International Newsletter

Forum on International Physics The American Physical Society

June 2009

View from the Chair

John W. Clark*

Welcome to the FIP Newsletter. We are proud to say that this periodical is more than just a newsletter, thanks to the efforts and dedication of the editor, Laszlo Baksay, as well as energetic solicitation of articles by members of the FIP executive committee. In it you will find not only announcements and reports of FIP activities, but also substantive and authoritative articles on salient issues in international scientific affairs. We urge you to print out this and other issues of the Newsletter and share them with your colleagues around the coffee table in your department or institute!

The Forum on International Physics is a volunteer organization of APS members whose mission is to advance the knowledge of physics and its diffusion by fostering cooperation and communication among physicists of all countries. In pursuing this mission, we have become increasingly active in recent years under the leadership of successive chairs Irving Lerch, Herman Winick, and Satoshi Ozaki, promoting new programs that enhance scientific interchange and raising our visibility at March and April APS meetings.

The FIP election cycle of 2008 and ascent along the chair line brought changes in our units Executive Committee. As the 2009 unit chair, I would like to express my gratitude and admiration for the exemplary leadership of last year's chair, Satoshi Ozaki. In particular, he showed uncommon dignity and skill in the way he dealt with a highly sensitive issue that arose when a noted Chinese dissident was honored with the Sakharov Prize. During 2008 we also benefited greatly from the continued guidance provided by Herman Winick. With undiminished energy, Herman remains a fountainhead of new ways to facilitate international scientific cooperation and advance physics research and education in the developing world. We welcome three new members of the Executive Committee: Susana Hernandez of the University of Buenos Aires and Marie-Louise Saboungi of the University of Orleans, for three-year terms as Members-at-Large, and Harvey Newman of Caltech for a four-year, chair-line term beginning as Vice Chair. We are grateful for another dedicated year from our Secretary/Treasurer Noemi Mirkin, who has played vital roles in maintaining continuity of our procedures and in managing the finances of our unit.

FIP Invited Sessions at 2009 APS Meetings:

Every year, a major investment of effort is involved in organizing FIP sessions at the March and April APS meetings, held this year in Pittsburgh and Denver, respectively, with the April meeting moved into May. For the 2009 season we offered a record number of sessions (7), either wholly sponsored by FIP or co-sponsored with another APS unit. The program and abstracts can be viewed at the URL http://meetings.aps.org/Meeting/MAR09/Content/1380 and its MAR->APR counterpart, or at http://www.aps.org/units/fip/meetings/. The presentations of most speakers will also be posted on the FIP web site.

Two sessions were organized to examine the status of physics development in two regions of the globe facing both challenge and opportunity; thus, "Physics in Africa" at the March meeting and "Physics in Latin America" at the April meeting. The former was organized by Abebe Kebede of North Carolina A&T and FIP Member-at-Large Paul Gueye of Hampton University and J-Lab, in consultation with David Ernst, FIP Member of the APS Council. Kebede chaired the session, which featured prominent speakers from African physics and/or scientific development and management: Alexander Animalu from the University of Nigeria, Ndeye Arame Boye-Faye from the University Cheikh Anta Diop, Senegal, and Bernard M'Passi-Mabiala of Marien NGouabi University in Congo-Brazzaville. The talk of Boye-Faye was particularly noteworthy in providing an authoritative view of the prevailing system for funding research in Senegal. Boye-Faye also paid important and constructive visits to U.S.

institutions, in the course of her travel to the APS meeting. The "Physics in Africa" session was organized as part of a sustained effort toward integration of African physics into the world physics community, especially through the promotion of research exchanges between African physicists and their counterparts in the US. Missing from the session (due to a late change of plans of the scheduled speaker) was representation from South Africa, which can play an important role in facilitation this integration. Follow-up APS sessions are planned for future years, generally in cooperation of the National Society of Black Physicists (NSBP).

In the "Physics in Latin America" session at the April meeting, three speakers represented three contrasting aspects of the diverse fabric of scientific development in a region rich in the complexity of its social and political crosscurrents. We were privileged to have the recipient of the 2009 John Wheatley Award, Carlos Ordonez (University of Houston) as the lead-off speaker. Ordonez focused on the task of building bridges between Latin America and the US through fostering scientific exchanges and collaborations. On this aspect he can speak with authority, having personally established highly successful programs at the graduate and postdoctoral levels, through the World Laboratory and beyond. Ronald Cintra Shellard (Centro Brasiliero de Pesquisas Fisicas), representing a rapidly emerging developed country in the region, chronicled in detail the founding of a school of high-energy physics in Brazil and its rise, since the late 70's, to international stature and major involvement in leading experimental collaborations. Success was achieved, but not overnight. The third talk, by Pedro Prieto, expressed a different, less optimistic view of physics development in Latin America, specific to the Andean region but not unique. Prieto, Director of the Center of Excellence on Novel Materials in Cali, Colombia, described the current state of R&D in condensed matter, novel materials, and nanotechnology in this region. Progress suffers from the lack of a consolidated regional network facilitating effective and lasting cooperation in R&D among Andean nations, and the lower priority given to physics in state policy, relative to the environment and medicine. The session was organized and chaired by Galileo Violini (University of Calabria), an earlier Wheatley recipient and FIP Member-at-Large), who himself has made important contributions to Andean physics, notably through the founding of Centro International de Fisica in Bogota.

A highly successful session at the March meeting was organized as a follow-up to the twin sessions on gender equality in physics offered by FIP at the 2008 March and April meetings. Entitled "Around the World in 180 Minutes: Differences and Similarities among Women Physicists,'' co-sponsored by FIP and the Committee on the Status of Women in Physics (CSWP), and co-organized and co-chaired by Cherrill Spencer (Member-at-Large, FIP) and Elaine Lessner (CSWP), the session recruited prominent speakers and panelists from participants in the Third IUPAP International Conference on Women in Physics (ICWIP2000), which was held last October in Korea. The speakers and panelists, representing different regions of the world and different career stages, analyzed the progress being made toward promoting women in physics, based both on personal experience and on what they learned from participation in ICWIP2000. Elaine Lessner introduced the session, and Cherrill Spencer moderated the culminating panel discussion, which elicited spirited questioning from the large audience. Judy Franz, APS Executive Officer, spoke eloquently of how the ICWIP conferences came about, and her own experience as a woman in male-dominated physics and the first female officer of IUPAP. Karimat El Sayed of Ain-shams University, a major figure in Egyptian physics and this year's recipient of the Marshak Lectureship Award, spoke from the perspective of a revered role model. Other speakers, Young-Kee Kim (University of Chicago) and Yevgeniya Zastavker (Olin College of Engineering) provided mid-career perspectives from different national orientations, while Kandice Tanner (UC-Berkeley), the youngest of the invited speakers, described -- special flair and personal anecdotes -- the post-secondary educational pathways available to potential physicists in Trinidad & Tobago, Jamaica, and Barbados. She observed that young women participate and compete favorably in the system, in numbers similar to males. A comprehensive report on this session and its conclusions is

being prepared by Lessner and Spencer and will appear in a future issue of the FIP Newsletter.

Two sessions at the April meeting were co-sponsored with the Forum on Physics and Society (FPS), namely "Global Physics Projects," organized by FPS with a panel-discussion format, and "Managing Nuclear Fuels: An International Perspective," organized and chaired by FIP Chair-Elect Noemie Koller. The first of these, co-chaired by Pushpa Bhat (Fermilab) and Lawrence Kraus (Arizona State), was both highlighted and overshadowed by Sir Chris Llewellyn Smith's consummate analysis of the lessons learned for large collaborative projects from SSC, ALMA, LHC, and ITER. An emergent message from this session is that successful international scientific collaborations can also yield very significant political and economic benefits. In our session on the management of nuclear fuels, three invited speakers from Canada, Japan, and Romania addressed rather different aspects of this problem, which evidently requires global attention. We were fortunate in recruiting a keynote speaker of extraordinary distinction: Elizabeth Dowdeswell, who has had an far-ranging career in government, education, and international affairs, having served in particular as the Executive Director of the UN Environmental Program and as President of Canada's Nuclear Waste Management Organization (NWMO). She explained in compelling terms the complex process through which NWMO, under her leadership, forged a contract between science and society that will govern the management of nuclear waste in her country. There followed excellent talks on the more technical aspects of this issue. Kazuaki Matsui of the Institute for Applied Energy gave an authoritative account of the strategies for reprocessing and disposal being implemented in Japan, while N. V. Zamfir of the National Institute of Physics & Engineering in Bucharest traced the steps involved in decommissioning the RR-VVR-S reactor and repatriation of residual fuel to Russia. A unique feature of the latter presentation was that Zamfir's talk (with coordinated display of slides) was given from Romania via skype – a "first" for APS meetings achieved by the heroic effort of the session chair Noemie Koller.

The remaining two sessions were products of a promising new phase of cooperation between the FIP Executive Committee and our counterparts on the Forum on Graduate Student Affairs. Amy Flatten, APS Director of International Affairs, suggested that we join with FGSA in organizing a 2009 session on "Preparation of Graduate Students for Careers in a Globalized World." This proposal received the encouragement of Arthur Bienenstock, APS President for 2008. In following up on the idea, the 2009 Program Chairs for FIP (myself) and FGSA (Kendall Mahn) chose to organize twin sessions around this theme, designing the March and April sessions to fit the rather different needs and concerns of graduate students attending the two meetings. In particular, April-meeting students, typically, are already involved in large international physics projects, while March-meeting students are more likely to be interested in establishing industrial connections. Each session was designed to feature a panel discussion, following a 36' keynote talk and briefer presentations by other speakers/panelists. We chose the keynote speakers from among the prominent participants at the EU/US Research and Education Workshop held in Atlanta in November 2008, which addressed the broad range of challenges and opportunities created by the reality that in an increasingly globalized economy, science and technology careers necessarily extend beyond national boundaries. In the March session, keynote speaker Sabine O'Hara, Executive Director of the Council for International Exchange of Scholars, gave a masterly presentation, articulating these issues based in part on her experience administrating the Fulbright programs. In turn, Amy Flatten, representing APS, discussed the international career opportunities available to graduate students, as well as the attendant challenges; T. Venkatesan (University of Maryland & National University of Singapore; FIAP Chair-Elect) spoke on career opportunities internationally from the industrial perspective and emphasized global entrepreneurship programs; Daniel Cox (UC-Davis and Co-Director, Institute for Complex Adaptive Matter – ICAM/I2CAM) described the opportunities provided by ICAM/I2CAM as a global, multi-institutional research network; and Fatiha Benmokhtar (Research Associate, Carnegie Mellon) exemplified, through a personal account, the early career experiences of current graduate and postdoctoral students engaged

in international collaborations.

