



*Working 15 Years...*



SCIENCE & TECHNOLOGY  
CENTER IN UKRAINE



*...For a Safer and Better World*

# 15 Year Anniversary



# Preamble



**Andrew A. Hood,**  
**STCU Executive Director 2004-**

*With the entry into force of the STCU Establishing Agreement in 1994, work began in earnest to establish the STCU Secretariat with its headquarters in Kyiv, Ukraine. Many operational, administrative, and technical details needed to be resolved, and while such issues are challenging in any environment, the challenges were even more daunting in Ukraine in the mid-1990s.*

*Ukraine itself was struggling to establish its governmental institutions, and to stabilize its financial and social processes. Into such an uncertain and confused situation, the preparatory STCU staff worked tirelessly and patiently to get the STCU up and running.*

*The climax of this start-up was the first STCU Governing Board Meeting, held on 14-15 December 1995. At this first meeting, the Governing Board approved the STCU Statute, approved the first STCU projects for funding, and approved the Model Project Agreement, rules of procedures, and administrative operating budgets for the Secretariat.*

*This was the STCU's first real moment in the sun; the first moment that the Governing Parties met to put the STCU program into motion and launch the Secretariat on a 15-year journey that has touched nearly 20,000 ex-USSR/ex-WMD and delivery system scientists in 5 recipient countries. Joining the STCU in this journey has been over 200 Canadian, European, and American companies and organizations that discovered the R&D capabilities in Eastern Europe, the Caucasus, and Central Asia regions. And other governmental programs—most importantly, agencies of the Recipient Parties themselves—have joined the original Funding Parties in soliciting, developing, and financing programs and projects that not only address WMD nonproliferation goals, but also other stability and security goals.*

*This brochure highlights the 15-year history of STCU activities, but it also highlights the evolution that STCU has experienced in each significant epoch of that history. This evolution proves the inherent utility of STCU to its multilateral partners to their contemporary threat reduction objectives, and to STCU 's continuing work for a better and safer world.*



# Concise history of STCU



**V.G. Baryakhtar, STCU Governing Board Member, 1995 - 2002**

*The collapse of the USSR developed into a quite dangerous situation which consisted in the following: countries appeared after it had a big number of scientists involved in the defense complex. Ukraine had such scientific areas developed at the time of USSR: tank-construction (Kharkiv), rocket production (Dnepropetrovsk), transport aircraft construction (Kyiv, Antonov DB), shipbuilding (Mykolayiv). The National Academy of Sciences of Ukraine took an important part in the “space weapon” works, in enhancement of the nuclear weapon and in creation of the systems of control of the nuclear-missile weapon complex. After the collapse these scientists resulted to be unemployed.*

*In the same time a range of the countries that were not a part of the “Nuclear Pull” (Russia, USA, France, China, Great Britain), paid a big attention to the nuclear-missile weapon creation. Emerged a situation when a possibility of involvement of the specialists of the former USSR in the weapon elaboration works arose.*

*In order to prevent this scenario US, Canada and Sweden made a decision to allocate funds to “retrain” ex-weapon scientists to the peaceful purposes or fundamental research. Now the timeliness of this decision is obvious: no flow-out of the defense specialists from Ukraine took place.*

*At the same time the Science and Technology Center in Ukraine has contributed to create favorable working conditions to develop new, peaceful research areas.*

*In the beginning of STCU existence I was appointed by the Government of Ukraine on the position of the representative in the Governing Board on behalf of Ukraine. I'd like to emphasize that the work of the Management of the Center was very well-organized and coordinated. The Chairperson in organization was John Boright, the US representative. This proceeded from the fact that main contribution was made by the US Government. At the same time all the Governing Board Meetings were conducted freely and in a democratic manner. By tradition, the final meeting was preceded by several informal ones. First, these meetings took place at the STCU premises and were prepared by the directors from the Western Parties, Ostap Hawaleshka and Borys Atamanenko from Ukraine. The crucial problems were solved here.*

*Work dinners at the Canadian Embassy were an important part of the process as well. The Executive Director was appointed from Canada. First, it was O. Hawaleshka who was later substituted by Leo Owsiacky. Not only the exact projects, but general issues of STCU work were discussed during the work dinners. For example, the use of Ukrainian scientists in Western private companies with a purpose of attracting the additional funds.*

*During the 5 years of the work in STCU I've received a good experience of working in international Committees, which I used widely in the realization of the international Chernobyl projects.*

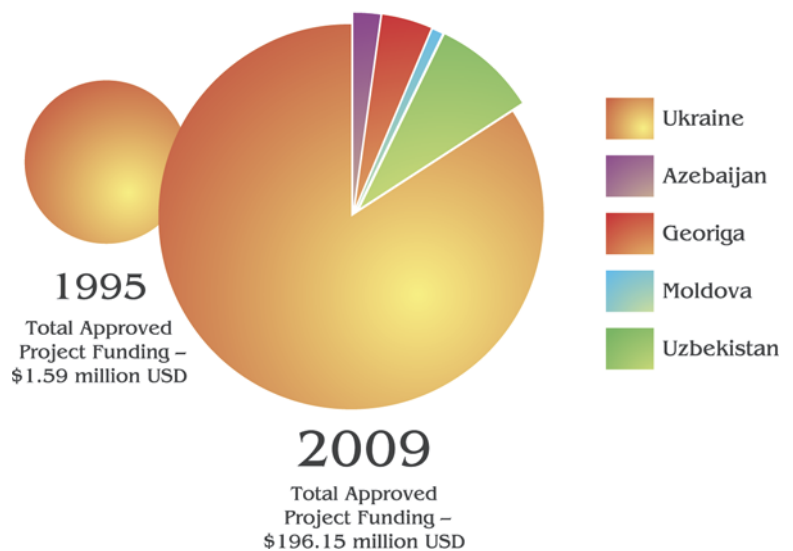




- 
- 1991** – Ukraine Gains its Independence
  - 1993** – STCU is established as an Inter-Governmental Organization with Four Founding Parties: Ukraine, Canada, Sweden and the United States of America
  - 1995** – First Government Board held at new STCU Headquarters building at 3 Laboratornyy Provulok, Kyiv
  - 1997** – Uzbekistan Accedes to STCU
  - 1998** – European Union Replaces Sweden as an STCU Governing Party
  - 1998** – Georgia Accedes to STCU
  - 1999** – STCU is accredited as a diplomatic mission by the Ministry of Foreign Affairs of Ukraine
  - 2000** – STCU celebrates 5 years successfully working in Recipient Countries
  - 2003** – STCU Surpasses \$100 Million USD in Total Project Funding
  - 2003** – Azerbaijan Accedes to STCU
  - 2003** – STCU headquarters relocated to 21 Kamenyariv st., Kyiv
  - 2004** – Moldova Accedes to STCU
  - 2005** – First Targeted R&D Initiative Program began between the STCU and Ukraine
  - 2006** – STCU-NATO joint workshop “From Science to Business”
  - 2006** – Georgia and STCU initiated Targeted R&D Initiatives Program
  - 2007** – STCU and Azerbaijan kick-off a Targeted R&D Initiatives Program
  - 2007** – STCU initiates Chief Technology Commercialization Officers (CTCO) Program with appropriate training of CTCO’s on tech commercialization issues (Ukraine, Georgia and Azerbaijan)
  - 2008** – STCU initiates its Institute Sustainability Program
  - 2009** – STCU headquarters relocated to temporary premises at 7a Metalistiv st, Kyiv
  - 2009** – STCU initiates Targeted Research Program, with the first two programs focused on nuclear forensics and biosafety (biosecurity)
  - 2010** – Total number of projects reaches 1400 while total amount of funds invested is over \$ 200 mln. USD

---

### 15 Years of Expanding & Successful S&T Collaboration



# 1995-1998 political highlights



*John Boright, STCU Governing Board Chairperson 1995 - 2002*

*The concept of the STCU was something new, connecting science and technology communities that in general had few personal and professional relationships. Much was unknown: what would the review process on all sides show about the real and perceived quality and importance of proposals? Would technical partners outside of Ukraine be interested? What would be the atmosphere in the Board and between the STCU staff and Ukrainian scientific and technical institutions? How difficult would it be to just make the practical arrangements, such as staffing, and transfer of funds?*

*The answers to these questions were overwhelmingly positive. There were many proposals that were judged by all sides to be of high quality and promise: it was clear to all that there was strong Ukrainian technical capability in many fields. The Board worked very well together, and real friendships and partnerships were developed. Outstanding staff leadership was found. Very impressive, highly motivated Ukrainian and international staff put in place efficient and modern processes, which I understand were setting a new standard for performance. It did turn out that some practical arrangements, such as office space and banking, were even more complex than expected, but in fact all of these were solved—a major accomplishment in itself. Speaking for myself, the experience and the teamwork and friendships built were a highlight of my professional life. I think we accomplished something of lasting value together.*



This first period was defined by the ramp-up of STCU operations, starting with the first projects approved at the 1st STCU Governing Board Meeting on 14-15 December 1995. One of the first challenges for the STCU Secretariat was to create a Secretariat, by hiring the needed staff! Considerable challenges needed to be overcome, even after the first GBM: the first STCU projects needed project agreements to be signed and project work to get underway; procedures had to be worked out for monitoring the projects, for paying tax-free project grants to scientists, for procuring project equipment and materials and importing/exporting these items with customs exemptions; and other such tactical details.

