



## Letter from the Editor



**Dear FIP Members,**

In this FIP newsletter issue you will find all information about our sessions at the next March and April Meetings and an overview of our recent efforts in serving the international physics community. I am proud to mention that our activities are always very well attended and the FIP community is

increasingly growing.

On behalf of the Executive Committee, I want to give a very warm welcome to our new elected Executive Members: Councillor- Emanuela Barzi (Fermilab, US); Vice Chair- Luisa Cifarelli (University of Bologna, Italy); Member-at-large - Dmitri Denisov (Femilab, US); Member-at-large- Abhishek

Kumar (Univ of Maryland-College Park, US). Let me thank Young-Kee Kim, who served as our FIP councilor the past four years, Maria Spiropulu the FIP Past Chair 2017, and the two Member-at-Large Jason S Gardner and Aldo Romero for their valuable contributions to the FIP. A special thank you also to the current Past Chair Cherrill Spencer for her enthusiasm and dedication to the international physics community as our Chair throughout 2017. And I would like to send to Jerry Peterson all my best wishes for a successful and fruitful year, as 2018 Chair of the FIP.

I hope to see you all at our next APS meetings!

My warmest best wishes to you all,

**The Newsletter Editor**  
**Maria Longobardi**  
**University of Geneva, Switzerland**  
[marialongobardi@gmail.com](mailto:marialongobardi@gmail.com)

## Inside this Issue

<b>Message from the 2017 FIP Chair .....</b>	<b>2</b>	<b>SESAME Begins Operation and Reminisces of its Beginning .....</b>	<b>6</b>
<b>FIP Invited Sessions at the 2018 APS Meetings.....</b>	<b>3</b>	<b>2017 Meeting of the World Science Forum.....</b>	<b>8</b>
<b>Proud to be Excellent! More Distinguished Students (DS) are Coming to the APS Meetings.....</b>	<b>4</b>	<b>Let's Talk About Science: The Nepalese Winter School.....</b>	<b>9</b>
<b>APS FIP FELLOWS 2017 .....</b>	<b>5</b>	<b>FIP Officers .....</b>	<b>10</b>
<b>New Efforts from APS International Affairs.....</b>	<b>6</b>		

## Message from FIP 2017 Chair Cherrill Spencer



The international physics scene enjoyed some highs and suffered some lows during 2017. Let me start this, my last, message from the FIP chair, with recounting the triumph of the observations of the collision of two neutron stars in August: the three LIGO machines, two in the USA and one in Italy, first saw the gravitational wave signals from this distant event and quickly sent out the stars' approximate position in

the sky to 90 astronomical observatories all over the world. Within hours 70 telescopes on all five continents observing in a wide range of electromagnetic frequencies had detected signals and even the space-bound Fermi Gamma Ray Telescope circling the earth had detected gamma rays from the colliding stars. This sharing of information amongst scientists of many countries, without omitting anyone, for example, Australia, "because we don't like the way they treat koala bears!", is how we should aim to practice physics and it as individuals that we have to make sure international collaboration continues to happen, to overcome government policies that aim to make some countries our enemies.

The latter is happening with USA policy towards Cuba for example. FIP organized an invited session on "Physics and Physicists in Cuba" at the 2016 March meeting and later in 2016 the APS sent a small delegation to Cuba to investigate future physics collaborations, these events were possible because the US government lifted its 50 years embargo on Cuba in December 2014. But a reversal in this policy was imposed by our current USA government in June 2017, with new travel restrictions on USA citizens going to Cuba, these restrictions, along with the still in force travel ban on citizens from 8 countries entering the USA, are what I call the lows of 2017 with regard to international physics. Part of the APS's mission statement declares: "the APS strives to support physicists worldwide and to foster international collaboration". So, while the Society cannot intervene in individual situations, we invite colleagues who have been affected by these executive orders or suffered harsh treatment from immigration officials as they entered the USA, to share their stories with us. Information can be sent to [International@aps.org](mailto:International@aps.org). (This information will only be used for statistical purposes and will be kept private.)

Physics and Engineering Departments have already seen substantial reductions in the number of applications for graduate programs from foreign students (e.g. a 42% drop in applicants from India at California State University at Long Beach), we presume because they do not want to live in an un-friendly country. Consider these statistics: in 2015 43% of Physics PhDs in the USA were awarded to foreign citizens; since 2000, 78 Nobel Prizes in Physics, Chemistry, and Medicine have been awarded to people living in the United States, of which 31 (40%) were immigrants. Therefore immigration policy affects the progress of science, and we must work to allow the freedom of scientists and students to move and exchange ideas freely across national boundaries, such movement is to the benefit of all countries.

The Forum on International Physics has several ways it encourages international collaborations and physicists' international travel.

