Secretary General Message

The massive amount on new data on disease targets and medicines is a major challenge for scientists and teaching. IUPHAR has invested, thanks to our pharmacological partners, in expert-curated websites for rapid diffusion of new research data (guidetopharmacology.org), and now in a new pharmacology education site, built around the core IUPHAR site. This issue is dedicated to these sites. Their development is a community-based initiative, with the involvement of all pharmacologists — this means you! This issue also shows the remarkable diversity of IUPHAR activities worldwide.

Michael Spedding

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IUPHAR ONLINE RESOURCES

The internet currently connects ~3.2 billion [1] of the world’s ~7.4 billion population [2], offering a significant portion of the human race the ability to regularly share ideas and emotions as an online collective presence. Humans have the opportunity to address worldwide concerns in meaningful ways via e-collaboration, which can be asynchronous and free of geographical limitations. For pharmacology-related research, the internet transformed the single-lab/single-idea undertaking into a collaborative online endeavor. Multi-continent research articles are commonplace. Data exchanges are ubiquitous. To allow researchers to capitalize on the potential of world-wide pharmacology, IUPHAR introduced a single portal to IUPHAR websites offer busy popular browsers and nearly IUPHAR webpages may be from the www.IUPHAR.org highlights the prominent each online resource.

Many educators have scoured the internet using a search engine to find just the right presentation or part of a presentation that can be used in teaching pharmacology. Students, too, use a search engine to find pharmacology-related content for their use in education or research. The results are often disappointing. This was the rationale behind the creation of the IUPHAR Pharmacology Education Project (PEP). With initial funding from the American Society for Pharmacology and Experimental Therapeutics (ASPET), the dream of a site where students and educators can find curated pharmacology content is becoming a reality. IUPHAR is pleased to announce the availability of the IUPHAR PEP website, www.PharmacologyEducation.org.

The current resources found at www.PharmacologyEducation.org represent only the beginning of a project that we hope will grow rapidly and be owned by the international community of pharmacologists.
The IUPHAR PEP developed out of the need to deliver a project with a clear educational focus as a complement to the Guide to Pharmacology. The IUPHAR PEP is a simple, attractive, easily searchable resource that supports students of the pharmacological and other biomedical sciences such as medicine, nursing and pharmacy, as well as those who teach them. The project should be particularly appealing to those in resource-poor countries or where pharmacology is less well developed.

The layout of the PEP website is divided into four main sections (Principles of Pharmacology, Principles of Clinical Pharmacology, Drugs, Therapeutics), each comprised of several modules (e.g., Adverse drug reactions under Principles of Pharmacology) that, in turn, are divided into topics (e.g., Pharmacovigilance under Adverse drug reactions). The format for each topic includes a brief summary of the topic followed by curated and annotated links to other resources.

The Project is led by Simon Maxwell at the University of Edinburgh, United Kingdom (Chair, IUPHAR Education Section) and John Szarek at The Commonwealth Medical College, United States (Councilor, ASPET Division of Pharmacology Education), who convened an inaugural Editorial Board comprised of an international group of educators and innovators in pharmacology education including Leszek Wojnowski, University Medical Center Mainz, Germany; Antonio Sarikas, Technische Universität München, Germany; Elizabeth Davis, Monash University, Australia; Kelly Karpa, Penn State College of Medicine, United States; Chay-Hoon Tan, National University of Singapore, Singapore; and John Peters, University of Dundee, United Kingdom. Elena Faccenda is the curator of the IUPHAR PEP website.

The current resources found at www.PharmacologyEducation.org represent only the beginning of a project that will grow rapidly and be owned by the international community of pharmacologists. There is much more to be developed and the PEP Editorial Board looks forward to contributions from the international pharmacology community to expand the offerings. The IUPHAR PEP has the potential to enhance significantly pharmacology knowledge and learning across many disciplines worldwide. To achieve this, volunteers are sought to contribute high quality materials then point relevant learners (e.g., students) towards them. Whatever area of research in pharmacology is of interest, there will be a part of the site that volunteers can contribute to or improve. Please take this opportunity to explore the site and then consider contributing to the Project. The PEP Editorial Board is also looking for partners to help with funding. Don’t hesitate to email admin@PharmacologyEducation.org with thoughts and comments.

Continued on page 3...
While the original IUPHAR website was a frame-based, single webmaster HTML website, the recently implemented portal at www.IUPHAR.org was created using the open-source software, Joomla, and delivers instant access to the online IUPHAR resources. A major advantage of the Joomla-based website is that now multiple webmasters may independently generate content at any time on behalf of the IUPHAR Clinical Division, the Sections, and the Subcommittees (specialty interest groups). The new configuration allows each of the specialty interest groups to manage its own website within the IUPHAR.org framework with a dedicated subdomain name and email address. Scientists may now visit the website(s) specific to the IUPHAR group(s) of interest and/or directly email the chair(s) (table 1). Internal tracking reports will inform the webmasters and chairs which webpages receive the highest volume of visits to help gauge the utility of the content they provide.

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Table 1: IUPHAR groups, websites, and contact emails
The newest module, called myIUPHAR under the Members tab, allows people who register their areas of research interest with www.IUPHAR.org/index.php/members/register to interact online with the Clinical Pharmacology Division, the specialty interest Sections and Subcommittees, the IUPHAR Administrative Office, and over 1,200 myIUPHAR registrants. These interactions will offer pharmacologists and students the opportunity to share ideas, learn about upcoming conferences or workshops, and obtain feedback from their peers about potential new research or programs. A distance education module called Guru and a discussion forum called Kunena are currently being explored as new technologies to support the various IUPHAR objectives.

Individuals, or their loved ones, who have benefitted from a better quality of life thanks to the discipline of pharmacology may now directly support the ongoing activities of IUPHAR via PayPal under the “Support/Donate to IUPHAR” link in the lower right corner of the homepage. IUPHAR is a non-profit Society according to Article 60 of Swiss Civil Law in Basel, Switzerland. A donation of any size helps the online resources remain available without a fee.

The IUPHAR Committee on Nomenclature (NC-IUPHAR) seeks to define all the main drug targets encoded by the human genome in order to annotate them in the online Guide to PHARMACOLOGY database (GtoPdb), generously funded by the British Pharmacological Society (BPS). Experts in the field and specialized curators work together to link the drug targets to therapeutics and pharmacological target validation in the database, which is freely available world-wide at www.GuideToPharmacology.org. Major efforts continue to define the main variables in drug/receptor interactions, including the parameters that can lead to variation in receptor function and pharmacology (i.e., biased signaling, splice variation, receptor polymorphisms, hetero-oligomerization, allosteric modulation, post-translational modification, epigenetic targets, non-coding RNAs, and linkage to multiple signaling cascades). These areas are of great interest because they may considerably expand the repertoire of potential targets for drug development, and are under evaluation by working groups, which will lead to a number of reports about issues which are of crucial importance for pharmacology.
IUPHAR ONLINE RESOURCES
Guide to Pharmacology (continued)

The immense recent growth of knowledge about drug targets, with their crystal structures, has had a dramatic impact on drug discovery and pharmacology. In the past year, great strides have been made to proactively include new drug targets in the GtoPdb, and recruit experts to advise on them. To date there are >2700 annotated protein targets in the GtoPdb, with >8300 ligands, including all approved drugs (~1900). The most recent target update included new G protein-coupled receptors (GPCR) data on calcitonin receptors, melatonin receptors, neuropeptide U receptors and opioid receptors. To receive notifications when updates are released, visit www.GuideToPharmacology.org/news.jsp to subscribe to RSS feeds or sign up to receive emails.

The data are primarily summarized from selected primary literature articles, which are linked to PubMed. Where possible, the data are linked to other relevant databases for further information. Entry points to the data are either via the database search tools (quick search at the top of every page or ‘Advanced Search’ tools linked from the menu) or through browsing the target and ligand lists. Targets are organized into protein classes (GPCRs, enzymes, ion channels, etc.) then subdivided into families (e.g., Adenosine receptors). Each family page contains a summary of the main properties and the recommended nomenclature and key ligands for each target, as well as a further reading list. This “concise” view of the information for each family serves as a useful “at-a-glance” introduction to the family and to each target. For the most important targets, links are provided to more detailed pages including a longer introduction to the family and detailed pages for each target. Target pages are modelled on IUPHAR-DB pages, with expert-curated information on the nomenclature, genetic, structural, pharmacological, functional, physiological, and clinical properties. Links are also provided where relevant to further information and the chemical properties of ligand molecules.

The Concise Guide to PHARMACOLOGY 2015/16 is published as a freely available issue of the British Journal of Pharmacology and provides overviews of the key properties of these pharmacological targets and links to the open access knowledge base of drug targets and their ligands in the www.GuideToPharmacology.org database. It focuses on the areas of G protein-coupled receptors, Ligand-gated ion channels, Voltage-gated ion channels, Other ion channel, Nuclear hormone receptors, Catalytic receptors, Enzymes and Transporters. Each is presented with nomenclature guidance and summary information on the best available pharmacological tools, alongside key references and further reading.

There is growing research interest, academically, clinically and industrially, in the pharmacology of immunity, inflammation and infection in defining the immunological/inflammatory targets in disease states with their main pharmacology. Within the research community, there is an urgent need for a pre-competitive, unbiased resource that will integrate high-level expertise in immunity, inflammation and infection, pharmacology and medicinal chemistry. At present, immunological and pharmacological knowledge are held by separate communities and the best resources fall short of what is needed. GtoPdb is the best molecular pharmacology database, but is currently limited in the immunity, inflammation and infection area. With funding from the Wellcome Trust, the GtoPdb will be expanded into this arena to produce a ‘Guide to IMMUNOPHARMACOLOGY: Integration of targets, diseases and therapies into an expert-driven database’.

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Better Medicines through Global Education and Research

IUPHAR ONLINE RESOURCES
Guide to Pharmacology (continued)

IUPHAR acknowledges and thanks Michael Spedding, Francesca Levi-Schaffer, Clare Bryant, Christian Doerig, Stephen Anderton, Steve Alexander, Doriano Fabbro, Jamie Davies, Anthony Davenport and the entire GtoPdb team for their tremendous efforts to secure the Wellcome Trust opportunity.

Immune/inflammatory/infection responses and disorders have become an increasing focus of pharmacological R&D. Therefore, the GtoPdb will be enriched with kinome resources linking to diseases to assist selection of new targets, tool compounds and drugs. Suggested priorities are established (JAK, PI3K, IKK) followed by less validated target kinases (RIPKs, IRAKs, MAP3Ks) in innate immunity. This will later be extended to adaptive immunity and kinases in selected pathogens. New data will be linked according to the existing GtoPdb expert-curation model but with a strong focus on translational aspects (e.g., clinical benefit, biomarkers and biological endpoints). In addition, an immunology-orientated portal will be developed under the guidance of the new IUPHAR expert subcommittees established for this task.

The ongoing support from the British Pharmacological Society for the core Guide to PHARMACOLOGY resources has made this project possible. While technical decisions remain on exactly what interfaces and data structures are instantiated, both resources will be dovetailed into an expanded central database with different front-ends for users. Anyone with immunopharmacology interests is welcomed as a volunteer for the newest expansion of the GtoPdb by contacting curators@GuideToPharmacology.org.

JobSeekers will appreciate the ability to peruse pharmacology-related positions at any time. Job alerts may be created on specific keywords in order to receive an email when new opportunities come available. If desired, JobSeekers may remain anonymous until they choose to reveal their identities to an interested Employer. A recently introduced benefit is the prospect of having their curriculum vitae reviewed through the PharmacoCareers website.

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PharmacoCareers is excited to announce a new service to job seekers: CV/Resume Critique!

As a job seeker, you now have the option to request a free, confidential CV/resume evaluation from an expert and writer.

You can participate in this feature when uploading a CV/resume to PharmacoCareers and through the CV/Resume Management section of your job seeker account. Within 48 hours of opt-in, an email will be sent to you outlining your strengths, weaknesses and suggestions to ensure you have the best chance of getting interviewed!

