the start of an independent assessment of the commercialization potential of 10 Moldovan institutes and universities involved in CTCO program. STCU invited experts from the Institute of Intellectual Property and Rights of Ukraine and from the North-East Regional Center of Innovative Development, State Agency of Ukraine for Investments and Innovations to conduct the assessment.

Among of the main results of Azeri CTCOs activity in 2009 was the creation of the Innovations Centre in the Azerbaijan National Academy of Sciences (ANAS).



In the beginning there was the idea to create an Innovations Centre in the ANAS. This idea was submitted to the CRDF for funding and at the end of 2009 this project was approved. Now Centre of Innovative Researches is established in the ANAS. Elbay Babaev, an STCU-trained CTCO, is a director of the Centre. Within the structure of the Centre of Innovative Researches is the special Department of Technology Transfer, in which the Technology Transfer Centre of ANAS (CTCOs trained by STCU) will operate as its staff.

# SUSTAINABILITY ACTIVITY

## S&T COMMERCIALIZATION BARRIERS ASSESSMENT



STCU initiated an assessment of barriers for technology transfer and commercialization in Ukraine. Understanding such barriers helps STCU and its Parties to evaluate the extent to which STCU Sustainability Programs can be effective in launching former weapon scientists and institutes on paths of successful self-sustained growth. The study by the Intellectual Property Rights Institute in Kyiv used the Delphi method to interview 14 Ukrainian experts in the field.

The study showed that, generally speaking, there are both cultural and legal barriers within Ukraine and its scientific community, which make it difficult to commercialize technologies developed at former weapon institutes. Among the more significant barriers found in the study were:



- The lack of knowledge, experience and preparedness for commercialization among key governmental officials, scientific leaders, industrial enterprises, and the scientists themselves.
  - Insufficient financing or financial incentives for innovation from the state and foreign investors.
  - Shortcomings in the Ukrainian legal structure that tend to discourage S&T innovation.
  - Absence of an effective infrastructure for innovation, including physical degradation of scientific institutes facilities, unfavorable attitudes toward Ukrainian-developed technology (compared to similar technologies available worldwide) and the non-profit status of state-owned scientific institutes.
- Ineffective management of research activities at institute level, including lack of desire by institutes and scientists to pursue follow-up innovative or commercial development of their research.



## SMALL CANADIAN COMPANY DEVELOPS PARTNERSHIP WITH UKRAINIAN SCIENTISTS



Tesseral Technologies, Inc. is a small company in Calgary, Canada that develops commercial software packages for highly accurate wave field modelling. This modelling is an integral part of geophysical methods of oil and gas exploration.

Since being introduced to STCU in 1997, Tesseral Technologies has financed four STCU Partner Projects (totaling in all over \$300,000 USD) to develop new software packages and improve the company's existing products. In these Partner Projects, Tesseral Technologies has engaged the talents of scientists from Ukrainian State Geological Research Institute and Subbotin Institute of Geophysics.

Says Ivan Iantsevitch (Tesseral Technologies Vice-President for Marketing and Business Development):

*"From the very inception, Tesseral Technologies Inc. was facing the problems common for most of the high-tech start-ups - difficulty to attract talent with very limited resources. Through the Canadian government, we were introduced to the STCU [Partners] program and the benefits it can bring to a company like ours. After the initial trip to Ukraine that was sponsored by the Canadian International Development Agency program, the principals of the company... engaged highly qualified professionals that are still the integral and vital part of Tesseral's team. It is through the synergy between the Ukrainian scientists and Canadian researchers [that] we were able to create a truly international company that - despite of its small size - can compete at par with larger companies in our industry.*

*From the very beginning, we came to appreciate the client-friendly and open approach of the STCU personnel, their sincere desire to help and professionalism.*

*Now, Tesseral Technologies Inc. and its products are [a]well-recognized brand in the petroleum industry world-wide. The world-class companies such as Shell, Schlumberger, Saudi Aramco, PetroBraz, GazProm and CGG-Veritas are using our product for both petroleum exploration and research. Of course, the current difficult economic times is challenging for any company, especially if it is involved in such a volatile sector as oilfield services. However, working through STCU and using Ukrainian consultants as a part of the project allowed us to continue our research efforts as planned, whereas our competitors were forced to drastically reduce theirs.*