Our International Research Travel Award Program (IRTAP) promotes international research collaborations between physicists in developed and developing countries; it has been going since 2004, with 84 travel grants awarded. The second travel award program FIP organizes is for Distinguished Students (DS). The travel awards are given to undergraduate or graduate students from developing or under-developed countries who have their abstract for a poster or a contributed talk accepted to either the March or April APS meetings. Another article in this FIP newsletter, by member-at-large Jason Gardner, who ran this DS program for two years, describes the most recent winners.

Every other year FIP presents the John Wheatley Award which honors and recognizes the dedication of physicists who have made contributions to the development of physics in countries of the third world. The award will consist of a stipend of \$2,000 and a certificate citing the contributions made by the recipient. The deadline for nominating someone for the 2019 John Wheatley Award is June 29th 2018 and all details can be found here: <https://www.aps.org/programs/honors/awards/wheatley.cfm>. Another way FIP encourages international collaborations is through our selection of FIP Fellows. In order to become an APS Fellow in a scientific division one only needs to demonstrate exceptional contributions to the physics enterprise; e.g. outstanding physics research or important applications of physics. Fellowship is a distinct honor signifying recognition by one's professional peers. In order to qualify to become a FIP Fellow our Fellowship Committee also demands evidence of activities above and beyond the chairing of a typical international conference, such as the fostering of scientific collaborations amongst physicists from diverse cultural backgrounds or the establishment of international exchange programs. In 2017 we awarded only 6 FIP Fellows out of 13 nominations, although we could have awarded up to 7, because the others lacked the kind of international efforts we want our FIP fellows to have expended. APS members working abroad can be nominated through the appropriate scientific division; do not send their nomination to FIP just because they live and work outside the USA. In another article in this FIP newsletter you will find the names and citations of the six 2017 FIP Fellows.

Our 2018 Program Committee, enthusiastically led by chair-elect, Jerry Peterson, has assembled a fascinating array of invited sessions for the March and April meetings. You can hear about physics experiments from the Antarctic to the International Space Station, learn how women physicists are faring in Africa, Asia and the Middle East, consider the future of physics and discover how to turn new undergraduates into physical scientists. The complete details of all 8 FIP invited sessions are given in the article by Jerry Peterson later in this newsletter.

Finally, here is where I bid a fond farewell to the four Executive Committee members who are "rolling off" at the end of 2017 and welcome the four new Committee members who start their service to FIP on 1st January 2018. My many thanks to Young -Kee Kim, who served as our FIP councilor the past four years, she represented FIP's interests on the APS's Council of Representatives and sat on the APS's Board of Directors for two years; to Maria Spiropulu who served in our four-year chair line, leading various committees and enhancing international scientific cooperation; to Jason Gardner, member-at-large for three years, who served on our Fellowship

Committee, our Program Committee, and chaired the Distinguished Student (DS) Travel Award Committee; and to Aldo Romero, member-at-large for three years, who served on our Fellowship, DS and Program Committees.

Our recent election for Executive Committee members yielded these four new members: Councillor- Emanuela Barzi (Fermilab, US); Vice Chair- Luisa Cifarelli (University of Bologna, Italy); Member-at-large - Dmitri Denisov (Fermilab, US); Member-at-large- Abhishek Kumar (Univ of Maryland-College Park, US).

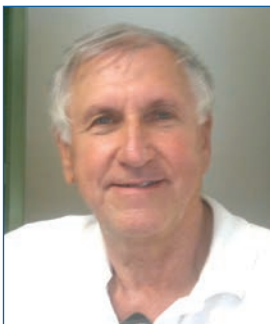
I became past-chair on 1st January 2018, which puts me in charge of

the FIP Nominating Committee; please help us maintain an excellent team of committee members by nominating people who are passionate about physics from an international point of view. Good luck to Jerry Peterson who took over as chair on 1st January 2018.

*Cherrill Spencer started her 45 years physics career as an experimental particle physicist, followed by a spell in industry where she learned to design magnets for a start-up MRI machine company, she returned to academia in 1988 as the SLAC National Accelerator Laboratory's only Magnet Engineer. She retired from SLAC in 2014 and is enjoying a busy retirement consulting and volunteering for FIP and other non-profit organizations.*

## FIP Invited Sessions at the 2018 APS Meetings

**Jerry Peterson, 2018 Chair of FIP and Chair of the FIP Program Committee 2017**



Our Forum was asked to create three sessions of invited talks for the March and April 2018 APS meetings. We amplified these both to four sessions, by strategic partnerships with other APS units.

The March 2018 meeting will be held in Los Angeles CA 5-9 March, with about 10,000 expected attendees. Your FIP Program Committee selected three themes for sessions, each with five invited speakers, plus a session shared with the Topical Group on Energy Research and Applications (GERA).