GET STARTED NOW

Employers are offered the prospect to browse the online applications of about 800 JobSeekers already registered with www.PharmacoCareers.org using keywords and/or geographical preferences. Posting an available job position is easy and affordable. The website accepts credit cards in Australian, Canadian and US dollars, euros and UK pounds. The job postings appear on the IUPHAR portal (an average of 18,000 views per month during 2015) and, when available, in Pharmacology International. For even broader coverage, Employers may add the Medical Research Job Board Network for a small fee, allowing the job postings to simultaneously appear on the career sites for the:

- American Board of Medical Genetics and Genomics
- American Medical Informatics Association
- American Society for Bone and Mineral Research
- American Society for Surgery of the Hand
- American Society of Gene and Cell Therapy
- Association for Applied Psychophysiology and Biofeedback
- Association for Behavior Analysis International
- International Society for the Study of Xenobiotics
- International Society for Traumatic Stress Studies
- PharmacoCareers
- Society for Simulation in Healthcare
- The American Association of Anatomists Career Center
- World Molecular Imaging Society
IUPHAR ONLINE RESOURCES

IUPHAR will continue to unite pharmacology-related research in e-collaboration. These online resources have been carefully chosen to facilitate a global community to help address issues facing the discipline of pharmacology and the worldwide population. Please be a part of this endeavor.

Peruse the free offerings available through the www.IUPHAR.org portal then offer suggestions for improvement and expansion in the myIUPHAR Group by clicking on the green “Join myIUPHAR” button under the Member tab in the upper right corner of www.IUPHAR.org. Help keep IUPHAR at the forefront of e-collaboration.

Michael Spedding, Secretary General, IUPHAR
Simon Maxwell, Co-Lead, IUPHAR PEP
John L. Szarek, Co-Lead, IUPHAR PEP
Elena Faccenda, Curator, IUPHAR PEP
Steve Alexander, Chair, NC-IUPHAR
Adam Pawson, Curator, NC-IUPHAR
Lynn LeCount, Administrative Officer, IUPHAR

March 30, 2016

We welcome nominations, before November 1, 2016, for the following positions on the IUPHAR Executive Committee for the period between the international meetings in 2018 and 2022:

- President
- Secretary general
- Treasurer
- First vice president
- Second vice president
- Five (5) councilors

Individuals, or groups of individuals, who belong to an IUPHAR member society, can submit suggestions. Nominations should be accompanied by brief biographical sketches (1-2 pages) highlighting the achievements of the candidate and other qualifications for office. The nominating materials must contain a brief statement as to why this candidate is particularly appropriate for this appointment. Be sure to indicate for which position(s) the candidate is being nominated. Nomination materials should be sent electronically to Professor Kim Brøsen at iuphar@kumc.edu as a single file. Nominations received after October 31, 2016 will not be considered.

The nomination material will be forwarded to the Nominating Committee, which is charged with preparing a slate of candidates for consideration by the General Assembly during the 2018 meeting in Kyoto, Japan. The Nominating Committee is chaired by Kim Brøsen, Odense, Denmark, (kbrosen@health.sdu.dk), and includes as members Kathy Giacomini, Simon Maxwell, Carlo Riccardi, Zhi-Bin Lin, John Miners and Mohamed Khayyal.

For further information on the nominating procedure please consult the IUPHAR Statutes at http://www.iuphar.org/about_statutes.html.

For the Nominating Committee,

Professor Kim Brøsen
The International Symposium on Methods for Studying Drug Metabolism and Transport, and African Traditional Medicines (METHODS2015)

Sponsored in part by the International Union of Basic and Clinical Pharmacology (IUPHAR)
Drug Metabolism and Drug Transport Section

The International Symposium on Methods for Studying Drug Metabolism and Transport, and African Traditional Medicine (METHODS2015) was held November 23rd to 25th, 2015 at Saint George Hotel and Conference Centre in Pretoria, South Africa. It was hosted by the University of the Free State Department of Pharmacology and its Research Unit on Indigenous Knowledge Systems in partnership with the Department of Science and Technology (DST) of South Africa. The symposium addressed research issues at the forefront of the DST national research policy, which also align with the research focus at the University of the Free State Department of Pharmacology. Furthermore, the symposium created a unique interface for policy makers and research scientists, both local and international, to deliberate on the best practices for research and development of African Traditional Medicine (ATM) and the pharmacokinetic processes of drug metabolism and transport. The theme of the symposium was “Rallying for Safe and Effective Medicines” with the following main objectives to:

- Enable researchers to assess the appropriate research methods for production of safe and effective medicines, including ATM.
- Inform researchers of the current DST strategy and progress in research and development of ATM.
- Appraise participants on the increasing importance of research in the pharmacokinetic processes of drug metabolism and transport, in general, and their application to ATM.
- Review the latest developments, particularly new research methodologies, for research and development of ATM and the pharmacokinetic processes of drug metabolism and transport.
- Create opportunities for national and international collaboration by seeking new avenues in research and development, plan more open learning forums, etc.
- Give researchers access to a pre-symposium workshop for practical training of students on laboratory methods for drug metabolism and transport, and ATM research development.

Continued on page 11...
The symposium attracted 117 participants, the majority of whom were from the host country, South Africa. Of the 61 students (52%) in attendance, 51 were from South Africa with the rest from Zimbabwe, Namibia, Ethiopia, Nigeria, Jamaica, China, India and Sri Lanka. Bursaries were awarded by the symposium organizers according to the need of the students and they included a waiver of registration fees for the symposium and pre-conference workshops, and accommodations. For the international students, the bursary contributed towards the ticket costs. The student bursaries enabled 46 South African students and nine international students to expand their knowledge of drug metabolism and network with researchers in their areas of interest. The participants also had the opportunity to visit exhibition booths and meet with vendors about products related to their research.

Major attractions to the participants were the diversity and expertise of the outstanding presenters. The South African based speakers included Prof. A. Walubo and Dr. G.M. Matsabisa (at left) from the University of the Free State (UFS) Department of Pharmacology; Dr. Cecilia Bester from the Agricultural Research Council; Dr. Neil Gower, from the Medicine Control Council (MCC); Prof. Nceba Gqaleni from Durban University of Technology; Prof. Xuesheng Ma from the University of the Western Cape School of Natural Medicine; Prof. Indries Moodley from the University of Kwazulu-Natal; Prof. Khajamohiddin Syed from the Central University of Technology; Prof. Glen Taylor from University of the Free State Research Directorate; Dr. Mboneni Muofhe, the Deputy Director General of the Department of Science and Technology (DST); Dr. Hlupheka Chabalala, Director of the DST Indigenous Knowledge Systems Based Innovations; Prof. N. Lall from University of Pretoria; Dr. K. Alexandre from the Council for Science and Industrial Research (CSIR); Mr. Ben Durham, DST Chief Director; Prof. Anne Grobler, Director of the DST/North-West University Preclinical Drug Development Platform and GLP-Laboratory; and Mr. Robert Longrigg from Afriplex Pty Ltd. The symposium brought in a wide variety of international speakers, represented by Prof. Collen Masimirembwa, Africa Institute for Biotechnology and Science (AiBST), Harare, Zimbabwe; Prof. Eleni Aklilu (at right), Karolinska Institutet Division of Clinical Pharmacology, Stockholm, Sweden; Prof. Olavi Pelkonen, Emeritus Professor of Pharmacology, University of Oulu, Finland; Prof. Dr. Matthias Schwab, Head of the Dr. Margarete Fischer-Bosch Institute of Clinical Pharmacology, Stuttgart, Germany; Prof. Tonghua Liu from Beijing University of Chinese Medicine, China; Prof. Farnao Castro Braga, Federal University of Minas Gerais, Brazil; Prof. Tuhinandri Sen from Jadavpur University, Kolkata, India; from the University of the West Indies, Jamaica were Dr. Rupika Delgoda, Dr. David Picking, Dr. Simone Badal; and Dr. H. Lowe, the Managing Director of the Eden Gardens Pharmaceuticals in Jamaica.

The primary symposium was preceded on the November 22nd, 2015 by two pre-conference workshops that were overprescribed to 60-69 people, of whom 31 (45%) were students. Workshop-1 was on the ‘Pharmacogenetics of Drug Metabolism and Transport’ facilitated by Prof. Collen Masimirembwa from Zimbabwe, while workshop-2 was on the ‘Advances in Traditional Medicine Research’, facilitated by Prof. T. Sen from India and Prof. Braga from Brazil.
The symposium opened on the evening of November 22nd, 2015 with a gala dinner honored by the presence of the DST Director General, Dr. Phil Mjwara. The host institution, the University of the Free State, was represented by Prof. Corli Wittwuhn, the Deputy Vice Chancellor Research; Prof. G.J. van Zyl, the Dean Faculty of Health Sciences and Prof. Alan St. Clair Gibson, the Head of the School of Medicine. Dr. Mboneni Mhoufhe, the Deputy Director General of DST Technology Innovations served as the Master of Ceremonies. During the subsequent dinner speeches, the university delegation expressed to the Director General their appreciation for the funding of the DST-funded Indigenous Knowledge Systems (IKS) Unit received from the South African Medical Council (SAMRC) and the continued support the unit receives from the DST. The speakers noted the IKS unit was well placed in the Department of Pharmacology in the Faculty of Health Sciences because its mission and vision reinforce those of the Department of Pharmacology, the Faculty of Heath Sciences and the university at large. In turn, the guest of honor, Dr. Mjwara, indicated that the IKS unit is one of their flagship projects, in line with the DST strategy of grand ‘bio-economy’. He reiterated the department’s resolve to support research on ATM, emphasizing support for human capital development and research equipment to advance traditional medicines research locally and internationally.

Strategies for research on DMT and ATM

The symposium started with an introduction of Department of Pharmacology’s research strategy on ‘Drug Metabolism and Transport’. Prof. Walubo illustrated the evolution of technological knowledge and advancement in research on CYP450 and drug transporters from the Wöhler synthesis of urea in 1828, to the discovery of atoms in 1800-1830, to the current era of the quickly advancing ~omics technology and personalized medicine. Owing to the growing complexity of scientific knowledge, Prof. Walubo advised that a collaborative approach across several disciplines is required to facilitate research on cytochrome P450 (CYP450) and drug transporters. Dr. Muofhe then outlined the national ‘ATM Bioprospecting and Product Development Strategy’, used to ensure the wealth of South Africa’s indigenous knowledge benefits the people of South Africa by focusing on strategic programs in ATM, cosmeceuticals, nutraceuticals and health beverages. As such, a holistic IKS-based research, development and innovation approach was adopted in order to improve the quality of life and sustainable livelihood of the people through the support of community-based technology demonstration, manufacturing and Ubuntu-inspired marketing and commercialization. This approach embraces the three sectors, or drivers, of the government’s ‘Bio-economy Strategy’, i.e., the cultivation and propagation of indigenous plants (Agriculture), the disease-controlling potential of IK-based bioprospecting products (Health) and the industrialization of all IK-based innovative products (Industrial and Environmental Bio-innovation).

As the plenary sessions continued, the presenters addressed other strategic approaches to research. Dr. Chabalala described the strategy for research and development of ATM, emphasizing the need for balancing the quest for innovation with academic research. Dr. Chabalala intrigued participants with his in-depth description of the traditional health philosophies, implying they were abandoned for western philosophy so remain largely...

Continued on page 13...
unexplored. It was agreed during the discussions that the potential has not been exhausted for discovering new medicines from traditional medicinal products/plants. This was further illustrated by Dr. Taylor in a case presentation of developing a natural medicinal product for human immunodeficiency virus (HIV). This achievement required balancing the pursuit for academic research with innovation, preservation of intellectual property, and the pressure for commercialization. In the same perspective, Prof. Pelkonen cited the wide inter-individual variations (polymorphisms) observed in the activities of CYP450 and drug transporters to highlight the need to tune research results towards the current trends in health practice, i.e., personalized medicine, by recognizing that people respond differently to medicine, whether conventional or ATM. These strategic sessions laid the foundation progressing and integrating research and innovation on ATM and DMT.

Research on ATM

The landscape of preclinical ATM research in South Africa was illustrated by members of the South African ATM-Bioprospecting and Product Development Consortium. Prof. Lall reported their findings on an adjuvant for tuberculosis (TB) therapy from a South African plant, while Dr. Alexandre reported on the prevention of HIV-1 infection of cells by a South African medicinal plant coded BP36. Prof. Moodley described his group’s progress developing Morula (Sclerocarya birrea) derivatives for the treatment of diabetes mellitus. In the same session, Dr. Matsabisa overviewed recent milestones in the pre-clinical development of ATM products using PHELA, an immune booster, as an example. This was followed by Dr. Bester’s illustration of how they used ‘Indigenous health beverages’ to enhance community development, economically, socially and health-wise. Indeed, this session reaffirmed that the ‘ATM-bioprospecting program’ is in unison with the national Bio-economy strategy, i.e., from farm to products to community development.