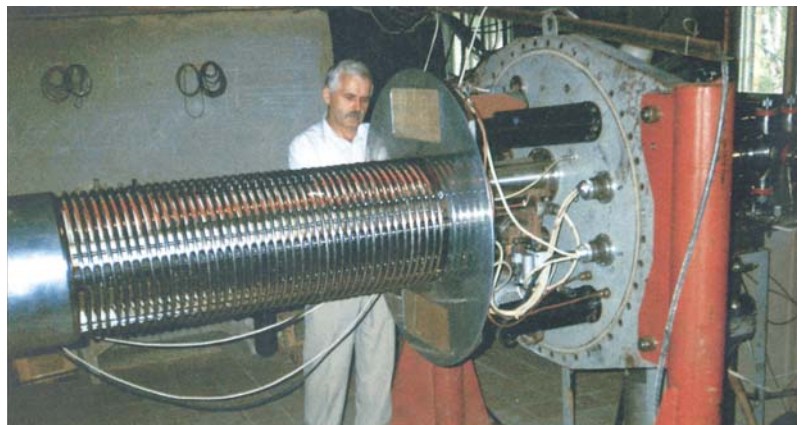
Led by STCU's first Executive Director, Dr. Ostap Hawaleshka of Canada, the Secretariat eventually built up a permanent international staff of 31 persons in 1996. The Secretariat also moved into a remodeled three-story building on Laboratornyy Provulok, centrally located in Kyiv.



The STCU also quickly established field offices in the Ukrainian regions, to provide closer assistance to the former weapon scientists and scientific centers as well as to provide better outreach and communication between the new STCU and the Ukrainian regions. The first STCU field office to open was in the city of Lviv in western Ukraine, and was quickly followed by field offices in Kharkiv in eastern Ukraine, and in Dnipropetrovsk in central Ukraine.

Soon, other countries became parties to the STCU Establishing Agreement, expanding STCU's reach and its operations beyond Ukraine. In 1997, the Republic of Uzbekistan in Central Asia completed accession to the STCU, and in early 1998 the country of Georgia in the Caucasus joined STCU. Further, in 1996 the Governing Board approved a new category of "donor" called an "STCU Sponsor", and in that same year, Japan became the first (and so far, the only) government approved for this Sponsor category (eventually, Japan would finance approximately \$1 million USD in STCU projects).

Another significant accession occurred on the Governing Party side during this period. Almost from the STCU's inception, the European Union was considering joining as a Party, and this initiative gathered momentum after the STCU started operations. In 1997, a Protocol to the STCU Establishing Agreement was negotiated by the four founding Parties, amending the STCU Agreement so that the European Communities were legally eligible to accede to the Agreement. In 1998, the European Union (represented by the European Atomic Communities and the European Community) completed its accession to the STCU Agreement. As part of this accession, Sweden—a founding member and signatory to the STCU Agreement—agreed to relinquish its membership and Governing Board seat to the European Union.



With the STCU now fully operational, the STCU closed this 1995-1998 period with its first turnover at the Executive Director position. Dr. Ostap Hawaleshka completed his tenure as the first STCU Executive Director in 1997, and at the beginning of 1998 STCU's second Executive Director, Mr. Leo Owsiacki from Canada took the reins of the STCU Secretariat.

# 1995-1998 program highlights



*From Prof. Ostap Hawaleshka, STCU Executive Director, 1995-1998*

*It is a real honor and pleasure for me to congratulate the STCU on its 15th anniversary. Who would have believed, during those difficult initial moments of its establishment that it would enjoy such success and such longevity? Our unique staff and management team, with the unfaltering support of the initial founding nations (Canada, Sweden, Ukraine and the United States of America) started something that was clearly needed, and did it right.*

*Allow me to express some words of gratitude:*

*First of all, I would like to thank the Signatory Parties for their farsightedness in providing the funding to establish what turned out to be one of the largest, long lived and recognized as probably the most successful official aid project in Ukraine. Special thanks are due to the USA State Department and CIDA for their unquestioning support at every critical moment of need.*

*Second, I am grateful to our original, so-called “nashi”, core Ukrainian staff for taking a big personal risk by believing in the STCU’s mission. Considering that at the initial stages neither of us really knew what to do, together we managed to establish a smooth running, transparent, effective, model organization that has to-date provided support to over nineteen thousand weapons-of-mass-destruction scientists from Ukraine and several other former Soviet republics – keeping them in their own countries, providing them an extraordinary opportunity to continue working in their various specialties – this time for economically useful purposes. In this manner we helped reduce the threat of proliferation of their former weapons-oriented knowhow.*

*Third, I am deeply indebted for the support and cooperation extended to me by our amazing and dedicated senior management team from the donor countries. We can all be proud of what was achieved!*

*Fourth, I would also like to thank the original 346 project scientific applicants who decided to trust this strange and unknown STCU organization by submitting their truly amazing research ideas and projects for evaluation and possible support. The close cooperation of the Ukrainian National Academy of Sciences and the Ukrainian State Security Services is also gratefully acknowledged.*

*Finally, I would like to thank the Canadian government for appointing me as the STCU’s founding executive director and thus giving me the extraordinary opportunity to contribute to the democratization and development of the country of my forefathers.*

*Following Ukrainian tradition, let me raise a toast to everyone that contributed to the STCU’s development and, together with them, wish it many more successful years!*

*MNOHAYA LITA - STCU!*





The start-up of STCU's programmatic work began at the 1st Governing Board Meeting with the approval and funding of 11 submitted project proposals, totaling approximately \$1.6 million USD. By the end of this start-up period in 1998, STCU had completed two successful Call for Project Proposals, implemented 197 approved projects totaling over \$25 million USD and involving over 4,500 scientists.

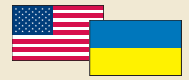
In addition, in 1996 the Governing Board approved the procedures to commence the STCU Partner Program, where governmental and non-governmental entities could then directly finance Partner Projects with former weapon scientists, subject to prior review and approval by the Governing Parties. The first STCU Partner Projects were approved at the 5th Governing Board Meeting in December 1997. By the end of 1998, there were 15 Partner Projects approved, totaling approximately \$1.4 million USD.

By 1998, the STCU was managing several new activities related to—and supplementing—the project activity. Under a Swedish initiative, a fund was established to finance the travel expenses of scientists to meet their peers in Sweden and develop professional collaborations. This concept was expanded with the Canadian/US Travel Project. STCU also began providing financial and logistical support to institutes organizing international scientific conferences—eight such conferences were supported in 1998, where STCU and STCU project results were presented.

By 1998, the first 49 STCU projects had reached their conclusion, and the Parties recognized that the project teams needed additional support in order to effectively exploit their research results. Thus, the Parties established a Patent Fund to provide financial support for Ukrainian patent applications made by Ukrainian scientists on funded STCU projects. Also, STCU organized seminars on Intellectual Property Rights (IPR) and Marketing, to train the scientists on patent regulations, patent search techniques, and other IPR and patent topics.

Finally, 1998 saw the first ISTC-STCU joint projects between Russian and Ukrainian scientists working on some of the consequences of the Chernobyl nuclear disaster. It was the first time that the two nonproliferation sister centers worked together to allow scientists of ISTC and STCU member parties to work on a single coordinated project workplan, expanding further the operational reach of both Centers.

## Leukemia and Other Hematological Diseases Among Clean-up Workers in Ukraine Following the Chernobyl Accident



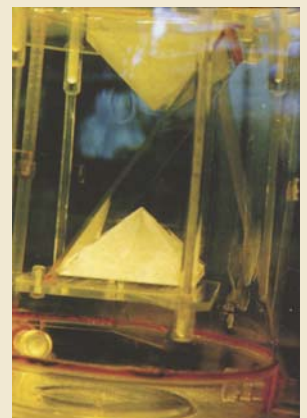
This project is supported by the National Cancer Institute, United States of America and is being executed by the Kyiv based Center for Radiation Medicine of the Academy of Medical Sciences of Ukraine. It will investigate the incidence of leukemia and other hematological diseases among clean-up workers in Ukraine following the Chernobyl accident. The implementation of this project is in the interest of the sponsoring countries and the world scientific community, and will provide new scientific information on the etiologic role of ionizing radiation in causing hematological disease. It should serve as the basis for studies of clean-up workers and will investigate more broadly than only hematological disease. It will contribute to public health policy in regard to the medical care of clean-up workers, and to the prevention and early detection of related diseases.

## Rapidly Grown Oriented KDP Crystals as Frequency Multipliers of Laser Radiation



*Institute for Single Crystals, Kharkiv.*

An STCU project aims to grow large, specially shaped  $\text{KH}_2\text{P}_0_4$  (KDP) single crystals at this institute. KDP crystals offer efficient transformation of long-wave, high power laser radiation into short-wave radiation, which allows the crystal to be a key element in control systems for high power laser beams. Currently, high power laser systems are being developed under the "Inertial Confinement Fusion" program at the Lawrence Livermore National Laboratory, USA and at the French Nuclear Center. A number of perfect KDP crystals are needed to complete projects on laser thermonuclear fusion that may contribute to creation of new ecologically friendly sources of electric power. The developed technique of crystal growth will allow a reduction in the growth period from three years to one year and for the growth of crystals to be oriented in a definite crystallographic direction. This will substantially increase the yield of usable material.





