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**BROOKHAVEN**  
NATIONAL LABORATORY

managed for the U.S. Department of Energy by Brookhaven Science Associates,  
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## Changes in ISPO

### Theresa Michna Leaves ISPO

After working more than three years as the administrative assistant in the ISPO liaison office in Vienna, Theresa Michna accepted a new job at the IAEA. Theresa was hired by the IAEA Department of Management's Division of Public Information to manage the photos and edit sections of a coffee-table book, *IAEA 50th Anniversary Commemorative Photo Album*, which will include over 400 photos. She is enjoying the writing, layout, and research that such a book requires. We wish her the very best in her new endeavor.

Until further notice, please contact Barbara Hoffheins for any hotel or other assistance you require that Theresa would have provided. Barbara can be reached in Vienna at +43-1-31339-4747 or e-mail [hoffheins@bnl.gov](mailto:hoffheins@bnl.gov).



Theresa

Barbara

### Josh Tackentien Joins ISPO

Josh Tackentien has joined ISPO from Mercyhurst College, Erie, PA, with a Masters Degree in Applied Intelligence. During his time at Mercyhurst, Josh worked on a non-proliferation study, designed a game simulating IAEA inspections, worked on an infectious and chronic disease estimate for the National Intelligence Council (NIC) and completed other research and information collection and analysis projects.

Mr. Tackentien grew up with an interest in science and history. His interest in non-proliferation increased during a study examining non-proliferation issues. This project was quickly followed by an Advanced Analytical Techniques class which allowed him to design a card-based game simulating IAEA inspections. The game, *Inspection!*, won him the Institute for Nuclear Materials Management's (INMM) JD Williams Student Paper Award for the Poster Session at the 47<sup>th</sup> Annual Meeting of the INMM.

Mr. Tackentien continued his work with *Inspection!* this year running an experiment to gauge the game's educational – training potential. He is incorporating this information into his master's thesis.

Mr. Tackentien received his B.A. in Photography from Pratt Institute, Brooklyn, NY, in May 2005. He has worked for the National Hockey League and Volkswagen, and as a U.S. Marine, a Resident Director, and a bartender.



Josh

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**Recruitment for the  
Department of Safeguards  
Donna Occhiogrosso**

The following positions are being advertised by the IAEA Department of Safeguards:

**Programme Management Officer** Section for Technical Support Coordination (P-3)  
Division of Technical Support  
Vacancy Notice No. 2007/046  
Deadline: August 20, 2007  
Published Salary: \$81,000

**Safeguards Information Analyst** Declared and Statistical Information Analysis Section  
Division of Information Management (P-3)  
Vacancy Notice No. 2007/043  
Deadline: August 22, 2007  
Published Salary: \$80,000

**Safeguards Inspector Radio-analyst (P-3)**  
Tokyo Regional Office  
Division of Operations A  
Vacancy Notice No. 2007/047  
Deadline: September 3, 2007  
Published Salary: \$93,000

**Safeguards Information Analyst**  
Information Management Unit  
Declared and Statistical Information Analysis Section  
Division of Information Management (P-4)  
Vacancy Notice No. 2007/048  
Deadline: September 3, 2007  
Published Salary: \$97,000

**Safeguards Equipment Engineer**  
Planning Coordination Unit  
Section for Technical Support Coordination (P-4)  
Division of Technical Support  
Vacancy Notice No. 2007/049  
Deadline: September 3, 2007  
Published Salary: \$97,000

**Unit Head (P-5)**  
Information Management Unit  
Division of Information Management  
Vacancy Notice No. 2007/041  
Deadline: September 3, 2007  
Published Salary: \$116,000

**Section Head (P-5)**  
Information Collection and Analysis Section  
Division of Information Management  
Vacancy Notice No 2007/055  
Deadline: September 26, 2007  
Published Salary: \$116,000

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**Update of the new  
ISPO Information System (IIS)  
Michelle Silva and Al Queirolo**

The International Safeguards Project Office (ISPO) began using modules of the information management system, built by the Information Systems Analysis and Development (ISAD) team at Los Alamos National Laboratory, in early January of this year. Currently, the system is available to be used internally by the ISPO office to handle daily operations such as calendars, travel requests, and an electronic library that houses reports, documents, photos, and other material. The information system is being used as an important component in the recruitment of experts to assist the International Atomic Energy Agency through cost-free expert, junior professional officer, and regular staff positions. It is also being used by ISPO to plan for and manage recruitment trips, tradeshow, and other outreach activities.