Session III expounded the requirement for ‘quality evaluation’ of herbal derived medicines. Based on the Brazilian experience, Prof. Braga narrated examples on the use of biological and chemical data to validate claims on medicinal value, while Prof. Pelkonen reviewed the advances on the application of omics techniques in the research and development of herbal derived medicine. The two presentations were capped by Prof. Grobler in her overview on the role of their specialized pre-clinical drug development laboratory at the North-West University in assisting South African researchers to conduct high quality pre-clinical studies. She affirmed that, through their laboratories, South Africa possesses the technology to conduct high quality pre-clinical studies on African herbal derived medicine. Further challenges in the development and evaluation of herbal-derived medicine were discussed by Mr. Durham. He outlined the road map, progress and future plans for ATM research and development while Dr. Matsabisa offered an overview on the challenges of conducting clinical trials for herbal derived medicines within South Africa.

During the next plenary session, international perspectives of traditional medicine were compared and contrasted with the South African perspective. Prof. Liu from China offered examples of insulin resistance reversal effects by several Chinese and African derived herbal extracts, while Prof. Sen described their work in India on targeting bacterial biofilms to combat antibiotic resistance, using quorum sensing inhibitors of natural origin. These presentations led to a comparison on the regulation of herbal derived medicines in different countries. Here, Prof. Braga presented facts about the regulation of herbal derived medicines in Brazil with special reference to the contribution of academic research, while Dr. Gower gave an overview on the Complementary Medicines Regulatory framework in South Africa. Dr. Ma, currently a visiting professor at the University of the Western Cape in South Africa, described the institutionalization (in-hospital use) and regulation of the Chinese traditional medicine.
Research on DMT

Prof. Schwab and Prof. Walubo explored the clinical significance of genetic variations in drug metabolizing enzymes and drug transport proteins, respectively. Using tamoxifen as an example, Prof. Schwab described how knowledge of CYP2D6 polymorphisms can be used to select appropriate breast cancer patients for treatment with tamoxifen as well as to predict their response to it. Prof. Walubo explained the importance of transporter polymorphisms in the response to anti-retroviral therapy and cholesterol lowering agents; in the toxicity of cyclosporine and tricyclic antidepressants; as well as recognizing drug resistant epilepsy, to mention but a few. Thereafter, Prof. Pelkonen imbued participants with the latest methods for studying drug-induced hepatotoxicity, specifically the in vitro methods to predict hepatotoxicity and appropriate extrapolation. Prof. Walubo capped this with a review on combating paracetamol, isoniazid and nevirapine-induced hepatotoxicity. He revealed, among others, recent results on the successful use of grapefruit juice to treat or prevent paracetamol-induced hepatotoxicity. Prof. Masimirembwa put this in perspective by describing the unveiling of several clinically significant genetic polymorphism in African populations. This was further illustrated by Prof. Aklilu in an overview of enzyme polymorphism studies that induce susceptibility to anti-retroviral adverse drug reactions among some African populations. Thereafter, Dr. Syed gave an excellent overview of several mycobacterial and fungal cytochrome P450 enzymes being targeted in the development of new drugs against the respective pathogens.

Integrating ATM and DMT research

The growing interface between western-based science and ATM was illustrated during several sessions. Prof. Masimirembwa overviewed the screening of herbal medicines for interactions with drug metabolizing enzymes of the commonly used drugs in most African populations, specifically the antimalarial drugs. Prof. Gqaleni emphasized the importance of education and development of traditional health practitioners and public health care workers. Advancing this notion, Dr. Picking reviewed the prevalence of medicinal plant use in Jamaica along with their work in assessing potential drug-medicinal plant interactions for several of them. Dr. Delgoda explained how Jamaican researchers utilize the Caribbean biodiversity to harness plant extracts that inhibit or slow down phase I and II drug metabolizing enzymes with potential adverse effects such as the metabolic activation of chemicals to cancerous free radicals. Thereafter, Mr. Danie Nel from Afriplex South Africa and Dr. Lowe elaborated on the role of industry in research and development of ATM.

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Mr. Nel described how agreements with relevant researchers and communities to manufacture medicinal products benefitted not only the shareholders but also increased local job opportunities. Dr. Lowe presented a case study to illustrate recent advances in research and development to commercialize Jamaican medicinal plants.

The symposium enabled participants, particularly the students, to share their relevant research results with colleagues in six poster sessions, during which 64 posters covering various topics on research on ATM (38 posters) and DMT (26 posters) were presented.

We are grateful for the generous donations from our sponsors that enabled greater participation. About 80% of the participants received support from the organizers. The major local sponsors were the national Department Science and Technology, the South African Medical Research Council, the University of the Free State Department of Pharmacology, and the National Research Foundation. The international sponsors were the IUPHAR Drug Metabolism and Transport Section, the American Association of Pharmaceutical Scientists, and the International Society for the Study of Xenobiotics, whose donations allowed us to share the platform with several international students.

Some of the important observations by delegates during this symposium included:

- The potential for discovery of new medicines from natural products has not been exhausted
- People respond differently to medicine, whether conventional or traditional
- Integration of research on traditional medicines with relevant scientific disciplines, such as drug metabolism and transport, will eventually enhance the health of the African population
- The traditional medicine philosophy remains under-researched, thereby delaying the potential for development of new remedies
- Owing to fast growing and complex technological advance (knowledge), further research in cytochrome P450 and drug transporters requires a collaborative effort across different disciplines
- Forums for research information such as this symposium (METHODS2015) are part and parcel of the strategy for accelerated research and development.

A questionnaire that allowed participants to rate the symposium confirmed the whole scientific activity was highly welcomed and deemed by the participants to be informative and, for some, it opened new research avenues and, hopefully, more collaboration to come. I would like to thank my colleagues on the METHODS2015 organizing committee and the event management company, Orange Galaxy, for their untiring effort to ensure success of the event.

A. Walubo
Chair, METHODS2015 Organizing Committee
On the occasion of the 55th annual conference of the Egyptian Society of Pharmacology and Experimental Therapeutics (ESPET), the Pharmacoepidemiology and Pharmacovigilance Subcommittee of the IUPHAR Clinical Pharmacology Division together with ESPET co-organized the “European-Egyptian Collaboration in Pharmacovigilance Workshop.” The Workshop was held on the elegant premises of the British University of Egypt (BUE) in Cairo. More than 150 participants attended the symposium co-funded by ESPET and IUPHAR, ranging from senior academic professors, vice ministers and representatives of pharmaceutical companies to junior pharmacologists and undergraduate students. National and international regulatory experts on pharmacovigilance from Europe and Egypt contributed to the Workshop. It was hosted by Prof. Hamad, President of BUE, Prof. Elmazar, Dean of the Faculty of Pharmacy of BUE, and Prof. Khayyal, President of ESPET. The Pharmacoepidemiology and Pharmacovigilance Subcommittee was represented by Prof. Drici of the University of Nice, expert to the National Agency for the Safety of Medicines and Health Products (ANSM) and European Medicines Agency (EMA), and Prof. Toumi from the University of the Mediterranean.

The Workshop covered different key aspects of pharmacovigilance, from academia to regulation to the advancement of academic pharmacovigilance in Egypt. The first theme, presented proficiently by Prof. Milou-Daniel Drici (photo at left), a European Medicines Agency (EMA) expert, pertained to the soon-to-be enforced European Regulation on Clinical Trials. This regulation will promote better interactions between the sponsors of clinical trials, pharmaceutical companies, and member states. A common portal should be available by 2018 that will improve collaboration on approval, encourage regulatory authorities to work together and adhere to the same time-frame when approving clinical trials, ensuring these are competently assessed. The portal should provide greater access to clinical trials data, not only within the European Union but outside as well. The results will be publicly available to ensure the ethical considerations are taken into account.

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In this field, new pharmacovigilance guidelines were skillfully presented by Dr. Carmen Kreft-Jaïs, former EMA expert and former head of Pharmacovigilance at the French Regulatory Agency (top left). She thoroughly surveyed the European Pharmacovigilance Legislation that took effect in July, 2012. In particular, she emphasized spontaneous reporting, medical errors, collaboration with patient safety organizations, medicines under additional monitoring, improvement of risk communication and the legal basis for a more proactive approach of pharmacovigilance. Dr. Krefti-Jaïs also gave a brief overview of Good Pharmacovigilance Practices, which were open for public evaluation on the EMA website until the end of May. Prof. Mondher Toumi (top right) reported on adverse drug reactions and strategies for reducing their effects. While a lot of effort has been undertaken to elicit, identify and quantify drug-adverse events, far less effort has focused on assessing the resulting clinical and economic impact. Tactics to minimize these ramifications were proposed by Prof. Toumi.

The second theme addressed was the currently-used Arab pharmacovigilance guidelines, most of which had been designed in Egypt then adopted throughout the majority of the North African and Arabian Middle Eastern countries. This theme was presented by Dr. Amr Saad, Associate Minister of Health for Pharmaceutical Affairs and Head of the Egyptian Pharmacovigilance Center (EPVC) (at left), and Dr. Hend El-Hussieny (center right), Head of the Cairo Satellite Center for Pharmacovigilance. Dr. Saad’s lecture tackled the basics of individual case safety reporting processes, highlighting the different EPVC reporting forms and its online reporting system, as well as discussing characteristics of a good case report, the seriousness or anticipation of adverse drug reaction, EPVC processing and assessment of the reports, along with possible signal detection. Dr. El-Hussieny’s talk was about the impact of Qualified Person for Pharmaceutical Vigilance (QPPV) on adverse drug reporting, describing how the EPVC was established, and the expansion of its scope to include drugs and biological safety, medical device safety, biocides vigilance, cosmetics and veterinary vigilance, in addition to the establishment of subsidiary regional centers across Egypt.

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The third theme of the Workshop was expertly addressed by Dr. Azza El-Sheikh, Associate Prof. of Pharmacology and Head of the Grants and International Cooperation Office at Minia University Egypt (at right). She discussed mechanisms for introducing pharmacovigilance into academic pharmacology curricula throughout all Egyptian universities, emphasizing the necessity of collaboration of different stakeholders and employing international collaboration by including pharmacovigilance and pharmacoepidemiology as a part of structured pharmacology programs.

The Workshop portion of the ESPET meeting concluded with the presentation of appreciation shields and certificates by Prof. Khayyal to all the speakers for their kind contributions (at left) followed by a social luncheon. The remainder of the scientific program continued into the late afternoon with six oral presentations and 40 posters on various topics in pharmacology. It is hoped that the Workshop helped Egyptian policy makers, clinicians, and researchers gain a greater appreciation of the efforts by IUPHAR to develop international links within the field of clinical pharmacology, specifically those of pharmacoepidemiology and pharmacovigilance, and to assist in the expansion of university pharmacovigilance programs.

Milou-Daniel Drici
Chair, Pharmacoepidemiology and Pharmacovigilance Subcommittee of the Clinical Pharmacology Division

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- British University in Egypt
- IUPHAR Subcommittee of Pharmacoepidemiology
- Egyptian Society of Pharmacology and Experimental Therapeutics
At the end of 2014, four major colleges of Neuropsychopharmacology (ECNP, ACNP, Asian CNP, and CINP) proposed a new template comprising a multi-axial pharmacologically-driven nomenclature tested by four surveys. According to the new classification (Neuroscience-based Nomenclature, NbN) presented at the 27th Congress of the European College of Neuropsychopharmacology (Berlin, 18-21 October 2014), every psychotropic drug can be classified according to the following 5 axes:

1. Class (primary pharmacological target and relevant mechanism);
2. Family (reflecting the relevant neurotransmitter and mechanism);
3. Neurobiological activities;
4. Efficacy (approved indications) and major side effects;
5. Approved indications.

The basic rationale for such a work was that Anatomical Therapeutic Chemical (ATC) nomenclature probably does not describe all the potential clinical applications of psychotropic drugs, and this may justify a proposal of the new nomenclature combining the new advances in neuropsychopharmacology with the ATC nomenclature based on approved indications.

NbN is a nomenclature system that organizes medications based on their known pharmacological actions. It currently lists 108 compounds, representing a broad range of medication in neuropsychopharmacology practice. The NbN characterizes drugs by pharmacological domain and mode of action. It also includes the following additional information:

1. Indications approved by regulatory bodies (e.g., FDA and EMA);
2. Profile of efficacy and side effects;
3. "Practical notes";
4. Neurobiology (disease sketch for which the drug is indicated).

Following this approach, as an example, NbN classifies desipramine as: 1) a norepinephrine reuptake inhibitor, 2) having approval for the treatment of major depressive disorder, 3) having efficacy for depression associated with the expected side effects, and being a substrate for CYP2D6, and 4) having a variety of secondary targets and effects on brain chemistry and signalling.

