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FROM WCP2014 IN CAPE TOWN TO WCP2018 IN KYOTO VIA XI'AN AND SINGAPORE 2015 **NEW DIRECTIONS FOR PHARMACOLOGY**

The great scientific success of the Cape Town World Congress of Basic and Clinical Pharmacology (WCP2014) gave a springboard to the organisation of WCP2018 being held in Kyoto July 1 – 6, 2018 and WCP2022 in Glasgow during July, 2022. We are continuing to help pharmacology in the developing world as much as we can, and we invite pharmacologists everywhere to help us in this mission.

In order to meet the challenges faced by pharmacology worldwide, the IUPHAR executive committee met in Xi'an, as guests of the Chinese Pharmacological Society – which organised a very successful meeting, the full details of which appear in the next article of this newsletter. While in Xi'an we firmly endorsed the fact that natural products will be a major priority for IUPHAR in the four years following the WCP2014 in South Africa to the WCP2018 in Kyoto. We believe that pharmacology is in the middle of a revolution concerning the molecular targets for drug, and our free database, supported by the British Pharmacological Society (BPS) and IUPHAR, www.GuideToPharmacology.org has started to take on natural products and their molecular targets, with the aim of facilitating the definition of the action of natural products at a molecular level.



Members of the IUPHAR 2014-2018 executive committee recently met in Xi'an, China.

Continued on page 2...

FROM WCP2014 TO WCP2018 NEW DIRECTIONS FOR PHARMACOLOGY



Drs. Yongxiang Zhang and Fred Wong have organized the IUPHAR World Conference on the Pharmacology of Natural and Traditional Medicine 2015 (WCPNT2015 www.PharmConf.org) on behalf of the IUPHAR Section on Pharmacology of Natural Products. WCPNT2015 is potentially a crucially important event for this part of pharmacology. The outstanding program, scheduled July 22 – 24, 2015 in Singapore, will offer the opportunity for chemists, and clinical and preclinical pharmacologists to interact, and to progress new medicines by bridging the gap between natural products and synthetic chemistry-based drugs. Furthermore, the organizers have chosen a great location so the conference should be truly memorable. We will have a full meeting report on this conference in the next newsletter.

IUPHAR has published its hundredth article via the Nomenclature Committee (NC-IUPHAR), which now has an *h*-index of 76, thus being clearly a reference for the molecular targets of drugs (www.GuideToPharmacology.org/nciupharPublications.jsp). The www.GuideToPharmacology.org is used by over 140 countries and is being

promoted by the British, American, Japanese, Indian, Australian and Chinese pharmacology societies. We wish to expand active participation to all IUPHAR member societies so please contact us about this benefit for your membership.

IUPHAR/BPS
Guide to PHARMACOLOGY

Home About Targets Ligands Resources Advanced search

An expert-driven guide to pharmacological targets and the substances that act on them.

Targets

- G protein-coupled receptors
- Ion channels
- Nuclear hormone receptors
- Kinases
- Catalytic receptors
- Transporters
- Enzymes
- Other protein targets

Search for targets

Ligands

- Approved drugs
- Synthetic organics
- Metabolites
- Natural products
- Endogenous peptides
- Other peptides
- Inorganics
- Antibodies
- Labelled ligands

Search for ligands

What's new to Guide to PHARMACOLOGY

New version (2015.1) released 13th Mar 2016!

Target updates:

- GPCR updates include:
 - Calcitriol, Diprenniol, P2Y1 and P2Y12 and Trace amine A₂ receptors
 - Links to Diltiazem added for Tazeti 2 Receptors
 - Data on experimentally generated mutations from GPCRS
- Kinase and epigenetic targets:
 - Added affinity data for many kinase inhibitors including those in clinical trials
 - Several new epigenetic targets added
 - Added all the unlinked compounds from SGCs epigenetic compound repository
- Disease information updated:
 - Target pathophysiology updated with standardised disease nomenclature
 - Disease synonyms and new Disease Ontology links

Ligand updates:

- More than 420 new ligands added including antibodies and drugs in pharma pipelines

FULL LIST...

Label News

From our blog

Creating PDB links between proteins and 3D chemical by pubchempharmacology - May 21, 2015

We know users find our curated PDB links of high value, particularly where the ligand co-crystallised with the target protein ...

Database Update March 2015

The first release of 2015 includes major updates in several areas. More than 420 new ligands were added. Read more ...

Latest news from NC-IUPHAR

Hot topic: mapping lipenable lipid-binding proteins

Jul 03, 2015

Two papers present a new approach to mapping lipenable lipid-binding proteins complemented by a knowledgebase for lipid ...

Hot topic: structures of the GPCRs CLR and LPA1

Jun 24, 2015

Two papers describe the structural basis of calcitonin receptor-like receptor (CLR) selectivity by HARM¹ proteins and antagonist ...

Hot topics in pharmacology

Recent receptor-ligand pairs

NC-IUPHAR newsletter

Get email updates

Get email updates

Email address:

Email format: HTML Text

The Concise Guide to PHARMACOLOGY 2013/14

BJP

The Concise Guide to PHARMACOLOGY 2013/14

A publication essential created from the database summary pages.

Access the table of contents

IUPHAR Database

IUPHAR DATABASE

International Union of Basic and Clinical Pharmacology

The IUPHAR/BPS Guide to PHARMACOLOGY builds upon and replaces the original IUPHAR Committee on Receptor Nomenclature and Drug Classification Database (IUPHAR-CD)

FROM WCP2014 TO WCP2018

NEW DIRECTIONS FOR PHARMACOLOGY

Michael Spedding resigned as chair of NC-IUPHAR, having served as secretary or chair for a quarter of a century to become the secretary general of IUPHAR. Dr. Steve Alexander took on the role of chair of NC-IUPHAR, accompanied by a new NC-IUPHAR executive committee.

IUPHAR/ASPET

Pharmacology Education Project

A solid start has also been made with a new educational initiative, called the IUPHAR/American Society for Pharmacology and Experimental Therapeutics (ASPET) Pharmacology Education Project, chaired by Drs. John Szarek and Simon Maxwell. The website will be made public when it is sufficiently populated.

IUPHAR itself has renewed its website www.IUPHAR.org (at right) earlier this month and we encourage your feedback!

Michael Spedding
Secretary General

IUPHAR International Union of Basic and Clinical Pharmacology
Improved health through pharmacology education and research

About Clinical Division Meetings NC-IUPHAR PharmacoCareers Sections-Subcoms Societies Members

IUPHAR is a voluntary, non-profit association of pharmacology societies representing the interests of pharmacologists world-wide.

Resources

- [IUPHAR/BPS Guide To PHARMACOLOGY](#)
- [Hot Topics and News](#)
- [Nomenclature Guide](#)
- [PharmacoCareers](#)
- [Pharmacology Education](#)
- [Publications](#)

Collaboration

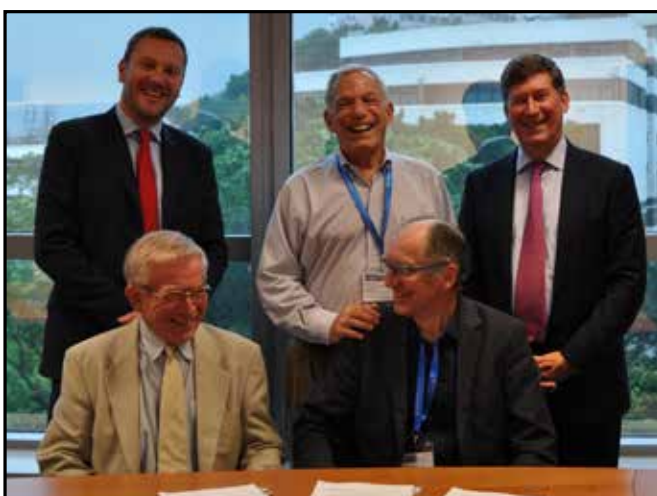
- [Clinical Division](#)
- [IUPHAR Calendar](#)
- [Meetings and Conferences](#)
- [Member Societies](#)
- [Nomenclature Committee \(NC-IUPHAR\)](#)
- [Special Interest Sections and Subcommittees](#)

Search...

2018
18th World Congress of Basic and Clinical Pharmacology
Kyoto International Conference Center in Kyoto, Japan
July 1-6, 2018
www.WCP2018.org

2022
19th World Congress of Basic and Clinical Pharmacology
Glasgow, United Kingdom
July 16-22, 2022
www.WCP2022.org

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In May, 2015 the officers of the BPS and IUPHAR initiated the signatures on the WCP2022 contracts in Hong Kong before proceeding to Xi'an, where the documents were finalized by Dr. Petra Thürmann, the IUPHAR Treasurer.

Standing L → R: BPS Chief Executive, Jonathan Brüün
IUPHAR President, S.J. Enna
BPS President Elect and WCP2022 President, David J. Webb
Seated L → R: BPS President, Humphrey Rang
IUPHAR Secretary General, Michael Spedding

The Chinese Pharmacological Society and IUPHAR Symposium on the Challenges in Drug Discovery and Development in Xi'an, China, May 23 - 25, 2015

Over the years, the IUPHAR Executive Committee has partnered with various member societies by holding its annual meetings in conjunction with a local or regional conference of one or more IUPHAR member societies. This arrangement has helped the members of the IUPHAR Executive Committee gain a better understanding of regional challenges and opportunities so that IUPHAR can better assist its membership.

The Chinese Pharmacological Society (CNPHARS) hosted the IUPHAR Executive Committee in Xi'an, in the Shaanxi Province, in order to offer Chinese pharmacologists a symposium focusing on the challenges associated with the discovery and development of new drugs. The organizers wish to thank the members of the Shaanxi Pharmacological Society for their efforts on behalf of the symposium. The proceedings were attended by over two hundred participants and featured eight experts in drug discovery and development. Although various aspects of bringing new compounds to market were presented, the emphasis was on how modern pharmacological research standards may be applied to Chinese Traditional Medicines.