The joint FGSA/FIP session at the April meeting (held in May) followed a similar pattern, with emphasis on different aspects. The keynote speaker was Linda Katehi, Provost and Vice Chancellor for Academic Affairs at UIUC. In the spirit of the Atlanta workshop, she gave a comprehensive analysis of the requirements for effective multi-national scientific collaborations and the corresponding needs for additional institutional programs, increased integration, and improved infrastructures that can encourage and support mobility of scientists. The shorter presentations focused on the structure and dynamics of large international collaborations, as well as personal experiences working and living in them. Michael Tuts, US ATLAS Operations Program Manager for the ATLAS detector project at the LHC, highlighted the unique challenges of such large scientific ventures, as well as the logistics involved in their undertaking. Morgan Wascko, a Fellow at Imperial College working on neutrino experiments in the US and Japan, gave a lively and informative tutorial, from a personal perspective, on how to survive and thrive in a large international collaboration. Last but certainly not least, Claudia Fracchiolla described the difficulties and rewards she has experienced as a graduate student working on several international collaborations, currently the Pierre Auger project sited in Argentina. FIP and FGSA plan to cooperate in organizing further March/April sessions in coming years on topics of mutual international interest.

FIP Outreach:

At this year's March APS meeting in Denver, we continued the tradition established by previous FIP chair Irving Lerch of hosting a joint reception at March meetings with expatriate physics associations. These currently include the Overseas Chinese Physics Association (OCPA), the American Chapter of the Indian Physics Association (ACIPA), the Iranian-American Physicists (IrAP) Network Group, and the Association of Korean Physicists in America (AKPA). This year's reception was especially successful, with a large and enthusiastic participation of the expatriate physicists groups, as well as many individuals strongly interested in promoting international scientific relationships. We were especially pleased with the participation of several representatives from the African continent, with whom we hope to establish lasting ties. We are also gratified that several APS officers visited the reception to show their support. The reception is an occasion for enjoying good food and good company, but it also provides a venue for awarding prizes by the participating associations and honoring newly elected FIP-sponsored APS Fellows.

As mentioned above, another important component of our outreach activities lies in our growing connection with the APS Forum on Graduate Student Affairs (FGSA).

APS Fellows:

This year, nomination of APS Fellows through FIP resulted in the election of eight new Fellows, all with distinguished records of achievement both in their research field and in their contributions to international scientific cooperation and/or the advancement of physics in developing countries. The Fellowship Certificate citing the grounds for election and the Fellowship pin were presented in person to almost all the new Fellows, either during the FIP reception at the March APS or at our Executive Committee meeting in Denver in May.

Additional Activities in 2009:

- Planning is under way for the FIP-sponsored sessions at the 2010 March and April meetings (with the April meeting in February). Our offerings promise to be even more ambitious (and provocative) than in 2009 and may include sessions on the ascendancy of China as a world power in science and the physics of global catastrophes (environmental, biological, economic, political). Our current Chair-Elect, Noemie Koller, will serve as FIP Program Chair for 2010.

- The International Travel Grant Award Program (ITGAP), launched several years ago based on the idea of former FIP Member-at-Large James Vary, continues to be highly successful and is now in its 10th cycle of awards. The program supports travel exchange between an APS member and a collaborator in a developing country, providing $2000 per award. Funding for ITGAP has been significantly increased through the efforts of Amy Flatten in recruiting several additional APS units as sponsors. As Vice Chair for 2008, Noemie Koller served as Chair of the ITGAP Selection Committee for the 8th and 9th cycles. For the 10th and 11th cycles the committee will be chaired by Harvey Newman.
- The deadline for submission of APS Fellowship nominations through FIP is May 15, 2009. As already mentioned, the qualification criteria are outstanding accomplishments in the nominee's scientific field, *plus* recognized contributions within the scope of FIP's mission.
- It is time to prepare the slate of candidates for competitive election of FIP officers. This year, there are openings for Vice Chair and two Members-at-Large, and for the position of Secretary/Treasurer. The Nomination Committee is chaired by Satoshi Ozaki (FIP Past Chair). You are encouraged to submit nominations for these posts, before the deadline of July 15, 2009.
- Membership Drive: Increasing FIP membership is of high priority for a number of reasons: (i) It enables us to raise the consciousness of international affairs among APS members and thus helps us to achieve one of our primary goals, (ii) it allows us to maintain direct representation for FIP on the APS Council, and (iii) it increases the income to FIP from APS that permits us to support an expanding range of activities. We appeal to all FIP members to convince your friends and colleagues to join FIP, which is inexpensive and easily done on line at the APS web site.
- Communication with the FIP membership is vital to our mission. While direct email announcements and the FIP web pages are invaluable mechanisms, we are aware that the Newsletter is highly valued by our members, and we shall endeavor to publish two full issues per year.

*John Clark is Chair, Executive Committee, Forum on International Physics and is also Wayman Crow Professor, Washington University in St. Louis

2008 APS Fellows
Nominated by FIP

Baksay, Laszlo
Florida Institute of Technology
Citation: For his contributions to high energy physics, leadership of international collaborations especially in bringing the Hungarian physics community into the international enterprise, innovations and activities in science education and many efforts for the APS international program and the Forum on International Physics.

Baldwin, Kenneth
Australian National University
Citation: For seminal contributions to quantum-atom optics and precision laser spectroscopy, organization of major international efforts to study these problems, and outstanding professional leadership.

Beltram, Fabio
Scuola Normale Superiore

Citation: For major contributions to nanophysics, including studies of semiconductor nanostructures and in molecular biophysics, and for leadership in promoting the international reach of Italian research.

Covello, Aldo
Univ. di Napoli Federico II
Citation: For perfecting the theory of pairing correlations, for showing that the nucleon-nucleon potential lead to predictions for nuclei far from stability, and for his outstanding contributions to the international nuclear physics community by providing, for over two decades, a venue for theorists and experimentalists to share their latest ideas.

Onel, Yasar
University of Iowa
Citation: For significant contributions to particle physics, organizing many international particle physics experiments and conferences, and inspiring and mentoring students from the US and developing countries.

Pancheri-Srivastava, Giulia
INFN Lab Natl of Frascati
Citation: For her leadership in establishing an international network in theoretical and experimental particle physics at the DAPHNE phi-factory, and for her leading several networks of researchers from European universities for the training of young researchers.

Sen, Surajit
SUNY-Buffalo
Citation: For the discovery of how solitary waves break and secondary solitary waves form in granular media, for his leadership in organizing forums to represent and recognize the physicists from India and for raising consciousness about the problems and the importance of rural science education in India and the developing world.

Shlomo, Shalom
Texas A&M University
Citation: For outstanding contributions in the study of nuclear correlations, giant resonances and the nuclear matter equation of state, and his many contributions to the development of international research and education in physics.

Xie, Xincheng
Oklahoma State University
Citation: For important contributions to the theoretical understanding of two-dimensional electron systems, tirelessly working for the advancement of physics in China, fostering collaborations between young physicists in China and the United States, and co-organizing a number of important international workshops and conferences.

Yeh, Gong
Fermilab
Citation: In recognition of his work in building international collaborations in physics, including his leadership of the Taiwan group in the Collider Detector at Fermilab and acting as a Special Adviser to the Japanese government on the creation of the Institute of Science and Technology in Okinawa and for his contributions to the discovery of the Top Quark.

IInd International Andean School and Conference on Spectoscopy

IInd Andean School of Spectroscopy, March 2nd- 6th 2009
IInd International Conference of Spectroscopy, March 9th- 13th 2009
Lima, Peru

F. Chandezon and M.-L. Saboungi
SPrAM (UMR CEA-CNRS-UJF) – CEA Grenoble/INAC
F-38054 Grenoble cedex 9, France
Centre de Recherche sur la Matière Divisée –
CNRS – University of Orléans, F- 45071 Orléans cedex 2, France

The second Andean School and International Conference of Spectroscopy took place during March 2nd - 13th at the Peruvian National Institute of Research and Training in Telecommunications (*Instituto Nacional de Iinvestigacion y Capacitación en Telecomunicaciones*, INICTEL) in Lima, Peru (http://postgrado.uni.edu.pe/espectroscopia/). This event was co-organized by several Peruvian universities and research institutes as well as by the NGO "Puya de Raimondi" (http://puyaderaimondi.org/). The latter is a French association of scientists whose main aim is to promote scientific cooperation between Peru, and Latin American countries in general, and France and other European countries. It was founded in 2004 by Dr. François Piuzzi, a staff member of the French Atomic Energy Commission (CEA), and other colleagues who worked in Peru as scientific collaborators between 1970 and 1985 together with Peruvian scientists living in France. This cooperation ended in the mid 80's and it was the wish of the founders of "Puya de Raimondi" to renew the fruitful collaboration.