*In conclusion, we would like to thank all the good people of STCU that were integral for our success and survival as a company."*



# SEMINARS & WORKSHOPS ACTIVITY

## TARGETED RESEARCH PROGRAM EXPERT WORKSHOPS

In June, the STCU organized two subject matter expert workshops as part of the pilot phase of the Targeted Research Program. The key feature of the Targeted Research Program (TRP) is to connect STCU Recipient Party scientists and their research proposals with new Partners or other Funding Party donor programs pursuing S&T work in specific priority fields of global security. To accomplish this connection, STCU organized these expert workshops to bring Funding Party technical experts and program directors together with Recipient Party officials and leading scientists with common interests in two active areas of global security: nuclear forensics development (to combat nuclear and radioactive material trafficking), and improved biosafety/biosecurity practices at biological facilities.



The first of these expert workshops, the Nuclear Forensics Experts Workshop was held in Tbilisi, Georgia on 8-9 June. The workshop included participants from Europe, the United States, Ukraine, Georgia, Azerbaijan, and Georgia. The International Science and Technology Center (ISTC) also sent a representative to talk about ISTC programs in the nuclear forensics area. A plenary session featured presentations from Funding Party officials on their nuclear forensics R&D needs and program funding opportunities, and Recipient Party officials presented their own nuclear forensics programs and R&D capabilities. The workshop then broke into panel discussions to develop a list of recommended R&D directions to guide individual project proposal development, and other programmatic actions (such as infrastructure improvement projects to enhance the Recipient Parties capabilities and coordination in cross-regional nuclear forensics cooperation).

The second of the workshops, a Biosafety/Biosecurity Experts Workshop, was held on 25-26 June in Annecy, France. Using a similar format as the Nuclear Forensics Workshop, the Biosafety/Biosecurity Workshop featured 34 participants from 10 countries, including the STCU Funding Parties, Recipient Parties, and delegates sponsored by the ISTC. As with the Nuclear Forensics Workshop, this workshop produced a series of recommendations for further project development in areas such as cross-regional epidemiological surveys, collaborative civilian research projects on specific diseases identified by the workshop experts, and development of a Biosafety/Biosecurity network for information and best-practices exchange among the STCU Parties (and possible beyond to other neighboring countries and regions).



## EU-SPECIFIC WORKSHOPS AND MISSIONS

In June, STCU and a delegation of Ukrainian scientists joined the International Science and Technology Center (ISTC) delegation in participating in the FISA 2009 workshop, held in Prague, the Czech Republic (which coincided with period of the Czech Presidency of the European Council). FISA is a European Commission/EURATOM meeting on nuclear technology, physics and related areas. The event was opened by then-Deputy Director General for Research Mr. Zoran Stančič, and had about 400 participants. The STCU delegation prepared 5 posters presenting targeted research achievements of Ukrainian scientific organizations. STCU presented an overview on STCU involvement in past and future cooperation between the EU and Ukrainian scientists.

One outcome on the margins of this event was STCU endorsement of a joint cooperation proposal from the National Academy of Sciences of Ukraine to the DG Research Director for EURATOM, in which STCU would play a role in implementing future projects and related activities (probably under the STCU-Ukrainian Targeted Initiatives Program). This proposed cooperation was accepted by the European Commission and will be developed more fully during 2010.

On 12-16 October, STCU led a delegation of Ukrainian and Georgian scientists to a series of workshops and networking meetings in Sweden. The STCU-supported travel used funds in a special Swedish Travel Grant supplementary budget, which was created by the Governing Board in 1998 to make use of remaining Swedish contributions to the STCU during the time Sweden held an STCU Governing Party position (in 1998, Sweden relinquished its Governing Party position to the European Union). STCU planned this mission in conjunction with the Swedish Presidency of the European Council.