In addition to the internal elements already in use, ISPO has been mapping out a financial management system. The ISAD team worked with ISPO financial managers to create the basis of a requirements document, develop a beta version of the module, transfer existing data, and test the usability and feasibility of the final version. During June, Michele Rabatin (ISPO) moved data from the current financial system, consolidated and input expense data from the

last six months, and reconciled all of the accounts. As this transition nears its final phase, summary information from the financial module has been computed into the task management module. This will allow POTAS Coordinators to view up-to-date financial information for their active and closed tasks.

Elements of the financial management module and the task management module were previewed at the POTAS Coordinators Meeting at the INNM Annual Meeting in July. Coordinators were shown the new format for the Capsule Summaries which will allow iterative input, eliminating the need to contact ISPO to make corrections. Once the coordinator is satisfied with his summary, he can click on a submit button that notifies ISPO the summary is ready for review. Coordinators will also have access to a report which details the status of each summary - awaiting submission, pending approval, approved, or returned for modification.

During the month of August, ISAD developers and ISPO task monitors are working together to finalize the task management module. Once this critical module has been approved, the entire external system will undergo an extensive beta test using program coordinators from a variety of organizations. This beta test will give participants the opportunity to provide suggestions and clarify any outstanding issues. The external system which includes financial reporting, capsule summaries, proposals, and task management will debut once the development team has addressed the results of the beta tests and the ISPO management team has done a final review of the entire system.

Participants will receive account information from the ISAD team. Each participant will be asked to acknowledge their security responsibilities by signing and returning a user security profile. Once the profile has been received, the ISAD system administrator will send a unique username and password. Passwords can be changed by participants once they access the new system. If you are interested in accessing the new information system, please contact the ISPO coordinator from your organization or a member of the ISPO team.

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**U.S. SUPPORT PROGRAM (USSP) ANNUAL REVIEW, JUNE 4 – 7, 2007 AND USSP-EUROPEAN COMMISSION SUPPORT PROGRAM (EC SP) MEETING, JUNE 11–12, 2007**

**Barbara Hoffheins**

During this year's annual review meeting, the IAEA recognized the thirtieth anniversary of the USSP in the opening remarks of IAEA Safeguards officials. Olli Heinonen (Deputy Director of Safeguards) stated that the USSP remains the backbone of the support program system. In his remarks, Safeguards Technical Support (SGTS) Director Nikolai Khlebnikov underscored the USSP as the oldest and largest support program. He expressed appreciation of its flexibility in working with the IAEA. He emphasized the continuing need for more sophisticated verification capabilities. U.S. Officials including David Noble (Nuclear Counselor at the U.S. Mission to UN Organizations in Vienna) and Bill O'Connor (Chair of the Subgroup on Safeguards Technical Support) continued U.S. extra budgetary support to the IAEA, especially in the areas of training, expert assistance, and provision of specialized safeguards equipment, and praised the IAEA for its excellent relationship with the USSP. Susan Pepper (Head of the International Safeguards Project Office (ISPO) and Coordinator for the USSP) gave a presentation which highlighted the thirty years of the USSP. The USSP has been instrumental in starting significant support efforts, such as the Training Section, the Satellite Imagery Unit and, as of this year, the Remote Monitoring Unit. Non-destructive assay (NDA) training has been conducted for IAEA inspectors at Los Alamos National Laboratory forty-seven times. Most of the IAEA's safeguards equipment used today originated from developments started at U.S. national laboratories.