One of the major outcomes of this association was the co-organization in May 2005 – the World Year of Physics – with Peruvian academic partners of the first Andean School and International Conference of Spectroscopy in Lima. The idea was to gather together recognized experts in various fields of spectroscopy that could be of interest for the scientific development of Peru and other Latin American countries. The originality – and strength – of the event was its division into two complementary parts. During the first week, the Andean School allowed selected students to be given practical laboratory training in various spectroscopic techniques by recognized experts, mostly from Europe. These training courses were organized on site in several laboratories of the best scientific universities in Lima. In some cases, special equipment was sent from Europe as loans or donations from academic institutions and companies. During the second week, the International Conference took place, where internationally recognized speakers presented the latest advances in spectroscopic techniques and their applications in various fields such as materials sciences, archaeometry and life and environmental sciences. Both the school and conference in 2005 were recognized as a success with 58 lecturers from Europe, USA and Latin America and around 120 participants. Furthermore, it led to the initiation of new research activities in Peru developed with the donated equipment.

The second Andean School and International Conference of Spectroscopy (SPECTRA2009) was co-organized in a similar way, associating one week of laboratory training with one week of conference sessions. The organizers of the conference were, on the Peruvian side, some of the best academic and research institutions of the country with the *Universidad Nacional de Ingenieria* (UNI, www.uni.edu.pe) as host institution, and on the French side the "Puya de Raimondi" association. The conference chairs were Prof. Walter Estrada (UNI, Lima) and Dr. Frédéric Chandezon (CEA Grenoble, France). The challenging task of organizing this event with colleagues from both sides of the Atlantic

was made possible by financial support from several Peruvian, Latin American, European and international research institutions, international agencies and companies. These included OEI (*Organizacion de Estados Iberoamericanos*), CAN (*Comunidad Andina de Naciones*), SPIE, UNESCO, IUPAP, the French Embassy in Peru and its office of regional cooperation with the Andean countries, and French governmental research agencies (CEA, CNRS, IRD)1.

A major difference from the 2005 event was a significant broadening of the scope of the conference. The areas covered included:

- Materials sciences and nanosciences
- Archaeology and archaeometry
- Life sciences
- Lasers and their applications
- Instrumentation and apparatus design and construction
- Astronomy
- Environment and climate change
- Remote sensing (*e.g.* for the study of vegetation coverage)
- Simulation

This required the participation of a large number of invited teachers and speakers from all over the world, with some prestigious participants such as Prof. Sune Svanberg (Lund University), a former president of the Nobel Prize Committee in physics, and Prof. Pierre Lena, a renowned French astrophysicist and member of the French Academy of Sciences. A total of 101 internationally recognized experts participated to the school and/or the conference. As a co-organizing country, the French delegation was especially large with 23 experts. Other experts came from Peru and all over Latin America. Countries represented included Spain, Sweden, U.K., Germany, Russia, Czech Republic, Japan, U.S.A, Belgium, Brazil, Mexico, Peru, Argentina, Bolivia, Ecuador, Venezuela, Cuba and Colombia. SPECTRA2009 attracted 180 participants, 41 of which received a grant thanks to dedicated financial support from the CAN and from the office of regional cooperation with the Andean countries of the French Embassy in Peru. As for the 2005 event, equipment was specially sent to Lima for the Andean School, as loans or donations.

These two stimulating weeks were recognized as a success by the participants and by the invited speakers. It was an occasion to make scientific contacts that will hopefully lead to collaborations within Latin America and between Latin America and Europe. The consensus at the conclusion of SPECTRA09 was that it might be better not to wait another four years but to take advantage of the momentum that SPECTRA2009 had created and plan for the next event in two years' time. Accordingly, SPECTRA2013 has been replaced by SPECTRA2011. This could be the best indication of the success of the 2009 event.

Group picture taken at the oldest American site Caral

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1. See the web page of SPECTRA2009 for a detailed list http://postgrado.uni.edu.pe/espectroscopia/

The Iranian-American Physicists (IrAP) Network

Announcement:

The Iranian-American physicists (IrAP) network group invites interested individuals to join their network. More information can be obtained via visiting their web site at www.irapnet.org

Hamid Javadi
Iranian-American Physicists (IrAP) Network Group President

Letter to the Reader

Dear Reader:

Not so long ago, the Secretary-General of a distinguished Academy told me that there are two kinds of science: discovery-based science that is appropriate to advanced countries and the other suitable for developing countries. More recently, I was asked this: Why are you teaching high-level physics to Africans when the real needs in Africa are clean drinking water, better public health, literacy and freedom from famine? How wrong I was to have thought that such questions had been put to rest in the last 45 years of ICTP's existence!

No one disputes the importance of mitigating poverty, disease, illiteracy, famine and the like, or of the overwhelming need for creating better living standards. We at ICTP cannot tackle head-on any of these problems in their direct manifestations but can address one basic ingredient of a developed society: the culture of rigorous thinking about problems that face one's society and of solving them through creative applications of that thinking. ICTP is about instilling rigorous thinking and its application to problem solving; it is our tacit belief that nothing lasting can be built on a sloppy base even if one works on applied problems of climate change, industrial pollution, groundwater circulation, renewable energy or cancer therapies. The process of learning itself is often more important than what one learns, and there is nothing more rigorous or broader than physics and mathematics for training oneself in this arena. This is the opportunity that ICTP offers to as many talented people as possible. Our concern is quality and diversity at one and the same time: without diversity we lose our soul and without quality we lose substance.

The second point is that even a person from a small institution in a poor country should be able to work in the most advanced branches of physical sciences at some place in the world, as long as she is sufficiently talented and her desire deep. How can I, or anyone else, tell her that advanced research is a luxury for her and that she should be working only on a developmental project of immediate relevance? The province of doing things one loves does not belong to a privileged few. Reality will no doubt impose limitations but there must be at least one place in the world where the opportunities are not diminished by poor pedigree alone. That place is ICTP.

In my conversations with many young scientists, my exhortation has been essentially the same: stop being traumatized by words such as "development" and "networking" that the world is fond of using these days---especially the UN agencies: you cannot contribute to development if you have no intellectual stamina, or achieve much by networking if you bring no strengths of your own. I tell them to use their time at ICTP to build their inner strengths for working on the same footing as most others from any part of the world (there are always a gifted few that work on a different plane of neuronal connectivity, and must be left out of such comparisons).

As always, we would love to hear from you.

Sincerely,

K.R. Sreenivasan
K.R. Sreenivasan is Director of the International Center for Theoretical Physics, Trieste, Italy

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The Mexican Physical Society

Working for Physics in Mexico since 1951

The Mexican Physical Society (Sociedad Mexicana de Física in Spanish) was formally founded in 1951 with 21 members that included distinguished physicists like Manuel Sandoval-Vallarta and Carlos Graef-Fernández. At present it counts with approximately 1,400 members, of whom 600 are full members and 800 are students. Students pay dues that are one half those of the full members.

The Mexican Physical Society is a non-profit organization whose main goals are to promote research and teaching in physics, to foster the interest for science in general and in physics in particular among people in Mexico, and to establish close links with similar organizations within Mexico and abroad. It has 13 topical divisions: Atomic and Molecular Physics, Fluids, Plasmas, Gravitation and Mathematical Physics, Nanosciences, Medical Physics, Optics, Cosmic Rays, Quantum Information, Nuclear Physics, Particles and Fields, Statistical Physics, and Radiation Physics. It also counts with three regional divisions located in the states of Puebla, San Luis Potosí, and Tabasco. A Directive Board is in charge of the administration of the Society and each Division has its own President.

The Society has a large diversity of activities that include its main event, the National Physics Congress that in 2008 was attended by 1700 participants that presented more than 1200 works. We also organize the divisional meetings, a variety of schools and workshops, the National meeting of specialists in science popularization, and the National meeting of high-school physics teachers. Additionally, we take care of the National contest of experiments designed by high-school students. A task force of women in physics has been recently created. The Society has the responsibility of organizing the participation of México in the Physics Olympiads at all levels: regional, national, ibero american, and international. We recently hosted in 2008 the Ibero American Physics Olympiad in Morelia, Michoacán, with the participation of 18 countries and will host the International Physics Olympiad in Mérida, Yucatán during July of 2009. We are undertaking a large effort to include the largest number possible of High School students in the early stages of the Olympiads.

We have three main publications. The Revista Mexicana de Física has three separate sections: Research, Education and Supplements. The research section appears on a bi-monthly basis and has an international editorial board. We are looking forward to having soon all papers of this journal on line at the Page of the Society. The Education section contains mostly articles with a teaching content. The Supplements serve to publish conference proceedings in Latin America. We also publish the Bulletin, a quarterly journal, with informal news and popularization and history articles. Finally, the Ibero American Physics Catalog offers extensive information on places in Latin America, Spain and Portugal that offer college or graduate degrees in physics, research institutions in physics and of people working in research or education in physics. A CD version with an interactive searcher is available for each member of SMF.

The Society offers two major Prizes. The Prize for the Development of Physics in Mexico recognizes the lifetime achievements of an individual or group in the development of institutions, laboratories or groups of physics in Mexico. The Prize for Scientific Research rewards basic or applied physics research of excellence and is given to an individual.

Finally, we participate, with the US and Canada, in the CAM (Canada, America, México) Graduate Students Physics Conferences. In 2009 we will host the fourth of this series of conferences in Acapulco, Guerrero, from October 22nd to 24th. We are supporting the event with 50 scholarships (room shared with another student and breakfast) for graduate students from the USA and Canada.

Our permanent offices are located in the School of Sciences of the National University of Mexico in Mexico City, thanks to the support of the School. Our Page is www.smf.mx, and we invite you to consult it. Questions can also be sent to smf@fciencias.unam.mx.

Luis F. Rodríguez
President of the Mexican Physical Society (2009-2011).

The UNESCO Physics Action Council

***Irving A. Lerch**

In the early 1990s, physics—one of the most global of scientific enterprises—began to look to UNESCO as an instrument to unify and coordinate the international outreach of the global physics communities. Several developments fueled this interest: the signing of a new tripartite agreement between UNESCO, IAEA and the Government of Italy assigning governance responsibility to UNESCO for the International Center for Theoretical Physics in Trieste; the sponsorship by UNESCO of CERN, the rise of developmental programs in Latin America, Africa and Asia; and the growing realization that a new framework was needed to coordinate research, education and intellectual exchange worldwide. Most important, physics had become a tool for intellectual, cultural and economic development in furtherance of UNESCO's great cross-cutting goals.