# 1999-2002 political highlights



*Yaroslav Yatskiv, Academician, STCU Governing Board Member, 2002-2010  
(Excerpts from the 2002 STCU Annual Report)*

*World civilization is gradually taking shape as a new kind of society, based on information and knowledge. The steady economic growth of any country today is only possible provided there is matching development in science, technology and innovation. Indeed, intellectual potential is the main factor which determines harmonious human development and increased social well-being.*

*Since 1991 Ukraine has been on its way to attaining social democracy and a decentralised economy. Science, or more specifically the science and technology area, must also adopt a model that would match the emerging market-based economy. However, in the new socio-economic reality the major part of the scientific potential of Ukraine, which provided for the scientific needs of the entire USSR, appeared to be rather excessive for this country alone. Before the disintegration of the USSR, two thirds of the Ukrainian scientific community's work was carried out according to external orders whose volume amounted to more than US \$1 billion. During the 1990s, the number of orders from CIS countries was reduced by a factor of 15. At the same time, scientific and engineering activities, in which more than 40% of the total amount of R&D work in Ukraine was conducted during Soviet times, have decreased in the military branch.*

*Under these circumstances, international financial and administrative support for Ukraine's R&D network has been essential.*

*One of the best examples of this support has been the Science and Technology Center in Ukraine. Its activities have specifically allowed a great number of scientists who were formerly engaged in designing and developing weapons of mass destruction to actively participate in broader-based scientific and technological research. These scientists are in the most need of attention and support in setting up international scientific cooperation, preparing grant proposals, overcoming language barriers, and so on.*

*Today, we can confidently state that the STCU has been successful in this task. In relation to the changes which have taken place in the Ukrainian economy and its thrust towards innovation and European integration, a new challenge has arisen: attracting funds from commercial and investment organizations in donor countries to carry out STCU Partnership Projects. According to experts, this is the most effective form of technology transfer on world markets.*

*The Ukrainian scientific community deeply appreciates the activities of the STCU and looks forward to continuing this creative cooperation.*



In the period beginning in 1999, the STCU saw an extraordinary expansion in political interest, which translated to increasing programmatic and financial support. The year 1999 was the beginning of the tenure of Leo Owsiaci as the STCU Executive Director, and it was also the first full year of EU participation, marked by project funding commitments of 3 million Euros plus the EU-sponsorship of a new Deputy Executive Director (EU) position and the Chief Administrative Officer (CAO) position within the STCU Secretariat.



The impact of the mid-1998 Russian ruble collapse began being fully felt in Ukraine and other STCU Recipient countries by 1999. As a result, there was renewed emphasis by the STCU Funding Parties to rapidly engage the former weapon scientists in a variety of activities, in order to assist them during this economic crisis. Soon after, Ukraine, Georgia, and Uzbekistan recovered economically and began a period of rapid economic growth, making the STCU's work easier and allowing the STCU Parties to start thinking about more substantial support in re-recruiting Partner Projects, post-project sustainability development, and other efforts to help STCU recipient scientist and institutes.

Even as the STCU Parties were considering how to build on the foundation created by the earlier Ukrainian, Georgian, and Uzbek work, additional expansion opportunities presented themselves. The STCU Executive Director embarked on outreach missions in response to requests from Moldova (as a candidate Recipient Party)

## Vitalij Petrenko



Dr. Vitalij Petrenko, Senior Research Fellow at the Institute of Nuclear Physics, Uzbek National Academy of Sciences, is a former nuclear weapons scientist currently working as a scientific leader of an important nuclear materials monitoring project for the STCU.

A graduate of Tashkent Polytechnic Institute in Electro-Physics Engineering, he is a leading expert in fissile material instrumentation and detection. Dr. Petrenko has published more than 50 scientific papers, including 2 monographs, and has 10 invention certificates and patents.

In 1997, Dr. Petrenko began working on regular STCU project #Uzb-11 entitled "Nuclear Detection Monitoring Suite for Uzbekistan." The aim of this project is to develop a suite of nuclear monitors, which could be manufactured in Uzbekistan and be used by the Uzbek Customs Service in controlling the smuggling of nuclear and radioactive materials. This project is developing novel gamma and neutron coincidence detection methods. It builds on prior work performed with Lawrence Livermore National Laboratory (USA) on a "Demonstration Project Countering Illicit Trafficking of Fissile and Radioactive Materials through Uzbekistan." Work Plan tasks under way include setting up monitors at the Tashkent International Airport and for pedestrian and vehicle control at key border crossings. Dr. Petrenko is the key technical leader for the development and engineering of the new device. Dr. Petrenko participated in an STCU training program on "How to Commercialize R&D Products (Innovations)" held in Tashkent. He is also filing for several patents based on inventions developed during his work for the STCU.

## 1999-2002 political highlights

and Turkey (as a candidate Funding Party), followed by similar missions to Azerbaijan and Tajikistan (both as candidate Recipient Parties). As a result, in 2002 Azerbaijan joined the STCU as a Recipient Party. In addition, the STCU Executive Director completed the complicated negotiations on administrative agreements to open STCU field offices in Tbilisi, Georgia and in Tashkent, Uzbekistan—the first STCU offices located outside of Ukraine.



At the end of 2000, in conjunction with the 11th Governing Board meeting, STCU organized a celebratory conference marking the 5th Anniversary of the first Governing Board Meeting and start of STCU operations. Dignitaries from the Ukrainian government, Ukrainian Parliament, and U.S., EU, and Canadian diplomatic missions in Kyiv attended. Several STCU project teams presented the fruits of their STCU experiences, demonstrating the leveraged S&T benefits of engaging ex-Soviets/WMD scientists in collaborative, international science cooperation,.

Of note, several of the attendees at this 5th Anniversary event were Ukrainian Parliamentarians closely connected with the presentation of the STCU Establishing Agreement to Ukraine's parliament (the Verkhovna Rada) for approval. While the STCU Agreement was enacted by Ukrainian presidential decree in 1994, the Ukrainian parliament still chose to take up legal consideration of the STCU intergovernmental agreement. In February 2001, the positive Rada vote approving the STCU Agreement, subsequently signed into law by the Ukrainian President Leonid Kuchma in March, gave the STCU a firm political (as well as legal) confirmation from the Ukrainian government.



The end of this 1999-2002 expansionary period for STCU brought both new transitions and new challenges on several fronts. First, in mid-2002, Mr. Leo Owsiacki ended his tenure as STCU's second Executive Director (1998 – 2002), and was replaced by Mr. Yves Carmel from Canada. Also in 2002, U.S. Governing Board representative and Board Chairman Dr. John Boright resigned his Board position after serving on the STCU Governing Board since its inception.

The period also ended with a serious challenge to STCU: the STCU's forced eviction from its Laborotorny Provuok headquarters building of the previous 6 years, and the subsequent political and diplomatic tensions between the STCU Governing Parties caused by this eviction.

In the years after the STCU Secretariat occupied the Laborotorny Provuok building, there were disputes between the Ukrainian Ministry





of Foreign Affairs and the landlords of the STCU building. This dispute had led to the Ukrainian government's refusal to provide funding for the STCU's rent, and the expiration without renewal of that lease in mid-2000. Following Governing Board instructions, the Secretariat remained in the building while diplomatic communications between the four Governing Parties took place. However, none of these communications resolved the basic situation, and in October 2002, after the cut-off of building utilities, the Secretariat was forced to vacate the building. The Governing Board responded by suspending 180 STCU projects in Ukraine due to a state of force majeure, as well as increasing diplomatic pressure on the Ukrainian government to find a solution to the situation.



After much searching for suitable premises, by the beginning of 2003 the Ukrainian government had located another office at 21 Kamenyariv Street, outside of the Kyiv city center. By the end of January 2003, the STCU staff made unprecedented efforts to relocate the STCU headquarters across Kyiv and by the end of January 2003, the STCU was moved in and back to full operations (including the re-start of the 180 suspended Ukrainian projects).



## Inessa Bolshakova



Dr. Inessa Bolshakova, Head of the Magnetic Sensor Laboratory, "Lvivska Polytechnica" National University in Lviv, Ukraine is an internationally-known expert in the development of radiation-resistant magnetic micro-sensors which have applications on space platforms; in magnetic systems of charged particle accelerators; and in nuclear power stations. A member of both the American and European Physical Societies, she has more than 50 publications. She has also won awards for work in higher education (Soviet Union, 1989), and science (Best paper at Sensor and Application Conference, Great Britain, 1999). Her radiation-resistant micro-sensors have been used on board Ukrainian and Egyptian-owned satellites.

Dr. Bolshakova began her work with the STCU in April, 1996 with project #320, "Development of Magnetic Measuring Devices and Systems for Use under Radiation in Charged- Particle Accelerators, Space Craft, and Nuclear Power Plants." A second project # 1438 "Radiation Resistant Magnetic Measuring Instrumentation" followed in September, 1999, and was designed to increase the radiation hardness of her sensors. Dr. Bolshakova's research attracted the interest of Japanese specialists which led to a joint project with Russia #Rus-02, "Highly-Stable Radiation Resistant Semiconductors," beginning in December, 2001. This latter project is one of only two joint Ukrainian-Russian projects carried out at the STCU. Contacts developed with Japanese and American collaborators have led to her organizing a special American-Japanese school for talented students from Lviv Polytechnic National University. Dr. Bolshakova prepared four Ukrainian patent applications based on the results of STCU projects and financed by the STCU. She also applied for five foreign patents to protect her intellectual property rights. The STCU has additionally helped her to move technologies to the international market through her participation in specially developed training programs.