Key issues and common themes discussed at this year's meeting included: the future of the Safeguards Analytical Laboratory (SAL), personnel issues, knowledge management (preserving the institutional knowledge before it goes out the door), quality management, and project management. A key USSP concern was with the IAEA's response, or lack thereof, to the results of the 2006 SAL feasibility study workshop which, in the main, recommended that the IAEA explore the idea of expanding the number of network laboratories that can analyze nuclear samples and conduct a rigorous feasibility or

cost benefit analysis of various scenarios for addressing the issues of aging infrastructure systems, such as the ventilation, electrical, and safety systems of the nuclear laboratory. SAL should not be a single point of failure by being the only location at which nuclear samples are analyzed. The need to upgrade or replace some critical infrastructure systems underscores this finding. SAL management is cognizant of the present condition of the laboratory. However, its focus has been on a complete replacement of the laboratory, which may not be necessary and which would be extremely expensive to finance by Member States. USSP officials noted that personnel issues were a recurring theme through several of the review presentations. USSP is concerned that the IAEA is not recruiting and retaining experienced personnel to manage the various important and complex projects currently underway. In her presentation, Alicia Reynaud (section head for CPR) stated that there was not enough budget to cover activities, including personnel costs. In the 2008-2009 budget, resources would be allocated to what she called essential investments ranked first by mandatory obligations, then by projects that support or enhance the IAEA's performance and, finally, non-mandatory projects that are carried out at the request of Member States. USSP representatives understood that an underlying message was that hiring would be delayed or postponed to save funds.

Safeguards support division managers gave overviews of their divisions, in light of the recent reorganizations (and reported in the April 2007 Liaisons). Project managers reported on the status of several of the large projects: safeguards at Rokkasho Reprocessing Plant, the future Japan MOX fuel plant, and the IAEA Safeguards Information System Re-engineering Project. The missions and visions of two relatively new units Remote Monitoring and Trade and Technology Analysis were presented.

Three of the newest section heads, Jean Maurice Crete (head of Training) Mark Pickrell (head of Attended and Unattended NDA (TAU)), and Andy Hamilton (head of Technical Support Coordination (TTS)) presented some of their vision and fresh ideas for the future. Dr. Crete outlined his vision for a comprehensive training program. The elements include: a training needs analysis based on an in-house analysis and identification of inspector competencies and skills which is not yet complete, a plan to

restructure the basic inspector training to reflect current practices, such as the state approach and the increased emphasis on new techniques and tools essential for Additional Protocol-related inspections, and the intention to reducing training bottlenecks caused by lack of courses at needed times. Dr. Pickrell presented a conceptual plan for standardizing hardware platforms that receive and process radiation sensor data. He believes this will be the key to simplifying the JMOX instrumentation challenge, and to providing a standard radiation input device for all of Safeguards' facility instrumentation. Mr. Hamilton stated that IAEA support program administration has become more burdensome for the IAEA because Member States require increased reporting and transparency, which increases the workload of IAEA legal and accounting operations. It is time, he said, to look at other mechanisms, which would reduce the administrative impact on the IAEA, while at the same time increase the effectiveness of Member State Support Program contributions.

On the subjects of project and quality management, the ISPO provided an overview of actions and response times involved in the USSP request cycle. A vendor Time Solutions presented preliminary thoughts on improving USSP product quality through quality management. A laboratory representative discussed her perception of USSP project management and lessons learned.

The SAL situation was a key agenda item during a two-day meeting held the following week (June 11-12) between USSP and European Commission (EC) Support Program officials, and management and staff from the EC's Joint Research Center (JRC), the Institute for the Protection and Security of the Citizen (IPSC) in Ispra, Italy. The USSP and EC Support Program officials, UK, EC, and Washington-based USSP members participated in a video conference to discuss collective views of SAL's personnel, equipment, and facility issues. The USSP representatives were treated to a number of interesting laboratory tours and presentations of EC Support Program tasks and related activities. The EC and US Support Program representatives discussed possible areas of collaboration and the need to maintain contact through video conferences and meetings.



William O'Connor (DOE) receiving a Certificate of Appreciation from Nikolai Khlebnikov (SGTS) in recognition of thirty years of technical assistance from the USSP.