On 24-25 June, 1993, Director General Federico Mayor and Assistant Director General for the Natural Sciences, Adnan Badran, convened a consultative meeting in Paris entitled, "UNESCO and the International Physics Community: An Agenda for Scientific Cooperation." Invited participants included distinguished physicists from Russia, ICTP, the Association of Asia-Pacific Physical Societies, the American Physical Society, OECD, the French Physical Society, the European Physical Society, the Commission of the European Communities, IUPAP, the German Physical Society, the French Government and other organizations. The organizers of the conference were Siegbert Raither, head of mathematics and physics programs in the Division of Basic and Engineering Sciences and the Division Director, Vladimir Zharov.

At the conclusion of the meeting, the participants submitted a recommendation to Director General Mayor recognizing UNESCO's growing importance to international science and recommending that priority be given to physics in developing countries, sustaining excellence of the physical sciences in East-Central Europe and the emerging states of the former Soviet Union, and promoting megaprojects in the physical sciences. A statement of general principles emphasizing the important roles of learned societies and partnerships between the public and private sectors recommended that a physics action council be convened to superintend the goals of UNESCO.

The Director General appointed ten senior physicists to the council and charged them with promoting international cooperation and collaboration and to provide counsel and guidance to UNESCO and its management. Donald Langenberg, then President of the American Physical Society and Chancellor of the University of Maryland System was made chair. The other appointees were F.K.A. Allotey

(Ghana), Carlos Aguirre (Bolivia), Sivaramakrishna Chandresekhar (India), Michiji Konuma (Japan), Norbert Kroo (Hungary), Yuri Novozhilov (Russia), Herwig Schopper (Germany), Yang Guo-Zhen (China), and Irving Lerch (United States). Siegbert Raither was assigned as Secretary to the council.

The Physics Action Council (PAC) convened an organizing meeting in April, 1994, and developed a work plan based on three working groups: Large Physics Facilities (Schopper, chair, Aguirre and Kroo); Communications Networks for Science (Lerch, chair, Novozhilov and Langenberg); and University Physics Education (Konuma, chair, Yang, Chandrasekhar and Novozhilov). The PAC remained an active component of the Organization's programs throughout the period of Mayor's tenure as Director General (1994-'99).

Almost immediately, the council's working groups began an aggressive program of international outreach, organizing meetings and workshops on telecommunications, access to large international research facilities and new approaches to invigorate physics education. The physics facilities working group held meetings in Japan, Paris, Brussels and Cuba and focused on projects in developing countries such as the Auger Giant Airshower project in Latin America, small accelerators in the Carribean and, ultimately, the SESAME project in Jordan. Telecommunications workshops were convened in Japan, China, Russia, the Philippines, Ukraine and Ghana—supported with resources provided by UNESCO, NATO, NSF and other funding organizations. Training for network administrators, programmers and technicians designed to promote internet access was the focus of these efforts. The role of physics education in capacity building led the education working group to survey successful programs and to examine ways of finding exceptional talent at the M.Sc. and Ph.D. levels in developing countries. In all cases these efforts were directed to complementing and strengthening the programs of the Science Sector and ICTP.

Today, the afterglow the council's activities may be seen in the UNESCO-supported SESAME project, the programs of the telecommunications and informatics sectors of the Organization, and in the awareness that science education plays a crucial role in developing the intellectual capacity of a nation.

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*Trustee, Americans for UNESCO;
Past Chair, Forum on International Physics, and Former Director of International Affairs, American Physical Society; Professor and Director, Radiation Oncology Physics, New York University; retired.

The Birth of the North American Chapter of the Ethiopian Physics Society

Solomon Bililign*

Ethiopia is one of the oldest nations in the world. The country's Rift Valley is known as the cradle of humanity. The founding of the Empire of Axum in the 5th century BC is often taken as the starting point of the Ethiopian civilization. This was a very advanced civilization. Ethiopians were the first Africans to mint coins. The Kingdom maintained trading relations both with the Greec-Roman world and with India and China during its most prosperous times. Ethiopia has one of the oldest written alphabets in civilization. The Axumite Empire was followed by the Zagwe dynasty. The most prized of the Zagwe kings was Lalibela. He is credited for building the eleven famous rock-hewn churches in his capital city. The site is considered one of the wonders of the world.

Despite the glorious past, modern higher education started in Ethiopia very late. The first University was established after the Second World War. The First Department of Physics in Ethiopia came into existence in 1966 with a BSc program. The Department has graduated more than 1100 students with BSc degree and about 90 students with MSc degrees. Current enrollments: Average of 200 undergraduates, 70MS and 15 PhD. In the last ten years about twenty-two new Universities have been established. The major universities currently are Addis Ababa University, Arbaminch, Bahir Dar, Debub, Haramaya, Jimma, Makealle, and University of Gondar. They all have physics departments with large enrollments.

Until recently (1983), all Physics graduates had to attend graduate programs in the US, and Europe. Consequently there are now a large number (over 100) of successful physicists of Ethiopian origin in the academic, industrial and government sectors both in North America and Europe. There is still a large influx of physics graduate students in the graduate programs in Europe and the US. This group has the potential to build a bridge with physicists in Ethiopia and jointly play a major role in shaping the future of Physics in Ethiopia and abroad.

There has been a strong desire by Ethiopian Physicist in the US to get organized and play a role in empowering the Ethiopian Physics community and help make physics research and education relevant to the needs of the country. Ethiopian physicists have been meeting informally at the APS general meetings since 1980 to discuss this issue. The first serious discussion of a formal organization was held during the APS centennial conference in Atlanta in 1999 with participation of about fifteen physicists from across the USA. This is where the seeds of a formal Ethiopian physics society were planted. All major accomplishments attributed to the society since 1999 are due to the leadership and dedication of Dr. Abebe Kebede, of North Carolina A&T University. The major accomplishments include the establishment of a vibrant and well- known website, and several workshops such as the 2003 session on physics in Africa at the APS March Meeting, and most recently the 2007 space physics workshop in Addis Ababa Ethiopia. One of the major challenges the society faced during this long period is lack of well-defined governance and connection between the leadership and the broad Ethiopian physics community in North America and in Ethiopia. As the Ethiopian physics community started growing in number and quality the need for reforming the organization to increase participation became quite apparent.

In 2007, the leadership board of the Ethiopian Physical Society in Ethiopia met with Dr. Solomon Bililign (Professor of Physics at North Carolina A&T State University) in Addis Ababa Ethiopia. The board asked Bililign to reorganize and revitalize the Ethiopian Physicists Society in North America. During this period Bililign also arranged the meeting between Dr. Judy Franz and Dr. Bekele at APC that formally led to Ethiopia's membership to IUPAP.

Following the meeting in Addis Ababa, an organizing committee led by Bililign was formed to draft by laws and organize a meeting to formally establish the EPS-NA. The one-year effort finally led to the organizational meeting and workshop on August 2, 2008. Dr Judith Franz, APS executive officer welcomed the workshop participants. About eighteen Ethiopian Physicists met for one day at ACP to formally approve the bylaws and conduct elections. Elections were also conducted on line for those who couldn't make it to the meeting. Dr Tessema, Guebre X (Professor of Physics, and currently a program officer at the National Science Foundation) was elected president unanimously.

The goals of EPS-NA are

1. To serve as a forum for networking of Ethiopian born physicists in the US with the local organization in Ethiopia and sister organizations worldwide.
2. To serve as an advocacy group to advance and promote the interests of the Physics Community in Ethiopia.

3. To work closely with EPS to promote their priorities strengthen the organization by inviting new members, and work closely with national and governmental institutions with vested power and interest to promote science and technology in the country.
4. To design and develop manageable short term projects to promote physics research in Ethiopia.
5. To develop credibility and visibility in the scientific community both in the US and worldwide through tangible and measurable contributions.
6. To reach out to the Ethiopian physics community and increase its memberships by contacting students, postdocs and professionals in the US.

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EPS-NA acknowledges the support provided by APS to cover travel cost for participants and the free use of ACP facilities.

Science and a World in Transition:

Selected memories of an international science bureaucrat

(Episode 3-5)

***Irving A. Lerch**

Europe under Siege and a Death in August—

My job in Vienna had taken me around the world and I was acutely aware that after two years I was being transformed into a bureaucrat with decreasing likelihood of reentering the laboratory or university classroom. Nonetheless in 1975 I agreed to a two year extension.

I had also discovered a voice on issues of scientific policy that affected institutions and people around the world. I had met and become friendly with Sherwood (Sherry) Rowland in an IAEA meeting and heard him predict that CFCs would eat away the ozone layer of the upper atmosphere—work that would win for him and his colleagues a Nobel Prize in chemistry a decade later. I grew alarmed by the implications of the first Indian Nuclear tests in Rajathstan in 1975 and published a long feature article which I followed up with a critical analysis of the nuclear power industry. This last raised the ire of the nuclear establishment when I pointed to evidence of increasing public resistance to new reactor projects in Northern Europe (which was not helped when I dared describe the gruesome consequences of a major reactor incident that occurred in 1961 in the vast Idaho National Reactor Testing Station—a disaster that claimed the lives of three reactor operators outright and created a crisis that lasted for many months). As it turned out, it presaged Three Mile Island, 1979, and Chernobyl, 1986.

My argument was that unless civic confidence was the first priority of the industry, the public would turn away from nuclear power at a time when it would be most needed. The Director General and Assistant Director General were outraged that I would bring controversy to the IAEA but I assured them that I would soon return to university life and that they could breathe easy.

The world intruded on the pastoral delights of Austria in other ways. The old IAEA headquarters on the Ringstrasse (also former *Gestapo* headquarters after the *Anschluss*) was the site of the Force Reduction Talks between the US, NATO, the Warsaw Pact and the USSR. One day, as I emerged from the building a voice boomed out, "Lerch, is that you?" It was my former 506th commander in the similitude of a lieutenant general (Elvy B. Roberts). As we exchanged pleasantries he explained to his

assistant, a young colonel, that we had served together in the 101st. Then he turned to me and exclaimed, "You used to be a much larger man!" No mention was made of the missing ground support radio and my near court-martial the previous decade.