1. On Wednesday March 7 from 08:00-11:00, Surajit Sen will chair the session “Physics Teaching in Gateway Classes: A Global Perspective”, concerning the ‘impedance matching’ problem of turning young adults into physical scientists in their first two years of college. Speakers will be Mulugeta Bekele (Sakharov prize winner in 2011) of Addis Ababa University, Jason Hafner of Rice University, David Helfand of Columbia University, Syed Minhaz Hossain of the Indian Institute of Engineering, Science and Technology, and Daniel Siegel, a best-selling neuropsychiatrist, author of “The Mindful Brain” and many other books.
2. Later on Wednesday, I will chair the session from 11:15-14:15 “Major Physics Organizations and their Role in the Future of Physics”. Speakers will be Arthur Bienenstock of Stanford (Associate Director of the OSTP in the Clinton White House and past APS president), Amy Flatten (Director of International Affairs of the APS), Sekazi Mtingwa of the Triangle Science, Education, and Economic Development LLC (speaking on behalf of IUPAP), Fernando Quevedo, Director of the International Center for Theoretical Physics in Trieste, and Ruediger Voss, President of the European Physical Society. These speakers have been on the inside of institutions with enormous impact on physics, in the present and in the future.
3. On Thursday March 8 from 14:30-17:30, we have created a session together with GERA “Materials and Fuels for the Global New Energy Economy,” chaired by Michelle Johannes of

GERA. Speakers will cover research and development of batteries, fuel cells, magnets for wind energy, sunlight-driven hydrogen formation and nuclear hydrogen production.

4. On Friday March 9 from 11:15 to 14:15, Maria Longobardi will chair the session “Condensed Matter Experiments on Board the International Space Station” shared with our FECS partner. This is international physics by its very definition. Speakers will be Eric Furth of the University of Delaware, Joe MacClenan of the University of Colorado Boulder, Hubertus Thomas of the German Aerospace Centre, John Goree of the University of Iowa, Rob Thompson of the Jet Propulsion Laboratory, and David Weitz of Harvard. These speakers will cover a wide range of fascinating microgravity studies.

In addition, FIP will host a shared reception with the Forum of Early Career Scientist (FECS) on the evening Tuesday March 6. If you will be at the March meeting, please do come by. FIP members will be provided details of this event before the March meeting.

For the April 2018 meeting in Columbus, Ohio, our three allotted sessions will each include, as usual, three invited speakers. In addition the APS has also assigned responsibility for the Sakharov prize session to the FIP. We partnered with the Forum on Early Career Scientists (FECS) for this prize session.

1. On the first day, Saturday April 14 from 10:45 to 12:33, I will chair a session “Opportunities in Global Nuclear Science Industries”. The April meeting traditionally attracts young people in nuclear and particle physics, many of whom will choose to work in industry, and this session is designed to inform them of the many options. Speakers will be Phil Cole of Lamar University on applications of accelerators, Ray Ladbury of NASA, on radiation effects on microcircuits and their bits, and Nigel Stevenson (2018 chair of the World Council on Isotopes) on the vast market for radioisotopes.
2. On Monday April 16 from 10:45 to 12:33, FIP will celebrate the two winners of the APS Sakharov prize for 2018. One of the prize winners is Narges Mohammadi, currently imprisoned in Iran. She will be represented as a speaker by her brother Hamidreza Mohammadi. Our second winner will speak himself, Ravi Kuchimanchi. His title is “Parity in our world and in phys-



ics". Our third speaker in this session on physicists and human rights was selected by our partner, the Forum on Early Career Scientists. This will be Shelly Leshner of the University of Wisconsin LaCrosse. This session will be chaired by Elena Aprile, 2018 Chair-elect of the FIP.

3. Later at 15:30 on Monday April 16 our FIP session will be chaired by Noemi Mirkin, with the theme 'Physics Experiments in Antarctica, What They Tell us About the South Pole and the Changing Climate'. Speakers will be Kimberley Casey of the USGS and NASA, Dustin Schroeder of Stanford University, and Gillian Young of the British Antarctic Survey.

4. One of the APS themes for this April meeting is the status of women in our profession. Cherrill Spencer, 2018 FIP Past-

chair, will preside over a session "Progress and Challenges for Women Physicists in Africa, Asia and the Middle East", from 10:55 to 12:33 on Tuesday April 17. Speakers will be Ibiyanka Agboola Fuwape from Nigeria, Rohini M. Godbole from India, and Mona Mohamed Abd Latif Mohsen from Egypt.

In addition, your FIP Executive Committee will be meeting Sunday April 15, all day. Please tell us of any concerns or issues that you would like us to consider. [Jerry.Peterson@colorado.edu](mailto:Jerry.Peterson@colorado.edu)

These are all important and fascinating topics for the international side of our field. Each session chair was responsible for organizing their session, and I thank them mightily. If you plan to attend the March or April 2018 APS meetings, please schedule to attend these FIP sessions.