Copies of the USSP Annual Review Meeting presentations are available from ISPO. Please contact Nedy Santiago, [Santiago@bnl.gov](mailto:Santiago@bnl.gov), if you would like to receive a copy.

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### **U.S. Participation in IAEA Meetings** Susan Pepper

It is now possible for people interested in attending IAEA meetings, conferences, and workshops to register on the IAEA's web site. Click on the meetings link at [www.iaea.org](http://www.iaea.org) and select the meeting you wish to attend.

Participants must still be nominated by their national authority. After registering through the web site registrants, they will receive an e-mail message from the IAEA telling them to do so. For most Safeguards meetings, the U.S. national authority is the Subgroup on Safeguards Technical Support (SSTS). The SSTS asks the International Safeguards Project Office at BNL to advertise meetings and collect participation and presentation forms and abstracts for their review. ISPO usually sends a message to the official laboratory or company point-of-contact notifying them of the meeting and providing a deadline for the submission of forms. The SSTS reviews the forms and identifies the applicants who are approved to attend the meeting. ISPO sends the forms of the approved participants to the U.S. Mission Vienna for official transmission to the IAEA. ISPO will prepare a

country clearance request for all individuals approved by the SSTS. Anyone not approved by the SSTS will have to request country clearance separately and will likely be declined.

If you have any questions regarding meeting attendance, or would like to ensure you are on the distribution list to receive future IAEA Safeguards meeting notifications, please contact Susan Pepper, [pepper@bnl.gov](mailto:pepper@bnl.gov).

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### **USSP Thirtieth Anniversary** Susan Pepper

The U.S. Support Program to IAEA Safeguards (USSP) reached the milestone of its thirtieth anniversary in January 1977. The USSP was established in January 1977 to react to identified, urgent needs more quickly than could be met through IAEA administrative procedures. ISPO was established at BNL at the same time. A one-time allocation of \$5 million was made in 1977 that was expected to solve all technical needs. Since that time the U.S. government has provided over \$240 million for IAEA Safeguards extra budgetary needs through the U.S. Program of Technical Assistance to IAEA Safeguards, the main source of funding for the USSP.

In the thirty years of the USSP, over 900 tasks have been initiated and over 800 have been completed. In the early years of the program, the Agency benefited from improved tools, such as the HM4, the portable multi-channel analyzer, seals and surveillance. CFE Gene Bates started the Safeguards training group in 1979 and Los Alamos National Laboratory delivered its first course for new IAEA inspectors around that time. Some support was as simple as buying a copy machine for reproduction of safeguards confidential information and beginning the rental of an IBM 370/158 computer mainframe, which the IAEA took over eventually.

The first U.S. Cost Free Experts in the Department of Safeguards were David Rundquist (SAIC) and John Foley (LANL). Since then, the USSP has sponsored 522 man-years of CFE support. Many CFEs such as Richard Hooper, Jim Larrimore, David Rundquist, Gene Bates, Bill Lichliter, Joseph Nardi, Tom Canada, and Bettina Bartsiotas joined the IAEA as regular staff members in influential positions. John Oakberg (who began a CFE position with the



IAEA in 1977) is now working in the Division of Information Management, Section for Declared and Statistical Information Management. He will retire this fall after thirty years with the IAEA.

The Agency's Programme 93+2 was a plan to investigate methods to increase the effectiveness and improve the efficiency of IAEA safeguards. It provided new ways for the USSP to assist the IAEA in the 1990s. The USSP contributed to Task 2 (assessment of potential cost saving measures), Task 3 (environmental monitoring techniques for safeguards applications), Task 5 (improved analysis of information on States' nuclear activities), and Task 6 (enhanced safeguards training). Under Task 2, the USSP provided expertise to assist with the implementation of remote monitoring. Early field trials were held in Switzerland and the Republic of South Africa. In 2007, remote monitoring systems have been installed in Canada, the Republic of Korea, and several European countries for transmission of data and state-of-health information. Under Task 3, the USSP participated in the field trials of environmental sampling and provided funding and a cost-free expert for the construction of the clean laboratory at Seibersdorf. Under Task 5, the USSP provided a CFE and assisted the IAEA in investigating information collection and analysis tools that could be used to manage the various forms of information at the Agency's disposal. As the IAEA began exploring the possible use of satellite imagery for safeguards purposes, the USSP provided a CFE and assisted with the establishment of the Satellite Imagery Analysis Laboratory. Under Task 6, the USSP provided training related to environmental sampling and a new training course on enhanced observation skills. As new measures were adopted by the IAEA for safeguards implementation and member states began asking for more efficiency with respect to the application of traditional and new measures, the USSP assisted the IAEA with investigations of integrated safeguards techniques.