Not long thereafter, terrorists stormed another site on the Ringstrasse hosting the OPEC oil ministers and after killing an Austrian security official, took the ministers and their staffs hostage. The Turkish ambassador, our next door neighbor, was assassinated by Kurdish militants just below our window on the Prinz Eugein Strasse the very evening we had been invited to a reception in his residence. And as I was opening the door to the airway at Schwechat airport to board a plane for a meeting in France, a voice rang out in English, "Where are you going? Get out of the airport now!" As I turned I looked out the great plate glass window facing the tarmac and not more than 20 meters distant saw a Volkswagen minibus surrounded by hooded men in black carrying AK-47s and holding hand grenades. A group of Jewish refugees leaving Russia had been taken hostage by Palestinians and were being held at the airport awaiting a plane dispatched by Austrian authorities.

Europe, it seemed, was under siege.

That August, my mother became gravely ill (she had been treated for breast cancer and metastatic spread) while I was in Sofia and an alert international operator tracked me down to give me the news. Sharon and I flew to Chicago and arrived in her hospital room minutes before she died. It was a bitter time. Before I left Chicago I had put her into an experimental program at the university medical center and she had been treated with a developmental high-energy electron hyperfractionated radiotherapy regimen based largely on research that I had done. While the therapy was a long shot (the disease was pernicious in its origins and patterns of development), its failure horrified me.

This accelerated our decision to return to the US and an opportunity in the form of an invitation from New York University arrived in time for us to close up shop and fly to the Big Apple at the end of 1975, almost three years to the day after our arrival in Vienna. After returning to the US, I continued my work in the international arena, often consulting for IAEA and other agencies (WHO, UNESCO) and becoming an advocate for increased international scientific collaboration.

Helping out during the Hadj and going to jail in Kano—

By the time of my first sabbatical from NYU in 1984, the IAEA and WHO asked me to travel to North, East and West Africa for a series of institutional visits to assess programs in Egypt, the Sudan, Nigeria, Ghana, Liberia and Sierra Leone. Unfortunately these visits coincided with the Hadj, the great annual migration of Muslim faithful to Mecca. This forced me to travel at the whim of vaporous schedules. But Sharon had agreed to accompany me and we were prepared for adventure intermingled with just a bit of discomfort. We got more than we bargained for.

I had been to Egypt a number of times and we had friends in Cairo. One incident, however, would haunt me: a woman colleague who had been educated in the US and whom I had met at various IAEA functions, asked for my help in finding a job outside of Egypt. She had just divorced her husband, a Coptic Christian, and she had been ostracized by her family. She was isolated socially and professionally. A year later, she committed suicide.

The trip to Sudan was uneventful, ignoring the midnight flight and heat at the confluence of the Blue and White Niles. But Sharon found the environment threatening. Many men in Khartoum appeared hostile towards us and we had to travel with colleagues and escorts. But the real trouble found us on our trip to Nigeria.

Our flight was delayed until about 2 am and we spent much of the night with men dressed in white dishdashah who were waiting for flights to Saudi Arabia. Many roamed the airport in high spirits and quite a few seemed to have been drinking heavily despite the proscription against alcohol. We were

assured that they would 'behave' on the flight east. It turned out that our flight was being diverted to Nigeria to pick up more pilgrims in the North, in Kano, the capitol of Muslim Nigeria.

My UN travel papers indicated that I was traveling to Lagos, however, and on landing in Kano a border official took us into custody and locked us in a small holding facility in the airport. We did not know at the time, but the difficulty in providing adequate transportation for pilgrims clamoring to go to Mecca had caused unrest in Kano with rioting and fighting between Muslims and Christians. The situation was tense and the young customs official, a major in the border police, was unsure of what to do with us.

After a few hours in the lock-up, bombarded by locusts, Sharon asked me if I wanted her to do "something" to clarify our situation. I'm no fool so I readily assented, knowing full well that Sharon's resourceful edicts should not be ignored.

She began pounding on the door and complaining loudly that she wanted to go to the toilet and needed water. When our young jailor responded, Sharon berated him for failing to look after our creature comforts and he began to apologize profusely and offered to take us to the "sanitary facilities." On our way, Sharon maintained a steady stream of complaints and pointed out that we were guests of the Nigerian government on official UN duty and were expected that day in Lagos (all true) and that the UN resident representative would have to be informed of our situation. He whimpered that the communications links with Lagos were down. She threatened diplomatic sanctions.

At this point the major had had enough and he took us down to the departure lounge, went to the head of a long line of passengers clamoring to get out of Kano, approached the agent and in a loud and threatening voice demanded that we be put on the plane first and flown to Lagos immediately.

But a long day was just beginning.

A Senatorial Investigating Committee and Collapse in the West—

On each of our stops, the ranking UN Resident Representative (equivalent of ambassador in diplomatic terms) was supposed to meet us and provide lodging, transportation and incidental funds. However, arriving in Lagos we were several hours late and the Resident Representative had no inkling of our whereabouts. We were without funds, without contacts and without a plan. What's more, we were warned that we would be prey to bandits on the roads if we did not leave the airport soon.

Salvation came in the guise of an Air-Nigeria manager who gave me the equivalent of $100 cash and instructed a driver to take us to the UN compound on the outskirts of the city. We arrived just as the gates were closing and were received by a highly annoyed UN official. He transferred us to a UN car to be driven to our quarters.

At the university guest quarters we were ensconced in an airy room overlooking the ocean and with some relief Sharon went into the shower at the precise moment that a messenger pounded on our door and announced that the Chancellor demanded our immediate presence. Dripping wet, Sharon pulled on some clothes and we rushed to a large banquet hall were the Chancellor had convened the faculty of the university to meet a Senate Investigating Committee sent to examine the university's administration (evidently the Chancellor was a member of the opposition political party). We were introduced as guests of the University and UN representatives.

Thus began my West African mission.

Nigeria is emblematic of much of sub-Saharan Africa—vast, sprawling, inchoate, fascinating, alien, and often repelling. The human and natural resources are immense but the history, religious and ethnic divisions, corruption, politics and social problems threaten to submerge the nation in chaos. No mortal can find a way into or out of this labyrinth and I had resigned myself to help, knowing that my efforts

would likely be washed away in the successive waves of disorder that engulf the region. I was not wrong.

In Ghana, I had in the past found good scientists with whom I had worked closely but on this trip, a government coup and military mismanagement had brought the nation to ruin and the University of Legon and the Nuclear Research Center had deteriorated badly. There was hunger in a country that had always been able to feed itself and its neighbors and the hydroelectric dams on the Upper Volta were producing power at much reduced capacity because of a persistent drought. I would return in a few years to improved conditions and on a high note of optimism. In 1984, however, the prospect was dreary.

Liberia had just undergone a brutal coup and the airport terminal was pock-marked from machine-gun fire. The UN resident representative almost had been shot by marauding troops (in fact he had been shot at and had dropped to the ground to the horror of his wife and children who witnessed the event and were certain that he had been killed).

Sierra Leone seemed untouched but when I spoke to some students I was alarmed when a young man told me that the nation was about to explode. He warned me that there would be unprecedented terror throughout the country and his prediction came to pass in a bloody civil war where rebels wiped out whole villages and chopped off the arms of men, women and children indiscriminately. And it was in Sierra Leone that I found a shipment of radiation equipment abandoned in the open—unattended for two years except for the rats that ate the wiring and rendered the equipment a silent, useless monument to yet another good intention lost to the rainforest.

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*Irving Lerch has also been Chair, Executive Committee, FIP, and Director, Office of International Affairs, APS

Physics in Africa March Meeting Session

American Physical Society March 2009 Meeting
Report on the Forum for International Physics sponsored
Physics in Africa Session

Abebe Kebede[1], Paul Gueye[2] and Dave Ernst[2]

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On March 16, 2009, the Forum for International Physics (FIP) co-sponsored a 3-hr long *"Physics in Africa"* session held during the 2009 American Physical Society (APS) March meeting in Pittsburgh, Pennsylvania. A. Kebede from NCA&T chaired the session. Four physicists from Africa were invited to this session that was attended by about 30 participants to provide an overview of the past, current and future of research and education in physics throughout this continent for both academic and policy-making aspects: Alex Animalu (physicist, Nigeria), Mzamo Mangaliso (past President National Research Foundation, South Africa), Arame Boye-Faye (head of the Research Division of the Ministry for Scientific Research and professor at the University Cheih Anta Diop of Dakar, Senegal) and Bernard M'Passi-Mabiala (Chair of the Physics Depamrtnet of the University Marien NGouabi of Brazzaville, Congo). The session was followed by a panel discussion.

Prof. Animalu provided a broad in-depth presentation of how physicists within Africa could contribute to worldwide forefront research. He presented his research work *"On the differences between theories of conventional and high temperature superconductivity"* in which he enlightened the theoretical work

performed in collaboration with some colleagues, and how this contributed in the advancement in the field of superconductivity. Dr. Boye-Faye followed with her presentation on *"Physics in Africa: the Case of Senegal",* in which she addressed the problems related to the student population (outpacing the university capacity by about 10 fold), the lack of equipment, and the very small direct contribution from the Government (less than 0.3% of GDP) to research. Prof. M'Passi-Mabiala addressed the audience with a review of the physics department (education, research and statistics) at his university and some ongoing inter-African collaboration to establish a consortium to leverage the expertise of faculty in neighboring countries for a more efficient educational implementation and advancement. The overall message from these talks was striking in their common content and centered around the following:

- The lack of sufficient funds and Government support for a proper environment to conduct adequate education and research;
- The lack of equipment and research facilities to conduct forefront research on and off campus, as well as reaching out to pre-college students;
- The need for more vehicles to connect physicists within and outside the continent to establish a critical mass for addressing physics issues;
- The need to have a pool of highly trained (theoretical) physicists with minimal but strong ongoing research to maintain a presence at the international level; and
- The fact that the most of the research is being done through personal relationship with foreign institutions.