The CNPHARS President, Dr. Guanhua Du (standing at left in the below photograph), opened the symposium by welcoming the audience and introduced the speakers and guests of honor. He then presented the IUPHAR President, Dr. S.J. Enna, (at the podium in the below photograph) who provided the participants with a brief overview of IUPHAR. Dr. Enna chaired the morning session on preclinical challenges in developing drugs.



Symposium on the Challenges in Drug Discovery and Development (continued)

At the conclusion of the symposium, Dr. Michael Spedding (at the podium on left) thanked the afternoon session chairs, CNPHARS Secretary-General, Dr. Yongxiang Zhang (seated at far right) and Honorary President, Dr. Zhibin Lin (second from right)

The first speaker was Dr. Michael Spedding. Prior to becoming the current IUPHAR Secretary-General, Dr. Spedding led the IUPHAR Nomenclature



Committee for 12 years after being its secretary for a decade. Over the past 35 years, Dr. Spedding has specialized in identifying, testing and bringing new drugs into clinical trials for Merrell Dow Research Institute, Syntex, Recherche Servier and now Spedding Research Solutions. He offered the audience insights on how pharmacology and knowledgebases may address healthcare after three decades of mixed success in the drug discovery industry. The IUPHAR/BPS GuideToPharmacology is a unique knowledgebase, freely available to all, covering all the sites of action for drugs, including natural products. It is validated by 90 expert subcommittees, comprising 700 scientists assembled by IUPHAR, and represents a unique scientific achievement, which has been recognized by two Wellcome Trust grants.

Dr. James Barrett followed with a presentation on sigma pharmacology and its use in developing novel therapeutic applications in the central nervous system. His reflections on how drugs may succeed or fail showed how essential good pharmacological translation is. His unique background encompasses both industry, with senior positions at Wyeth, Adolor and Memory Pharmaceuticals, as well as academic appointments at the University of Maryland, the Uniformed Services University of the Health Sciences and, currently, Drexel University.

The next presenter, Dr. Guanhua Du, President of the Chinese Pharmacological Society, spoke from the experience of pursuing therapies for cerebrovascular and neurodegenerative diseases for over three decades. Hailing from the Institute of Materia Medica at the Chinese Academy of Medical Sciences and Peking Union Medical College, Dr. Du initiated the national high-throughput drug screening in China and has shepherded three new compounds through preclinical testing, including mixtures such as Denshen, the tanshinone compounds and Salvianolic Acid A. He delineated the steps necessary to apply 21st century methodologies to the active constituents from those Traditional Chinese Medicines that have proven effective after centuries of years of use.

Dr. Yinxiang Wang expanded this idea by talking about the interethnic differences underscored by pharmacogenomics and the importance of government regulations to ensure a sufficient number of patients are enrolled in multiple randomization control trials to deliver reliable results. Dr. Wang offered the participants a perspective based on his success in obtaining first market approval in China for two drugs

Continued on page 6...

Symposium on the Challenges in Drug Discovery and Development (continued)

and as a cofounder and CEO/CSO of Betta Pharmaceuticals and the Manager of Amgen-Betta. He showed how Cyp2C19 polymorphism can affect clinical outcomes with clopidogrel, which may be why efficacy in stroke is poor in China. In contrast, diazepam has a much prolonged half life. Thus, Chinese populations require specific studies.

At the conclusion of the presentations, the morning speakers were invited onto the stage to address questions from the audience before breaking for a buffet lunch. The afternoon session on clinical issues and drug research/development was chaired by the CNPHARS Honorary President, Dr. Zhibin Lin and Secretary-General, Dr. Yongxiang Zhang. After greeting the returning participants, they invited Dr. Darrell Abernethy to the podium.

Dr. Darrell Abernethy noted that although there was a rich history of herbal medicines in the USA, nearly all have fallen into disuse as highly characterized active components, which have well defined approaches for their development, have become available. USA drug regulation doesn't currently accommodate combination drug products or dietary supplements. Dr. Abernethy observed the regulations must evolve before complex mixtures of medicinals and their use in association with systems of care may be developed within the USA. He insisted on the needs for expanded ontology-based classification of adverse drug reactions and related mechanisms. However, there are many traditional medicines currently under evaluation, albeit with a very challenging pathway to approval, which will require a totality of evidence approach. Dr. Abernethy has appointments at Johns Hopkins University and the US Food and Drug Administration. In the past, he has been on the faculty at Tufts University, Baylor College, Brown University, and Georgetown University before transferring to the US Pharmacopeia prior to his current positions.

The next speaker, Dr. David J. Webb, reported that in the United Kingdom the public has long regarded herbal products as being safer than medicinal products. Concerns with product quality, poor labeling and interactions with prescriptions led to the adoption of registration requirements which became fully implemented in 2011. These first steps have illuminated the challenges in establishing guidelines for safety/toxicity, drug interactions, consistency, efficacy, etc., for complex herbal products. The difficulties are defining the active constituent and inconsistent herbal-drug interactions; there may also be contamination, with metals or banned substances. However, 35% of people in the UK use herbal preparations, 89% thought they were safe to take, 22% thought not to tell their doctor and 75% thought they should be regulated. He feels that, while licensing mixtures is challenging, herbal products that represent new chemical entities provide real opportunities. Dr. Webb is based at the University of Edinburgh where he studies hypertension among other cardiovascular-related diseases. Among his many responsibilities, Dr. Webb chairs the Scientific Advisory Committee of the UK National Institute for Biological Standards and Control, which is part of the Medicines and Healthcare Products Regulatory Agency, and provides advice jointly with the National Institute for Clinical Excellence regarding UK authorization of medicines including herbals, generics and biosimilars.

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Symposium on the Challenges in Drug Discovery and Development (continued)

Dr. Henry Sun described a recent randomized and well-controlled clinical trial that helped substantiate the perception that Traditional Chinese Medicines produce slower onset but offer sustained effects. The study was designed to also help identify possible mechanisms of action. It is hoped the PK-PD models developed from this work will serve as a guide for future development and improvement of Traditional Chinese Medicines. Dr. Sun is pursuing an innovative strategy to obtain the first FDA registration. Dr. Sun gained his expertise from a unique blend of experience as a regulatory reviewer at the US Food and Drug Administration before joining the Tasley Group Company, Ltd. and being appointed to the faculty at Tianjin University.

The final symposium speaker was Dr. Paul Vanhoutte, who offered a summary and critique of the preceding presentations. He was able to offer the participants his experience from both the academic and industry perspectives. After spending a combined 23 years at the University of Gent, the University of Antwerp, the Mayo Clinic and Baylor College, Dr. Vanhoutte then spent a decade at Recherche Servier before returning to an academic appointment at the University of Hong Kong. He and the clinical speakers offered a panel discussion and answered audience questions as the conclusion to the symposium. IUPHAR can make a major contribution via its experts to the molecular, clinical and translational pharmacology of natural products, bridging the gap between traditional and modern medicine.

The scientific offering was followed by a social dinner giving the symposium registrants the opportunity to converse with their colleagues and explore ideas and concepts with the symposium guests and speakers in casual conversation. All agreed that the interactions were thought-provoking and fun.

The members of the IUPHAR Executive Committee express their gratitude to the CNPHAR officers and the staff in the CNPHARS Administration Office, for the deft and friendly assistance they offered throughout the symposium and meetings. It will be a pleasure to collaborate again in the future. •

Michael Spedding
IUPHAR Secretary General

Lynn LeCount
IUPHAR Administrative Officer



*Dr. Wei Wei (at right) asks a question of the afternoon discussion panel in the below photograph.
L → R: Drs. Paul Vanhoutte, David J. Webb, Darrell Abernethy and Henry Sun*



Golden Helix Symposium

Next Generation Pharmacogenomics

11 - 13 March 2015
in Kuala Lumpur, Malaysia



The meeting was held over two days with 230 participants from 22 countries, including many from the region - an impressive statistic. The proceedings were exceptionally well organized by the University of Malaya under the leadership of Prof. Zahurin Mohamed. Prof. Mohamed acknowledged the funding support received from 31 entities, which included the Malaysian Government, biotechnology companies, the Golden Helix Foundation, IUPHAR, the Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists, and the Asia Pacific Federation of Pharmacologists.



The format of the conference comprised 30 minute plenary lectures plus over 100 posters, mainly from students, with plenty of time for the students to present their work, which was of a very high standard.



The guests and speakers of the Golden Helix Symposium on Next Generation Pharmacogenetics.

Golden Helix Symposium (continued)



The IUPHAR Pharmacogenetics/genomics Section Executive Council was extremely well represented among the speakers with:

Prof. Munir Pirmohamed (UK): *Personalised Medicine: the challenge of developing the evidence base (top photo at left)*

Prof. Ron van Schaik (The Netherlands): *Clinical implementation of pharmacogenomics: what did we learn? (second from top photo at left)*

Dr. Ming Ta Michael Lee (Japan): *Pharmacogenomics and genetic testing in the Taiwanese population (center photo at left)*

Prof. Jae-Gook Shin (South Korea): *Are we ready to practice pharmacogenomics for personalised medicine? (second from bottom photo at left)*

Prof. Andrew Somogyi (Australia): *Translation of opioid pharmacogenomics into pain treatment: commercial reality versus regulatory oversight (bottom photo at left)*



There was a South East Asian Pharmacogenetics Regional Meeting (SEAPHARM) in the late afternoon of the last day to discuss better ways to collaborate on important pharmacogenetics research. The main areas of discussion were Serious Adverse Events including SJS/TEN (a major problem in the region with some antiepileptic drugs) and drug-induced liver injury (DILI).