In recent years, the USSP has set priorities and focused on quality management, human resources and training, destructive and nondestructive analysis, containment and surveillance, safeguards concepts and implementation for new and complex facility types, and information technology, collection, and analysis. Significant accomplishments include the implementation of safeguards at the Rokkasho Reprocessing Plant

and the Chernobyl Nuclear Power Plant and the ongoing ISIS Re-engineering Project. The USSP's support of remote monitoring has led to the establishment of the Remote Monitoring Unit in the Division of Technical Support, Section for Attended and Unattended NDA. In 2002, the USSP established an intern program to introduce students and young professionals to the IAEA and to assist the Department of Safeguards with basic, yet essential work. The internship program was discontinued in 2006 after placement of forty interns, but has been replaced by the Junior Professional Officers (JPO) program for recent graduates. The USSP has sponsored eight JPOs to date.

ISPO and the SSTS look forward to many more years of collaboration with the IAEA. We do not know what the future holds, but we expect that there will be significant challenges brought about by improved technology and greater energy needs. The USSP encourages the IAEA to plan and communicate its needs to the USSP for maximum efficiency in the use of USSP funds.

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#### **USSP Hosts IAEA Workshop on Advanced Sensors for Safeguards At Queirolo**

The U.S. Support Program to the IAEA hosted its seventh technical workshop for the IAEA Department of Safeguards from April 23 to 27 in Santa Fe, New Mexico, at The Lodge. This year's workshop entitled: "Advanced Sensors for Safeguards" sought to help the IAEA identify and plan for new sensors to help it in the conduct of its safeguards mission of verifying the peaceful use of nuclear material and technology. As the world's nuclear inspectorate, the IAEA must have the best possible tools to verify that nations are not using nuclear technology or material to build nuclear weapons.

More than sixty-five people attended the workshop, and twenty people gave presentations on new or future sensors that might improve how inspectors do their job. Participants came from the IAEA, Member State Support Programs, the private sector, academia, the U.S. national nuclear laboratories, and the U.S. government. The IAEA was represented by ten participants, led by Nikolai Khlebnikov, director of the division of Safeguards Technical Support (SGTS).

In his keynote speech, Dr. Leonard Weiss, from the Center for International Security and Cooperation at Stanford University, highlighted the events that led to the United States' current nonproliferation policies and concerns. Equally as interesting was the historical perspective on the regions of the world where the IAEA is facing its greatest challenges. As a result, the participants understood the importance of sharing their knowledge and ideas during the workshop.

The technology presentations focused on emerging technologies that could be used by the IAEA to improve its capabilities in meeting its mission of safeguarding nuclear material and technology around the world. The topics included a variety of subject matter from basic research on new sensors, typically from academia, through new products from sensor supplier vendors, to larger technical concepts from the National Laboratories. Many new ideas were presented which appeared to have future applications to new sensors systems that could be used by the IAEA in the near term future. (CD-ROMs will not be distributed after the Workshop. The list of presentations is available at <http://www.bnl.gov/ISPO/BNLWorkshop07/agenda.htm>. If you click on a presentation title you can download a copy of the presentation.

Part of the original intent of the Workshop was to utilize the expertise of the attendees to address two sample scenarios typical of what IAEA inspectors might face in the field. The intent included generation of new approaches or sensor types by the Workshop participants that might be of value to the IAEA. After hearing the technical possibilities, three breakout sessions were conducted simultaneously by three separate facilitators. At the end of the week, the workshop participants presented the IAEA representatives with specific recommendations of which capabilities and technologies should be prioritized in the agency's plans. A final report is presently in a draft form and is undergoing a review and comment period.