Four speakers introduced the panel discussion that followed:

- Richard Martin from the University of Illinois who provided a status of the African Institute for Mathematical Sciences (AIMS), a project initiated and launched by Niel Turock (head of the Perimeter Institute in Canada). This is a 10-month long school that is based in South Africa and brings students from across the continent to obtain quality training in various applied mathematics fields.
- Dave Ernst from Vanderbilt University who provided a review/status of a South Africa-Vanderbilt program in astronomy.
- Herman Winnick from SLAC/MIT who lead the establishment of the SESAME facility in the Middle East and stressed the importance of establishing a synchrotron radiation facility in Africa
- Amy Flatten (head of the International Affairs at APS) who informed the audience of new programs within APS to help African physicists: free APS membership, free online journal access ... (more can be found at http://aps.org/programs/international/).

Abede Kebede led the panel discussion and engaged the audience on various topics relevant for Africa, especially on the need for a single African Physical Society that will link up communities and research groups within Africa as well as outside Africa: internet access, conferences, funding, comparison between non-US international agencies/institutions (ICTP, Sweden …) work, astrophotography … There was a general agreement in the fact that more can be done by the US physics community to establish stronger ties with African physicists and develop more efficient/higher impact projects to advance physics. The session concluded with informal discussions on how such effort could be developed. Additional information on some relevant activities can be found at: http://sirius-c.ncat.edu/asn/afps/index.html. It is noteworthy to mention that: copies of the first publication of the African Journal of Physics were provided (lead mostly by African physicists residing and practicing physics in the US) and the Ethiopian Physical Society-North America was introduced during the APS-FIP reception (to facilitate research and education in their own country.

The Overseas Chinese Physics Association

Chien-Peng Yuan*

The Overseas Chinese Physics Association (OCPA) was founded in 1990. OCPA is a non-political, non-profit, professional organization. The chartered goals of OCPA are to promote physics research in general and also to promote recognition of achievements by ethnic Chinese physicists in particular.

OCPA members hail from all disciplines of physics, and spill over into astronomy, chemistry, electrical engineering, computer sciences and mathematics. It includes scientists from universities, government and industrial labs.

OCPA administers two awards each year. The Outstanding Young Researcher Award (OYRA) is given annually to a physicist of Chinese ethnicity working outside Asia. The Achievement in Asia Award (Robert T. Poe Prize) (AAA) is given annually to a physicist or a team of physicists of Chinese ethnicity working within Asia. The winners of these two awards, selected by panels of distinguished physicists, include many outstanding physicists in our community.
We are pleased to report that both the OCPA Outstanding Young Researcher Award and the Achievement in Asia Award (Robert T. Poe Prize) have continued to attract candidates of excellent caliber. The remarkable rapid rise to professional eminence by winners of the OCPA OYRA and AAA awards also highlights the success of the OCPA programs.

In this meeting, we shall recognize the OYRA winners for 2007 and 2008. They are

2008	Ho Bun Chan	Univ. of Florida
2008	Feng Wang	Univ. of California, Berkeley
2008	Congjun Wu	Univ. of California, San Diego
2007	W. Vincent Liu	Univ. of Pittsburgh

For more information see http://www.ocpaweb.org/new/.

- Chien-Peng Yuan is President of OCPA and Professor at Michigan State University

Women in Physics in the Baltic States: Story of a Growing Consciousness Process

Dalia Satovskiene*

Globalization and super quick technological changes follow the changes in the scientific society. The stereotypes and myths shaped during centuries, structures of organizations etc. are targeted to repeal rising tensions in the society and fit new challenges. This story will be about actions targeted to re-think women physicists' situation in sciences in the Baltic States and obtained results.

Five years ago when the President of the Lithuanian Physical Society Prof. Zenonas Rudzikas suggested to me to take part in the First IUPAP women in Physics conference (2002, Paris) as a member of the Lithuanian delegation I was going to refuse. I did not feel myself having a gender as a physicist. However the well organized sessions, the open and sincere life stories of outstanding women physicists cardinally changed my position and lead to the conclusion: the women in sciences problem exists!

In 2005 Lithuanian women physicists initiated the FP6 project "Baltic States Network: Women in Sciences and High Technology" (BASNET, http://www.basnet-fp6.eu/). The project was successful and got financial support for its implementation from the European Commission. The core of the problem of women in sciences consists of two main and closely connected parts: large disproportion of women and men scientists in sciences and inadequate representation of women on various levels of science and its management. The BASNET project was committed to solve the latter dimension of the problem. It was coordinated by Vilnius University. Among project partners were the Ministries of Education and Science, key universities, and research institutes from three Baltic States. The Polish Physical Society and the University of Bucharest also participated in the project.

After session "International Gender Issues in Physics", with APS president Arthur Bienenstock and other speakers

FIP reception (March 2008, New Orleans)

Discussions with Colleagues

The main goal of the BASNET project was the creation of the regional Strategy how to deal with the "women in sciences" problem in the Baltic States. The project implementation has some stages.

The first one was an in depth sociological study aiming to find out disincentives and barriers women scientists face in their career and work at science and higher education institutions. Analysis of results revealed a wide range of problems concerned with science organization, management, and financing common for both counterparts. However it also proved the existence of discrimination against women in sciences. As main factors influencing women under-representation in Physics were found: the stereotypes existing in the society where physics is assigned to the masculine area of activity; failings of the science management system, where highest positions are distributed not using the institutionalized objective criteria but by voting, where the correctness of majority solutions is anticipated implicitly. In physics, where male scientists are the majority (they also usually compose executive boards, committees etc.) results of such procedures often are unfavorable for women. The same reasons also influence women "visibility" in the physicist's community and as the consequence possibility to receive needed recourses for their research as well as appropriate presentation of results obtained. The study revealed the conservatism of the scientific community - reluctance to face problems existing in the scientific society and to start solving them. On the basis of the results obtained as good practice of other countries the common strategy of solving the problem of women in physics (sciences) in the Baltic States region was formulated. As changing the stereotypes is a long lasting process it, was decided firstly to concentrate strategy implementation plans on changes in science management policy tackling the problem from the „top" and allowing to receive the quickest results. Each participating country is free to decide which problems are most important and be solved first.For example, on the basis of BASNET strategy the Lithuanian Ministry of Education and Sciences developed its strategy of Equal Gender Opportunities in Sciences and started its implementation. On the other hand, a great work was done to improve women-scientists communication in the Baltic States so necessary to make women more visible in the scientific community. For this the Data Basis of Baltic States Women in Sciences and HT was established. Together we became more confident and understood that we can change something in this world!

BASNET meeting devoted to the women in sciences Strategy (with representatives of Baltic States Ministries of Education and Science)

The BASNET project was finished at the very end of 2007. As its continuation on the basis of institutions - BASNET project partners, BASNET Forumas association was established. Its mission: to monitor the Strategy implementation in the Baltic States region. 2008 BASNET Forumas has become a full member of the European Platform of Women Scientists(EPWS, http://www.epws.org/), prestigious umbrella organization of women networks in EU, established by EC. The membership opened broader horizons for Baltic States' women scientists to influence European science policy.

*Dalia Satkovskiene is President of BASNET Forumas and Associate Professor of Physics, Vilnius University, Lithuania.

Different sides of the Jabłoński Diagram on its 75th anniversary

Lidia Smentek*

The list of *Named Concepts in Chemistry* presented by John Andraos in the Internet (http://www.chem.yorku.ca/NAMED/) contains the names of the scientists who have made outstanding contributions to science. With special pride and pleasure I found there the name of the author of the famous diagram Aleksander Jabłoński, which is presented with the following information:

Aleksander Jablonski

1898 – 1980
Polish, **b. ?**

Jablonski diagram

Jablonski, A., Z. Physik **1931**, 73, 460
Jablonski, A., Z. Physik **1931**, 70, ~~53~~ 723
Jablonski, A., Z. Physik **1935**, 95, ~~460~~ 53
Jablonski, A., Z. Physik **193~~1~~5**, 94, 38
Jablonski, A., Acta Phys. Pol. **1954**, 13, 175

My roots, in fact both personal and professional, make me obligated to fill in the empty spaces in the above table, correct the references to Jabłoński's work; and by providing some data from his biography, to remove the question mark from above.

As a native of Toruń, Poland, I started my academic career there in 1966 as a first year student in the Physics Department of Nicolaus Copernicus University. Professor Aleksander Jabłoński at that time led the Department. He retired two years later but for more than ten years, following his retirement, he was present as a scientist, authority, advisor, and important persona. He was important also for us, the youngest undergraduates and later on, young scientists, who were watching him and his students, our teachers. Although Professor Jabłoński did not teach me, I was raised in the atmosphere of his scientific fame and charisma.

Scientific side of the Jabłoński diagram

Professor Jabłoński published 101 scientific papers[1], which catalogue 54 years of his active life. When asked in 1976 about his greatest scientific achievement, he humbly replied in two sentences[2]:

> *The most important is the publication concerning the mechanism of fluorescence and phosphorescence – this one well known. Then I was*

[1] Complete list is presented by J. Szudy at the address: http://www.fizyka.umk.pl/~lum98/papers.html.
[2] Postępy Fizyki (Magazine of the Polish Physical Society) v. 33, issue (1-2), 1982; interview from 1976.

interested in the pressure effects upon the broadening of the spectral lines.