It is recognized that there will be challenges to adopting this approach beyond adjusting to abandoned established conventions. For example, medications are grouped on the basis of conventions regarding their primary mechanisms of action. However, this presumes that we actually know with confidence the mechanisms through which medications produce their clinical effects and this may not always (or even often) be the case. The NbN approach is particularly difficult in terms of how drugs are characterized, for example, the initial mechanisms of clinical efficacy remain unknown for lithium and bupropion. Moreover, most psychotropic drugs produce their full clinical effects after chronic, not acute, administration and our understanding of the drug-induced plasticity that mediates this delayed efficacy is even more poorly understood.

Using NbN will require authors to change the way in which they write their papers. Some relevant journals in the field of neuropsychopharmacology have announced the adoption of NbN in the near future. To make all new papers searchable by NbN, the NbN nomenclature of the substances that the paper covers should be substituted for the older terminology in the keywords of the publication. To “translate” between old and new nomenclature, it is recommended to download the official application (available for free from Google Play https://play.google.com/store/apps/details?id=il.co.inmanage.nbnomenclature or Apple Store https://itunes.apple.com/us/app/nbn-neuroscience-based-nomenclature/id927272449?mt=8) that provides instructions for authors (http://nbnomencalure.org/authors).

NbN is both a chance and a challenge, particularly for clinicians, but also for basic researchers who wish to uniform their scientific language to the most recent evidence regarding the clinical profile of psychotropic drugs.

Filippo Drago
Chair, Neuropsychopharmacology Section
NPP@IUPHAR.org
The ImmuPhar (Immunopharmacology) Section has continued to develop its resources through websites, meetings and publications, which in turn, attracts new members. Most recently, the ImmuPhar website (www.immuno.iuphar.org), Facebook (www.facebook.com/immunopharmacology) and LinkedIn (www.linkedin.com/groups/7484359/profile) pages have been updated. Please take a minute to visit them to offer us your opinion.

The Section organized a session in Florence, Italy entitled “Histamine and cells of inflammation” for the European Histamine Research Society meeting held May 11-15, 2016. Two members of the ImmuPhar Executive Committee participated in the session. The Swiss Society of Pharmacology and Toxicology Spring Meeting on “Innovative therapeutic modalities: Opportunities and challenges” in April 2016 included an ImmuPhar Section sponsored lecture, “Of CARs and TRUCKs: adoptive cell therapy on the way to cure cancer?” given by Hinrich Abken, University of Cologne.

Two reviews prepared by the Section were published in March and May of 2016 in the British Journal of Pharmacology: 1) Monoclonal antibodies: the new magic bullets for allergy. IUPHAR Review 17 [Mar;173(5):793-803] and 2) Immunotherapy of cancer: from monoclonal to oligoclonal cocktails of anti-cancer antibodies IUPHAR Review 18 [173(9):1407-24]. A volume on “Immunopharmacology and Inflammation” for the book series Methods in Pharmacology and Toxicology published by Springer Publications was edited by Executive Committee members Carlo Riccardi, Katerina Tiligada and Francesca Levi-Schaffer, and is in the early stages of preparation. Suggestions for possible chapter topics and authors are currently being solicited by the co-editors.

A proposal on harmonizing targeted therapy research and exploitation in immune-inflammatory disorders was drafted for a European Cooperation in Science and Technology (COST) supported by the European Framework Programme Horizon 2020 and is currently in the final stages of preparation for submission. If approved, this will be a major activity of the Section in the coming year.

Three subcommittees are being formed: 1) Antibodies as therapeutics; 2) Molecular targets for immunomodulatory drugs (molecular oriented); and 3) Targets in immune related diseases (disease oriented). Please contact ImmuPhar@IUPHAR.org to become a member of one or more of these subcommittees designed to promote the specific areas within immunopharmacology.

Finally, the Section has been collaborating with NC-IUPHAR by contributing to the areas of antibodies and immunopharmacology as part of the Wellcome Trust-funded initiative to create a Guide to Immunopharmacology within the expanded structure of www.GuideToPharmacology.org.

Francesca Levi-Schaffer
Chair, ImmuPhar
ImmuPhar@IUPHAR.org
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IUPHAR Congratulates the Member Societies Celebrating Milestone Anniversaries during 2016

British Pharmacological Society
1931 - 2016

Norwegian Society of Pharmacology & Toxicology
1936 - 2016

Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists
1966 - 2016

Brazilian Society of Pharmacology and Experimental Therapeutics
1966 - 2016

South African Society for Basic and Clinical Pharmacology
1966 - 2016

Turkish Pharmacological Society
1966 - 2016

West African Society for Pharmacology
1971 - 2016

Hong Kong Pharmacology Society
1986 - 2016

Association of Pharmacologists of Ukraine
2001 - 2016

Maltese Pharmacology Society
2006 - 2016

Pharmacology for Africa
2006-2016
British Pharmacological Society celebrates 85 years of championing pharmacology

This anniversary is a time to celebrate an important milestone, but also provides an opportunity to reflect on the past and focus on the future. 2016 marks the British Pharmacological Society’s 85th birthday, which comes at a time of significant growth and development for the Society.

I am pleased to have been invited to report on the Society’s expanding membership and activities. It is noteworthy how dedicated the Society has been to promoting and advancing the whole spectrum of pharmacology throughout its 85 years. I am proud of our historical achievements and excited by our plans for 2016 and beyond.

The origins of the British Pharmacological Society began with a single letter sent to thirty pharmacologists across the UK inviting them to a meeting where they would be able to present and share their research amongst peers. At that initial meeting in 1931, the Society was officially formed by the twenty pharmacologists present in Oxford.

Once the Society was founded, 38 members joined in its first year. Fast-forward to 2016 and the Society now represents nearly 4,000 members across the globe: a number that has continued to grow since at least 2010. Now one-third of our membership is under 30 years old, and our Young Pharmacologists Advisory Group plays a leading role in how the Society nurtures this important group. Since 2004, the Society has actively encouraged greater participation by our female members. Last year, we renewed this commitment to equality and diversity by raising the minimum level of female participation across the Society’s activities to 30%.

Our first international members joined in 1947 and today the Society is a truly international organisation: around 20% of members are internationally-based, representing more than 60 countries. If you’re not already a member, we invite you to consider joining our friendly community. You can find out more about the benefits of membership and how to apply online (www.bps.ac.uk/membership-options). The Society gives out over £300,000 each year to recognise and support members through awards, bursaries and grants – regardless of geography.

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I am proud of the Society’s long-standing reputation for international collaboration. The Society has a track record of supporting the World Congresses of Basic and Clinical Pharmacology, most recently the 2010 Congress in Copenhagen, Denmark and the 2014 Congress in Cape Town, South Africa. We are now looking forward to being a key supporter of the 2018 Congress in Kyoto, Japan. Looking further ahead, the Society keenly anticipates welcoming attendees from around the world to Glasgow, Scotland in 2022, when we will be hosting the World Congress. It’s the second time we’ve hosted the event, with the first being in 1986. We hope to see you there!

Since its formation, the British Pharmacological Society agreed to meet once a year to share and discuss scientific information, as well as to promote relations between pharmacologists. Six papers were presented at the first annual scientific meeting in 1932. Our annual flagship meeting (now called Pharmacology) continues to this day and attracts over 1,000 scientists from across the world. The programme each year includes a selection of topical symposia, plenary lectures, oral communications and poster sessions, which cover the many aspects of pharmacology from basic to clinical science and, of course, the opportunity to network with colleagues around the world. Last year, the meeting included 331 poster presentations and 63 oral presentations. We’re now gearing up for Pharmacology 2016, taking place on 13–15 December in central London. We will be hosting symposia from guest societies: the American Society for Pharmacology and Experimental Therapeutics (ASPET), the American Society for Clinical Pharmacology and Therapeutics (ASCPT) and the Chinese Pharmacological Society (CNPHARS). For the latest information about how to submit abstracts and registration (which is free for the Society’s members), please visit www.bps.ac.uk/pharmacology2016 from 1 July.

The British Pharmacological Society has a track record of organising successful scientific meetings. In addition to Pharmacology, we hold a number of other meetings throughout the year, from small educational workshops to larger focused meetings. These support the different needs of our members throughout the different stages of their careers, and allow us to celebrate the latest research across the entire spectrum of pharmacology. You can view our busy meetings calendar online at www.bps.ac.uk/news-events/future-scientific-meetings. If you’d like us to post an event on our online calendar, please don’t hesitate to get in touch by emailing info@bps.ac.uk.
The publication of scientific research was a discussion point at the first ever meeting and it remains a fundamental part of the British Pharmacological Society’s activities. World War II led to the acceleration of pharmacological research and prompted the creation of the Society’s first journal, the British Journal of Pharmacology (BJP), in 1946. Recognising the increasing importance of clinical pharmacology, the Society created its second journal, the British Journal of Clinical Pharmacology (BJCP), in 1972. Today, they are both leading international journals in pharmacology with almost 2 million full text downloads from their combined readerships in 2015.

The Society is dedicated to ensuring that all of the global pharmacology community has access to the latest knowledge and research. The IUPHAR/British Pharmacological Society Guide to PHARMACOLOGY is available to everyone as an open access database of drug targets and the prescription medicines and experimental drugs that act on them (www.GuideToPharmacology.org). Our journals are available at reduced or no cost to institutions based in emerging economies: BJP is available in over 4,800 institutions through HINARI, INASP and AGORA and BJCP is available in over 3,900 institutions via INASP and HINARI. Articles published by BJP and BJCP are freely available online twelve months after publication. Certain selected content is also made freely available from the date of publication, including the January editions of both BJP and BJCP.

In 2013, the Society, in collaboration with the American Society for Pharmacology and Experimental Therapeutics (ASPET) and Wiley, was proud to launch an open access journal, Pharmacological Research & Perspectives. Readership has grown rapidly since its creation and it continues to publish articles across the spectrum of pharmacology. Of particular interest to readers may be the ongoing interest in papers on target validation and so-called negative findings.

The Society also publishes its own magazine, Pharmacology Matters, which features topical articles on current events and trends, as well as insights into the Society and its members. It is freely available, so anyone with an interest in pharmacology can access it and keep up-to-date. You can read the latest issue online at www.bps.ac.uk/pharmacology-matters.

We are ambitious about our plans for championing pharmacology beyond 2016. We have already begun investing in strategies to support pharmacology in universities (find out more at www.bps.ac.uk/focus) and the National Health Service (NHS). Most recently we have jointly developed the world-class Prescribing Safety Assessment (https://prescribingssafetyassessment.ac.uk) with the Medical Schools Council.

The Society looks forward to continuing to work with our members, friends and partner organisations to deliver initiatives that fulfil our mission to promote and advance pharmacology in the years to come. If you’d like to find out more about any aspect of the Society, please visit www.bps.ac.uk.

David Webb
President, British Pharmacological Society

A brief overview of the history of the South African Society for Basic and Clinical Pharmacology (SASBCP), 1966-2016

With great excitement the SASBCP is celebrating their 50th Anniversary during the 2016 South African Annual Congress in October in conjunction with the All Africa Congress of Pharmacology and Pharmacy. Furthermore, it coincides with the 10th Anniversary of the initiative Pharmacology for Africa (PharA). In addition this key African event will be the 6th joint hosting of the Academy for Pharmaceutical Sciences and Pharmacology South Africa (APSSA) Congress and the SASBCP. To show the true integrative nature of pharmacology, we will be joined by TOXSA (Toxicology Society of SA).

SASBCP, as the pharmacology society at the southern tip of Africa, has for many years made inroads in the pharmacological sciences and health professions in South Africa, the African continent and internationally, as will be seen below. The Society also aspires to foster interest and talent of young pharmacologists, with a strong emphasis on capacity building.

Hosting the 17th World Congress of Basic and Clinical Pharmacology (WCP 2014) in Cape Town, South Africa was a defining moment for South African pharmacology. It was the culmination of a vision that was first considered some 47 years ago. This article will tell the story of its origins, making appropos the 50th anniversary will be held near the Cradle of Humankind in October, 2016.

The Beginnings

The South African Pharmacology Society (SAPS) was established in 1966 under the leadership of its founding fathers, amongst others, its first president, Prof. Johan Offermeier. One of the eminent “fathers of pharmacology”, Prof. Everhardus J. Ariëns, was the first international speaker during the first annual congress of the Society in 1967. Prof. Arnold Beckett followed the next year.