It was felt that the Southeast Asia region gained a greater appreciation of IUPHAR so the Pharmacogenetics/genomics Section recommends IUPHAR continues to contribute financially to other regional conferences to attract more membership among the region's various pharmacology societies. It will be valuable to promote optimum pharmacotherapy in developing countries through IUPHAR training programs or policy development in this promising area of pharmacology in the era of personalized medicine. ●

Andrew Somogyi
Jae-Gook Shin



International Symposium on Medicines and Patient Safety

The International Symposium on Medicines and Patient Safety was held at the College of Medicine and Health Sciences (CMHS) in Kigali, Rwanda on Wednesday, 5 November 2014. The Symposium was attended by over 170 delegates, with contributions by national and international clinical and policy experts from six countries (Rwanda, South Africa, Morocco, Uganda, UK and USA). The meeting included talks on drugs for both communicable and non-communicable diseases. The three major themes of the Symposium were educating health professionals in safe and effective use of medicines; regulating drugs, including pharmacovigilance and quality of medicines; and reducing harm from high risk medicines and in patients with high risk conditions, with contributions on risks and regulation with regard to traditional medicines.

The one-day Symposium was followed on 6 November 2014 by an international videoconference on Prescribing Skills with IUPHAR Education Section Chair, Prof. Simon Maxwell from the UK, and on Pharmacovigilance with Prof. Rita Benabdalleh from the World Health Organization co-ordinating centre in Rabat, Morocco.

The Symposium was organised by the British Pharmacological Society Fellow and Yale Faculty, Prof. Donald Singer (at right in the below photo), the University of Rwanda Vice-Dean, Dr. Pierre Claver Kayumba, and the Head of Medicine at King Faisal Hospital in Kigali, Dr. Emmanuel Musabeyezu, with support from the World Health Organization, Partners in Health and the Rwanda Social Security Board, which is the national organization for Universal Health Coverage. The Symposium was held in partnership with Pharmacology for Africa, the co-founders of which, Profs. Douglas Oliver (at left in the below photo) and Christiaan Brink (in the center of the below photo) from South Africa, spoke at the meeting.

The Symposium was held as a new underpinning activity within the US Aid and US Centers for Disease Control-supported seven-year Human Resources for Health Program in Rwanda. Expected outcomes of the Symposium include plans to launch the first Rwandan Pharmacology Society, publication of selected reviews and commentaries in the international journal *Health Policy and Technology*, and plans for a Second International Symposium on Medicines and Patient Safety in 2016, with themes to include improving prescribing skills, and rational guidelines for antibiotics. •

Donald Singer
Co-Organizer



2015 Anniversaries

IUPHAR congratulates these member societies on their milestone anniversaries:

American Society for Clinical
Pharmacology and Therapeutics
1900 - 2015

German Society for Experimental and Clinical
Pharmacology and Toxicology
1920 - 2015

Danish Society for Pharmacology and Toxicology
1945 - 2015

Armenian Pharmacological Society
1960 - 2015

Polish Pharmacological Society
1965 - 2015

Swiss Society of Pharmacology and Toxicology
1965 - 2015

Spanish Society of Clinical Pharmacology
1985 - 2015

Federation of European Pharmacology Societies
1990 - 2015

Austrian Pharmacological Society
1995 - 2015

Cuban Society for Pharmacology
1995 - 2015

Safety Pharmacology Society
2000 - 2015



50th Anniversary of the SWISS SOCIETY OF PHARMACOLOGY AND TOXICOLOGY

Adapted from the full length version available for
download from <http://www.swisspharmtox.ch>.

Introduction

In general, pharmacologists and toxicologists investigate the mechanism of action and effects of bioactive compounds on biological systems in a quantitative manner. Pharmacologists aim to exploit the beneficial properties of these interactions by identifying their potential use in therapeutics, while toxicologists characterize the compound-associated



*A laboratory in which pharmacists brewed their poisons in the 18th century.
Courtesy of Dr. Michael Kessler, head of the Pharmacy Museum of the
University of Basel.*

hazards for humans, as well as for the environment. Clinical pharmacologists and toxicologists concentrate on the beneficial and adverse effects of drugs and poisons.

Switzerland is one of the world's leading nations in the production of pharmaceuticals, chemicals and nutritional products, reflecting the presence of such companies as Novartis, Hoffmann-La Roche, Actelion, Clariant, Ciba-Specialty (renamed BASF Schweiz AG), Syngenta and Nestlé. This degree of economic progress and international competitiveness is the result of higher education and accumulated knowledge in the areas of pharmacological research, pharmaceutical development, and safety evaluation and risk assessment. Scientists with profound and wide-ranging expertise are educated in academic institutions that include five medical faculties and nine faculties of science in Swiss universities as well as the Zurich- and Lausanne-based Federal Institutes of Technology, respectively the ETH-Z and the EPF-L.

Development of the SSPT from 1965 to 2015

While the Swiss Society of Pharmacology and Toxicology (SSPT; (www.swisspharmtox.ch)) has undergone many changes during its fifty years of activity, its main focus remains promoting the contributions of pharmacology and toxicology in research as well as in teaching and, occasionally, providing advice on drugs and chemicals to governmental agencies and to pharmaceutical and other industries. In view of the major role played by pharmaceuticals and, therefore, of pharmacology and toxicology, it is astonishing that the Society was only founded in 1965. Peter G. Waser from the University of Zurich put together a preliminary council of the SSPT at an assembly in November, 1964. The first members' meeting was held in Basel in May 1965 with about 30 members and, at that point, the Society took off.

Continued on page 13...

SSPT 50th Anniversary (continued)

Council and Membership Count of the SSPT During Its 50 Year History

Year	President	Secretary	Vice-president		Treasurer	Assessor	Members
1965	P. Waser	G. Peters	A. Cerletti		Bein	H.J. Schatzmann	30
1968	Langemann	Hürlimann	R. Straub		Bein	H.J. Schatzmann	
1971	R. Straub	G. Zbinden	G. Zbinden		M. Täschler	K. Bucher	
1974	G. Zbinden	W. Haefely	H. Reuter		H. Weidmann	M. Bickel	
1977	G. Peters	L. Maître	H. Reuter		H. Weidmann	J-L. Schelling	
1978	G. Peters	L. Maître	U.A. Meyer		D. Löw	M. Schorderet	
	President	Secretary	VP for Clin. Pharmacol.	VP for Toxicology	Treasurer	Assessor	
1980	G. Peters	L. Maître	U.A. Meyer	C. Schlatter	D. Löw	M. Schorderet	
1983	M. Bickel	Menassé	U.A. Meyer	F.E. Würigler	K. Bürki	M. Schorderet	
1986	J-L. Schelling	R. Eigenmann	U.A. Meyer	F.E. Würigler	G. Gmelin	L. Balant	
1989	W. Lichtensteiger	M. Glatt	P. Meier-Abt	F.E. Würigler	G. Gmelin	L. Balant	263
1992	W. Lichtensteiger	P. Donatsch	P. Meier-Abt	F.E. Würigler	G. Gmelin	L. Balant	
1995	U. Ruegg	P. Donatsch	P. Meier-Abt	P. Bentley	H.P. Käsermann	T. Leemann	
1998	U. Ruegg	J-Y. Chatton	S. Krähenbühl	B. Schmid	H.P. Käsermann	E. Felley-Bosco	297
2001	K. Hofbauer	J-Y. Chatton	P. Meier-Abt	B. Schmid	H.P. Käsermann	J. Wood & H.U. Simon	317
2005	H.U. Simon	H.U. Simon & O. Staub	K. Fattinger	F. Pfannkuch	M. Barbu	H. Schmid	
2008	M. Kondo-Oestreicher	O. Staub	M. Kondo-Oestreicher	F. Pfannkuch	M. Wagener	C. Bin Eap	
2010	M. Arand	O. Staub	H. Kupferschmidt	F. Pfannkuch	M. Billeter	C. Bin Eap	
2012	O. Staub	G. Weitz-Schmidt	H. Kupferschmidt	F. Pfannkuch	M. Billeter	H. Kupferschmidt	
2014	H. Kupferschmidt	G. Weitz-Schmidt	S. Samer	T. Weiser	M. Traber	H. Kupferschmidt	550

Marcel Bickel, who wrote a report on the occasion of the 25th anniversary in 1990, offers the historical context that pharmacology used to be merely an appendix of physiology within academic institutions, just as biochemistry used to be an appendix of chemistry. Furthermore, his report described the early history of the society, its growing membership, council composition and contacts with other societies. This period is briefly summarized, based in part on the text written by Prof. Bickel, in the following paragraphs.

The aim of the Society, as defined in the by-laws, was to defend and integrate the interests of pharmacology and toxicology in education and research in Switzerland, and to connect with other societies abroad having similar interests. The annual meetings were held in turn in one or other of the cities having an academic, pharmacological, or toxicological institution. At first, communication depended on talks but later on the predominant medium became posters and this is still the case.

Soon after its foundation, the SSPT became a member of the International Union of Basic and Clinical Pharmacology (IUPHAR). Several SSPT council members have served as IUPHAR officers, namely Prof. Waser (treasurer 1972-78, president 1978-81), Gerhard Zbinden (councilor 1975-78, treasurer 1981-84), Alfred Pletscher (treasurer 1984-87, vice-president 1987-90) and Urs Ruegg (treasurer 2006-2014). As can be seen, IUPHAR likes Swiss treasurers.