During the same interview he was asked also how has it happened that he created the diagram explaining the luminescence; he honestly replied:

> *Some time ago Professor Förster, who came to Toruń for a visit just a few weeks before his death* [1974]*, asked me what was my inspiration for the scheme of levels; that time I answered that I do not remember. Later on, while thinking I believed that possibly it was connected with the fact that at the beginning I worked on the fluorescence of the cadmium vapors...*

When the „Jablonski Diagram" is Googled, within fractions of a second more than there are 6000 hits. The diagram is indeed very well known. It has been applied over the years to explain different luminescence processes in various materials. It was modified, extended, generalized and adopted to specific problems, but in essence still remaining the Jablonski diagram. One of the more interesting versions can be found at the address: http://www.innssi.com/Chapter1.htm, where it is employed to explain pressure sensitive paint measurements, used by *"NASA ARCs, ONERA in France, DLR in Germany, NAL of Japan, TsAGI in Russia, automobile industry Ford, Peugeot, full scale aircraft tests, numerous university wind tunnels"* as described in this material.

Back to the origin

The original diagram of the energy levels was published in a short paper in Nature in 1933 (copy of the title and the original diagram below, reprinted by permission from Macmillan Publishers Ltd: Nature **131**, page 839, copyright (1933)).

Efficiency of Anti-Stokes Fluorescence in Dyes

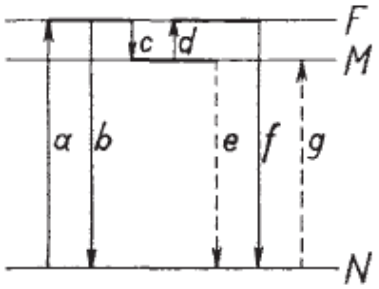


FIG. 1.—Energy levels in a phosphorescent molecule. *a*–absorption, *b*–fluorescence, *c*–transition to metastable level, *d*–thermal excitation, *e* and *f*–phosphorescence, *g*–absorption of very small transition probability.

Using the words of the author, the process of luminescence was explained in the following way:

> *...We can assume therefore that in such molecules there must be at least one metastable energy level M, situated lower than the level F reached immediately after absorption. From the state F the molecules can pass either to a normal state N, emitting the band F-N (fluorescence), or to the metastable state M. The probability of the transition M-N is very small. Therefore when the temperature is sufficiently high, a great majority of molecules will be raised thermally from the level M to F and will be able to emit the band F-N (phosphorescence at room temperature). At low temperatures, direct transitions M-N take place.*

In 1941 (when Poland was under Nazi occupation, and the author of the diagram suffered its consequences, as described below) G. N. Lewis, *et al* wrote in their paper[3]:

> *This simple scheme of Jablonski has been criticized on several grounds by Pringsheim and Vogels[4]. [...] It seems to us that the scheme of Jablonski is sufficiently flexible to take care of such complexities as they arise.*

The evidence, how right Lewis and his collaborators were may be found in all the modifications of the original diagram that have been introduced in the literature. A special place on the list of all these publications is reserved for a paper by Lewis and Kasha[5] from 1945, since it implemented the Jabłoński diagram introducing the realization of the metastable state of the original diagram by the triplet state; in this very paper also the term *inter-system crossing* was introduced (see also review articles by M. Kasha[6]).

The metamorphosis of the Jabłoński diagram observed over the years and its flexibility, as described by Lewis, are illustrated in the article *A generalization of the Jablonski diagram to account for polarization and anisotropy effects in time-resolved experiments*, by J. Zimmermann, A. Zeug and B. Röder (Phys. Chem. Chem. Phys., **5**, 2964 (2003)). In this paper the authors are writing:

> *…the idea to model the process of rotational diffusion by a series of arbitrary jumps between discrete states fits nicely into the concept of the Jablonski diagram. In this paper, we present a generalization of the Jablonski diagram to account for rotational diffusion using a DDA like method* [discontinuous distribution approach], *which we call the polarization sensitive Jablonski diagram (PSJD). The main advantage of this model is its easy customization to special requirements, as the Jablonski diagram itself can be easily extended to any possible electronic states and transitions in (supra-) molecular systems.*

[3] G. N. Lewis, D. Lipkin and T. T. Magel, J. Am. Chem. Soc., **63**, 3005 (1941).
[4] Pringsheim and Vogels, J. chim. Phys., **38**, 345 (1936).
[5] G. N. Lewis and M. Kasha, J. Am. Chem. Soc., **66**, 2100 (1945).
[6] M. Kasha, J. Chem. Educ., **61**, 204 (1984) and Acta Phys. Pol., **A71**, 661 (1987).

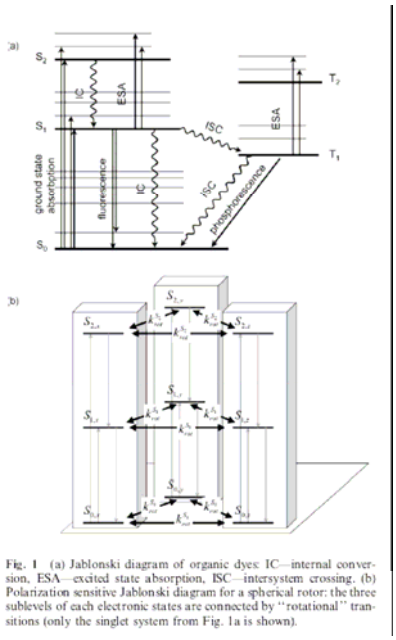


Fig. 1 (a) Jablonski diagram of organic dyes: IC—internal conversion, ESA—excited state absorption, ISC—intersystem crossing. (b) Polarization sensitive Jablonski diagram for a spherical rotor: the three sublevels of each electronic states are connected by "rotational" transitions (only the singlet system from Fig. 1a is shown).

Figure reproduced from the article by J. Zimmermann, A. Zeug and B. Röder in Phys. Chem. Chem. Phys., **5**, 2964 (2003) (by permission of the Royal Society of Chemistry).

Human side of the Jabłoński diagram

(photograph from private album of E. Walentynowicz)

Professor Aleksander Jabłoński was born on February 26, 1898 in Voskresenovka, Ukraine (that time part of Poland) in a very patriotic, Polish family. He died on September 9, 1980 in Warsaw survived by his two daughters and their families; his beloved wife, Wiktoria, neé Gutowska, his best life companion, confidant, advisor and pianist, who also played in his string quartet, passed away in 1970. His life spanned a very difficult period of history in Europe, in general, and Poland in particular. He served his country in both the First and Second World Wars and suffered all their consequences; yet he was an outstanding scientist, talented musician, warm family man, skillful organizer and simply a nice person emanating tender attitude toward all those around him. At the same time however, he was serious, always defending the moral and ethical rules and searching for the truth, also in science. Demanding much from all those working with him and for him, expecting honest and truthful performance from all sharing life with him, he drew by his own devotion, determination and hard work a clear picture for others to follow.

The First World War interrupted his study of physics at the University in Kharkov. He continued his education at Warsaw University in 1918, when Poland regained its independence,

and completed it under the supervision of Professor Stefan Pieńkowski. After obtaining his PhD in 1930, he spent two years working for Professor Peter Pringsheim in Berlin, while maintaining a scientific collaboration with Otto Stern in Hamburg. His time spent at University of Warsaw after returning from the stay abroad was very fruitful, and it culminated in his publishing in 1933 in Nature the diagram that brought him international fame. This time was also a good time from a personal point of view, as recollected by Jabłoński's daughter Danuta. Indeed, married in 1922 to the accomplished pianist Wiktoria Gutowska, he started his family life in Warsaw; and his two daughters were born there, Halina in 1923 and Danuta in 1925.

While studying physics he was simultaneously a student of music under the guidance of famous violinist Stanisław Barcewicz, who studied music composition under Piotr Tchaikovsky (the same who composed the Fourth Symphony and the opera *Eugene Onegin*). In fact for some years, between 1921 and 1926, Jabłoński played violin in the orchestra of the Teatr Wielki - Polish National Opera (founded in 1778) with Emil Młynarski as conductor. This was a real dilemma for a talented violinist and, at the same time, talented physicist, which profession to choose for the future. With the serious voice of his wife's advice, physics won, and the main stream of Jabłoński's life was devoted to research and teaching. However, during his whole life he was also a devoted musician organizing at his own home string quartets, in every city he lived to the end of his life. As his daughter Danuta recalled[7], her parents were playing music every evening, mother on piano, father the violin. Sometimes father was also improvising on the piano, but early in the morning he was practicing on the violin silently, with no sound of music.

In 1938 he accepted an academic position of docent at the Stefan Batory University in Vilnius, Lithuania, (that time part of Poland) to establish an independent and his own research group on a new ground. Unfortunately the war that broke out on September 1, 1939, which again ruined the normal life of the Jabłońskis, with the worst to come in July 1940. After the fiasco of the defense of the mother country at the German front, recovering from the wounds from the battle, he stayed at home being completely suspended between the military and civil life styles, and crushed by the internal conflict between his feelings of patriotic obligation and the helpless and hopeless situation. In order to survive hunger his wife cooked candies, and the daughters bartered them in the neighborhood for food, but docent Jabłoński, as a Polish Officer, could not accept an offer from his German colleagues to work on scientific Abstracts to earn money. As reminisces his daughter Danuta,[8] he argued that *Poland and Germany are in war, therefore I cannot accept such an offer*, agreeing at the same time with his wife that he should be indeed moved by this gesture of his colleagues.