# 1999-2002 program highlights



*Leo Owsiacki, STCU Executive Director, 1998-2002*

*It is with fondness that I look back on my tenure as the Center's 2nd Executive Director, serving from 1998 to 2002. This was a turbulent time for Ukraine and the STCU as we battled a wide range of crises brought on in part by the Russian financial default and its effect on related currencies, such as the hryvnia and the Ukraine economy. It was also a great time of growth for the Center as we set ourselves a goal of being better and faster than our much larger sister center in Moscow. Building on the foundation laid by my Canadian predecessor, the activities and budget of the organization supporting our scientists went from being 1/10th to 1/4 of the ISTC. At the same time, many new and innovative programs were designed and developed to assist the scientists we worked with in new and helpful ways, new Branch Offices established in Georgia and Uzbekistan, the EU brought into the fold and important new contacts made with Tajikistan, Moldova and Azerbaijan, which would allow their future accessions.*

*My most dreaded words in those days were "tak, v'principee" or "yes, in principle" and the fact that not a single day in five years went by without a problem to solve – either at work or in my apartment. But make no mistake, these were exciting times. I had the honor and privilege of working with many talented and exceptional staff and colleagues that made it possible to resolve all of our problems and issues and to effectively meet our objectives. The scientists we were there to help were often outstanding leaders in their fields and recognized the importance of our mission while at the same time appreciating the helping hand we provided. It is a rare opportunity one has to be part of something important and of historical consequence, and I was fortunate enough to have been given this opportunity by the Canadian government. I will never forget the colleagues, scientists, and friends made during this period and look forward to reading about the new successes of the STCU well into the future.*



STCU project activity grew sharply in this period, as more Regular Projects were approved for funding and Partner Projects started to grow in numbers. In 1999, STCU issued its 3rd Call for Regular Project Proposals, and even though this was more restricted than in previous calls, and a shorter timeframe for submitting proposals, it still produced over 1,120 Regular Project proposal submissions. By the end of 2002, STCU had funded over 500 Regular Projects (employing over 12,800 scientists) plus over 100 Partner Projects from 75 STCU Partners, all of which totaled over \$85 million (USD equivalent) in project funding.

The large number of proposals received in the 3rd Call, disseminated to the Funding Parties all at once, tended to overwhelm the Funding Parties' own proposal review and approval processes. Due to these bottlenecks, many project proposals sat waiting in the review queue for significant periods of time. This led to a Governing Board decision in 2002 to replace the deliberate Call for Regular Proposals process with a "continuous open registration" process. Under this approach, scientists submitted Regular Project proposals at any time of the year, and STCU Secretariat would continuously process and disseminate the proposals to the Funding Parties. This approach smoothed the dissemination to the Funding Parties, and better fit the Funding Parties' internal processes of that time. It also allowed the Funding Parties to more quickly focus on specific Regular Projects that were of special interest to a particular Funding Party.

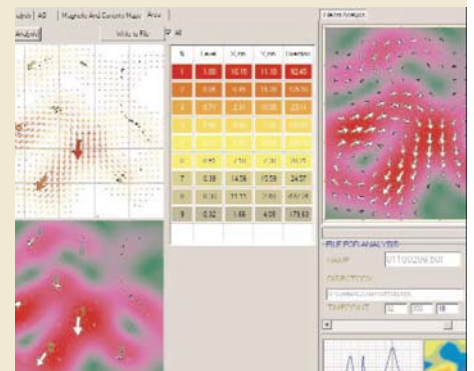
The STCU Secretariat, recognizing that these new project processes and other data needs demanded new in-house information technology systems, created a new IT Group to provide focused management on expanding STCU's IT architecture. A new STCU web site was developed, as well as a new project database format. More importantly, an initiative was undertaken to design and build a proprietary software-based project submission package in order to move STCU towards an all-electronic proposal submission process.

Another new aspect of the STCU IT effort was the creation of an Internet Initiative funded from a Supplemental

## Unlocking the Power of the Wind



Project Manager and Doctor of Technical Sciences, Professor Volodymyr Kukushkin, previously worked as the chief designer of the solid-propellant engines used in the SS-24 strategic missiles at the Pivdenne State Design Office. He still acts as a scientific consultant for PivdenMash, once the largest missile plants in the world. Following the dissolution of the Soviet Union, Professor Kukushkin headed project development for Ukrainian wind energy. He gathered around him a team of scientists and specialists from the space rocket branch to carry out Project 2499, Monitoring Wind Energy Potential and Electrical Networks for the Adaptation of Contemporary Wind Turbines. The completion of the Project was the first attempt to lay a scientific foundation for wind power in Ukraine and to develop scientific forecasting for suitable locations to build wind energy stations.



An important scientific achievement of the Project is the first-ever completed wind map at 50, 60 and 70 meters in Ukraine. The results of this project have been adopted by Ukraine's Ministry of Fuel and Energy, which is working on the construction of wind energy stations using this normative document to provide a basis for choosing site locations. Professor Kukushkin has received a proposal from Uzbekistan and Azerbaijan to conduct similar work for these states within the STCU program.



## 1999-2002 program highlights

Budget line. Under this initiative, the STCU Secretariat and Funding Parties worked with selected Recipient Party institutes to build “internet cafes” in the institutes. These cafes helped improve the connectivity between the recipient scientists and STCU (and to the rest of the world), greatly enhancing the ability of the scientists to research their project ideas, and find potential collaborators and Partners.



The STCU Secretariat established a Sustainability Group that would dedicate attention and resources to assisting with post-project results. The Sustainability Group took responsibility for developing and managing STCU Partner Promotion activities, training for recipient scientists in business management skills and IPR/patent support. The Group also initiated STCU’s Partnership Promotion “Road Shows” concept: planned missions of STCU recipient scientists to attend business trade shows and commercial technology exhibitions in Canada, Europe, and the United States, so as to promote the STCU Partners Program and

attract new Partner Projects for the recipient scientists. The Group also helped in directing more substantial travel grant support for scientists seeking partners and collaborators in future research project ideas. The group also designed and managed business management training programs for STCU project managers, approved financial assistance to over 100 patent applications (received since 1998), and helped coordinate a variety of travel grants to recipient scientists to meet potential Partners.

STCU began hosting regular Canadian trade missions to Ukraine, under the auspices of the Canadian International Development Agency (CIDA). Working closely with CIDA officials and contracted advisors, groups of small to medium Canadian businesses were brought to Ukraine to visit scientific teams and institutes working with STCU. Out of these STCU-organized exchanges came more Canadian non-governmental Partners that would finance Partner Projects with the partial financial assistance offered from CIDA.



Of note, two significant programs were initiated during this 1998-2002 period, programs that demonstrated the STCU’s utility as an implementing organization for specific governmental policy initiatives and objectives:

**The Y2K Readiness Program:** In April 1999, STCU Governing Board approved a special project to quickly address possible Year 2000 (Y2K) readiness problems at 5 Ukrainian civilian nuclear power stations. Because of

the old computer systems used at these nuclear power plants, many Western authorities believed that Ukraine was particularly at risk for computer malfunctions during the “rollover” period from 1999 to the year 2000. Using Governing Board-approved, accelerated project development/approval and funding schedule, and approximately \$2.1 million USD in funding commitments from Canada, the U.S. and the EU, STCU organized a series of computer system assessment and remediation projects (eight projects in all), involving the U.S. Department of Energy, the U.S. Pacific Northwest National Laboratory, and Ukraine’s Energoatom and Nuclear Power Plant Operational Support Institute (with advisory assistance from the International Atomic Energy Agency in Vienna). Over 300 Ukrainian specialists participated, with STCU providing the overall coordination, technical monitoring, and financial and procurement assistance. In the end, the program completed all the recommended remediation steps at the nuclear power plants, and no Y2K rollover problems were encountered.

This Y2K Program was seen as so effective that the European Commission’s Tacis Program funded a 721, 536 Euro Post-Rollover Remediation effort through STCU, extending the work of 5 of the original 8 Y2K projects so as to complete safety-related remediation work at the 5 Ukrainian nuclear power plants.

**The NASA-NSAU Projects:** Under joint agreements on peaceful cooperation in outer space between the United States and Ukraine (including the 22 November 1994 presidential agreement signed by U.S. President Clinton and Ukrainian President Kuchma), the U.S. National Aeronautics and Space Administration (NASA) and the National Space Agency of Ukraine (NSAU) agreed to conduct joint ground-based research in the areas of life sciences, microgravity sciences, and tele-medicine. The Ukrainian participation in this cooperative work was conducted as a series of STCU projects, with approximately \$2.7 million USD in financial support provided by the U.S. State Department. Beginning in late 2000, STCU registered 41 specific Regular Projects from Ukrainian scientists related to this initiative.