Apart from its connection with IUPHAR, the SSPT collaborated with other national societies, particularly with the German, French, British, American and Canadian organizations. The main activity was to hold joint meetings either in Switzerland or in one of the partner countries. A memorable event was the joint Canadian-Swiss Pharmacological Society meeting held in Zermatt in 1999, which brought together many colleagues in pharmacology from the two nations. The SSPT was instrumental in setting up the Austrian Pharmacological Society in 1997-98, whose founding council members came mostly from the University of Graz. The SSPT is also a member of the Federation of European Pharmacological Societies (EPHAR) and collaborates routinely with the International Union of Toxicology (IUTOX) and EUROTOX. In 1969, the SSPT became one of the founding members of the Union of Swiss Societies of Experimental Biology (USSBE, USGEB). In 2013, the USSBE/USGEB was designated LS2, which stands for "Life Sciences Switzerland" (<http://www.naturalsciences.ch/organisations/ls2/home>). Also in 1969, the SSPT became a member of the Swiss Academy of Natural Sciences (now called SCNAT).

In 2005, the council decided to split the SSPT into three societies: The Swiss Society of Experimental Pharmacology (SSEP; <http://www.swisspharmtox.ch/SSEP>), The Swiss Society of Clinical Pharmacology and Toxicology (SSCPT; <http://www.clinpharm.ch>), and the Swiss Society for Toxicology (SST; <http://www.swisstox.ch>). These societies have their own by-laws and councils but are each constituents of the SSPT, whose president rotates bi-annually between the constituent societies. The division into separate societies not only led to an increase in total membership but, more importantly, also gave the newly formed societies more independence



SSPT 50th Anniversary (continued)

and flexibility with regard to national and international contacts. Both the clinical pharmacologists and the toxicologists have been very successful in increasing awareness and interest in their domains by creating educational programs and holding meetings, often in conjunction with Swiss internal medicine meetings or together with other toxicological societies. In 2006, the Swiss Society of Pharmaceutical Medicine (SGPM; <http://www.sgpm.ch>) also joined the SSPT.

The 50th Anniversary was celebrated during the SSPT Spring Meeting held April 23rd, 2015 in Bern. The scientific program showcased historical changes and accomplishments, reviewed the current developments within pharmacology as well as within Swiss academia, and analyzed the possible future paths.

Among the diverse offered lectures, EPHAR sponsored a

presentation on paracetamol poisoning by Nicholas Bateman and Hugo Kupferschmidt offered a presidential lecture about the society. Guest speakers included Matthias Schwab, president of the German Society of Experimental and Clinical Pharmacology and Toxicology; Humphrey Rang, president of the British Pharmacological Society; and Hanns Möhler, Institute of Pharmacology and Toxicology, University Zürich for the keynote lecture on challenges in CNS drug research. A Young Investigator Research session concluded with the Novartis Prizes for best poster and oral presentation. The scientific sessions were followed by the annual SSPT general assembly.

Educational Activities

Within the universities and, especially in the pharmacy schools, continuing education programs were established that are currently ongoing. This was initiated in the early 1990s in Lausanne by Urs Rüegg and later expanded to Geneva and Basel. Whole day courses or 2-hour evening lectures are held at the universities. Attendees are mainly pharmacists and the maximum attendance ever reached was close to 200 for an evening session. At the University of Basel, Karl Hofbauer initiated in 2001 such a program that was very successful. A year later, together with Stephan Krähenbühl, Prof. Hofbauer also initiated biannual seminars in pharmacology for pharmacists and physicians called "Pharmathemen". Since 2007, the latter, Jürgen Drewe and Christoph Meier have organized these.

Successful collaboration with regard to education in the domain of pharmacological safety was initiated by Friedlieb Pfannkuch. Today, this annual course is a well-established part of the Modular Training Program in Toxicology of



The SSPT council members celebrating the 50th anniversary. L → R: Martin Traber, Hugo Kupferschmidt, Gabriele Weitz-Schmidt, Thomas Weiser & Stephan von Gunten

SSPT 50th Anniversary (continued)

the German Society of Experimental and Clinical Pharmacology and Toxicology and provides an overview of the relevant aspects of physiology as well as standard tests designed to investigate the effects of drugs on these systems.

Sponsorships and Prizes

The SSPT provides financial support for young scientists wishing to attend scientific meetings or to undertake short stays in laboratories for technology-transfer, i.e., to familiarize themselves with other techniques. The Bürgi prize is allocated annually to young scientists on a competitive basis for the best publication. The prize is named after Emil Bürgi, who was director of the Pharmacological Institute in Bern from 1906-1942. Uwe Simon heads the nomination committee. In 1996, Urs Rüegg initiated the Novartis award for the best talk or poster by young scientists. The award is given annually to three recipients. This tradition continues with the NIBR (Novartis Institutes of Biomedical Research) prize.

Toxicology

The Swiss Society of Toxicology (SST; www.swisstox.ch) celebrates its 10th anniversary this year. Representatives of the SSPT prepared a report in 2000 on the state of toxicology in Switzerland on behalf of the Academies and the Swiss Science Council. In this report, a detailed analysis of the current state of toxicology and the role of toxicologists in academia and industry was made. The conclusions were that most researchers in this field work in industry, that this field annually requires 2-4 experts, and that academia should provide the framework for training these. It was also proposed that a network should be created, providing the structural basis and the educators. Ways to strengthen academic toxicology were further analyzed during 2000-2004 by the steering committee "SwissTOX" of the Swiss Academy of Medical Sciences, which was composed of members from academia, the Swiss Offices of Health and Environment, and industry. Stemming from these analyses, the center for Xenobiotic and Environmental Risk Research (XERR) was established in Zurich in 1999 as well as the extremely successful Swiss National Science Foundation of the National Research Program 50 (NRP50) with a budget of CHF 15 million from 2002-2007.

In 2002 a member of SST requested a report from the government on how independent teaching and research as well as information concerning toxicology and the training of toxicologists should be ensured in the future. Based on proposals made by the resulting governmental committee, the Swiss Federal Council decided to establish the Swiss Centre for Applied Ecotoxicology (opened in 2008) and the Swiss Centre for Applied Human Toxicology (opened in 2009). During the period between the closure of the Institute of Toxicology in Schwerzenbach in 2001 and the inauguration of the independent Swiss centres for eco- and human toxicology in 2008/2009, the SSPT and the SST, supported by organizations such as XERR, undertook to fill the gap.

The SST organizes annual meetings, with increasing numbers of participants. In addition, about 30 colloquia on toxicology have been organized at Basel University.

Clinical Pharmacology

Created in 1978, the Swiss Society for Clinical Pharmacology and Toxicology (SSCPT; <http://www.clinpharm.ch>) is responsible for the medical discipline of clinical pharmacology and toxicology on behalf of the Swiss Medical Association (Foederatio Medicorum Helveticorum, FMH). It determines the corresponding postgraduate training program and delivers specialization diplomas for both MDs and PhDs. It represents the Swiss clinical pharmacologists and toxicologists in various international organisms, and holds contacts with similar societies in other countries. It is a member society of the European Association of Clinical Pharmacology and Therapeutics (EACPT). SSCPT works closely with the University Hospitals of Geneva and Lausanne to facilitate clinical pharmacology research as well as phase I-IV trials. It also identifies for its members appropriate continuing education opportunities. SSCPT organizes annual one-day courses entitled "Progress in Pharmacology" sponsored by Pfizer (and therefore called "Pfizer Meetings"). These have taken place since about 2004 under the auspices of the SSPT and are organized by Uwe Simon and Leonardo Scapozza.

The future: Challenges and opportunities

Opportunities in teaching

Higher learning institutions have two duties: Transmitting existing knowledge and creating new knowledge. A continuing and important obligation of pharmacologists and toxicologists is to offer high quality transmission of existing knowledge that stimulates students' interest and curiosity. Regarding methods, problem-based learning is already used at most medical faculties in Switzerland. It is certainly a useful way to transmit knowledge, because it demands active participation of the students, but it requires a lot of effort and time from the teaching staff.

An attractive alternative to that could be digital learning, a method that offers topics on-line. It would make sense to do so, as over the past 50 years pharmacology, as well as toxicology, has shifted from mostly "know-what" to "know-why" domains due to insights into mechanisms of drug and toxin action. Therefore, we should promote digital learning.

Enhance the impact of science on the political decision-making

Finally, scientific societies of other countries have their interests supported by experts within parliaments and executive bodies. In Switzerland, there is as yet little contact of this nature and for this reason it would be good if the SSPT, via the academies and USGEB/LS2, could stimulate policy makers' interest in science. This was the case when members of Zurich and Lausanne universities contacted Maya Graf, a member of parliament, in the late 1990's. She raised awareness among her parliamentary colleagues concerning the importance of toxicology. This led to the launch of the National Research Project on endocrine disruptors (NRP 50; 2002-2007) and later to a bid for the two toxicology networks mentioned above.