Prof. Johan Offermeier (left) and Prof. Everhardus Ariëns (right)

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Some other founding pharmacologists during the early years included Profs. Deo Botha (University of Pretoria), who had the unique capacity to frown his bald patch and forehead at the same time) and Theuns Naude (University of Pretoria); Bob Charlton and Koppel Furman (University of the Witwatersrand, Johannesburg); Andries van Zyl and Frans Taljaard (University of Stellenbosch); John Reid, who was frequently called upon as a radio announcer because of his excellent modulation and diction; and Perry Leary, who was noted for his Oxford accent (University of KwaZulu Natal); Bill Jenkins (Onderstepoort); Norman Sapieka, who wrote the first South African pharmacology book (University of Cape Town).

Prof. Ben Potgieter, then a young upcoming pharmacologist, fondly refers to these founders as the “heavy weights”. Dr. Douw Steyn, a well-known toxicologist who fought long and hard to prevent fluoridation of water, was another. Prof. Andries van Zyl was tasked to draw up the original constitution in both Afrikaans and English as the Society would be bilingual, of course. A Congress was planned for the very next October “to enable researchers to attend the main overseas summer congresses and also to ensure that top overseas speakers would be free to visit us.” The first Congress drew in excess of 100 participants.

Upcoming young pharmacologists or the “light-weights” included Peter Folb, Abraham Aucamp, Otto Müller (newly back from Germany and who would eventually head pharmacology as well at the very successful FARMOVs at Bloemfontein), Hans Hundt, Pieter van Jaarsveld, Dek Sommers, Ben Potgieter, Charles de Wet, Ben Allman, and many more followed in their footsteps. Of course, Ben Potgieter will also be remembered for his fondness of old Mercedes Benz motor cars and his willingness to travel a thousand kilometres to congresses in one of them.

Pharmaceutical companies started to show interest and medical directors who played a major role in those early days were Dr. Bauling (Janssen Pharmaceuticals) and Dr. Max Durr (who introduced the Boehringer-Ingelheim bursaries), Dr. Ben Krengel (Mer-National) and Dr. Willie van Rensburg (SKF – before they became Smith Kline and Beecham) and in later years Charles de Wet, also from Boehringer.
South African Pharmacology: growing in stature

Up to this point, the Society had been served and guided by the leadership of some very competent pharmacologists. The 1st president, Johann Offermeier, was succeeded by Ben Allman, Peter Folb, Otto Müller and Ben Potgieter. In 1997 Jacques Snyman took the reins, then handed them over to Douglas Oliver from 2001 to 2007, when Wim du Plooy took the presidency. In 2011 Tiaan Brink became the current president.

The importance of strategic alliances and extending the interactions of the Society beyond the South African borders lead to the hosting of series of International Congresses of Pharmaceutical and Pharmacological Sciences (ICPPS). The first of these meetings were hosted in Midrand (1996 - 1st ICPPS), followed by five ICPPS hosted in Cape Town (2002 - 3rd ICPPS), Johannesburg (2006 - 4th ICPPS), Durban (2011 - 6th ICPPS) and Potchefstroom (1999 - 2nd ICPPS, 2009 - 5th ICPPS) as a joint collaboration with the South African Academy of Pharmaceutical Sciences. By the turn of the millennium, the South African Society had grown into a vibrant and sustainable group, an organisation that today continues to make important strategic decisions to significantly impact the pharmacological communities in South Africa and also throughout Africa. The Society further joined with the International Society of Immunopharmacology in 2001 to host a very successful joint International Congress in Sun City, Pilansberg despite the tragic events of 9/11.

U→L: Prof. Jacques Snyman, Prof. Douglas Oliver, Prof. Wim du Plooy, and Prof. Christiaan Brink
There was an excitement in the air about developments to improve the interaction and synergism between the fundamental and therapeutic aspects of pharmacology. The 4th ICPPS Congress on Pharmaceutical and Pharmacological Sciences in 2006 in Johannesburg was an excellent collaboration between South Africa Pharmacology, the Academy of Pharmaceutical Sciences and further included the participation of South African Neurosciences Society. All of these joint international meetings would, of course, later serve as the platform, among other things, that empowered the bid for the IUPHAR 17th World Congress to be held in South Africa.

In the meantime, discussions were underway to combine the basic and clinical congresses of IUPHAR and to change its name to the International Union of Basic and Clinical Pharmacology. The name of the South Africa Society would follow suit later. The General Assembly voted Copenhagen, Denmark as the destination for this first historic 16th World Congress of Basic and Clinical Pharmacology in 2010. South Africa, as was thought, would be the ideal destination for the next meeting after Copenhagen, a step that would embrace the developing world and emphasise our role in this new model of IUPHAR. The development of young pharmacologists has been central to activities and future of the Society since the middle 1990s. Opportunities and forums acknowledging young pharmacologists with prizes are key initiatives to build a next generation of basic and clinical pharmacologists for South Africa and beyond.

The Road to Cape Town: 17th IUPHAR World Congress 2014

As far back as 2002, the Society engaged in discussions with Prof. Paul Vanhoutte, the newly elected IUPHAR President, and IUPHAR executive committee members to explore the possibility to host the first ever IUPHAR World Congress on the African continent. Post-1994 South African democracy and the new South Africa had been viewed as a model for transition and transformation. A decision was made in 2002 to submit a bid to host the congress in Cape Town in 2014 – still 12 years away. The Congress in San Francisco (2002) marked the beginning of an exciting journey for the South African Society for Basic and Clinical Pharmacology.

Intensive planning commenced immediately upon return to South Africa to prepare the extensive bid dossier to be submitted by 2005. There were brainstorming sessions, think tanks, assessments of cities and congress venues in South Africa, stakeholder interactions, discussions with pharmacologists on the continent, and in particular, assessments of pharmacology societies (or mostly the lack thereof) on the African continent. Ultimately, Cape Town, the mother city of South Africa, was the destination of choice for the 17th IUPHAR World Congress and that the Cape Town International Convention Centre (CTICC) would be the ideal venue. In September, 2005, the founding of the Regional Office for Africa (ICSU ROA), the first regional office of the International Council for Science (ICSU), paved the way for an important relationship fostering skills development on the whole African continent. Importantly, Douglas Oliver and Christiaan Brink began the momentum for the Pharf/A initiative, which was planned to unite and organise pharmacology on the whole African continent. To involve and empower the whole African continent was a central objective and this was also a key strategy for the bid to host the 17th World Congress in Cape Town.
The submission of the draft bid dossier passed the first hurdle when IUPHAR invited the South African Society to submit their final proposal alongside Brazil, Israel, Korea and Japan in July, 2006 during the IUPHAR General Assembly in conjunction with the 15th World Congress in Beijing. With anticipation and excitement, the delegates from Africa travelled to China, demonstrating the team-work and effort of the endeavour. The first fruits of the hard work were the official launch of PharA initiative at the South African Embassy in Beijing. After the bid presentations by the five participating countries and the voting concluded, the winner was announced:

The 2014 IUPHAR World Congress will be hosted in South Africa for the first time ever in Africa!

It was a special moment indeed, particularly since the South African Society won the bid during its fortieth anniversary year. History had been made and the South African and African delegations were overjoyed. The dream was realized in July, 2014 when South Africa hosted an outstanding IUPHAR World Congress (WCP2014) with delegates from nearly 80 countries and more than 300 world renown invited speakers. WCP2014 has been hailed as a milestone event for pharmacology on the African continent, celebrating the participation of nearly 30% of the delegates coming from Africa. It showcased a truly South African experience to more than 1500 local, continental and international participants.

Now 50 years and beyond

Now after all this rich history, the South African Society for Basic and Clinical Pharmacology has reached another milestone – its 50th anniversary. On the heels of such rich origins, the celebrations of the 50th Congress of the SASBCP will aptly take place in the heart of the Cradle of Humankind, the origin of humans, near Johannesburg in October, 2016. This Congress will be hosted as an All Africa Congress of Pharmacology and Pharmacy to celebrate of the pivotal role of pharmacology on the African continent, serving the health of African nations. It will further present opportunities to treasure the amazing successes and contributions during these past 50 years in the South African Society and to look ahead with excitement knowing that great things are still to come. The next generations of South African pharmacologists are well positioned to reach beyond these remarkable achievements during this first half century of the South Africa Society of Basic and Clinical Pharmacology.

George Muntingh and Wim du Plooy
When the Steering Committee of Garth McQueen, Robert Whelan, Kevin Higgins, Ralph Howard, Bernard Lake and Neville Percy met in November, 1966 to establish the Australasian Society of Clinical and Experimental Pharmacologists (ASCEP – Toxicologists were added in 1990), they could not have envisaged that it would evolve over 50 years into the premier toxicology and pharmacology society in the Asia-Pacific region. The first scientific meeting, with a total of 47 (basic pharmacology) papers delivered, was held in November 1967 at the University of Melbourne. The rest, as they say, is history.

Some of the stalwarts of the fledgling society went on to be world leaders. The late Prof. Michael (Mike) Rand deserves special mention. Not only did he produce ground breaking research in a number of areas, including nitric oxide, but wrote (with Bill Bowman and Geoff West) the *Textbook of Pharmacology* (1968), which became the go to text for many budding pharmacologists for decades (the second edition was published in 1980 with Bowman and Rand as the authors). His research students went on to populate some of the best research laboratories in the world.

Fifty years on, the present members of ASCEPT continue to generate world class research and provide leadership of Departments of Pharmacology and Toxicology and Schools of Pharmacy around the globe. The Society has a strong relationship with both the pharmaceutical industry and government. Over the last two decades, its members have provided numerous representations to State and Commonwealth Departments of Health, the Therapeutic Goods Administration, and National Prescribing Service. Many national and international boards and (government) working parties benefit from having ASCEPT members providing expert input.

The Society maintains strong links with overseas societies, including its Hong Kong, Japanese and Indian counterparts, as well as the Asia-Pacific Federation of Pharmacologists. However, ASCEPT’s relationship with the British Pharmacological Society (BPS) has been its most enduring. Indeed, since its foundation, the two societies have exchanged visiting lecturers, and recently co-hosted a meeting with the Hong Kong Pharmacological Society in Hong Kong (http://ascept-bps2015.com/) in May, 2015.

ASCEPT has been affiliated to IUPHAR since the early 1970s, and has successfully hosted International Congresses of Pharmacology in 1987 and 2004. The Society maintains a strong representation in the Clinical Pharmacology Division - Secretary General, Prof. David Le Couteur (also a Member of the Executive Committee) and Immediate Past Chair, Emeritus Prof. Don Birkett. In basic pharmacology, Prof. Arthur Christopoulos is an Executive Member of the Receptor Nomenclature Committee (NC-IUPHAR) and Dr. Chris Langmead is a Corresponding Member. ASCEPT is delighted to host the entire (17 member) IUPHAR Executive at the 2016 ASCEPT ASM in December (www.asceptasm.com).

From the relatively small beginnings and boutique meeting of 1967, the Society now holds primarily joint meetings with the Australian Physiological Society (AuPS), the Australian Pharmaceutical Sciences Association (APSA) and Molecular Pharmacology of G-Protein Coupled Receptor (MP-GPCR) group, which are attended by over 500 delegates. Meetings now run over 4-5 days, and consist of free communications, workshops and plenaries. The Society remains a springboard for students and early career researchers – who will take ASCEPT forward for the next 50 years.

The author wishes to acknowledge the late Associate Prof. G. A. Bentley, who wrote a more substantial history of the Society spanning the years 1966 to 1991, and the Immediate Past President of ASCEPT, Associate Prof. Peter Molenaar. •

Dom Geraghty, President of ASCEPT
The Hong Kong Pharmacology Society (HKPS) is proud to celebrate its 30th birthday this year. The Society has been guided by seven presidents, drawn from pharmaceutical, clinical and preclinical pharmacology backgrounds. The HKPS was officially founded in July, 1986, after deliberations by its 31 founding members earlier that year. Our first president was Prof. Clive W. Ogle (pictured sitting centre, front row), who went on to become the Society’s first Honorary Member, after his retirement from the University of Hong Kong (HKU).

The Society has been particularly interested in pulling together Western and Eastern systems of drug discovery and use, to provide a unique window of understanding and opportunity for the rest of the world. In fact, collaborations with Mainland China date back to the founding year of the Society when members attended the Guangdong Pharmacological Society Scientific Meeting in Guangzhou. Since then delegations from the HKPS have also visited Shanghai (1992, 2002, 2013), Xi’an (1996), Beijing (1998), Shenyang (2008), Hangzhou (2000), and Jinan (2011) to attend conferences with fellow pharmacologists. In return, scientists from these cities have come to Hong Kong in alternate years.