## Nina Kuchua



Dr. Nina Kuchua, a former weapons scientist, Head of the Research & Production Complex “Electron Technology” of Tbilisi State University, is an internationally recognized expert in the development of GaAs technology for integrated circuits and other applications. Having received her PhD in Physics and Mathematics from Joffe Research Institute in former Leningrad, USSR, Ms. Kuchua returned to her native Georgia where she has since won several awards for her semiconductor investigations at the Research Institute “Mion” and at Tbilisi State University. Starting at “Mion” as a senior scientist, she rose to become Head of Laboratory and then to Head of Department. A member of the Institute of Electrical and Electronics Engineers (IEEE), she has more than 50 publications and is a frequent speaker at international symposia. Dr. Kuchua has developed excellent scientific collaborations outside Georgia, especially in Germany and in the USA.

Dr. Kuchua has benefited from projects funded by the ISTC, the STCU, and NATO. From 1994-1997, she was the Manager of ISTC project G-10 and G-10B on “Development of Building Blocks Based on Gallium Arsenide and Related Compounds for Apparatus and Systems.” In 1999, she was awarded a project from NATO on “Development of the Enabling Technologies for the Fabrication of GaAs-based Application Specific Integrated Circuits.” In 2000, she became the scientific leader of STCU project Gr-13J on “Development of Local Non-destructive Deep Center Diagnostics Methods in GaAs Integrated Circuit Technology.” In 2002, Dr. Kuchua won her second ISTC project G-801 on “Further Improvement of GaAs Technology for Advanced Micro-system Sensors.” Dr. Kuchua has benefited from ISTC- and STCU-financed travel to the USA to promote her technology applications to universities and private companies. She has also received training from the STCU in “IPR Protection and Related Business Opportunities”.

# 2003-2005 political highlights



*Victor Alessi, STCU Governing Board Chairperson 2002-2005*

*The STCU has been a model of how nations could work together for the common good. It has played a major nonproliferation role during the entire period following the collapse of the Soviet Union. For 15 years, the STCU has promoted and supported the pursuit of peaceful science by scientists who once were involved in weapons of mass destruction. The partnership of the STCU has been a major example to the world of how nations can cooperate in science for the benefit of all peoples. Its work has not only prevented the proliferation of weapons of mass destruction, but increased worldwide scientific cooperation and transparency.*

*The success of the STCU could not have been accomplished without a strong partnership of its member states. This cooperation has shown itself to be a model for creating a more peaceful world. I congratulate all those who have contributed to the success of the STCU over the past decade and a half. Peace!*





This 2003-2005 period for STCU started on a much more positive note, now that the STCU was settled in its new headquarters at 21 Kamenyariv Street on the outskirts of Kyiv. In 2003, STCU celebrated the 10th anniversary of signing STCU Establishing Agreement, which also marked the occasion of STCU surpassing \$100 million (USD equivalent) in approved project funding since 1995.

In 2003, Dr. Victor Alessi (a former U.S. governmental arms control official and long-time U.S. representative on the ISTC Governing Board) agreed to take over the position of U.S. representative on the STCU Governing Board, and also to become its Chairman. Other new additions to STCU's membership came during this period: Azerbaijan completed accession to the STCU in 2003, with an STCU field office opened in Baku by mid-2004. Finally, after many years of effort, Moldova completed accession to STCU at the end of 2004, and an STCU office in Chisinau was opened by 2007. STCU now had seven Parties, including Recipient Parties that stretched STCU's geographic reach from Eastern Europe through the Caucasus region and on to Central Asia.



During this 2002 – 2005 period, STCU began taking serious steps to review its strategic mission and objectives within the Establishing Agreement. Thanks to the initiative of Executive Director Yves Carmel, and with the active engagement of the Advisory Committee members, a long process of discussion and debate began in 2002 to re-orient the STCU's activities to fit the evolving WMD nonproliferation priorities of the Governing Parties.

Much of these strategic discussions were influenced by the ISTC strategic planning initiative that had already been underway for a year. Particularly, the concepts of “sustainable redirection” of former WMD scientists to peaceful, research employment, as well as the “evolution to partnership” among the Funding and Recipient Parties underlined the STCU strategic planning discussions. It soon became clear that the STCU would need to re-organize itself and its programs so that more emphasis was placed on the Party priorities of redirecting STCU recipient scientists into self-sustaining employment; increasing the quantity and quality of Partners and their Partner Projects; and encouraging Recipient Parties to take a more active and equal partnership role in STCU and its programs. By mid-2004, at their 18th Governing Board Meeting held in Baku, the STCU Parties approved this new Near-Term Strategy.

At this very same time, sudden changes occurred at STCU when Executive Director Carmel resigned abruptly in March 2004. Thus, at the same June 2004 meeting that adopted a new strategy, the Governing Board also appointed a new Executive Director: Mr. Andrew A. Hood from the United States. With the United States now assuming the Executive Director position, U.S. Governing Board member Dr. Alessi agreed to relinquish his chairmanship of the Governing Board (Dr. Alessi remains on the Board as the U.S. Party representative). By mutual agreement of the four Governing Board members, the chairmanship was transferred to Mr. Zoran Stancic, the European Commission's Board representative.

As this period of STCU history reached its close, the year 2005 saw the Secretariat making changes to accommodate the objectives of the new 2004 Near-Term Strategy. With only a short period of disruption due to the 2004 Ukrainian presidential election and resulting “Orange Revolution” (causing the scheduled 19th Governing Board Meeting to be postponed from December 2004 to February 2005), the STCU Secretariat moved forward in implementing its reorganization. New departments were created, including a Technology Advancement Department under the newly created Canadian Deputy Executive Director position. The STCU also embarked on new cooperative partnerships with Recipient Party entities such as the National Academy of Sciences of Ukraine.

# 2003-2005 program highlights



*Yves Carmel, STCU Executive Director, 2002-2004  
(Excerpts from the 2003 STCU Annual Report)*

*This period began in earnest at the STCU, moving the operations of our Kyiv head office into the new facility that has been provided to us by the Government of Ukraine. More importantly, however, as of 1 January 2003, the Ministry of Education and Science of Ukraine became responsible on behalf of the Government of Ukraine to oversee the activities of the STCU. This important change opened the door to a new kind of relationship between the STCU and the Government of Ukraine, a constructive and positive relationship that was now developing, and which will give our Funding Parties an opportunity to achieve the goals and objectives they have set for the program.*

*In June 2003, the STCU held its first Governing Board meeting outside of Kyiv, in the beautiful city of Samarkand, Uzbekistan. The June Board was an excellent opportunity for the representatives of our sponsor governments to visit scientific institutes in Uzbekistan and meet with both representatives of the Government of Uzbekistan as well as distinguished members of the scientific community of Uzbekistan. The June Board meeting approved the equivalent of approximately US \$10 million; the largest ever amount of funds approved by an STCU Board.*

*It is worthy to note that new project funding coming into STCU showed the sustained interest by STCU sponsor governments, as well as a growing interest from our Partner organizations. By 2003, the total amount of project funding approved by the Governing Board since the founding of the STCU to a record level of more than \$100 million USD.*

*During this period, the discussions between the STCU Secretariat and the funding parties have been focused on Sustainability. The clear intent by the funding parties is to put in place the mechanisms and the programs that will facilitate the integration of the scientific community of the region we serve into international business and scientific circles. The STCU has therefore put in place a new tool available to the scientists who are developing scientific proposals, this tool is the Sustainability Implementation Plan. A systematic approach towards the objective of sustainability, with the resources and assistance needed to implement it appropriately.*

*On a personal note, I wish to express my deepest gratitude to all the personnel of the STCU for the great job they did and for the support they have provided in our efforts to make the STCU a better organization.*



Between 2003 and 2005, STCU saw a leveling off in project activity, with a peak of about \$17 million (USD equivalent) in newly approved project funding reached in 2003, followed by a gradual decline in annual project funding through 2005. Part of the reason for the new Near-Term Strategy was to position the recipient scientists to attract new project funding, some of which would flow through STCU (particularly, new Partner Project funding). Still, by the end of 2005 the total amount of project funding since the first Governing Board in 1995 exceeded \$130 million (USD equivalent). Of note, by 2005 the European Union had contributed approximately 20 million euros, making it the second largest overall funding contributor to STCU (behind the United States).



Among the new programs created to address the Near-Term Strategy objectives was the Targeted R&D Initiatives Program. This program aims at soliciting Regular Project proposals that would be jointly reviewed, approved, and funded by both the Recipient Party and the STCU Funding Parties. The first Targeted Initiative Program was between STCU and the National Academy of Sciences of Ukraine, under the framework of a 2005 Statement of Co-

## Destruction Methods for PFM-1 Mine Ammunition



Anti-personnel mines have become a serious problem throughout the world today. It is estimated that between 15,000 and 20,000 new casualties are caused by landmines and unexploded ordnance each year. Most of these casualties are civilians and most lie in countries that are now at peace.

Playing its part to help eradicate this serious problem, during 2003-2004 the STCU financed and successfully completed a project entitled Research of the Technical Condition of Ammunition Containing PFM-1 Series Anti-Personnel Mines (APMs).

Financially backed by the European Union, this project was aimed at obtaining information regarding possible ways for safely destroying various forms of ammunition (canisters, bombs, and propelled shells) for special kinds of anti-personnel mines (APM) containing toxic liquid explosives. At nearly 6 million units, the total number of PFM-1 series APMs in Ukraine is quite great and poses a real security and environmental threat that is exacerbated by the fact that the shelf life for the mines has already expired.