## Proud to be Excellent! More Distinguished Students (DS) are Coming to the APS Meetings

*Another call for travel awards for foreign students to disseminate their academic and research excellence*

**Jason S. Gardner, FIP Executive Committee Member-at-Large 2017**



Another cohort of outstanding young researchers has recently applied to the Forum on International Physics (FIP) for travel support to attend the APS annual meetings in 2018. More than twenty-five foreign applications were received for these competitive travel awards from countries as far away as Taiwan and Australia.

A committee made up of prominent scientists from the FIP executive deliberated over the applications and awarded 11 worthy undergraduate and graduate students with grants between 500 and 2500 USD. Students were chosen based on their academic and research excellence, teaching and community outreach. Special consideration was given to applications from underrepresented communities at the annual meetings.

Along with the travel support, these 11 awardees will give oral presentations and receive a certificate. In Los Angeles, 7 students will listen and present work on topics as diverse as high-tech magnetic recording material to diffusion of molecules in confined space. While the 4 awardees heading to Columbus, Ohio will ponder topics rang-

ing from the evolution of massive stars to pseudoscalar interactions.

In the Spring Newsletter, I will report generally on the achievements of these young researchers at the annual meetings. It is also hoped that one or two of the awardees will write an article on their adventures to America, often for the first time.

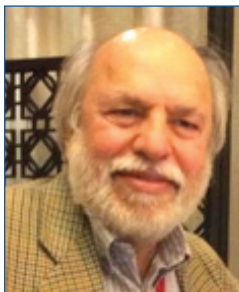
Over the past two years, the DS travel program has successfully brought over 15 young researchers from distant lands to the annual APS meetings to interact with many of the worlds' leading researchers in Physics. The Forum on International Physics, with support from the Office of International Affairs at the American Physical Society, wish to continue this very successful program into the future and are discussing ways to attain funds. If members wish to support this very deserving program, please make a donation to the international program when renewing your annual dues with the society and mention the DS program specifically.

*Jason S. Gardner is a scientist in the neutron scattering group at the National Synchrotron Radiation Research Center, Taiwan. His group manages the cold neutron, three axis spectrometer at the Australian source just outside of Sydney, Australia. He also has a research group that specializes in the study of low temperature magnetism.*



# APS FIP FELLOWS 2017

Noemi Mirkin, FIP Secretary/Treasurer



**Ahmed Ali**  
**Deutsches Elektronen-Synchrotron DESY**

*Citation: For contributions in phenomenology using quantum-chromo-dynamics in precision tests of the standard model, advising and organizing international conferences and schools, and for fostering scientific collaboration among physicists*

*from a large number of countries with diverse cultural backgrounds.*



**Sushanta Mitra**  
**University of Waterloo – Canada**

*Citation: For fundamental contributions to micro- and nano-scale fluid transport, including under-liquid wetting dynamics, as well as development of tools and techniques for energy exploration and water quality monitoring, and for establishing physics exchange programs and ties with many communities in India.*



**Chilakamarri Rangacharyulu**  
**University of Saskatchewan, Saskatoon, Canada**

*Citation: For worldwide contributions to enhancing diversity and excellence in physics and science, from low-energy nuclear structure physics through subatomic physics at intermediate energies to high energy particle physics.*



**A. Surjalal Sharma**  
**University of Maryland - College Park**

*Citation: For pioneering and sustained contributions to nonlinear dynamical modeling of non-equilibrium phenomena in space physics and to the development of data-enabled science and for his leadership in fostering international collaborations.*



**Bernardo Spagnolo**  
**Universita di Palermo, Italy**

*Citation: For distinguished contributions to the theory of noise-induced phenomena and relaxation dynamics in metastable systems and interdisciplinary applications in biological systems and ecosystems.*



**Shining Zhu**  
**Nanjing University**

*Citation: For distinguished contributions to ferroelectric physics, quasi-phase-matched nonlinear optics, laser physics and technology, nano-photonics and metamaterials and leadership in enhancing the international physics community.*



*Noemi Mirkin was born in Buenos Aires, Argentina. She received her Licenciado degree in Physics from the National University of Tucuman in 1973 and her Ph.D. in Physics from the University of Michigan in 1989. Mirkin stayed at the University of Michigan first as a postdoctoral fellow in the Physics Department, and later joined the Biophysics Research Division as an Assistant Research Scientist. Mirkin's*

*research has been in the general area of vibrational spectroscopic studies of peptide and protein structure. She has served the American Physical Society as a member of the Executive Committee of the Forum on International Physics.*

APS physics APRIL MEETING 2018

quarks Q2 cosmos April 14-17, 2018 Columbus, Ohio

REGISTER NOW  
[aps.org/meetings/april](http://aps.org/meetings/april)

EARLY REGISTRATION ENDS ON MARCH 2

## New Efforts from APS International Affairs

Amy Flatten, APS Director of International Affairs



During 2017, APS provided international exchanges, travel, and training opportunities for physicists worldwide. I am pleased to highlight some of our past activities and a few things to watch for in 2018.