Five years ago, we celebrated our 25th birthday, pulling together four of our past-presidents, during our joint scientific meeting with the Chinese Pharmacological Society, in Shandong (pictured at right): Prof. Man, Prof. Vanhoutte, Prof. Jones and Prof. Tomlinson.

HKPS 25th Anniversary celebration in Shandong, China in 2009

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As the Society has aged, we have awarded another three Honorary Membership positions to past presidents (Prof. R.L. Jones, Prof. B. Tomlinson) and our previous serving Honorary Secretary (Prof. Helen Wise). We thank these members for their hard work, enthusiasm and dedication to our Society.

The affairs of the Society are managed by an Executive Committee. This group includes the president, secretary, treasurer and three councilors. Since the founding of the Society, the majority of its members are from the medical schools of HKU, the Chinese University of Hong Kong (CUHK) and the School of Chinese Medicine, Hong Kong Baptist University. The current president is Prof. Bernard MY Cheung, Head of the Division of Clinical Pharmacology and Therapeutics in the Department of Medicine, HKU.

The missions of the HKPS are to promote interest in both basic and clinical pharmacology, to foster communication and cooperation between those who are actively engaged in various aspects of education, research and service in pharmacology and related disciplines in Hong Kong, and to establish and to facilitate communication with similar societies abroad, especially those in the South East Asian and Western Pacific regions. To this end, productive interactions between Hong Kong pharmacologists and colleagues in Mainland China, Singapore and Taiwan have been established. The discipline of pharmacology continues to lose its identity in Hong Kong through incorporation into new curricula in Schools of Biomedical Sciences or Molecular Sciences. Experienced pharmacologists have retired, or are scheduled to retire in the next five years. We hope the void does not continue to grow. Unfortunately, however, there are no undergraduate degree courses in Pharmacology taught in Hong Kong, and postgraduate education has also switched to programs of higher degrees (MPhil, PhD) in Biomedical Sciences. In these challenging times, the HKPS provides a forum for those of us who still believe strongly that the integrated scientific approach, which is the hallmark of training in pharmacology, is essential for successful drug development and patient care. To achieve this goal we sponsor seminars throughout the year and actively encourage attendance by our student members to increase their exposure to new areas of research. We also provide travel grants to encourage the newer generations of pharmacologists to experience the thrill of presenting their research work to an international audience.
In the last five years, HKPS was also active in meetings with the Asia Pacific Federation of Pharmacologists and the World Congress of Basic and Clinical Pharmacology. In 2015 HKPS hosted the Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists (ASCEPT) and the British Pharmacological Society (BPS) joint scientific meeting and had a very stimulating and enjoyable two-day conference.

The HKPS continues to pride itself on its encouragement and support of student members and provides bursaries for attendance at international conferences, including sponsoring a young African pharmacologist to attend the World Congress in Cape Town in July, 2014.

The Society continues to actively promote participation in the IUPHAR World Congresses and this year we are happy to be involved in planning for symposia and workshops in the next World Congress of Basic and Clinical Pharmacology in Kyoto, Japan 2018. All members of the HKPS value the opportunity to meet with like-minded scientists. We are a relatively small society, supported financially by low-cost membership fees and donations from local pharmaceutical companies and distributors. New (and old) chemical entities still need to be characterized and evaluated, as do the tools used by the pharmacology-naïve biomedical scientist. We are always looking towards expanding, so that we may continue to educate and learn.

John Rudd, HKPS Secretary
The all-Ukrainian public organization “Association of Pharmacologists of Ukraine” (APU) celebrates its 15th anniversary this year. The first scientific meeting of leading pharmacologists and health care specialists of the independent Ukraine was held in the city of Poltava as the I National Congress of Pharmacologists of Ukraine in 1995. During the II National Congress of Pharmacologists of Ukraine in the city of Dnepropetrovsk in October, 2001, the scientific and educational pharmacological community founded the APU to support the social, creative, scientific and other interests of pharmacologists and other biomedical scientists. The first president was Oleksandr V. Stefanov, an academician from the National Academy of Medical Sciences of Ukraine and the director of the Institute of Pharmacology and Toxicology of the Academy of Medical Sciences of Ukraine. At that time APU numbered 236 members and has historically experienced membership growth every year. Two important additions to the APU constituency were the Institute of Pharmacology and Toxicology of the National Academy of Medical Sciences of Ukraine and the state enterprise, the State Pharmacological Center of the Ministry of Health of Ukraine (currently known as the State Expert Center of the Ministry of Health of Ukraine). The APU Council is the governing body between congresses.

During the III National Congress of Pharmacologists of Ukraine in Odessa, 2006. L→R: former secretary of APU - Oleg Yadlovsky; vice-president of APU - Ganna Grigoryeva; founding president of APU - Oleksandr Stefanov; vice-president of APU - Valentin Kresiun; member of APU - Ludmila Labushevska; and current secretary of APU - Ganna Shayakhmetova.

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Taking into account the important role of clinical pharmacology within evidence-based medicine and the rational application of pharmaceuticals, the Clinical Pharmacology Section was established in 2008. The APU achieved another milestone in 2009 by becoming a full member of IUPHAR. By a 2014 estimate, the APU included 10 regional offices serving nearly 600 members. At the present time, the president of the APU is Tetyana A. Buhtiarova, the Corresponding Member of the National Academy of Medical Science of Ukraine and the director of the Institute of Pharmacology and Toxicology of the Academy of Medical Sciences of Ukraine.

Since the foundation of the APU, serious efforts have been undertaken to introduce and expand modern teaching methods in fundamental and clinical pharmacology. To a large extent this is facilitated by the fact that the chairs of the pharmacology departments within the leading Ukrainian medical universities are the active members of the APU. The occupation of Crimea and part of the Donetsk and Lugansk regions resulted in a slight decrease in the 2016 membership of APU for the first time. The officers and council members are working diligently to ensure this unfortunate development does not affect the ongoing APU activities focused on maximizing the creative potential of members and the continuous coordination of research and education within fundamental and clinical pharmacology. The APU members look confidently into the future and believe that these temporary difficulties will be overcome.
The training of young scientists in the discipline of pharmacology is considered to be one of the highest priority tasks of APU. The traditions of the National Schools for Young Pharmacologists of Ukraine were established by Prof. Stefanov during the 1990s. Their scientific programs, which consist of lectures by well-known scientists from different countries, are always dedicated to the most urgent problems of pharmacology and the related disciplines. More than a thousand scientists have participated in ten National Schools for Young Pharmacologists of Ukraine. The comfortable atmosphere for communication contributes to the significant exchange of information, experience, and new ideas while encouraging continuity between the generations. The Association also supports annual competitions among its young scientists to identify the best scientific publications. Attended by young researchers, graduates and students, the competition often results in the first installment of their careers in scholarly publication.

APU is co-issuer of the scientific periodical, *Pharmacology and Drug Toxicology*, (http://pharmpodux-j.org.ua/en/node/221) which publishes reviews and original scientific articles on topics related to the pharmacodynamics and toxicodynamics of medicine; identification and development of potential new medicines; mechanisms of action; new pharmacological and toxicological properties; experimental substantiation of schemes and methods of pharmacotherapy for common diseases; drug interactions; and pharmacoconomics as well as issues relating to pharmaceuticals, such as side effects; rational prescribing within the present pharmaceutical market, etc.

During its first 15 years, APU has delivered 16 conferences and seminars aimed at the coordination of scientific research and advanced training for specialists, and three congresses in Dnepropetrovsk, Odessa and Kyiv. The APU encourages participation of its members in leading scientific forums, either in Ukraine or abroad, on issues of pharmacology, toxicology, and medical expertise networks.

Recognizing the urgency for adopting harmonization with international standards for pre-clinical and clinical trials for medicines in Ukraine, and understanding the consequences of its absence, the APU embraces methodical staff training to implement the principles of Good Laboratory Practices (GLP), Good Clinical Practices (GCP), a pharmacological supervision system, and the initiation of appropriate regulation of these issues. The experience and knowledge of pharmacologists within Ukraine are available to and widely used by pharmaceutical companies for the creation of new drugs. The APU members also monitor the issues of quality, safety and efficacy of medicine in the media.

In conclusion, we would like to acknowledge the efforts of those who contributed to the creation and coordination of scientific and organizational activities of APU, namely: Oleksandr Stefanov, Tetyana Buhtiarova, Ganna Grigoryeva, Valentin Kresiun, Mykola Golovenko, Svitlana Drogovoz, Igor Komisarov, Viktor Lukyanchuk, Vladlena Godovan, Vitaliy Mamchur, Nataliya Maslova, Mykola Mohort, Anatoliy Tsypkun, Ivan Chekman, Leonid Gromov, Viktor Bobyretr, Kateryna Posohova, Georgiy Stepaniuk, Tetyana Zviagintseva, Yaroslava Gudyvok, Igor Sapecin, Raisa Kosuba, Ganna Shayakhmetova, Oleg Yadlovsky, and Ludmila Boytsova. The initial 15 years of advancement for the APU would not have been possible without their vision, determination and perseverance. •

Ganna Shayakhmetova
APU Secretary
The Early Years: Pre-2006
It is the year 2002, we are in San Francisco, USA and South Africa is excited about the idea of hosting an IUPHAR World Congress. Prof. Paul Vanhoutte is elected as President of IUPHAR during the 14th World Congress of Pharmacology and our vision gains momentum during our discussions in San Francisco. The next three years involved the implementation of a strategic plan with two pivotal objectives:

- Engaging with Africa, which led to the founding of an initiative, now well-known as “Pharmacology for Africa” (Phar/A) and
- Preparing a bid to host an historic first for Africa: the IUPHAR 17th World Congress in South Africa in 2014.

It became evident from numerous brainstorming sessions and teleconferences with pharmacologists in Africa that there is an ongoing need to build, structure, mobilize and foster pharmacology on the African continent. These deliberations illustrated the strategies necessary to build capacity, networks and identify expertise, as well as to promote pharmacology and facilitate the development of society structures in various countries and regions. A website and database were developed for pharmacologists on the continent to register themselves in order to help coordinate pharmacology efforts. This important step helped increase awareness and enthusiasm for a World Congress bid.

Subsequent to the successful IUPHAR review of the preliminary 2005 proposal for the 2014 World Congress of Pharmacology submitted by the South African Society, we were invited to present our bid to the full IUPHAR Council during the 2006 World Congress of Pharmacology in Beijing, China. “Pharmacology for Africa” was featured as key element in the bid documentation as an activity by the South African Society for the benefit of Africa. Recognition that pharmacology and its development on the African continent is essential helped to advance the process of founding Phar/A during the 2006 World Congress.

Africa in Beijing: 2006 Phar/A Founding
On July 3rd, 2006 African pharmacologists and the IUPHAR executive officers met at the South African Embassy in Beijing, which was the historic founding and inauguration meeting of Phar/A. This milestone development helped provide the thrust needed to unite, promote, network, organize, mobilize and build capacity for pharmacology within Africa. The South African successful bid to host the 17th World Congress of Basic and Clinical Pharmacology in Cape Town during 2014 offered Africa an opportunity to join hands for achieving yet another important shared goal, reiterating the one of the objectives for Phar/A’s existence.