The head of the Common Arms Reduction Support Fund and Project Manager Roman Karpenko assembled a team of specialists in various fields (ammunition, explosive, toxicology, chemistry, etc.) who were capable of thoroughly exploring the problem, performing the necessary experiments (including field testing explosions of the ammunition and toxicological analysis employing animals), and preparing recommendations on what technologies could be employed for the utilization of the mines; all in less than one year. The project was performed in close collaboration with Peter Krejsa, a European expert in the field of ammunition destruction.

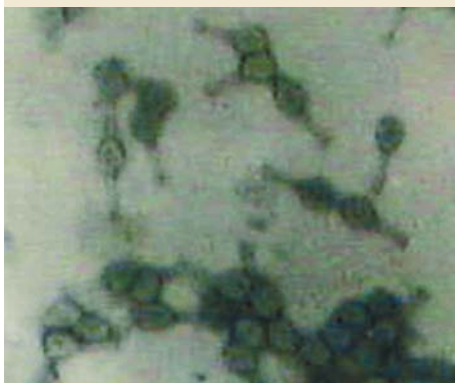
The project results will be used to prepare and hold a tender on the choice of the most appropriate technology for the destruction of the mines.

## 2003-2005 program highlights



operation between the two organizations. Under the first cycle of this STCU – Ukrainian Targeted Initiative, 7 projects were approved for an approximate amount of \$500,000 from the National Academy of Sciences of Ukraine being matched by \$378,050 USD plus 97,560 euros from the STCU. This marked the first time in STCU history that projects were co-financed in equal partnership between the Funding and Recipient Parties.

### Bacteriophages against Antibiotic Resistant Infections



The Laboratory of Morphology and Biology of Phages was established simultaneously with the foundation of the G. Eliava Institute of Bacteriophages in 1923. From the beginning, its purpose was to conduct scientific-research work related to bacteriophages involving isolation of bacteriophages, to research their biological properties and a range of activities that allowed for the use of phages against infectious diseases in medical practice.

The principal aim of STCU projects at this lab is to improve the complex preparations created with naturally occurring agents, such as bacteriophages and antifungal substances, and to obtain a new generation of biocomposites, using biodegradable poly (ester amide) s as a matrix. Such products provide a novel approach to management of poorly vascularized wounds (i.e. diabetic foot ulcers, pressure ulcers in nursing home patients, tropic ulcers, etc.). Use

of antibiotics in this setting are generally not efficacious since due to poor vascularization, antibiotics can seldom penetrate to affected areas at high enough levels to eradicate infection. Due to the recurrent courses of antibiotics that these patients have received, the bacterial pathogens causing the infection are often also antibiotic resistant.

At the Laboratory, various technological processes have been elaborated producing the following combined preparations:

1. Intesti phage (against intestinal infections)
2. Phyophage (against purulent infections)
3. Mikolis (combined preparation against bacterial and fungous diseases)
4. Bacteriophage “DG.” (Combined preparation of a broad range against purulent diseases)
5. Bhagobioderm (combined phage preparation of a prolonged action on the base of biodegraded polymer against purulent infections). Interest in this product has been expressed by Intralytix, Inc., a US company located in Baltimore working on commercialization of bacteriophage products. A patent application for this preparation has been filed to the US Patent and Trademark Office.



In 2005, STCU's new Sustainability Promotion Department absorbed the previous Sustainability Group, took over the Partners Program, the Patent Support Program, and initiated a new Chief Technology Commercialization Officer (CTCO) Program to develop tech transfer offices within selected, targeted institutes employing large numbers of former weapon scientists.

CIDA Partnership Promotion missions continued throughout the 2003 – 2005 period, with the 13th mission visiting Ukraine in November 2005. In this mission, 9 Canadian companies had meetings with 35 institutes in Kyiv, Lviv, Dnipropetrovsk, Kharkiv, Odessa, and Sevastopol, and from these meetings, 7 Partner Projects were developed.



Still, the close of 2005 saw a decline in overall STCU project funding, confirming a downward trend in STCU project activity since 2003. In particular, approved Regular Project funding from the three Funding Parties had dropped from the peak of \$14.24 million (USD equivalent) in 2000 to \$8.6 million (USD equivalent) in 2005, and Partner Project funding dropped from \$7.72 million (USD equivalent) in 2002 to \$4.48 million (USD equivalent) in 2005.

## STCU Opens National Radioanalytic Center in Uzbekistan



*From left to right, Jon Purnell, US Ambassador to Uzbekistan, Andrew Hood, STCU Executive Director, Dr. Jeff Richardson, Principal Deputy Program Leader (Proliferation Prevention & Arms Control Program, Lawrence Livermore National Laboratories) and Academician Bekhzod Yuldashev, President of the National Academy of Sciences of Uzbekistan.*

Two STCU projects at the Institute of Nuclear Physics (INP) in Tashkent, Uzbekistan have created this national analytical center and companion mobile field laboratories, which will provide the INP with a source of contract analytical work. The INP is at the center of a joint U.S.-Uzbek program to improve the Uzbek capability to monitor, detect, and identify the transit of illicit radioactive materials across its borders. A key element of this border security system is a modern radioanalytic laboratory for analysis and characterization of materials detected and intercepted at Uzbek border crossings. But in addition to this nonproliferation mission, the center will also provide Uzbekistan with an important capability to study, evaluate, and monitor a wide variety of materials that play a role in Uzbekistan's industrial economy as well as its environmental and public health security. The laboratory can provide analytical services to Uzbek government agencies and companies involved in industrial metallurgy, recovery of precious metals, soil nutrient replenishment in agricultural land, geological studies for ore prospecting, medical diagnostics, food quality, and environmental monitoring. With this radioanalytic

laboratory, the INP is now positioned to further diversify its activities in the non-nuclear sphere, and make important contributions to Uzbek national development and quality of life for the Uzbek people.

The National Radioanalytic Center was officially opened during a Ribbon Cutting Ceremony at the Institute of Nuclear Physics on October 6, 2004. STCU Executive Director Andrew Hood participated in cutting the ribbon and the ceremony was attended by members of the diplomatic community, officials of the government of Uzbekistan as well as members of the Uzbek scientific community and STCU staff.

# 2006-2010 political highlights



**Zoran Stancic, STCU Governing Board Chairperson 2005-2008**

*The Science and Technology Centre in Ukraine (STCU) is now commemorating the 15th anniversary of its establishment, marked by the first meeting of its Governing Board in December 1995. I personally feel privileged to have had the chance to participate in and contribute to guiding the organization in achieving its policy goals.*

*STCU is much more than a research funding organization. Besides the very difficult economic conditions they were facing, the scientists from Ukraine, Azerbaijan, Georgia, Moldova and Uzbekistan were confronted with another vital issue: their isolation from the international scientific community. One of the most important contributions the STCU has made is that it acted as a gateway to the world for scientists from these countries. I would like to stress however, that this bond was not unidirectional. It also allowed our own scientific community in Europe, Canada, US and beyond, to discover a new world, a different way of thinking, of creating, of discovering and acquiring knowledge.*

*The procedures and programs of the STCU were very well conceived, offering a wide variety of tools to support research and development initiatives, but also to try and promote an entrepreneurial and more commercially-oriented mindset in the recipient scientists and their organizations. One of the greatest characteristics of such programs was their systematic collaborative nature: the scientists have to link with their peers in the funding countries. The mission to counter a potential threat of diffusion of secret knowledge was of course the primary reason for creating the STCU. But right from the start, the objective of supporting the reconstruction of these countries' economies was enshrined in the establishing International Agreement. The quality and sheer size of the S&T system in these countries represented a tremendous asset that needed to be put into play for building their future. The STCU has been doing just that. It has helped the scientists to better address the socio-economical needs of their countries, and encouraged them to bring to the market the fruits of their work for the benefit of the population.*

*The STCU is a lean and efficient organization. It has sometimes sailed through waves of difficult times, just to mention the discussions on the location of the Headquarters office which was a recurrent topic in our discussions at the meetings of the Governing Board. But such difficulties remain anecdotal, because STCU keeps on delivering! While serving as the Chairman of the Governing Board from 2005 to 2008, I have witnessed a clear evolution, moving slowly from the donor-to-recipient approach to building an equal partnership. The traditional beneficiary countries became more and more engaged, aiming ultimately at a joint ownership of the Centre. Some programs are now co-funded, and a subtle mix between the usual bottom-up and a more top-down approach is taking shape. Prioritizing research areas is not easy, but it is a clear sign that the governmental institutions are taking steps to define strategically the orientations needed.*

*Today, global security concerns are still headline issues. They entail a shared responsibility and any risk of failure would need to be collectively addressed. The STCU is positioned at the centre of such concerns and has become a platform for co-operation which has proved successful over the years. Its capability to adapt to its environment and its strict governmental oversight makes it an organization of choice for addressing regional challenges through international S&T cooperation.*



In this period, the changes in STCU's political leadership continued, most notably with the replacement of CIDA as the Canadian Party program representative with the Global Partnership Program of Canada's Department of Foreign Affairs and International Trade. Given the WMD elimination and nonproliferation mandate of Canada's Global Partnership Program, such a change tied STCU even closer to the overall G8 Global Partnership against Weapons and Materials of Mass Destruction, as well as aligned Canadian Party programmatic focus more closely to the STCU's own mandate.

Members on the Governing Board also continued to change. By 2008, EU Governing Board representative and Board Chairman Mr. Zoran Stancic was succeeded by Dr. Anneli Pauli (a new Deputy Director General for Research in the European Commission). Dr. Pauli was in the chair for less than a year, when broader changes in responsibility occurred within the European Commission, culminating in EU Party leadership transferring from the Directorate for Research to the Directorate for European Cooperation (AidCo) at the beginning of 2010.