This past year, APS and the Sociedade Brasileira de Física (SBF) continued to offer an exchange program for physics Ph.D. students, postdocs, and professors in the United States and Brazil. Likewise, we continued our partnership with the Indo-U.S. Science & Technology Forum to offer a similar exchange program with India. FIP members have helped with the development and promotion of these programs and have served on the proposal review committees. We will continue these programs in 2018, so visit [www.aps.org/programs/international/honors](http://www.aps.org/programs/international/honors) for more information.

We are continuing to build joint programs with the Cuban Physical Society and were pleased to include a delegation of 14 Cuban PhD students in the 2017 Canadian-American-Mexican Physics Graduate Student Conference (CAM 2017), that APS hosted this past August 2017 in Washington, D.C. CAM is a biennial scientific conference cosponsored by the physical societies of North America and for the first time in CAM's 15 year history that the physics graduate students from across North America could be joined by their Cuban colleagues.

This past year, APS continued to lead the SESAME Travel Award Program, a partnership of 11 scientific societies in Europe and the United States that supports training opportunities for scientists in the Middle East. In May 2017, APS leaders joining dignitaries from around the world for the SESAME Opening Ceremonies. Likewise, APS also served developing country physicists through FIP's International Research Travel Award Program and also through the En-

trepreneurship Workshops cosponsored by the UK Institute of Physics, International Centre for Theoretical Physics and other societies.

As we look ahead, I am excited about the growing opportunities for APS to serve the international physics community. In the August 2017 issue of the FIP Newsletter, I shared news of the Task Force on Expanding International Engagement, launched by APS CEO, Kate Kirby. The Task Force has spent months reaching out to APS members and partners regarding how the Society can expand its offerings, strengthen its connections, and ensure its long-term value to the international physics community. The Task Force will present its report and recommendations to APS leaders later in 2018.

APS continues its vigilance regarding U.S. Government policies that impact scientific mobility, joining other scientific and higher education organizations to meet with State Department officials regarding new developments in visa policy. APS has a website dedicated to helping scientists with visa issues and I encourage you to visit it at [www.aps.org/programs/international/visa](http://www.aps.org/programs/international/visa).

Members of the Forum on International Physics (FIP) were tremendous partners in the activities mentioned above and are key colleagues in developing our future efforts. I want to thank you all for your ongoing interest and support for APS international affairs and I look forward to working together in 2018.

*Amy Flatten is serving as Director of International Affairs of the American Physical Society (APS), where she develops international scientific exchanges, collaborations, and partnerships with physicists around the globe. Prior to joining APS, she served for five years with the White House Office of Science and Technology Policy (OSTP), where she managed international S&T initiatives involving government, academia, and industry. She received her Ph.D. and M.S. degrees in Engineering Science and Mechanics from the Georgia Tech.*

## SESAME Begins Operation and Reminisces of its Beginning

Herman Winick



SESAME (Synchrotron-light for Experimental Science and Applications in the Middle East), the synchrotron light source in Jordan, began to store electron beams early in 2017. Its administration is modeled on CERN and is under the umbrella of UNESCO. As this article is being written in late-December, 2017, the final steps of commissioning the first two X-ray beam lines are underway. By the time this is

published the first scientific results may be achieved. The success of SESAME has led others, in Africa, to plan a similar facility by

bringing together countries in Africa, the only habitable continent without a synchrotron light source.

I made the first suggestion for SESAME 20 years ago, and have been involved ever since with the many developments that have led to the beginning of research this year. I would like to summarize some key points in this 20 year history. This first suggestion, for what is now called SESAME, came at a meeting of the Scientific Advisory Committee for BESSY II, the 1.7 GeV light source that was funded in Berlin, Germany after the unification of East and West Germany as a successor to BESSY I, the 0.8 GeV light source that was in operation in West Berlin since 1982.



BESSY is an acronym for Berliner Elektronenspeicherring-Gesellschaft für Synchrotronstrahlung.

As is customary when a new light source facility is authorized and funded, an advisory committee is formed to review the plans, particularly since the concepts and technology associated with such light sources has continued to progress over the several decades, with new ideas enabling increased performance. I was asked to join the advisory committee for BESSY II in the early 1990s.

At a meeting of this advisory committee in September, 1997, when BESSY II was nearing completion, I asked about plans for BESSY I, which was still in full operation with about 30 beamlines, each equipped with a monochromator. The answer was that it was planned to sell BESSY I for scrap and clear out the building for other uses.