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Africa joining hands: Highlights from the First Decade

Numerous activities were initiated immediately after returning home from the excitement of the events and successes in China. With South Africa, Egypt, and the West African Society of Pharmacology (WASP), a regional society in sub-Saharan Africa, being the only pharmacology societies with a membership in IUPHAR, it was vital to engage the rest of the continent. The growing database for pharmacologists was already a clear signal of the enthusiasm amongst African pharmacologists. Key PharA activities during the past decade demonstrate how pharmacologists have worked together to advance the discipline of pharmacology on the African continent:

• Building scientific capacity by enhancing the development of young scientists in Kenya, Egypt, Ghana (WHO medicine safety), Nigeria, Rwanda, and South Africa;
• Helping new societies form in Kenya and Uganda with East Africa progressing towards a formal organization;
• International networking and exhibition in Copenhagen, Denmark, Boston, USA, Shanghai, China, continental Africa, and Quebec City, Canada to help create awareness;
• Interacting with the International Council for Science (ICSU) and its regional office in Africa, the World Health Organization, and the IUPHAR adhering societies within Africa as well as beyond, such as the Federation of European Pharmacological Societies;
• Supporting and participating in the All Africa Congresses during 2012 in Accra, Ghana and during 2016 in Johannesburg, South Africa;
• Partnering with the 2014 World Congress of Basic and Clinical Pharmacology in Cape Town to raise travel support for African delegates and to facilitate exhibitions, symposia, and workshops for next generation of African scientists resulted in the highest number of delegates from 18 African countries at any of the IUPHAR World Congresses with 397 (27% of the total) delegates in Cape Town;
• Organizing symposia and satellites at continental and international congresses in Ghana, South Africa, and Denmark;
• Coordinating six IUPHAR Integrated Organ Systems Pharmacology as well as other capacity-building workshops in Kenya, Egypt, South Africa, and Nigeria benefitting over 200 young scientists;
• Securing funding support via ICSU, IUPHAR, South African Funding Agencies (National Research Foundation, Medical Research Council, Department of Science and Technology), the pharma industry, and the other African IUPHAR societies;
• Growing leadership through the formation of the PharA Prestigious Lectures during 2014 and 2016.
Summary and Future
In spite of being described as an exciting but fragile initiative in the early years, PharA has made tremendous strides and significant contributions toward achieving the goals and objectives of IUPHAR and the South African Society of Basic and Clinical Pharmacology. Despite the difficult economic climate, PharA has drawn continental and international recognition for supporting the aspirations of young and established pharmacologists on the African continent through effective and sustainable initiatives. To strengthen pharmacology within African health care systems in the coming decade, PharA will help countries form pharmacology-related societies, encourage scholarship programs for research exchanges, support centers of excellence, as well as seek strategies to increase continental and international contributions in research and training. PharA’s participation in local, All Africa, and IUPHAR congresses is a vital component of its strategic plan for the future.

Acknowledgements
PharA is grateful for the participation of numerous individuals and organizations, both globally and from Africa, but in particular the South African, Egyptian, West African, Kenyan, and Ugandan Societies, IUPHAR, and the funders who made it possible with their overwhelming support and contributions during this remarkable 10 year journey. We express our sincere appreciation to Prof. Christiaan Brink, PharA co-founder, for his outstanding insight and continuous support. Pharmacologists from Africa, you have been the pillars of PharA over the past decade and we look forward to further improving pharmacology in Africa with you during the next decade.

Douglas Oliver
Chair and Co-Founder, PharA
CIOMS is pleased to announce the appointment of Dr. Lembit Rägo as its new Secretary-General

Lembit Rägo, MD, PhD joined the Council for International Organizations of Medical Sciences (CIOMS) as the Secretary-General effective April, 2016. He was Professor of Clinical Pharmacology at Tartu University and founder and first Director General of the Estonian Drug Regulatory Authority, State Agency of Medicines. He has two PhD degrees in medicine (one from Tartu University, Estonia, and another from Kuopio University, Finland).

In December 1999, he joined World Health Organization (WHO) Headquarters in Geneva, as Coordinator of Quality Assurance and Safety: Medicines team which included activities related to International Nonproprietary Names, Quality Assurance, Pharmacovigilance, Regulatory Support, Fighting Falsified Medicines and Prequalification of Medicines. During 2000 - 2001, Dr Rägo laid the foundations for the WHO Prequalification of Medicines Programme and has continued to contribute to its development. Since 2002, he has been the main organizer of WHO biennial International Conference of Drug Regulatory Authorities, bringing together regulators from around 100 countries all over the world.

From September, 2013 Dr. Rägo served as the Head of WHO’s newly formed unit, Regulation of Medicines and Other Health Technologies, consisting of four teams covering technical norms and standards, safety and vigilance, prequalification (assessment of products quality, safety and efficacy) and strengthening regulatory systems for medicines, vaccines and diagnostics. This unit of more than 125 staff is a key unit determining WHO’s policy on regulatory systems strengthening which includes a very wide range of activities from policies to actual scientific assessment of products. He also worked on written and physical standards through WHO Expert Committee on Specifications of Pharmaceutical Preparations and WHO Expert Committee on Biological Standardization. Additionally, the unit includes WHO assessment tool for national regulatory systems and is one of the biggest training providers on various regulatory issues for Low and Middle Income Countries. Under his leadership the unit established confidentiality arrangements with major regulators such as US FDA and EU European Medicines Agency (EMA).

Since 2000, he has been a WHO observer to the International Council on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH) Steering Committee, ICH Global Cooperation Group, International Pharmaceutical Regulators Forum and International Coalition of Medicines Regulatory Authorities. He is also the participant of Heads of Agencies Summits – an informal gathering of leading Global regulators such as EU EMA, US FDA, Japanese PMDA, Health Canada, Chinese CFDA and Brazilian ANVISA. He currently serves as a member of the Uppsala Monitoring Centre Board and is responsible for publishing WHO Drug Information quarterly journal.

Additionally, he served as a designated technical officer for several NGO’s in official relations with WHO, including CIOMS since 2000. He is well known to many senior regulators in all parts of the world, is a frequent speaker in different international fora and has numerous publications including on several aspects of regulatory affairs.

Johannes J.M. van Delden
President, CIOMS
Upcoming Events

**July**

**International Narcotics Research Conference** jointly organized by the British Pharmacological Society  
July 10 - 14, 2016 in Bath, UK  
[https://www.bps.ac.uk/news-events/future-scientific-meetings/2016/international-narcotics-research-conference-(inrc)](https://www.bps.ac.uk/news-events/future-scientific-meetings/2016/international-narcotics-research-conference-(inrc))

**Serotonin in Seattle** held by the International Society for Serotonin Research  
July 24 - 27, 2016 in Seattle, Washington, USA  
[http://www.serotoninclub.org](http://www.serotoninclub.org)

**September**

**22nd Scientific Symposium of the Austrian Pharmacological Society, Joint Meeting with the Hungarian Society for Experimental and Clinical Pharmacology**  
September 8 - 10, 2016 in Vienna, Austria  

**8th Croatian Congress of Pharmacology**  
September 15 - 18, 2016 in Split, Croatia  
[http://pharma.mef.hr](http://pharma.mef.hr)

**29th Congress of the European College of Neuropsychopharmacology**  
September 17 - 20, 2016 in Vienna, Austria  

**2016 Joint Meeting of the Safety Pharmacology Society (SPS), the Canadian Society of Pharmacology and Therapeutics (CSPT), and the Japanese Safety Pharmacology Society (JSPS)**  
September 18 - 21, 2016 in Vancouver, Canada  
[http://www.safetypharmacology.org/am2016](http://www.safetypharmacology.org/am2016)

**October**

**XIV International Congress of Toxicology**  
October 2 - 6, 2016 in Merida, Mexico  

**48th Congress of the Brazilian Society of Pharmacology and Experimental Therapeutics & 21st Latin American Congress of Pharmacology**  
October 4 - 7, 2016 in Foz do Iguaçu, Brazil  

**All Africa Congress on Pharmacology and Pharmacy**  
October 5 - 8, 2016 in Gauteng, South Africa  

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To include your events here, please e-mail the details to iuphar@kumc.edu.
Dear Colleagues,

On behalf of the Organising Committee, it is a great pleasure for me to invite you to Istanbul, Turkey for the 7th European Congress of Pharmacology in 26-30 June 2016, which is hosted by the Turkish Pharmacological Society. The congress will take place at the Military Museum and Cultural Centre, located in the heart of the city. This modern congress centre with easy transportation offers convenient facilities.

We have published the preliminary program with outstanding speakers from around the World on the official congress website www.ephar2016.org. Every main session will last for 150 minutes, giving sufficient time for invited speakers and discussion. In addition to this, for every panel there will be two elevated talks, which will be selected by the chair of the relevant session from abstracts freely submitted. Thus, every one of you will have a chance to be in the official program of main sessions.

Istanbul is the biggest city in Turkey, located in the north-western part of the country, with a pleasant climate in June. Istanbul is a real must see destination with many unique features, easily accessible by hundreds of direct flights from many countries. It is the only city in the world to connect two continents - Europe and Asia. Istanbul, which has been a capital for centuries, embraces many historical and cultural beauties of Turkey including ancient and modern attractions.

I welcome you to Istanbul for a great meeting to exchange knowledge between basic and clinical fields of pharmacology throughout the World and to share good times.

EPHAR 2016 Istanbul should not to be missed! Will you join us?

Please write to the official congress e-mail ephar2016@figur.net if you have any comments or questions.

Öner Süzer,
Congress Chair EPHAR 2016
Poštovane kolegice i kolege,

zadovoljstvo mi je pozvati vas u ime Organizacijskog odbora na 8. hrvatski kongres farmakologije s međunarodnim sudjelovanjem koji će se održati u Splitu od 15. do 18. rujna 2016. godine.

Kongres će biti otvoren za predstavljanje širokog spektra tema povezanih s farmakologijom koje će biti zanimljive znanstvenicima i stručnjacima iz različitih polja biomedicine i zdravstva.

Za ostvarenje tog cilja pozvani su na aktivno sudjelovanje u radu Kongresa temeljni i klinički farmakolozi, Agencija za lijekove i medicinske proizvode Republike Hrvatske, farmaceutske tvrtke, farmaceuti te ostali profesionalci kojima je farmakologija blisko područje znanosti.

Posebna pozornost bit će posvećena stvaranju poticajnog ozračja za mlade znanstvenike da u većem broju predstave svoj rad, međusobno se upoznaju i razmjenjuju ideje.

Program Kongresa odvijat će se kroz plenarna predavanja uglednih znanstvenika iz Hrvatske i inozemstva, simpozije, poster sekcije, radionice i promotivne izložbe. Tu pripada i poseban satelitski simpozij koji će se održati u Sinju, povijesnom i živopisnom središtu u Dalmatinskoj zagori.

Strukovne komore će sudionike Kongresa iz Hrvatske nagraditi odgovarajućim bodovima. Sažeci svih prezentacija bit će objavljeni u Periodicum Biologorum, službenom časopisu Hrvatskog društva farmakologa.

Uz znanstveni i radni dio Kongresa, planiran je bogat društveni i kulturni program, vjerujemo da će ugodnom doživljaju Kongresa u Velikom gradu Splitu.

Radujemo se susretu u Splitu!

Mladen Boban
Prešednik Organizacijskog odbora

Dear colleagues,

On behalf of the Organizing Committee I am pleased to invite you to the 8th Croatian Congress of Pharmacology which will be held in the city of Split, from 15th to 18th of September 2016.

The Congress is open for presentations of broad spectrum of topics related to pharmacology that will be appealing to the scientist and professionals from various fields of biomedicine.

To achieve that goal we have invited both basic and clinical pharmacologists, the Agency for Medicinal Products and Medical Devices of Croatia as well as pharmaceutical companies and pharmacists, to take an active part in the Congress.

Particular care is taken to create a positive and encouraging environment for young researchers so they can present their work, get to know each other and exchange ideas.

The Congress program includes plenary lectures presented by prominent scientist from Croatia and abroad, symposia, poster sessions, educational workshops and promotional exhibitions. It also includes a special satellite symposium which will be held in historic and picturesque town of Sinj in the Dalmatian hinterland.

The respective professional chambers will accredit attendance at the Congress for the participants from Croatia.

Abstracts of all presentations will be published in Periodicum Biologorum, the official journal of the Croatian Pharmacological Society.

Besides scientific and professional part of the program, we plan a fair deal of social and cultural activities, hoping that all of you will find city of Split, with its unique Mediterranean spirit and historical heritage, an enjoyable surrounding for the Congress.

We are looking forward to seeing you in Split!

Mladen Boban
President of the Organizing Committee

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**ORGANIZACIJSKI ODBOR**

**CONGRESS ORGANIZERS**

**Znanstveni odbor**

**Scientific Committee**

**Mjesni organizacijski odbor**

**Local organizing committee**

**Mrežne stranice kongresa**

**Congress website**

**Opće informacije**

**General information**

**Daljnje obavještaji**

**Further information**

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**http://pharma.mef.hr/
REGISTER TODAY!

Safety Pharmacology Society
Canadian Society of Pharmacology and Therapeutics
Japanese Safety Pharmacology Society

2018 Joint Meeting
Vancouver Convention Center - Vancouver, BC - Canada
September 18-21

Meeting Topics Include:

- Safety Pharmacology Across the Globe: Vision of Past, Present, and Future
- Translational Cardiovascular Safety Pharmacology
- Clinical Relevance of Receptor Pharmacology
- Advances in Technologies: In Vitro and In Silico Models
- Practical Pharmacology
- Using Big Data and Little Data to Understand Variable Drug Action
- Translational CNS and Respiratory Safety Pharmacology
- State-of-the-Art Methods in Pharmacology
- Pediatric and Fetal Clinical Pharmacology
- Translational Biomarker Research: Bridging the Gap
- Global Regulatory Climate for Safety Pharmacology

Abstract deadline is June 15, 2016.