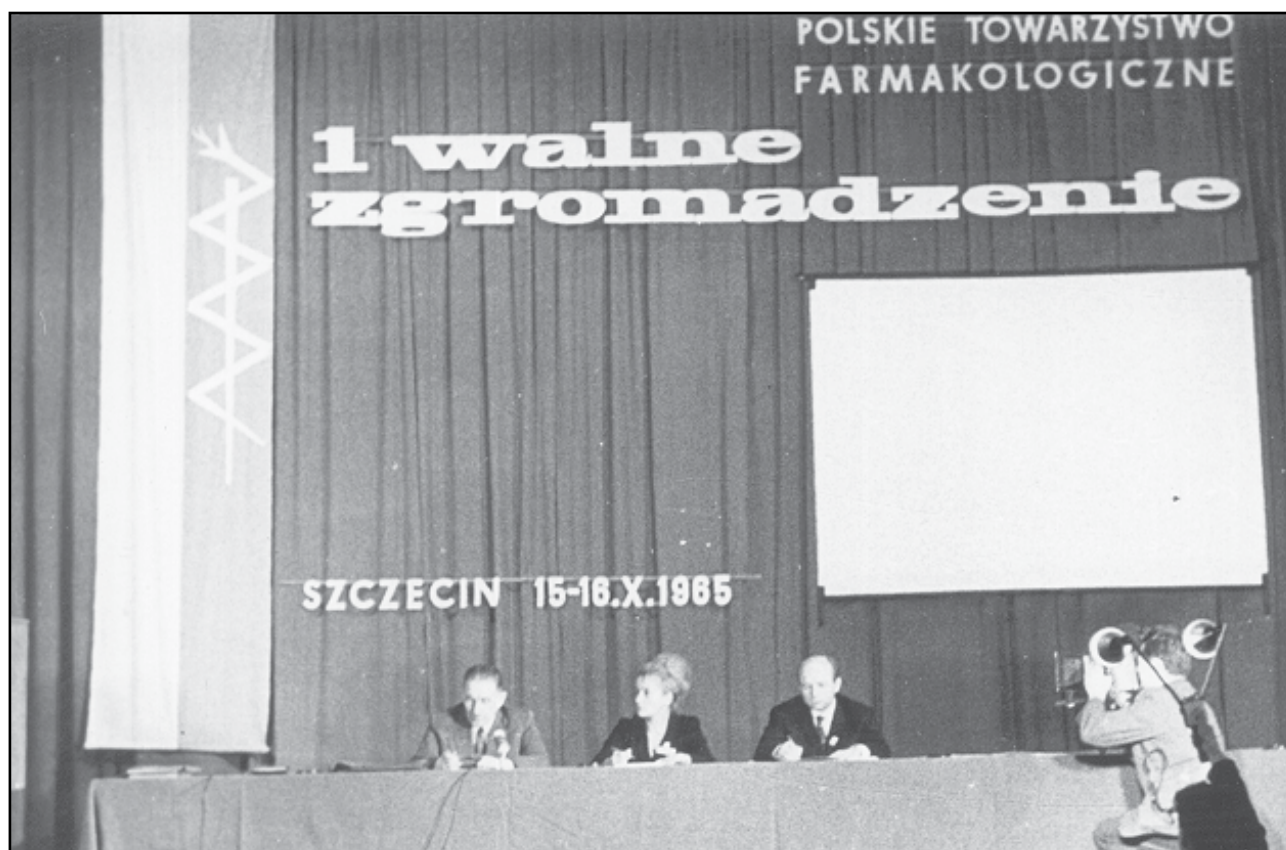
Moreover, the public, medical and official organizations should be made aware that the more recent drug types, in particular monoclonal antibodies and RNA-based drugs, are also pharmacological agents transmitting beneficial or undesirable effects. In the future, the Society must continue to play a central role in forming pharmacologists and toxicologists who are able to interpret the multi-level reactions that occur when chemicals interact with biological systems. At the same time, the Society must encourage the development and study of pharmacology and toxicology as important elements in transmitting knowledge to students and stimulating their curiosity in medical faculties and pharmacy schools. ●

Urs Rüegg
Professor emeritus of Pharmacology
Universities of Geneva and Basel

With Contributions

From Geneva: Hugues Abriel, Harald Reuter, Hans-Uwe Simon, Robert Friis & Beat Schmid,
From Bern: Jacques Diezi, Laurent Schild, Jérôme Biollaz & Thierry Buclin,
From Lausanne: Yves Dunant & Pierre Dayer,
From Basel: Urs A. Meyer, Christoph Handschin & Stephan Krähenbühl,
From Zürich: Michael Arand, Peter Meier-Abt, Gerd Kullak-Ublick, Hugo Kupferschmidt, Walter Lichtensteiger, Hanns Möhler, Hanspeter Naegeli and Hanns-Ulrich Zeilhofer





A picture from the first congress (L → R: Prof. A. Dadlez, Dr. A. Put and Assoc. Prof. Z. Szreniawski)

Polish Pharmacological Society A Historical Overview



The Polish Pharmacological Society (PPS) was founded on October 16, 1965 in Szczecin, Poland during a two-day meeting of the society founders. Thus, PPS was launched one year before the International Union of Basic and Clinical Pharmacology (IUPHAR) become an independent organization. In his opening ceremony speech, Prof. Leonidas Samochowiec offered these historical words “... we are proud that Szczecin was nominated as the venue of the first meeting of Polish pharmacologists ... only 20 years after the Western Territories of recovered Poland



began to organize higher education...”. Prof. Piotr Kubikowski (pictured at right) was elected by the 156 founding members as the first president of PPS. The first executive body was composed of Assoc. Prof. J. Hano, Assoc. Prof. T. Chrusciel, Assoc. Prof. Z. Szreniawski, Assoc. Prof. J. Venulet, Prof. J. Jeske and Assoc. Prof. A. Danysz. Their legacy has been preserved through the subsequent presidents and councils. Please see the inset on the next page for the full list of the PPS presidents.

Independent societies of toxicology and clinical pharmacology were eventually formed in 1978 and 1997, respectively, however, PPS continues to serve the needs of basic and clinical pharmacologists



PPS 50th Anniversary (continued)

The PPS Presidents:

Prof. Piotr Kubikowski (1965-1967)
Prof. Józef Hano (1967-1969)
Prof. Tadeusz Garbuliński (1969-1971)
Prof. Andrzej Danysz (1971-1973)
Prof. Jerzy Maj (1973-1975)
Prof. Zdzisław Kleinrok (1975-1977)
Prof. Marian Wilimowski (1977-1980)
Prof. Alfons Chodera (1980-1983)
Prof. Edmund Przegaliński (1983-1986)
Prof. Zdzisław Herman (1986-1989)
Prof. Sławomir Rump (1989-1992)
Prof. Wojciech Kostowski (1992-1995)
Prof. Włodzimierz Buczko (1995-1998)
Prof. Henryk Trzeciak (1998-2001)
Prof. Ryszard Brus (2001-2004)
Prof. Marek Kowalczyk (2004-2007)
Prof. Stanisław Jerzy Czuczwar (2007-2010)
Prof. Władysław Lasoń (2010-2013)
Prof. Marek Drozdziak (2013-2016)
Prof. Magdalena Bujalska-Zadrożny (2016-2019
President-elect)

and collaborates with toxicologists. PPS members organize many annual and biennial scientific events. Since 1997 a PPS congress has been held every three years. Over the past 50 years PPS has organized 18 international society congresses in Szczecin, Katowice, Poznań, Warsaw, Lublin, Białystok, Gdansk, Bydgoszcz, Krakow, Wrocław and Krynica.

The 19th jubilee congress will be held on September 17 – 19, 2015 and promises to be an excellent opportunity

to exchange ideas and meet new scientific contacts, listen to state of the art lectures and participate in the symposia. Many internationally recognized experts in basic and clinical pharmacology will be in attendance. The primary topics during the congress will be the latest progress in epilepsy and antiepileptic drugs, glutamate metabotropic receptors in CNS disorders, neurotoxicity and neuroprotection as well as safety and optimization of pharmacotherapy. The congress venue is located in the Baltic Sea holiday resort of Świnoujście, which offers leisure time near the pier and beach after the scientific meetings. Please visit www.pum.edu.pl/19-zjazd-ptf to register for the congress and help PPS celebrate 50 years of success.

In addition to its activities in conjunction with the Federation of European Pharmacological Societies (EPHAR) and IUPHAR, PPS engages with other pharmacological societies, mainly from neighboring countries such as Germany, Hungary, Sweden and Italy. The friendly and fruitful cooperation between German and Polish pharmacologists was initiated at the PPS Congress in 1973 by Prof. Ulrich Trendelenburg and Prof. Jerzy Maj, ex-soldiers who served in enemy armies during the Second World War. Having experienced the trauma of war, they strongly believed that making new human relationships is necessary. Their efforts proved that joint activities, even in a relatively narrow field of science like pharmacology, can contribute to the process. This idea was also supported by Prof. Eric

PPS 50th Anniversary (continued)

Honorary Members who have contributed significantly to the success of PPS include:

- 1973 - Prof. P. Kubikowski (Poland), Prof. J.R. Vane (UK), Prof. W.S. Aniczkow (Russia)
- 1975 - Prof. J. Hano (Poland)
- 1977 - Prof. W. Rusiecki (Poland)
- 1980 - Prof. U. Trendelenbrug (Germany), Prof. J. Knoll (Hungary), Prof. S. Garattini (Italy)
- 1986 - Prof. J. Maj (Poland)
- 1995 - Prof. M. Wilimowski (Poland)
- 1998 - Prof. M. Göthert (Germany), Prof. Z. Kleinrok (Poland)
- 2001 - Prof. R. Kostrzewa (USA), Prof. A. Danysz (Poland)
- 2004 - Prof. A. Chodera (Poland), Prof. L. Samochowiec (Poland)
- 2007 - Prof. S. Rump (Poland), Prof. Z. Herman (Poland)
- 2010 - Prof. R. Brus (Poland), Prof. E. Przegaliński (Poland)
- 2013 - Prof. A. Członkowski (Poland), Prof. M. Kowalczyk (Poland), Prof. T. Archer (Sweden)

Westermann, who invited young Polish pharmacologists to participate in the congress of the German Society for Experimental and Clinical Pharmacology and Toxicology (DGPT) in Hannover three years later. Following these initial exchanges, researchers representing both nations regularly and actively took part in scientific events organized across the communist “iron curtain”. Thus, Polish researchers participated in the congresses of DGPT in München, Travemünde, Freiburg, Aachen, Mannheim, Hamburg and Köln. Similarly, many German pharmacologists have participated in, and continue to attend, the 18 congresses organized by the PPS. In recognition of their great achievements in pharmacology and their efforts in promoting this science in Poland, PPS bestowed the title of Honorary Member on Prof. Ulrich Trendelenburg in 1980 and Prof. Manfred Göthert in 1998.