I was shocked by this waste of an extremely productive facility. I turned to my friend and colleague, Professor Gus Voss, the Technical Director of DESY, who was also on this advisory committee, and said that, rather than scrapping BESSY I, it should be offered as a gift to the Middle East, where, after upgrading, it would be the nucleus of a new light source facility in a part of the world that had none. I quickly calculated that superconducting wigglers could extend the spectral range to at least 10-15 KeV, the hard x-rays needed for many applications such as structural biology. We also expected that such a project would promote cooperation and peace in a troubled part of the world.

After my September 1997 suggestion to Voss that the decommissioned BESSY I facility could be the centerpiece of a new light source in the Middle East, Voss presented this idea to a November 1997 meeting of the CERN-based Middle East Scientific Collaboration (MESC) group in Torino, Italy. This meeting was organized by Tord Ekelof (Uppsala University) and included other key members of MESC (Sergio Fubini; Torino University, Herwig Schopper; past Director-General of CERN, Eliezer Rabinovici; Hebrew University, Israel).

Voss described the positive reception that he received from Middle East scientists at that MESC meeting in an email to me on November 14, 1997, immediately after the MESC meeting. This email included the following.

From Gus Voss on November 14, 1997

*Dear Herman, remember, it was you who had this idea first and in all my conversations I do not fail to point this out. But even after having had this on my mind for several weeks now, I cannot see anything basically wrong with this idea.*

*I told you about my then upcoming week in Torino, actually this is what probably triggered your brainstorm. In Torino, actually a wonderful meeting with a number of brilliant talks (if you disregard mine) I talked to a number of Palestinians, Jordanians, Israelis, even Marockens and one Syrian. Also there were the originators of that meeting, of course, Ekelof from Sweden and Fubini from Italy. On all I very carefully tried out your idea. Nobody could see anything wrong, and quite often it struck a strong resonant response.*

*Having returned to Hamburg I first called Eberhard Jaeschke to make sure, he hadn't given away his baby. Then I called Dr. H. Schunk, a very important administrator in our Bonn ministry. He*

*sounded almost enthusiastic about this idea and told me, that he would approach Dr. Eschelsbacher, his boss, who is known to take problems of the Middle East close to his heart.*

In addition, Voss informed Professor Adnan Badran, a Jordanian who was the Deputy Director for Science at UNESCO, about this idea. Badran responded to Voss on January 27, 1998 in a message which included the following:

*"Dear Professor Gustav-Adolf Voss,*

*Thank you for your E-Mail of 17 December 1997 and your letter of 7 January 1998 concerning the Berlin Synchrotron Light Source BESSY I's move to a country in the Middle East to eventually be a seed for a new research facility available to all scientists in the area. I also received another E-Mail from both Prof. Sami Mahmoud and Prof. Mohamoud Al-Kofahi, Senior Physicists at Yarmouk University, requesting me to develop contacts with you concerning BESSY I, an 800 MeV accelerator when it will be shut down after December 1999 and replaced by BESSY II: and to bring to your attention that Yarmouk University is interested to have these facilities on its campus and make this accelerator radiation laboratory open to all scientists in the Region and other parts of the World.*

*Jordan could be an ideal place for such an operation in Middle East for the following reasons:*

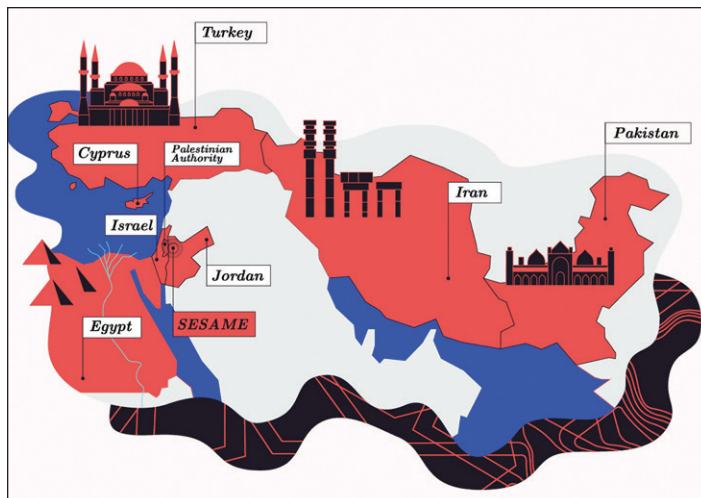
- 1. Availability of the critical mass of scientists in basic research in the areas of physics, chemistry, biology, medicine and material research. These scientists are distributed within 18 universities in the country and within driving distance.*
- 2. The availability of institutional infrastructure of research and development at the universities, the higher council for science and technology, and at the Royal Scientific Society.*
- 3. Geography and free access allow all scientists from the Region and other parts of the world to establish joint research activities around the high energy synchrotron accelerator."*