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### **IAEA Staff Changes Susan Pepper**

Nina Wilson completed her Junior Professional Officer (JPO) assignment on July 11, 2007. Nina started working for the IAEA in July 2005 in the Section for Installed Systems. Following the Department of Safeguards reorganization, she

worked in the Section for Attended and Unattended NDA in the Unattended Monitoring Unit. Most notably, Nina was the project leader for the Chernobyl unattended monitoring systems. She was the recipient of the U.S. Support Program's first Outstanding Achievement Award.

Greg Gerrein completed his JPO assignment with the Division of Information Management on July 3. Greg started working with the IAEA as one of the USSP's interns in the JNFL Project in 2003. To enable him to travel on official IAEA business, Greg was converted to a consultant in early 2004. Following a short break in service, Greg was given a JPO contract in July 2005. Under this assignment, he supported the IAEA's management of the Integrated Inspector Information System (I3S) development. He traveled to Japan numerous times to monitor the performance of IAEA instrumentation at the Rokkasho Reprocessing Plant.

Maryam Tatavosian began a JPO position in the Division of Information Management Section for Information Collection and Analysis on July 2. Maryam was a USSP intern in that Section from July 2004 to July 2005. Upon returning to Mercyhurst College to complete her master's degree, she supported the Section under a contract sponsored by the USSP. She returned to the IAEA in August 2006, under a personnel contract with Brookhaven National Laboratory. Maryam holds a Bachelor of Science in Political Science and Criminal Justice from the University of Nebraska and a Master of Science in Applied Intelligence from Mercyhurst College.

Yana Feldman began a JPO position in the Division of Information Management, Section for Information Collection and Analysis, Unit for Information Analysis on July 2. Ms. Feldman holds a Bachelor of Science in Chemistry from the University of California-Berkely and a Master of Science in International Relations from the London School of Economics. At the time of her recruitment for this position, she was pursuing a Ph.D. in Political Science at the University of California-San Diego. She has held positions with FirstWatch International and the International Centre for Security Analysis at King's College London.

Philip Hypes completed his cost-free expert assignment in the Section for Safeguards Training in July. Phil was employed at Los Alamos National Laboratory when he began his

assignment in July 2005. He assisted with the development, scheduling, and implementation of NDA training. He was available on a daily basis for refresher NDA training. Phil has returned to LANL where he will be the POTAS Coordinator for LANL activities, in addition to his other duties.

Mark Pickrell joined the Department of Safeguards on May 1, as the Section Head for Unattended and Attended NDA. Dr. Pickrell has a Ph.D. in Physics from the Massachusetts Institute of Technology. He worked previously at LANL, where he was the principle investigator and lead on several projects advancing technology development, implementation, and deployment for International Safeguards and IAEA measurement requirements. Dr. Pickrell has thirty years of experience in experimental physics, nuclear measurements, and nuclear instrumentation.

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### **Upcoming Meetings Susan Pepper**

The following meetings and events will take place during 2007:

**Universal NDA Platform Workshop**, September 25-26, 2007, Vienna, Austria – The IAEA is convening this workshop to review requirements for a new NDA platform for NDA data acquisition. Information is available at [www.bnl.gov/ispo/jobforum/Letter%20requests/20070704.htm](http://www.bnl.gov/ispo/jobforum/Letter%20requests/20070704.htm).

**JAEA-IAEA Workshop on Advanced Safeguards Technology for the Future Nuclear Fuel Cycle**, November 13-16, 2007, Techno Community Square Ricotti, tokai-mura, Ibaraki, Japan. Information available via the workshop website: [www-pub.iaea.org/MTCD/-Meetings/-Meetings.asp](http://www-pub.iaea.org/MTCD/-Meetings/-Meetings.asp).

**INMM/ESARA Workshop**, October 6-9, 2008, Tokyo, Japan. The meeting agenda is being developed. Details will be available soon at [www.inmm.org](http://www.inmm.org).