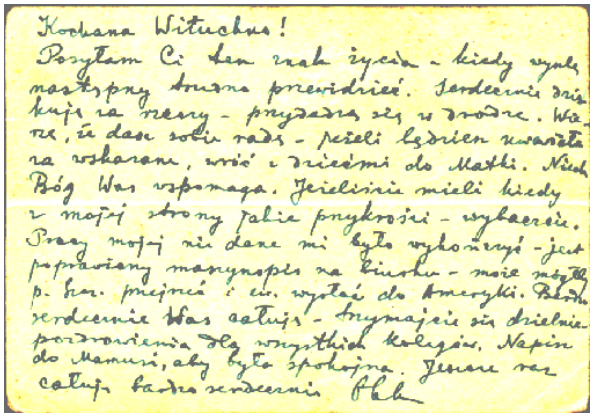
In July 1940 the war for Jabłońskis turned into a new chapter. In the middle of the night Jabłoński was arrested, not by the obvious enemy, the Germans; but by new ones, the Russians, who in 1939 had joined the German side [9]. Only later it was learned that he was taken together with other Polish officers to Kozielsk, a camp in Russia, to occupy the vacant places created by the massive murder of Polish officers and intelligentsia in the spring of that year. In fact, at that time nobody knew that a few months earlier, in April, Professor Jabłoński's brother Feliks, the judge, had been killed in Katyń[9]. It is scary to repeat after Danuta Jabłońska, that her father, while

[7] Danuta Jabłońska-Frąckowiak, *Na Universytecie Mikołaja Kopernika w latach 1946-1966. Wspomnienia fizyka* (in Polish), Wydawnictwo UMK, Toruń, 2006.
[8] Danuta Jabłońska-Frąckowiak, *Pomruki wojny* (memoir in Polish), Tow. Miłośników Wilna i Ziemi Wileńskiej, Bydgoszcz, 2004.
[9] As a result of the Ribbentrop-Molotov Pact, on September 17, 1939, Poland was invaded by the Soviet Army, and several thousand of officers of the Polish Army, policemen and civilians were arrested. There were three NKVD camps: Kozielsk, Ostashkov and Starobielsk; in the spring of 1940 thousands of prisoners were executed and the most known execution place was Katyń Forest.

in captivity, found the name of his brother engraved on the wooden bunk bed! That time he naively assumed that, since the brother was not present, this had to be vivid evidence that he had been previously transported to another camp. I have to confess that this story is very emotional for me, since in the same place, in Katyń, and at the same time as Professor Jabłoński's brother, my father's brother was killed (on April 10, 1940). For the reader not familiar with the achievements of the political changes of 1989 in Central and Eastern Europe, I have to add that for all the years prior to these changes, the Russian camps existed only in the tragic stories whispered among the family members in the privacy of home; they had been removed from the official history books and from the official version of the Second World War. Only in the last 19 years did the scale of this crime come to the surface, and its victims have been openly mourned. However still not all the documents filed in the Russian archives are open for public eyes and souls.

Jabłoński survived the captivity in the Russian camp, but it sounds like a paradox that it happened thanks to the war against Hitler. In a real war zone it was indeed possible, and in this particular case the actions of war took a reverse order. Russians, on being attacked by the Germans on June 22, 1941, realized the danger of the situation and suddenly changed their colors and side. They became the allies of the Poles, unified in the fight against a common invader.

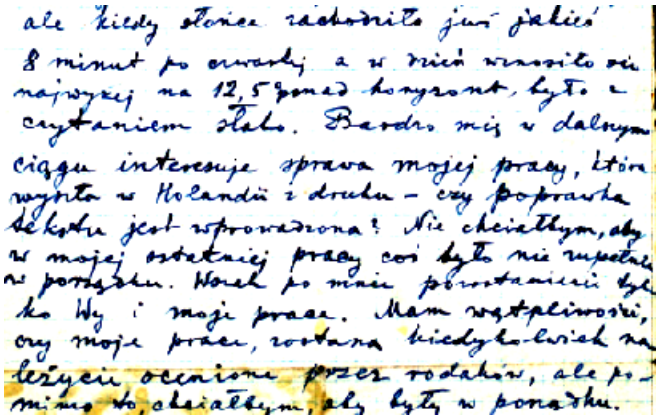
Below is a copy of the first card written on August 23, 1940 by Professor Jabłoński to his wife and daughters. It was written during his travel across Lithuania in an unknown direction; it reads (my translation of a fragment from the original correspondence donated by Danuta Jabłońska-Frąckowiak to the Archives of Nicolaus Copernicus University in Toruń, cat. num. AUMKW-24/3;):



Dear Wituchna[10]*,*
I am sending you this sign of life, it is difficult to predict when it will be possible to send another one. Thank you cordially for all the clothes you gave me – they will be useful during the way. I believe you will be able to survive; if you think it would be better, move with children to Mother. Let God take care of you. Please forgive me if I have caused you any sorrow. I was not given a chance to complete my work - there is a corrected manuscript on the desk, maybe Prof. Sz. would be willing to check it and eventually mail it to America.

[10] Nickname of Wiktoria, wife of Professor Jabłoński

Nobody knew where he was kept in captivity, and only from a message written in one of his letters where the time of the sun rise and its position were mentioned, it was possible to deduce that it is indeed the camp in Kozielsk (copy below)



Copy of a fragment of the letter written on February 26, 1941 (in the second line from the top: *sun set at around 8 minutes after 4, and during the day it was 12.5 º above the horizon*; the rest of this letter is translated below (courtesy of the UMK Archives, AUMK W-24/3)

In the same letter (presented above), which in fact has been written on February 26, 1941, Professor Jabłoński's birthday, he wrote (from the memoir of Danuta Frąckowiak-Jabłońska[11]):

> *I am most interested in my work, which was printed in Holland; was the correction introduced? I would not want there to be something wrong in my last paper. You know, only you and my papers will be left after me.*

On March 23, 1941 the following report has been written to his wife and daughters:

> *I have not been ill, not even with flu, my teeth are strong (I was given a gift of a small piece of onion and garlic which is supposed to preserve teeth). I try and keep fit by studying physics and reading English books...*

and continuing (my translation from the Polish original):

> *I am very happy that my last paper was found interesting, the external conditions are rather inappropriate. But unfortunately still I do not know whether my erratum was taken into account and the error is corrected. Are there in Vilnius copies of my paper available? I am unable to have contact neither with Fokker (the editor of Physica) nor with Opechowski, his assistant*[12].

In the last letter dated on April 30, 1941 he wrote [11]:

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[11] *Born 100 Years Ago: Aleksander Jabłoński (1909-1980)*; ed. J. Szudy, Wydawnictwo UMK, Toruń, 1998.
[12] The paper mentioned in these letters, entitled: *Pressure Broadeing of Spectral Lines*, was published in Physica, **6**, 541-550 (1940).

Lately I have started to play the violin, built with the aid of a penknife and piece of glass; the bow has thread instead of horse hairs.

Family, physics, music... these were the main sources of strength for Jabłoński to survive the extreme conditions.

The next episodes of the life of Jabłoński sound very straightforward in comparison to the trauma of the war: the Polish Army organized on the Soviet territory, transit through the Middle East and the final destination in Edinburgh, Scotland, where he taught at the Polish School of Medicine[13]. In November 1945 his advisor from Warsaw, Professor Pieńkowski, arrived in Edinburgh to convince him to return to Poland, since, as he said, young people in liberated Poland want to study; and they are awaiting teachers! Professor Jabłoński indeed returned to Poland out of his deep patriotism, dedication to family and to his mission as scientist and teacher.

Although he had the opportunity to stay at Warsaw University, again the chance of creating his own research group on a new territory was the reason that he accepted a position at as yet a non-existing university, which was just in the process of being established in Toruń, in the northern part of Poland. In 1946 Jabłoński, a scientist already recognized in the world in spite of a break of five years in his scientific activity caused by the war, faced a new challenge. His task was to create the Physics Department, including research and teaching. Nothing was available at that time – equipment for laboratories, buildings, people...

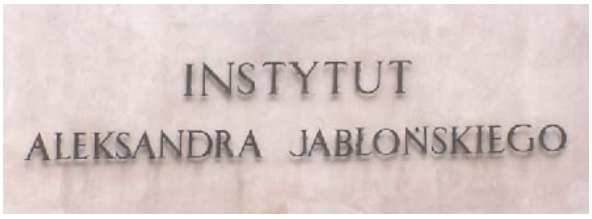
Professor Jabłoński at his desk looks with smile at the results of a new experiment presented by his students (from the left): Emanuel Walentyno-wicz, Kazimierz Antonowicz (first PhD student in Toruń), Edmund Lisicki, Henryk Łożykowski i Stanisław Łęgowski (private collection of Emanuel Walentynowicz).

[13] In fact it was a long, tragic and painful way. The treaty between the Soviet government and the Polish government in exile was signed in London on July 30, 1941. On August 14, 1941 there was a military agreement signed in Moscow giving permission to organize the Polish Army on Soviet territory. General Władysław Anders became its chief; it was a voluntary army established for the Polish men on Soviet territory. However nobody knew how many of them had been living there and how many were kept there, not voluntarily of course. Only after the amnesty, when Polish prisoners were freed, thousands of them joined the army, and in February 1942 there were 75 thousand soldiers. Nobody knew at that time why the Polish officers were not joining the army; nobody knew, until 1943, that they had been killed in Katyń. Stalin did not fulfill his promise to provide military equipment and food for the army; there was hunger, death, misery and no arms with which to fight. With the approval of Stalin, the Polish Army was evacuated in the spring of 1942 and in September of that year General Anders in Iraq started the formation of a Polish Army in the East.

Professor Jabłoński dedicated his life to the Institute of Physics of Nicolaus Copernicus University, he created the Toruń School of Physics, and he built its home, which is now the Institute of Aleksander Jabłoński (picture below).

Professor Jabłoński (in the first row in a light jacket, next to him is Professor Roman Stanisław Ingarden, who succeeded Jabłoński as Director of the Institute) in the front of the Physics Institute with some of the faculty members, May 27, 1972.

...and everything has happened in my hometown Toruń, a small town established 755 years ago, the same where in 1473 Nicolaus Copernicus was born...



Aleksander Jabłoński's Institute, the home of the Physics Department of Nicolaus Copernicus University, Toruń, Poland (photographed by Dawid Piątkowski, a graduate student of physics, 2008).

Acknowledgement

I wish to express my gratitude to Danuta Jabłońska-Frąckowiak, Professor of Physics, for sharing with me over the phone her personal reminiscences, for her wonderful books with her own memories and memoirs of her famous father; for her moral support, extreme amount of optimism, pleasure provided during multiple conversations, and for her patience in answering my questions. I thank Emanuel Walentynowicz, one of the students of Professor Jabłoński, for the photographs from his private album presented here. I acknowledge also the very prompt and useful help I received from the Archives of Nicolaus Copernicus University in Toruń.

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