Similarly, beneficial cooperation was established with the Hungarian Pharmacological Society, the Swedish Pharmacological Society and the Italian Pharmacological Society. Their collaborations included joint meetings and scientific exchange programs. The esteemed members of these neighboring societies, Prof. József Knoll from the Hungarian Pharmacological Society, Prof. Silvio Garattini from the Italian Pharmacological Society and Prof. T. Archer from the Swedish Pharmacological Society, who have contributed remarkably to the tight cooperation between our societies, were also granted Honorary Member status in PPS.

Nowadays the structure of PPS is organized into ten branches, based on geographic location, with three hundred members employed in university medical schools, research institutes and the Polish Academy of Sciences. PPS serves its members by organizing and promoting development of research and scientific endeavors in the field of experimental and clinical pharmacology and toxicology then helps to promulgate the research results. It facilitates personal contact among researchers and clinicians engaged in these disciplines and represents Polish pharmacology and toxicology at domestic and international forums. ●



SOCIEDAD ESPAÑOLA DE Farmacología clínica

The Spanish Society of Clinical Pharmacology Celebrates 30 Years

Clinical Pharmacology was officially approved in Spain as a medical speciality in 1978. Isolated antecedents in this field existed long before, as far back as the 1930's with the creation of chairs in "Clinical Therapeutics" at several universities. However, it was in the early 1970's that a few professors of medical pharmacology joined the then current trends in the USA, UK and Sweden, of considering humans as the target of medicine use. During the first half of that decade, academic positions linked to hospital services were created in Santander (Prof. J. Flórez), Madrid (Prof. P. Sánchez), Barcelona (Prof. J. Laporte) as well as in universities in Salamanca, Tenerife and Valencia.

As a consequence, when the medical specialties were reorganized and the system of residents instituted in the mid-1970's, those pioneers took the opportunity to include Clinical Pharmacology among them, which was a cornerstone for the future development of our specialty. As expected, within a few years a considerable group of trainees in accredited centers were available. In 1983, a workshop was held in Santander where not only research communications but also professional occupational problems were debated. The need to create a new association to deal with specific aspects of the recent specialty became evident. The clinical and epidemiological aspects made it clear that marked differences existed, which finally determined that our Society should follow a separate path from the Spanish Society of Pharmacology (SEF). After several intermediate workshops, a national meeting was held in Barcelona, at which the

Continued on page 21...

SEFC Celebrates 30 Years (continued)

Spanish Society of Hospital Clinical Pharmacology was born, with Professor A. Moreno (Madrid) being elected as its first President. It was soon understood that clinical pharmacology was not an activity exclusive to hospitals since primary care and regulatory organizations could also benefit from its activity so the word "hospital" was removed from its title. Thus, since 1990, it has been called the "Spanish Society of Clinical Pharmacology" (SEFC, hereinafter). From a few dozen members in the 1980's, SEFC has grown to around 300 today, most of them being very young people.

SEFC has maintained its initial impetus over time, holding annual conferences at practically all the Clinical Pharmacology Units in the country. SEFC joined IUPHAR in 2006. In addition, SEFC has enjoyed close collaborations with the European Association for Clinical Pharmacology and Therapeutics (EACPT) since its foundation. Thus, several members have served on its Council as well as its Executive Committee, and moreover, the former vice-president of SEFC, Prof. Gonzalo Calvo (pictured at left), is the current President of EACPT. An important milestone for the international presence of Spanish clinical pharmacology was the election of Madrid as the venue for the 12th Congress of EACPT, held in June 2015.



In addition to this brief historical overview, it is important to introduce a few of the primary aims of SEFC and to present some of the areas of emphasis for the near future. The ethical aspects of drug research in humans as well as the judicious use of medicines are concepts that permeate the training of new clinical pharmacologists. We seek to imbue these example principles into the professional profile of our clinical pharmacologists. SEFC has continuously promoted the values of independent thinking based on scientific and ethical criteria. In this respect, our journal *Investigación Clínica y Bioética (Clinical Research and Bioethics)* has played an important role for over twenty years. It is freely accessible to all research ethics committees in the country.



Boletín para los Comités de Ética de Investigación

The presence of SEFC has been critical in achieving some legal regulations on medicines for human use through regulatory bodies. Among them the Medicines and Medical Devices Act, the National Committee of Medical Specialties, Clinical Research Ethics Committees, and the Spanish Pharmacovigilance System are outstanding examples. In all these fields the role of clinical pharmacologists has proven to be invaluable so that today they are considered essential. In fact, the Spanish Agency for Medicines and Medical Devices has several clinical pharmacologists in key positions within its organization. To facilitate further progress, SEFC has established about a dozen working groups devoted to the analysis of different topics in which dynamic volunteers work together to propose new measures and solutions.

It would not be fair to end this brief report without recognizing that there is still much work to do. What has been achieved is based on the conviction of the importance that clinical pharmacologists play in modern medicine, but at the same time it is necessary to establish targets where further action is required. Many of these issues were raised and analyzed at a

Continued on page 22...

SEFC Celebrates 30 Years (continued)

satellite symposium held in Poznan during the EACPT Congress in 2005, which focused mainly on the stumbling blocks hindering our development. Ten years later, many of those obstacles continue to exist.

It is necessary to take into account that Spain is a country with an effective decentralized administrative in which the responsibility for education and health matters has been transferred to the 17 Autonomous Communities that make up the State. This framework determines different developments between territories and influences the strategies to be followed in order to advance our medical specialty.

One of our goals is to take full advantage of the clinical and methodological skills of clinical pharmacologists by expanding their leadership role in the evaluation and decision processes dealing with the use of medicines in the healthcare system. In patient settings, clinical pharmacologists contribute high value expertise to individualized treatments and should be distinguished from what is offered by “pharmaceutical care” providers. The limited number of clinical pharmacologist staff positions in medical schools and university hospitals profoundly affects the efficiency of the healthcare system. Moreover, the shortage of clinical pharmacologists is usually resolved by replacing them with lesser skilled medical staff. Finally, although pharmaceutical companies have augmented the number of clinical pharmacologists engaged in safety tasks, their presence in designing and carrying out clinical research must be increased.

Finally, we wish to recognize the efforts of those who have had the responsibility of guiding the SEFC during the last thirty years, particularly the Executive Boards and the Presidents pictured at right in the following order: Alfonso Moreno, Joan Ramon Laporte, Pau Salvá, J. Nicolas Boada, Africa Mediavilla, Antonio Portolés and Cristina Avendaño. ●

SEFC
www.se-fc.org



2015 EACPT Lifetime Achievement Award to go to

Professor Michel Eichelbaum

The 2015 Lifetime Achievement Award of the European Association of Clinical Pharmacology and Therapeutics (EACPT) went to Prof. Michel Eichelbaum for his outstanding contributions to the national and international benefits of clinical pharmacology for medicine, health care and patient safety. The Award, which includes the EACPT silver medal, was presented to Professor Eichelbaum during the 12th EACPT Congress in Madrid (<http://www.eacpt2015.org>) on Saturday, 27 June 2015.

Michel Eichelbaum is one of the most cited pharmacologists in the world. He has published nearly 500 articles, reviews and book chapters and numerous abstracts, and his work has been cited over 25,000 times by other authors. His primary research interest has been the pharmacogenetics of drug metabolizing enzymes and transporter proteins. He was also one of the pioneers of studying various aspects of the stereochemistry of drugs, the use of stable isotopes in clinical pharmacology and intestinal metabolism and transport of drugs.

In 1975, he discovered a genetic polymorphism in the oxidation of the antiarrhythmic and oxytocic drug, sparteine, which later became known as CYP2D6 polymorphism. This is considered his single most important scientific discovery. Later, he became involved in research on factors involved in the regulation of drug-metabolizing enzymes and transporters with special emphasis on nuclear receptors. This basic research is supplemented by clinical studies in oncology with special emphasis on breast cancer treatment, HIV, psychiatry and organ transplantation, in which the consequences of genetic polymorphisms of these proteins for drug effects and toxicity are explored.

Professor Eichelbaum was born in Leipzig on 19 May 1941. He studied medicine at the University of Heidelberg between 1960 and 1966, and defended his doctoral thesis there in 1968. During 1966 to 1968, he was an intern in Internal Medicine, Surgery and Gynaecology and Obstetrics. Between 1968 and 1976, he was a resident in Internal Medicine at University Hospitals of Giessen and Bonn. From 1976 to 1985, he was attending physician and Associate Professor of Internal Medicine and Clinical Pharmacology at the Department of Medicine, University of Bonn. He is a specialist in both Clinical Pharmacology and in Internal Medicine. For 21 years beginning in 1985, he was the Director of the Dr. Margarete Fischer-Bosch Institute of Clinical Pharmacology, Stuttgart, Germany. Simultaneously, he was Professor and Chairman of Clinical Pharmacology at the University of Tübingen, and in 2001 he became Adjunct Professor at the University of Adelaide, Australia.

During his career, Michel Eichelbaum has obtained several Research Fellowships. From 1970 to 1971, he worked in the Laboratory of Chemical Pharmacology, National Heart and Lung Institute, National Institutes of Health, Bethesda, USA, together with Drs. B.B. Brodie and J.R. Gillette. From 1973 to 1974, he worked at the Department of Clinical Pharmacology, Karolinska Institute in Stockholm, Sweden, together with Prof. Folke Sjöqvist, and from 1995 to 1996 he was a Visiting Professor at the Department of Clinical and Experimental Pharmacology, University of Adelaide, Australia. Prof. Eichelbaum has received numerous awards and honours. This year, he was honoured with the Oscar B. Hunter Memorial Award in Therapeutics from the American Society of Clinical Pharmacology and Therapeutics. He is the third European to receive this prize.