The goal of this Sweden mission was to develop new international collaborative research projects, share experiences, define priorities, and meet industrial partners. The STCU-sponsored scientists participated in three different events: (I) a series of thematic workshops organized by the Royal Institute of Technology, where some of the STCU scientists could meet Swedish collaborators on their current STCU projects, (II) the Scandinavian Technical Fair "TEKNISKA MASSAN, including a visit to Uppsala University, and (III) the "ENERGY 2050 Conference" organized by the Royal Swedish Academy of Sciences and hosted at the University of Stockholm.

After this, five Ukrainian scientists were invited to participate in additional training periods to deepen the research interaction and understanding with Swedish researchers (this training was paid for by a special grant from the Swedish government).

# SEMINARS & WORKSHOPS ACTIVITY

## CANADIAN-UKRAINIAN AEROSPACE BUSINESS SUMMIT



On 29-30 September in Kyiv, STCU joined the Canadian Embassy and the National Space Agency of Ukraine (NSAU) in jointly organizing this business-to-business networking event aimed at exploring trade, science and technology and investment opportunities between Canadian and Ukrainian companies, organizations, institutions and universities in the aerospace and aviation sectors. Key speakers included Canadian Ambassador Daniel Caron, STCU Executive Director Andrew Hood, and Olexander Zinchenko, the General Director of NSAU. This was a follow-up event to the Canada-Ukraine Business Summit held in Dnepropetrovsk and Kyiv in March 2008. Out of this March summit, the aerospace sector was assessed to have the most potential for a single-sector follow-up summit.



Twenty three Canadian participants attended representing 13 companies, organizations and government agencies, including the Canadian Space Agency, the National Research Council of Canada, the Aerospace Industries Association of Canada, Bombardier, MDA - Space Communications, NovAtel, L-3 Westcam, Smart Economy, and MDS AeroSupport. There also were participants from 48 Ukrainian entities, including the National Space Agency of Ukraine and other institutes, universities, research organizations, and companies. The Summit coincided with the signing a \$254 million deal between MDA - Space Communications and the National Space Agency of Ukraine to supply Ukraine's first space communications satellite and related ground station upgrading. This satellite is planned to be launched on a Ukrainian rocket in late 2011 and serve the expanding Ukrainian and Eastern European telecommunications and broadband needs.



## COMMERCIALIZATION AND IPR WORKSHOPS

Throughout the year 2009, STCU organized 10 Intellectual Property/Tech Transfer round-table workshops, attended by former weapon scientists, CTCOs, and other interested scientific personnel throughout the STCU Recipient Parties. In addition to these round-tables, in October STCU conducted a Technology Transfer Workshop with experts from ISIS Innovations, Oxford University. The target audience of the workshop was Chief Technology Commercialization Officers (CTCOs) of CIS countries, with representatives of institutes involved in the Institute Sustainability Program (ISP), and with Ukrainian high technology small- to medium enterprises. In addition, representatives of different organizations (state and private) involved in technology transfer participated in the workshop. In general, there were about 60 participants during the 2 days.

On April 1st a round table for CTCOs was conducted in F. Tavadze Institute of Metallurgy and Material science, Tbilisi, Georgia. The agenda and aim of the round table were the same with round table in Institute of Physics, Baku, Azerbaijan. Dr. Givi Kochoradze, CTCO Executive Director of International Center for Advancement of Research, Technology and Innovation suggested Creation of Technological Center on the Base of Consortium of Scientific Institutions and its Retrained Scientists as Managers.

In addition to the discussions Regina Sattarova from STCU's Uzbekistan office met with all the CTCO's to review the draft booklets of technologies that each country is preparing. She is planning to develop booklets that will include IPF's (Institute Profile Forms) and TPF's (Technology Profile Forms) for Georgia, Azerbaijan and Uzbekistan at this time.

One of the new aspects for CTCO's is the MPES Program (Matchmaking & Promotional Event Support). Under this program each CTCO can propose a travel request to do promotion for his or her Institute at a western technology exhibition. The CTCO selects the technologies to promote, selects the exhibition, and plans the meetings with companies at the exhibition. The goal of MPES is to give more responsibility to the CTCO's for seeking government and commercial projects.



STCU is also providing financial support for English language courses to Georgian and Azeri CTCO's to improve their English.

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