STCU was hit with yet another crisis surrounding its headquarters building. The 5-year lease for the office premises at 21 Kamenyariv Street expired at the end of 2006, and rather than renew the lease under higher rental payment terms, the Ukrainian government decided that the STCU headquarters should be moved to state-owned premises. The problem was that no suitable premises were readily available, and once again, STCU was caught in a situation where it was occupying office premises without a lease.

In a near identical repeat of the premises crisis in 2002, utilities were cut-off to the STCU's Kamenyariv offices in April 2007 due to non-payment by the Ukrainian government. In response, and following pre-approved instructions from the Governing Board, STCU closed down its headquarter operations and suspended all Ukrainian projects due to a state of force majeure. For two months, STCU remained closed until the Ukrainian government offered a solution: extend the Kamenyariv lease until the end of 2007 and relocate the STCU to temporary premises prepared for the Secretariat by the start of 2009. STCU will remain in these temporary premises on the campus of Kyiv Polytechnic Institute until a brand new office building was constructed (also on KPI territory) by 2012.

After several months of debate, the Governing Board reluctantly agreed to the Ukrainian proposal at its 26th Governing Board Meeting in November 2008. Thus, in February 2009, STCU staff began to move the STCU headquarters to new offices, its third (and not its last) office location.

While these disruptions threatened the political future of STCU, the period was marked by the repeated, strong expressions of support of STCU Parties to not only keep STCU operating, but to start actively planning for its future. Throughout the 2006-2010 period, the STCU Parties and Secretariat engaged in new strategic planning discussions to replace the 2004 Near-Term Strategy with a new strategy aligned with the evolving and current threat priorities of the Parties. These discussions have lasted longer than the 2002-2004 round of strategic planning, in part because this time the discussions touched upon more fundamental aspects of STCU's mandate and mission, indeed on the very question of what STCU should be doing in that future.

These strategic discussions continue today, with a view to prepare STCU for the post-2012 future, when presumably the new global security and stability priorities of Canada, the European Union, Ukraine, the United States, and the other STCU Parties will be incorporated into a new STCU strategic vision and programmatic directions.

## Nuclear Forensics Coordination Meetings



On 8-10 February 2010, STCU hosted a working meeting of nuclear forensics experts to develop specific project proposals for the STCU Targeted Research Program – Nuclear Forensics initiative. The meetings, held at Kyiv Polytechnic Institute, included scientists and government officials from Ukraine, Azerbaijan, Georgia, and Moldova. There were keynote speakers from Health Canada and Defense Research and Development Canada (Ms. Sonia Johnson), from the European Commission (represented by Dr. Klaus Mayer, JRC Laboratory of Transuranium Elements), and from Lawrence Livermore National Laboratory (Dr. Eileen Vergino representing the U.S. Department of Energy / National Nuclear Security Agency). The participants discussed technical details of potential STCU project proposals, which the Canadian, EU, and U.S. representatives felt were suitable for funding consideration. The STCU staff will be working further

with the Ukrainian, Azeri, Georgian, and Moldovan participants to develop and refine the preliminary project proposals so as to meet the expectations and recommendations of the western nuclear forensics program experts.

# 2006-2010 program highlights



**Anneli Pauli, STCU Governing Board Chairperson 2008 - 2009**

*It is now 15 years since the Science and Technology Centre in Ukraine first started its activities. During these 15 years, the STCU has been serving an important mission: it contributed to a safer world, it supported a wide community of scientists faced with drastic changes and dire economic conditions, it worked to ensure that scientific research would bring solutions to the socio-economic problems of newly independent republics, and above all, it acted as a bridge builder between the scientific communities of East and West.*

*The 15th anniversary obviously raises the question of the future of STCU. This organisation was created in the 1990s to tackle an immediate threat following the collapse of the Soviet Union: the potential spread of scientific and technological knowledge on weapons of mass destruction and their means of delivery. Since then, the situation has changed; the risk has been mitigated. Is there still a specific mission to perform? Without a doubt. The economic and political stabil-*

*ity of many of the STCU beneficiary countries has improved but remains fragile. Globally, the quest to acquire WMD (Weapons of Mass Destruction) and their means of delivery by certain states or non-state actors persists, and some observers say, HAS even increased.*

*When I assumed the chairmanship of the STCU, reflections on the future had started to take place. What really animated us during such discussions was the common understanding of the potential of such an organisation to bring added value, and to fill a gap in facilitating cooperation to address the regional current and emerging stability and security concerns necessitating science-based solutions.*

*Furthermore, innovative technological responses to security issues often raise commercial competitiveness concerns. Constantly adapting to the needs of the members it serves, STCU has built up strengths and expertise in this respect. In addition, this organisation has progressively developed close relations and confidence with stakeholders, and made itself the facilitator of collaborative relationships in the region and beyond. As a dynamic, flexible, and transparent institution, the STCU is now uniquely situated to help the Parties and, more broadly, the international community to pursue broader cooperative initiatives addressing common, contemporary security and stability priorities.*

*Celebrating 15 years of concrete results and the promise of a successful future is also an acknowledgement of the significant contribution of all who made this possible. I would like therefore to take this opportunity to express my sincere gratitude to the STCU founders, the staff, the current and past Executive Directors, the Parties delegations and representatives of the Governing Board, and above all, the scientists who have been engaged with the Centre during these past 15 years.*





On the program side, the 2005 reorganization and new programs had yielded immediate progress toward the 2004 strategic objectives. In 2006, STCU hit an all-time record in approved project funding in a single year (\$19.8 million, USD equivalent), as well as highest level of approved Governmental Partner Project funding. This achievement was followed up the next year, when focused Partnership Promotion efforts yielded a record level of approved Non-Governmental Partner Project funding (\$4.6 million, USD equivalent). Even though STCU project activity has declined since those peaks of 2006-2007, the level of project funding remained high compared to previous years. By the close of 2009, STCU had received over \$195 million (USD equivalent) in project funding, with the donors contributing the following amounts: Canada - \$9.3 M, the U.S. - \$76.6 M, the European Union - \$42.2 M (EURO 33.6 M), Non-Government Partners Sector - \$27.8 M, Government Partners Sector - \$38.9 M and others (e.g., Japan, CERN) - \$1.0 M.

The Targeted R&D Initiatives Program helped in the expansion of the overall project activity,



## New Biosafety Training Center Created in Ukraine



STCU Project #4440 "Ukrainian Biosafety and Biodefense Training Center Organization" is a \$360,000 USD project financed by the Global Partnership Program of the Department of Foreign Affairs and International Trades (DFAIT) of Canada. The project, started in September 2008, will establish a modern biosafety training center on the territory of the I. I. Mechnikov Ukrainian Research Anti-Plague Institute (URAPI) in Odessa, Ukraine. Fourteen former biological weapon scientists are among the 19-member project team at the Odessa institute, directing their former weapons expertise to this important project in public safety.

The Ukrainian project members worked closely with Canadian biosafety experts to design the Biosafety Training Center, where Ukrainian specialists working with especially dangerous infections will be trained using newly developed programs that combine the best experience and methodological approaches of the former Soviet Union anti-plague system with modern international biosafety standards. The Center will be equipped with modern biosafety cabinets, computers, and other facilities to train the staff. The Biosafety Training Center will contribute to decreasing the level of biological risks in Ukrainian laboratories and preventing dangerous infections from escaping from the laboratories. The Center also will help to bring Ukrainian laboratory biosafety standards up to international standards and integrate Ukrainian specialists into the international biosafety community.

## 2006-2010 program highlights

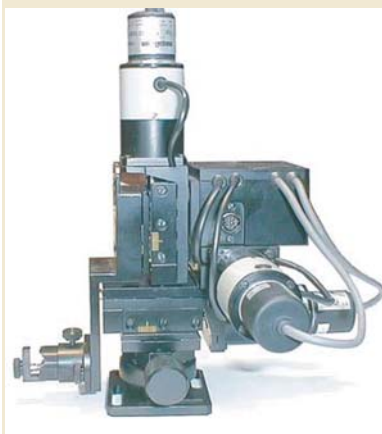


and demonstrated the increasing sense of equal partnership between Funding and Recipient Parties. Joining the successful STCU-Ukrainian Targeted Initiative Program where identical programs in Georgia (started in 2007), Azerbaijan (2008) and Moldova (2009). With four separate programs underway, by 2009 the Targeted Initiatives Program was approving nearly 60 Regular Projects, for a total of roughly \$3.2 million – with half of the financing coming from the participating Recipient Parties.