For more information and to register, please visit www.safetypharmacology.org.
Diplomate in Safety Pharmacology (DSP) Certification Exam

2016 Certification Exam: September 17, 2016 • Vancouver, Canada

The Safety Pharmacology Society (SPS) has established a process for certification which would evaluate and document competency in the field of safety pharmacology. There is a need from the industry, and regulators worldwide for a certification process to confirm expertise and identify quality standards for professionals involved in the practice of safety pharmacology.

The advantages of establishing a certification for safety pharmacologists is that it stimulates recognition of the discipline in the overall drug development community and with regulators, encourages toxicologists and other professionals who wish to diversify their experience and professional expertise to participate in SPS activities, and stimulates poster presentations and publications in safety pharmacology.

Eligibility

☑ Be a current SPS Member
☐ Register for the Exam, and pay the examination fee ($250)
☑ Achieve a passing grade on the DSP certification examination (see below)
☑ Currently have earned at least a bachelor degree in science
☐ Have at least two years of relevant experience in positions involving safety pharmacology
☐ Have at least one poster on safety pharmacology as first author presented at a recognized major (national or beyond) scientific meeting

The Certification Exam

Certification is achieved by success on the certification examination. The exam is a written exam, conducted in English. Each examination consists of four one and a half hour parts. The exam will contain approximately 300 multiple choice questions covering a variety of areas in safety pharmacology.

Maintenance of Diplomate Status

☑ Maintain valid membership of the SPS
☑ Pay annual Diplomate fees ($75)
☑ Obtain a total of at least 15 “credits” over a 3-year cycle. Diplomates are required to submit their credits every 3 years, please keep all receipts and acceptance/invitation letters for the following items:

• Attendance at the SPS Annual Meeting (5 credits)
• Invited oral presentation on a topic related at recognized academic institution or safety pharmacology recognized scientific meeting (e.g. SOT, ACT, EUROTOX, etc.) (5 credits)
• Attendance at a scientific meeting related to safety pharmacology (e.g. SOT, ACT, EUROTOX, etc.) (3 credits)
• Each first author poster presented at a recognized scientific meeting (2 credits)
• Each non-first author poster presented at a recognized scientific meeting (1 credit)
• Publication in the field of pharmacology (10 credits)
• Continuing education course, including webinars (1 credit)

More information, registration, and sample questions, can be found at www.safetypharmacology.org/education.asp
XIV International Congress of Toxicology
Merida, Mexico October 2-6, 2016
www.ict-mexico2016.org

IUPHAR session featured at ICTXIV

“Influence of Ethnicity, Genetics, and Age on Drug Response and Toxicity”

Speakers

Ann K. Daly, IUPHAR Session Co-Chair, Newcastle University, UK
“Polymorphisms in Xenobiotic Metabolism Genes as Risk Factors for Drug Toxicity”

Guilherme Suarez-Kurtz, IUPHAR Session Co-Chair, Instituto Nacional de Câncer, Brazil
“Impact of Ethnic Variation on Drug Metabolism in Latin American Populations”

J. Steven Leeder, Children’s Mercy Hospitals & Clinics, University of Missouri, USA
“Integrating Genomics and Quantitative Systems Pharmacology: GOLDILOKS and the Dose That is ‘Just Right’ for Kids”

Allan E. Rettie, University of Washington, USA
“Variation in Genes Controlling Warfarin Disposition and Response in American Indian and Alaskan Native People”

Important Deadlines
June 10, 2016
Travel Award & Abstract submissions
June 30, 2016
Early bird Registration Fee
August 31, 2016
Standard Registration Fee

For more information on ICTXIV please visit http://ict-mexico2016.org/
The Congress is the 50th Anniversary of the South African Society for Basic and Clinical Pharmacology, the 6th All Africa Congress of Pharmacology (ACP 2016), the 10th anniversary of Pharmacology for Africa (PharfA), and the 37th annual meeting of the Academy of Pharmaceutical Sciences South Africa.

The All Africa Congress of Pharmacology and Pharmacy (AACPP) will be held at Misty Hills Hotel and Conference Centre in Muldersdrift, Gauteng, South Africa, from 5-8 October 2016.

Organizers
The Congress is hosted jointly by the Department of Pharmaceutical Sciences from the Tshwane University of Technology (on behalf of the Academy for Pharmaceutical Sciences South Africa: APSSA) and the Department of Pharmacology and Therapeutics at the Sefako Makgatho Health Science University, (on behalf of the SASBCP), the Toxicology Society of South Africa (TOXSA) and PharfA.

Academic programme
The Congress will cover Clinical, Basic and Clinical Pharmacology, Pharmaceutics, Pharmaceutical Chemistry, Pharmacy Practice, Herbal/traditional/natural medicines, Pharmacovigilance, Regulatory Affairs and Pharmacy and Pharmacology Education, to Biological and Chemical Toxicology.

Keynote speaker:
Prof Pawaeska, the Head of the Centre for Infection and Communicable Diseases, SA – Ebola.

Invited speakers:
Prof V Butterweck, University of Applied Sciences, Northwestern Switzerland, School of Life Sciences, Institute for Pharma Technology, Switzerland – Polyphenols as biogenic additives and value added products.

Prof M Hamburger, Pharmaceutical Biology, Department of Pharmaceutical Sciences, University of Basel, Switzerland – HPLC based activity profiling for discovery of pharmacologically and toxicologically relevant natural products.

Prof A Woodiwiss, School of Physiology, Faculty of Health Science, Witwatersrand University, SA – Central aortic pressure: the new blood pressure target.

Prof G Ogunbanjo, School of Medicine, Family Medicine, Sefako Makgatho Health Science University (SMU), SA – The management of obesity.

Prof Magazi, School of Medicine, Neurology, SMU, SA – Uncontrolled epilepsy.

We invite pharmacologists and pharmacists from all over the world to come and join us. For more information visit [www.sapharmacol.co.za](http://www.sapharmacol.co.za); [www.allafrica2016.co.za](http://www.allafrica2016.co.za); or [www.iuphar-africa.org](http://www.iuphar-africa.org).
It is a great pleasure to invite you to Foz do Iguaçu, Brazil for the 48th Brazilian Congress of Pharmacology and Experimental Therapeutics and the 21st Latin American Congress of Pharmacology in 04-07 October 2016, Rafain Palace Hotel Convention Centre. The Congress will be hosted by the Brazilian Society of Pharmacology and Experimental Therapeutics (SBFTE).

The theme of the congress is Pharmacology in Latin America: Drug discovery for the future. The members of the Brazilian and Latin American Association of Pharmacology, the Organizing Committee and the Scientific Committee are taking great care to design a programme that offers hot topics in pharmacology. Members of the Young Investigator’s Committee are also helping us to organize meeting activities targeting trainees and young pharmacologists, which definitely will open opportunities to improve their careers, and build long-lasting relationships with fellows and senior scientists for individual growth and career planning. The language of the meeting will be English.

Outstanding scientists have been confirmed as keynote speakers, including Salvador Moncada, (University of Manchester, UK), Arthur Christopoulos (Monash University, Australia), and Alberto Mantovani (Research Humanitas, Italy). We will be delighted to welcome attendees, speakers, partners, sponsors and exhibitors to join us for this meeting.

In 2016 we will celebrate the 50th anniversary of our society, and it will be a great pleasure for us to celebrate together in Foz do Iguaçu. Special Congress Events and pre- and post-Congress scientific activities will be announced soon.

The Rafain Palace Hotel has a modern convention center with meeting rooms for ongoing simultaneous scientific sessions, an exhibition hall for poster exhibitor-hosted sessions, and networking places to meet with your colleagues.

The congress website (www.sbfte.org.br/congressos/2016) is active and all the announcements will be available through this webpage. Deadline for on-line registration is September 21st.

Situated at the borders of Brazil, Argentina and Paraguay, Foz do Iguaçu is well known for its natural beauty and proximity to the Iguassu National Park where the famous Iguassu Falls, one of the New Seven Natural Wonders of the World is located. Iguassu Falls is also home of the Itaipu Dam, one of the world’s largest hydroelectric power stations. The Bird Park, featuring a large collection of wild birds, and the “Bosque Guaraní”, the city’s zoo, are places that should not be missed during your visit to Foz do Iguaçu.

We hope to see you all at our Congress in Foz do Iguaçu!

Congress Organizers
The Indian Pharmacological Society (IPS: www.indianpharmacology.org) is a 49 year old affiliate body of INSA-ICSU. It won approval for IUPHAR Full Member Status at the Fifth IUPHAR Congress held in San Francisco in July, 1972 and was later endorsed at the IUPHAR Council Meeting held in Helsinki. IPS actively participated in WCP2014 held at Cape Town, South Africa, with a large delegation of over 20 members.

IPS has marched ahead and grown in leaps and bounds with over 4,500 Life Members from academic/research institutions and industries in the public and private sectors. The Indian Journal of Pharmacology published by IPS (www.ijp-online.com) is indexed by PubMed. IPS regularly conducts annual, regional, and zonal conferences and workshops all over the country. The last two annual meetings - the 47th & 48th - were conducted in Guwahati and Rajkot as a part of outreach activity. The 49th Annual Conference of the Indian Pharmacological Society and International Conference (IPSCON-2016) will be held at the Department of Pharmacology, Postgraduate Institute of Medical Education & Research (PGIMER), Chandigarh, India on 20th – 23rd October, 2016 (www.ipsccon2016.in). PGIMER is where the British Pharmacological Society had planted the seeds for developing clinical pharmacology in India. This year's event will be innovative in many ways and will be the launching platform for the 50th year celebrations for IPS. The Executive Committee of IPS and Local Organizing Committee invite you for active participation in large numbers.

Individual genomes will get sequenced every year to check for disease and abnormalities and customized treatment will be delivered and "shaping an individual biology will be a part of life". This is the future of pharma and medicine, which all of us are looking forward to.

...the late Dr. A.P.J. Abdul Kalam, President of India 2002 - 2007

Dr. B. Dinesh Kumar, President, IPS (Email: nindineshpct@gmail.com)
14th Annual Conference of the Chinese Pharmacological Society & 20th Anniversary celebration symposium for the CNPHARS-SERVIER Young Investigator Awards in Pharmacology

http://www.cnphars.org/the14meeting

Dear Colleagues,

The 14th Annual Conference of the Chinese Pharmacological Society (CNPHARS) will be held in the Beijing International Convention Center, Beijing, China on October 22-25, 2016. The program will include the 20th anniversary celebration symposium for the CNPHARS-SERVIER Young Investigator Awards in Pharmacology and the 11th CNPHARS General Assembly.

The conference will consist of plenary and invited lectures, symposia, oral presentations, poster presentations, and discussion sessions. The themes include basic and clinical pharmacological research as well as technology and new drug discovery. The conference will offer an outstanding opportunity for all delegates and guests to showcase their latest results, new ideas, new methods and technologies in pharmacology.

On behalf of the organizing committee, we sincerely encourage you to attend the conference. We believe this conference will be a great contribution towards fostering international communication and collaborations to boost progress in the field of pharmacology and new drug research.

Please contact us at cnphars@163.com for any comments or questions. We look forward to welcoming you in Beijing!

Important Dates

- **Early-bird Registration**: Aug 10, 2016
- **Abstract Submission**: Aug 10, 2016
Save the date

PHARMACOLOGICAL ASPECTS OF MICROVASCULAR CELL-CELL SIGNALLING AND CVS DISEASE
21 – 22 September 2016 | Magdalen College, Oxford

Upcoming British Pharmacological Society meetings and workshops

- International Narcotics Research Conference (INRC) 2016
  10 – 14 July 2016 | Bath

- New Insights in Inflammation
  27 July 2016 | London

- Drug Discovery Workshop
  6 – 7 September 2016 | Edinburgh

- General and Advanced Receptor Theory Workshop
  12 – 13 September 2016 | Liverpool

- Pharmacological aspects of microvascular cell-cell signalling and CVS disease
  21 – 22 September 2016 | Oxford

- Pharmacokinetics and Pharmacodynamics Workshop
  25 – 26 October 2016 | Birmingham

- British Pharmacological Society's President's Lecture
  17 November 2016 | London

- Pharmacology 2016
  13 – 15 December 2016 | London

To register your interest and for further information about any of these scientific meetings and workshops, please contact meetings@bps.ac.uk or visit www.bps.ac.uk/news-events