The EACPT (<http://www.eacpt.eu>) was founded 22 years ago and now includes as members all national organisations for clinical pharmacology in Europe, as well as organisations from further afield internationally. The EACPT aims to provide educational and scientific support for the more than 4000 individual professionals interested in clinical pharmacology and therapeutics throughout the European region, with its congresses attended by a global audience. ●

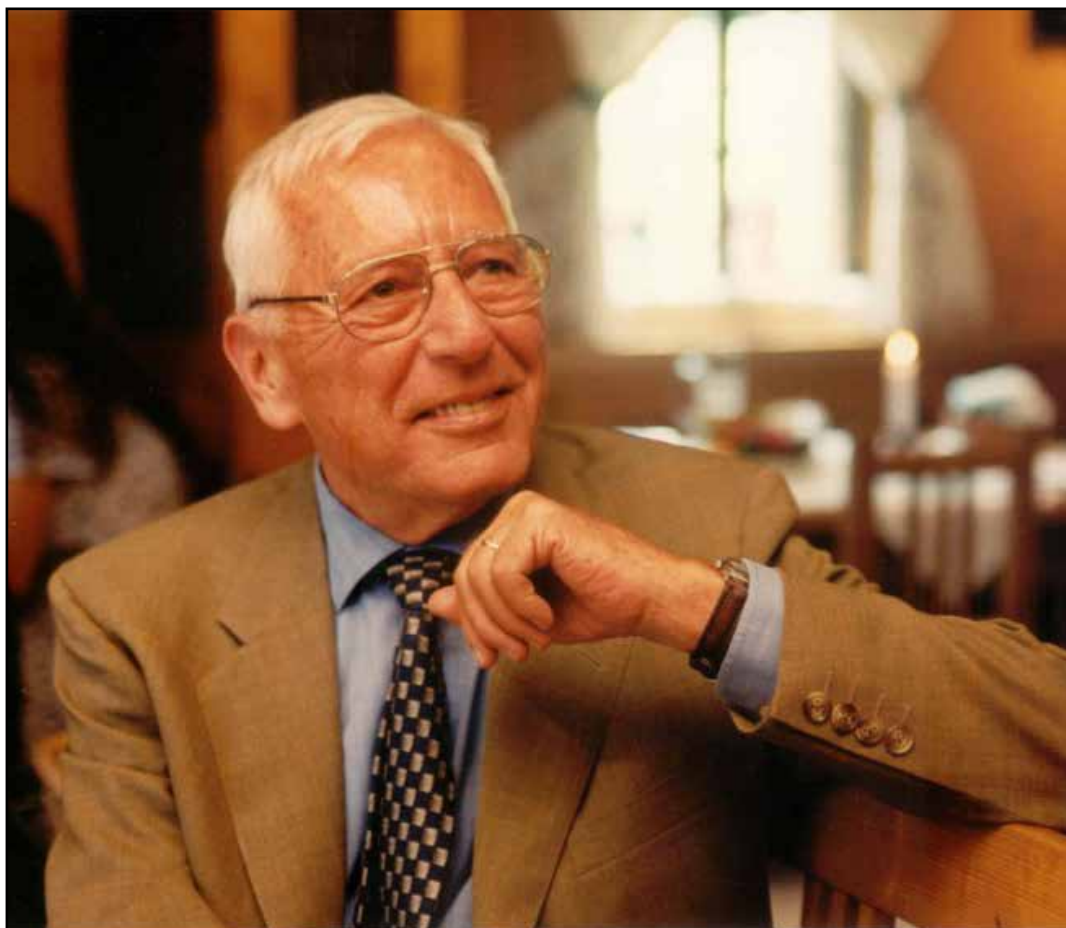
Donald Singer
EACPT Secretary



In Memory of Fred Lembeck 1922 - 2014

“It will probably always be more important to try a thing out than to argue about it.”

This bon-mot by Sir John Henry Gaddum can rightly be seen as a guiding motto in Fred Lembeck's scientific endeavours. Besides John Gaddum, it was also Ulf Svante von Euler, Sir Henry Hallet Dale and Otto Loewi who stood as models and peers to navigate Fred Lembeck into the pharmacology of neurotransmitters and neuropeptides. Fred was a successor of Otto Loewi on the chair of pharmacology at the University of Graz in Austria and throughout his life, Fred was fascinated by the scientific achievements of this 1936 Nobel Laureate. It is no wonder that the legacy of Otto Loewi lives on not only in Fred Lembeck's movie and book on Otto Loewi (Lembeck and Giere, 1968) but also in his scientific advances. Fred continued to work in the laboratory until his eighties and passed away on 22 October 2014 at the age of 92, survived by his daughter, Eva Désirée, and his sons, Klaus and Andreas.



*Fred Lembeck discovered serotonin in carcinoids and pioneered research on substance P.
(photograph from 2003)*

Fred Lembeck (continued)

Fred Lembeck was born on 4 July 1922 in Oberwinden, a small village near Herzogenburg in Lower Austria. His destination in pharmacology was not at all clear in 1947 when he graduated as an M.D. after studying medicine in Vienna and Graz during and after the bleak war times, interrupted by service as army doctor and being caught as a prisoner of war. As he writes, "I spent only 3 years and 3 months as a real student ... and when I received my degree I sincerely wished I had had the money to stay for another year in order to acquire more knowledge" (Lembeck, 1980). Nevertheless, by a lucky incidence, he was able to join the Department of Pharmacology at the University of Graz as a tutor soon after his graduation. It was even more fortunate that an official of the World Health Organization, who was visiting Graz at that time, was taken to Prof. Hans F. Häusler, the head of department and the only English-speaking professor of the Medical Faculty. Prof. Häusler persuaded the official to offer Fred a fellowship to work with John Gaddum in Edinburgh, which led Fred to recall: "My arrival there, one year after my graduation, was my entrance into pharmacology and decisive for the rest of my life." (Donnerer and Lembeck, 2006)

Back in Graz from Edinburgh, where he had focused on the pharmacology of noradrenaline, Fred turned to two bioactive compounds that he had also encountered in John Gaddum's laboratory: serotonin and substance P. Serotonin had just been found in enterochromaffin cells of the gut by Vittorio Erspamer when Fred discovered it to occur in carcinoid tumours, using chromatographic methods and bioassays he had learned to perform in Edinburgh (Lembeck, 1953a). In the same year he also published a seminal paper on substance P (Lembeck, 1953b), another bioactive but even more enigmatic compound that Ulf von Euler and John Gaddum had discovered back in 1931. In his work, Fred demonstrated that the concentration of substance P in the dorsal roots of the spinal cord was much higher than in the ventral roots and concluded that substance P might be a transmitter of primary afferent neurons (Lembeck, 1953b). This suggestion had to wait for another 25 years until it was confirmed by immunohistochemical and other methods following the identification of substance P as an undecapeptide. The 1953 paper is also particularly remarkable with regard to its emergence from the last experiment Otto Loewi performed in Graz before he fell victim to the Nazi racism and was put into prison in 1938 (Fred Lembeck – Wikipedia).

Just before the takeover of Austria by the Nazis, Otto Loewi had found that acetylcholine is apparently absent from the dorsal roots of the spinal cord. Already in prison, Otto Loewi managed to obtain a pencil and to send a post card to the Springer Verlag in Berlin, in which he briefly described the results and asked for their publication. Fortunately, this card fell into the hands of Paul Rosbaud (born 1896 in Graz, then a consultant of Springer Verlag and spy for England, later founder of Pergamon Press) who immediately forwarded the card to Henry Dale for communication to the Physiological Society (Loewi and Hellauer, 1938). After the war, Horst F. Hellauer (the former assistant of Otto Loewi) and Karl Umrath confirmed that the dorsal roots lacked acetylcholine but contained a vasodilator compound that was neither acetylcholine nor histamine. Fred Lembeck stepped in and showed that this compound could be substance P, dedicating his paper to Otto Loewi on the occasion of his 80th birthday (Lembeck, 1953b).

In 1954, Fred was promoted to Docent (Lecturer) at the Department of Pharmacology of the University of Graz, and in 1961 he moved to Germany to become Professor and Head of the Department of Pharmacology at the University of Tübingen. Here, Fred Lembeck and Klaus Starke discovered that substance P enhances vascular permeability (Lembeck and Starke, 1963) and



Fred Lembeck (continued)

characterized the effect of substance P and related peptides, termed tachykinins by Vittorio Erspamer, to stimulate the secretion of saliva (Lembeck and Starke, 1968). The discovery of the sialogogic action of substance P contributed, though *indirectly*, to the isolation and identification of substance P as the undecapeptide we know today. Reading the newspaper *Frankfurter Allgemeine Zeitung* in an intercity train, Fred stumbled over a short note saying that researchers at Brandeis University in the US had discovered a sialogogic factor in the hypothalamus (Lembeck, 2008). Back in office, Fred immediately got in touch with Susan E. Leeman, the lead author at Brandeis University, and the further exchange between the two soon convinced Susan Leeman that the sialogogic factor she had discovered was identical to substance P. The amino acid sequence of substance P was published in 1971 (Chang et al., 1971).

In 1969 Fred Lembeck returned to Graz to become Professor and Head of the department (renamed to Department of Experimental and Clinical Pharmacology) in which his career in pharmacology had begun in 1947. His second term in Graz up to his retirement in 1992 proved to be another enormously fruitful period in which the department became internationally recognized for its contributions to neuropeptide research and sensory neuropharmacology. The scope of the work was considerably expanded, focussing on several aspects of substance P and other peptides (including bradykinin) in cutaneous, gastrointestinal, pulmonary and urogenital physiology and pharmacology, neurogenic inflammation, pain and various aspects of autonomic neuropharmacology. Exploiting the advent of tachykinin and bradykinin receptor antagonists, Fred was eager to provide pharmacological evidence for the implications of substance P and bradykinin in health and disease and to explore substance P and bradykinin receptors as potential targets for therapy.