Gus then formed a team consisting of several people at BESSY (particularly Ernst Wehreter), me and others to work out a conceptual design report for BESSY Ia (the Green Book). This design used all of the BESSY I components, except the vacuum system. BESSY I was 62m in circumference with 4 straight sections, 2 of which were available for IDs. BESSY Ia was 101m in circumference with 6 straights, 4 of which could be used for IDs. By closing the magnet gap, the energy could be pushed from 0.8 to 1.0 GeV, where a 7T SC wiggler would provide a spectrum with a critical energy of 4.7 KeV, reaching much deeper into the hard x-ray spectral range. This conceptual design was presented at the international accelerator conference in Germany in 2000.

By the end of 1997, Voss informed the Deputy Director of UNESCO, Adnan Badran, the directors of BESSY I, and others of his support for this idea. He also made Herwig Schopper aware of this idea.

This led to a series of UNESCO sponsored meetings resulting in the formation of the Interim SESAME Council, with Schopper as president. In 2000 Voss, together with Kamal Araj, organized a 10 day SESAME accelerator school, at which 50 Middle East scientists and engineers were introduced to accelerators. Several of these are

now on the SESAME staff, and others are on the staff of other light sources.



**The current members of SESAME are Cyprus, Egypt, Iran (Islamic Republic of), Israel, Jordan, Pakistan, the Palestinian Authority, and Turkey.**

Voss also led a group evaluating proposals from 6 Middle East countries to host SESAME, leading to the choice of Jordan as the

host country. He continued to support SESAME until his death in Oct. 2013.

In its evaluation of SESAME in May 2002, the Executive Board of UNESCO said that SESAME was “a quintessential UNESCO project combining capacity building with vital peace-building through science” and “a model project for other regions”.

Another view of the origins of SESAME is given by Eliezer Rabinovici in a recent issue of the newsletter of the APS Division of the Physics of Beams (DPB). See; SESAME: A Personal Point of View; <https://www.aps.org/units/dpb/newsletters/upload/fall17.pdf>

*During his scientific career Herman Winick played a strong leadership role in the development of synchrotron radiation sources and research at Stanford University and around the world. Scientifically he is now focusing largely on SESAME, a project he began together with Gus Voss (DESY) in 1997. In 2007 he was chair of the APS Forum on International Physics (FIP). In 2009 he was elected to represent FIP on the APS Council. In 2005 he received the Heinz R. Pagels Human Rights of Scientists Award from the New York Academy of Sciences. In 2010 he received the Andrei Sakharov Prize from the American Physical Society.*

## 2017 Meeting of the World Science Forum

Roy Jerome (Jerry) Peterson, 2018 FIP Chair

The World Science Forum was formed in 1999, with its origins in a meeting called by UNESCO in Budapest, Hungary. This Forum met on November 7-11, 2017, in Jordan, at a conference center near the Dead Sea, advertised as the lowest place on earth. The theme of this meeting was ‘A Forum on the Social and Economic Relevance, Influence and Responsibilities of Science’. This Forum was hosted by the Royal Scientific Society of Jordan, and included an impressive array of sponsors and speakers, including Jordanian royalty. See WorldScienceForum.org for many more details.

The WSF is an advocate for science in general, with an emphasis on the advantages of science for development. The assembly passed an ambitious Declaration ([worldscienceforum.org/contents/declaration-of-world-science-forum-2017-110045](http://worldscienceforum.org/contents/declaration-of-world-science-forum-2017-110045)), emphasizing water, energy, and food. Our field of physics certainly has at least some relevance to these issues, most strongly in the broad field of providing energy. This Declaration also called for the creation of a new Arab Science Forum. I suggest that FIP offer its assistance to this group, once the idea gets underway. I will seek some names and contacts for possible cooperation.

There were over 900 attendees at the November 2017 WSF meeting, from over 100 countries. I counted about 60 attendees from the USA from the posted list of attendees.

At this November meeting, major UNESCO awards were awarded. The UNESCO Kalinga prize for the popularization of science was given to Erik Jacquemyn of Belgium, and the UNESCO Sultan Qaboos Prize for Environmental Preservation was given to the National Parks Board of Singapore.

The next meeting of this World Science forum is expected in 2019, but there is no site selected as yet.