On the sustainable redirection side, the STCU kicked off Chief Technology Commercialization Officer (CTCO) Programs in Ukraine, Azerbaijan, Georgia, and Moldova. A total of 50 CTCOs were trained, and encouraged to form associations, share lessons learned, and promote their institute's technical capabilities and offerings to commercial customers. Joining this program was a pilot program approved by the Governing Board in 2008: an Institute Sustainability Program aimed at having selected

### Nanomanipulator Technology sees US Commercial Success



The Small Scientific Production Enterprise "Lileya" was founded in 1992 by the group of professionals formerly of the "ARSENAL" State Factory in Kyiv. The main direction of activity of Lileya Enterprise is the research, development and manufacturing of high technological devices based on piezoelectric motors and precision machine technologies used in space and ground systems. Led by Dr. S. Petrenko, with 25 years experience as engineer - researcher in the field of solid-state electronics engineering, the Lileya Enterprise has had several STCU projects (including two Partner Projects with U.S. companies) to develop a variety of multifunctional piezoelectric micromanipulators. Taking advantage of STCU Patent Support Program and working closely with the STCU staff and with U.S. representatives, these micromanipulator devices have been patented in the United States and recently a commercial licensing agreement was signed with a U.S. company through the U.S. Department of Energy.

institutes submit proposals to help them progress on strategic growth plans and develop more competitive and sustainable capacities.

Finally, in 2009, the Secretariat proposed another pilot program called Targeted Research Programs. This pilot activity organized workshops and meetings where new donor programs from the Funding Party side (particularly governmental programs focused on security and stability areas) could outline their program interests and priorities, to which



selected Recipient Party experts could offer project proposals and concepts answering those priorities. Two subject matter expert workshops were held in 2009: one on nuclear forensics and the other on biosafety/biosecurity. In 2010, one of those areas—regional nuclear forensics—had attracted potential Governmental Partner project ideas for regional development of analytical networks and future S&T projects to develop forensics technology and capabilities.

## Targeted R&D Initiatives: Creating Equal Partnerships



Beginning in 2005, the STCU created its Targeted R&D Initiatives Program. This unique program seeks to create an equal partnership between STCU and national-level science authorities of the STCU Recipient Parties; a partnership focused on helping former weapon scientists target their talents towards the long-term development and national priorities of their country. The first Targeted Initiatives program was established between the STCU and the National Academy of Sciences of Ukraine, where in 2005 approximately \$1 million USD in research projects were solicited, jointly reviewed and approved by STCU and the National Academy, and financed in equal parts: 50% of the approved project funding coming from Ukraine, the remainder from the STCU Funding Parties. This was the first time in STCU's history where a Recipient Party joined the Funding Parties as an equal partner in STCU project funding. The success of this STCU-Ukraine

cooperation led to Targeted Initiative Programs being established in Azerbaijan, Georgia, and Moldova. Since 2005, nearly \$9 million USD in Targeted Initiatives projects have been approved and funded, with half of that project financing coming from the Recipient Parties.



Working 15 Years...

# STCU beyond 2010

**Andrew A. Hood, STCU Executive Director 2004-**

*It is easy to perceive the STCU (and perhaps former weapon scientist redirection in general) as a mere isolated response to a specific WMD proliferation threat of the early 1990s. But if one considers the overarching concept that embodies the STCU—and its sister center in Moscow, the International Science and Technology Center (ISTC)—there is much to be said for the value of the “Science Centers approach” in today’s global security environment.*

*Today’s challenges to security and WMD nonproliferation require approaches that more fully address the “intentions” part of the threat, as much as the “capabilities” part. The STCU has shown great utility in not only addressing S&T-based problems and challenges, but also in influencing the normative behavior of individuals, groups, and communities below the nation-state level. When we step back from the current ISTC/STCU programs, one can see that the model described by the Science Centers offers useful guides, experiences, and lessons for future cooperative security initiatives. Indeed, to the extent that contemporary threat vectors come from the information- and technology-empowered individual, the “Science Centers concept” of shaping the actions and attitudes of the individual becomes even more important.*

*Some say that it is time to move on from the Science Centers of the 1990s, as the STCU Recipient Parties grow economically stronger, politically stable, and as the passage of time reduces the urgent dangers of the post-Soviet crisis. Perhaps it is more important to have our perceptions “move on” from the narrow, constrained concept of ex-Soviet WMD scientist redirection, and to see the STCU as a pioneering model for addressing the emerging stability and security needs of the 21st century. The STCU, as a proven, credible, and effective multilateral organization, is well positioned to step beyond the narrow conceptions of its 1995 mission. STCU can, and will, serve as a guide and as an engine for future initiatives to address critical S&T-based challenges—in short, to continue its work for a safer and better world.*





# STCU points of contact

## CANADA

### Andrew Shore

Global Partnership Program  
Foreign Affairs Canada  
Board Member  
125 Sussex Dr.,  
Ottawa, ON, Canada,  
K1A 0G2  
e-mail: [andrewshore@international.gc.ca](mailto:andrewshore@international.gc.ca)

### Contact person at the Canadian Government

### Sabine Hey

Senior Program Manager  
Redirection of Former Weapons Scientists  
Global Partnership Program  
Foreign Affairs Canada  
125 Sussex Dr.,  
Ottawa, ON, Canada, K1A 0G2  
Tel: +1-613-944-2429,  
Fax: +1-613-944-1130  
e-mail: [sabine.hey@international.gc.ca](mailto:sabine.hey@international.gc.ca)

## EUROPEAN UNION

### Markus Cornaro

Board Member  
Director  
Europe, Southern Mediterranean,  
Middle-East and Neighbourhood Policy  
EuropeAid Co-operation Office  
European Commission  
B-1049 Brussels, Belgium  
e-mail: [marcus.cornaro@ec.europa.eu](mailto:marcus.cornaro@ec.europa.eu)

### Contact person at the European Commission

### Jean-Paul Joulia

Advisory Committee Member  
Head of Unit A4 Nuclear Safety  
EuropeAid Co-operation Office  
European Commission  
B-1049 Brussels, Belgium  
Tel.: (+32.2) 295 72 10,  
Fax: (+32.2) 299 52 06  
e-mail: [jean-paul.joulia@ec.europa.eu](mailto:jean-paul.joulia@ec.europa.eu)

### Sorin Popa

Administrator  
Unit A4 Nuclear Safety  
EuropeAid Co-operation Office  
European Commission  
B-1049 Brussels, Belgium  
Tel.: (+32.2) 296 62 09,  
Fax: (+32.2) 299 52 06  
e-mail: [sorin.popa@ec.europa.eu](mailto:sorin.popa@ec.europa.eu)

## UKRAINE

### Yaroslav Yatskiv

Board Member, Academician  
National Academy of Sciences of  
Ukraine  
54 Volodymyrska Street  
Kyiv, 01030, Ukraine  
Tel.: +38-044-239-6567,  
Fax: +38-044-234-6387

### Mikhail Zgurovsky

Advisory Committee Member  
Rector  
National Technical University of  
Ukraine  
"Kyiv Polytechnic Institute"  
37 Prospect Peremogy, Kiev 03056,  
Ukraine  
Tel.: +38-044-236-6913  
Fax: +38-044-236-5932

## USA

### Victor E. Alessi

Board Member

### Contact person at the US Government

### Charles Jacobini

ISN/CTR - Room 3327  
United States Department of State  
2201 C Street, N.W.  
Washington, DC 20520  
Tel: +1-202-736-7137  
Fax: +1-202-736-7698  
e-mail: [jacobinicb@state.gov](mailto:jacobinicb@state.gov)

## STCU SECRETARIAT

### Science & Technology Center in Ukraine Headquarters

7a Metalistiv Street  
Kyiv 03057, Ukraine  
Tel.: +380-44-490-7150  
Fax: +380-44-490-7145  
e-mail: [stcu@stcu.int](mailto:stcu@stcu.int)  
website: [www.stcu.int](http://www.stcu.int)

### Andrew A. Hood

Executive Director (USA)  
e-mail: [andrew.hood@stcu.int](mailto:andrew.hood@stcu.int)

### Igor Lytvynov

Senior Deputy Executive Director  
(Ukraine)  
e-mail: [igor.lytvynov@stcu.int](mailto:igor.lytvynov@stcu.int)

### Landis Henry

Deputy Executive Director  
(Canada)  
e-mail: [landis.henry@stcu.int](mailto:landis.henry@stcu.int)

### Michel Zayet

Deputy Executive Director  
(European Union)  
e-mail: [michel.zayet@stcu.int](mailto:michel.zayet@stcu.int)

### Victor Korsun

Deputy Executive Director  
(USA)  
e-mail: [vic.korsun@stcu.int](mailto:vic.korsun@stcu.int)

### Curtis "B.J." Bjelajac

Chief Financial Officer  
(USA)  
e-mail: [curtis.bjelajac@stcu.int](mailto:curtis.bjelajac@stcu.int)

### Anthony Nichol

Chief Administrative Officer  
(European Union)  
e-mail: [anthony.nichol@stcu.int](mailto:anthony.nichol@stcu.int)

## Information Office in Azerbaijan

### Adalat Hasanov

Institute of Physics  
33-A H.Javid Ave.,  
Baku 1143, Azerbaijan  
Tel./Fax: +994-12-438-2074  
e-mail: [adalat.hasanov@stcu.int](mailto:adalat.hasanov@stcu.int)

## Information Office in Georgia

### Akaki Peikrishvili

7 E. Mindeli St.,  
Tbilisi 0186, Georgia  
Tel./Fax: +995-32-326-891,  
+995-32-321-657.  
e-mail: [akaki.peikrishvili@stcu.int](mailto:akaki.peikrishvili@stcu.int)

## Information Office In Moldova

### Alfreda Rosca

1 Chelmare Ave.,  
Chisinau 2002, Moldova  
Tel./Fax: +373-69-172-668  
e-mail: [alfreda.rosca@stcu.int](mailto:alfreda.rosca@stcu.int)