*Jerry Peterson is a professor of physics at the University of Colorado and was a Jefferson Science Fellow for the U.S. Department of State. After receiving his undergraduate (1961) and graduate (1966) degrees in Physics at the University of Washington, he was an instructor at Princeton University and on the research faculty at Yale University. Jerry’s research interests have covered many arenas of nuclear physics, including nuclear astrophysics, nuclear reactions, nuclear fission, and applications of nuclear reactions to computer memory elements.*

*Jerry worked as an analyst in the Office of Economic Analysis of the Bureau of Intelligence and Research, where he focused on energy and the environment with an emphasis on coal and nuclear energy.*



# Let's Talk About Science: The Nepalese Winter School

**Abha Eli Phoboo (Nepalese Team), Ajeeta Khatiwada (Purdue University), Kate Shaw (ICTP), Mario Campanelli (UCL), and Sean Kuvin (Argonne National Lab)**

For the first time in Nepal, the International Centre for Theoretical Physics' Physics Without Frontiers team organized a high energy physics Winter School in partnership with Tribhuvan University. The five-day event was also supported by the US CMS collaboration and Kathmandu University together with Nepal's Ministry of Science and Technology.

Physics Without Frontiers works to inspire, train and motivate physics and mathematics students in developing countries to build the next generation of scientists. The Winter School culminated with 'Let's Talk About Science' open day showcasing events that engaged the public in discourses related to science and integral to the progress of scientific communities. The main part of the School consisted of 9 lectures ranging from Introduction to Particle Physics, Standard Model, Physics beyond the Standard Model, to careers and opportunities. Physicists from the CMS and ATLAS experiments, Ajeeta Khatiwada, Kate Shaw, and Mario Campanelli, and Sean Kuvin from Argonne National Laboratory led lecture sessions, problem and discussion sessions and a hands-on masterclass in which the students learned to analyze real LHC data.

Over 200 people attended 'Let's Talk About Science' day, where students displayed posters showcasing the research work going on in the university. In parallel, two sessions were held with the first being a panel discussion on 'Women in Science' with panelists that included representatives from the Ministry of Science and Technology, Tribhuvan University, Dhulikhel Hospital, Tri Chandra Campus, Women in Science and Technology, Kathmandu University, and CMS Experiment to discuss how to promote women's involvement in science.

The second session was a Physics Slam competition where 11 participants from the Winter School took up the challenge of explaining their research work or interesting scientific questions to the public in 3 minutes or less.

The Physics Without Frontiers' team has organized Masterclasses

and interaction programs annually in Nepal since 2014, in Kathmandu and districts beyond. From previous Masterclasses, Santosh Parajuli and Mahesh Thakuri attended the CERN Summer School and Yadav Kandel attended the ICTP Summer Program in Condensed Matter Physics. Parajuli later completed his M.Sc. thesis analyzing the ATLAS data in the framework of "sandwich" M.Sc. program at TU, supported by ICTP.



**ICTP PWF Nepal Team: (from left to right) Sean Kuvin, Ajeeta Khatiwada, Abha Eli, Kate Shaw & Mario Campanelli**

The commitment shown by local institutions together with the interests of Nepali scientists led to the Nepal government signing the International Cooperation Agreement with CERN in 2017. In June that same year, Nepal became the first state to host the South Asian High Energy Physics Instrumentation workshop [1]. ICTP hopes to continue partnering with Nepal in its mission to foster the growth of advanced studies and research in physical and mathematical sciences.

*Abha Eli was the coordinator of the ICTP Physics Without Frontiers 2018 – Nepal team.*

[1] <http://cerncourier.com/cws/article/cern/69904>



**Group photo of the Nepalese School**

# 2018 Executive Committee of the Forum on International Physics



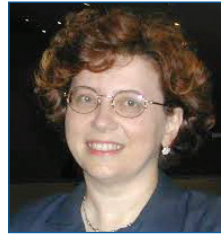
**Chair:**  
**Roy Jerome (Jerry) Peterson**  
University of Colorado - Boulder



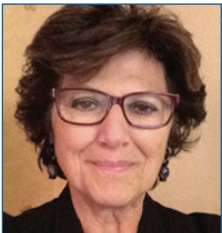
**Member-at-Large:**  
**Vladimir Shiltsev**  
Fermilab



**Chair-Elect:**  
**Elena Aprile**  
Columbia University



**Member-at-Large:**  
**Elisa Molinari**  
University of Modena & Reggio Emilia



**Vice Chair:**  
**Luisa Cifarelli**  
University of Bologna



**Member-at-Large:**  
**Toyoko Orimoto**  
Northeastern University



**Past Chair:**  
**Cherrill Spencer**  
SLAC National Accelerator Lab  
(retired)



**Member-at-Large:**  
**Dmitri Denisov**  
Fermilab



**Secretary/Treasurer:**  
**Noemi Mirkin**  
University of Michigan - Ann Arbor



**Member-at-Large:**  
**Abhishek Kumar**  
University of Maryland-College Park



**Councilor:**  
**Emanuela Barzi**  
Fermilab



**Newsletter Editor**  
**Maria Longobardi**  
University of Geneva  
Switzerland



**Member-at-Large:**  
**Surajit Sen**  
State University of NY - Buffalo