Since the late 1970s, Fred Lembeck and his group took use of a pharmacological tool that exhibited a remarkable selectivity for peptidergic sensory neurons: capsaicin (Holzer, 1991). Part of this research was conducted in close collaboration with colleagues in Hungary (Gábor Jancsó, János Szolcsányi and Loránd Barthó), given that the selective action of capsaicin on sensory neurons had been originally discovered by the Hungarian pharmacologist Nikolaus (Miklós) Jancsó. By utilizing capsaicin's acutely excitatory and long-term desensitizing actions, the multiple implications of sensory neurons in sensation, pain, vascular function and autonomic regulation were systematically mapped (Lembeck and Holzer, 1979; Gamse et al. 1980). These studies also revealed that capsaicin's action is not selective for a particular neuropeptide phenotype of sensory neurons, but extends to a range of capsaicin-sensitive neurons that were later characterized to express transient receptor potential channels of the vanilloid type 1 (TRPV1), the molecular target of

Continued on page 27...

Fred Lembeck (continued)

capsaicin.

Research was the lifeblood in Fred Lembeck's career. As alluded to above, he pursued a hands-on approach, being equally keen on the intellectual plan of an experiment and the design of the protocol and equipment required. Despite this predilection, he liked every aspect of his profession, was a keen teacher (Lembeck, 1980), and wrote books to promote the practical aspects of pharmacology, such as Prescription 101 (in German and Greek, eight editions), Pharmacological Facts and Figures" (in English, German and Japanese, four editions) and Practical Course in Pharmacology (in German, one edition). His enormous knowledge led him to write commentaries on a wide range of topics in professional newsletters as well as newspapers and to take an active part in university, health and research politics. Even when the Medical Faculty was transformed into the independent Medical University of Graz in 2004, he actively participated in the discussion as to how the new university should be shaped.

Fred was President of the German Society of Pharmacology and Toxicology then served the International Union of Pharmacology (IUPHAR) from 1969 to 1972 as a Councillor and from 1972 to 1975 as the Secretary General. Fred also invested much effort in turning *Naunyn-Schmiedeberg's Archives of Pharmacology* into an international journal published exclusively in English (Fred Lembeck – Wikipedia).

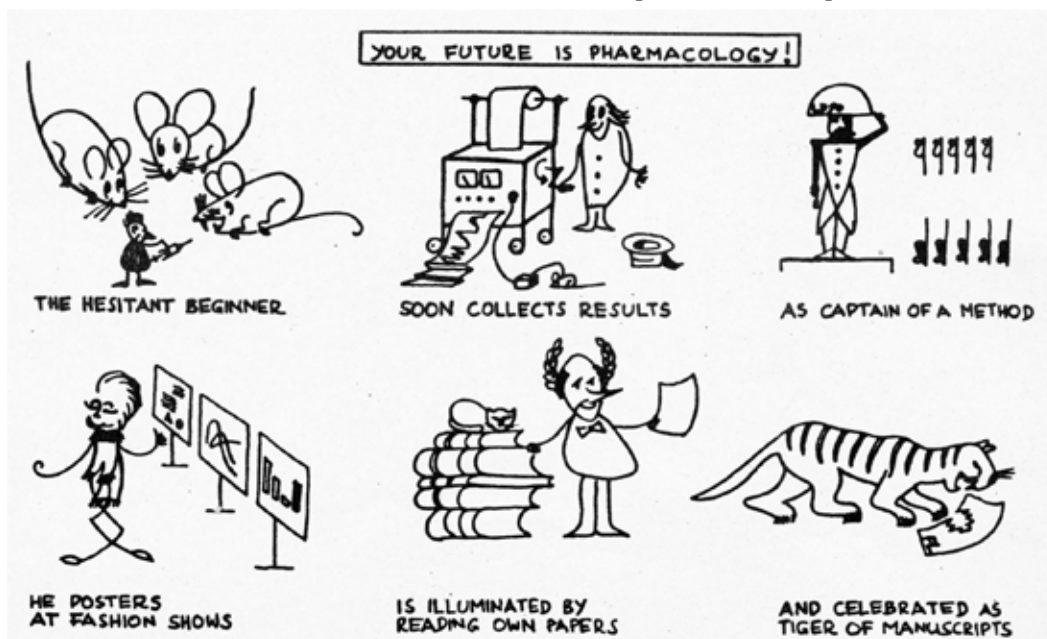
Fred Lembeck was a pioneer in his field of research, and his achievements were recognized by many national and international honours and awards, only a few of which are listed here. He was elected honorary member of many pharmacological societies including the Hungarian Pharmacological Society (1979), the German Society of Experimental and Clinical Pharmacology and Toxicology (1988), the Austrian Pharmacological Society (2001) and the British Pharmacological Society (2007). He was a member of the Deutsche Akademie der Naturforscher Leopoldina (1983), a corresponding member of the Austrian Academy of Sciences (1988) and a founding member of the Academia Europaea (1988). In 1985 he was awarded the Oscar Gans Prize of the German Society of Dermatology and the Oswald Schmiedeberg Medal of the German Society of Experimental and Clinical Pharmacology and Toxicology, in 2001 named as Highly Cited Author in Pharmacology, and in 2007 decorated with the Austrian Cross of Honour for Science and Art.

Despite his many recognitions, Fred Lembeck was a modest and self-effacing person, yet at any rate passionate to thrill his contemporaries inside and outside the department by his excitement about research. He led the department by setting an example of a devoted scientist, and this spark of enthusiasm quickly caught up with the other members of the group. When young researchers proved promising and successful they were consistently mentored by Fred, and many of them made a distinguished career in academia, pharmaceutical industry or regulatory body. Fred knew that good science requires a stimulating atmosphere in the laboratory including mentorship, openness for new developments and discoveries, sufficient funding, successful publication, international mobility and proper recognition.



Fred celebrating Flower Night at the 1990 IUPHAR World Congress of Pharmacology in Amsterdam. Photo courtesy of Karl Netter.

Fred Lembeck (continued)



© Fred Lembeck

At the same time, as his sketch on “Your future is pharmacology” (above) vividly shows, he was also well aware of the downsides of the scientific profession. Although being an ardent scientist, Fred Lembeck pursued many interests that went far beyond science but had an important impact on his professional life. He was extremely knowledgeable about the history of science, and was most entertaining when he narrated stories from the archives of physiology and pharmacology. He also loved music and enjoyed hiking in the mountains, photographing as well as drawing. In so doing Fred considerably expanded John Gaddum’s definition of a pharmacologist as “the ‘jack of all trades’ borrowing from physiology, biochemistry, pathology, microbiology and statistics”. •

Prof. Peter Holzer, FBPharmacolS
Institute of Experimental and Clinical Pharmacology
Medical University of Graz

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Tenure-track Full-time Assistant Professor Position

DEPARTMENT OF PHARMACOLOGY
YONG LOO LIN SCHOOL OF MEDICINE

Position

The National University of Singapore (NUS) Yong Loo Lin School of Medicine invites applications for a Tenure-track Full-time Assistant Professor position in the Department of Pharmacology. The Department has major conglomerations of strength in cancer pharmacology and neuropharmacology research (more information on the department is available at <http://medicine.nus.edu.sg/medphc>). We are looking for candidate with strong research interests in immunopharmacology, cardiovascular pharmacology, or pharmacokinetics/pharmacogenomics to build on our existing strength.

Main Duties and Responsibilities

The Assistant Professor is expected to compete for independent extramural research funding; is required to participate in undergraduate and/or graduate level teaching of medical, dental, nursing, pharmacy and life science students; and is expected to contribute to service to the Department and University as assigned by the Head of Department. The Assistant Professor will be expected to establish excellence in research and education meriting promotion to Associate Professor with tenure within about 6 years.

Qualifications

The applicant should:

- (a) have a Ph.D. in pharmacology or related disciplines,
- (b) have experience in teaching demonstrating potential for development as an outstanding educator,
- (c) have a strong track record of research demonstrating potential for development as an outstanding researcher; preferably with at least 4-6 years postdoctoral training, and
- (d) have research expertise relevant to pharmacology, preferably with focus on immunopharmacology, cardiovascular pharmacology, or pharmacokinetics/pharmacogenomics.

Formal application

Interested candidates should submit their applications with the following supporting documentation:

- i. Cover letter
- ii. A detailed CV
- iii. Summary of research achievement and proposed projects
- iv. Teaching statements and philosophy
- v. Course syllabus and specific teaching experience
- vi. Minimum of 3 reference letters

Please submit your application by **31 July 2015** to:

A/Prof Fred Wong Wai-Shiu
Head, Department of Pharmacology
Yong Loo Lin School of Medicine
National University of Singapore
Level 5, Clinical Research Centre, Block MD11,
10 Medical Drive, Singapore 117597
Email: phchead@nus.edu.sg

Upcoming Events

August

14th National Biochemical and Molecular Pharmacology Conference organized by the Chinese Pharmacological Society for Biochemistry and Molecular Pharmacology Professional Committee

August 21 - 24, 2015 in Tai'an City, China

[website address](#)

28th Congress of the European College of Neuropsychopharmacology (ECNP)

August 29 - September 1, 2015 in Amsterdam, The Netherlands

<http://www.ecnp-congress.eu>

September

Annual Scientific Meeting of the Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists New Zealand Section during Queenstown Research Week

September 1 - 3, 2015 in Queenstown, New Zealand

<https://ascept.org/nz-section>

23rd National Congress of the Turkish Pharmacological Society

September 1 - 10, 2015 in Ankara, Turkey

<http://www.tfd.org.tr/Default.aspx?sid=30&div=div28&lnk=lnk30>

20th Anniversary Celebration of the Austrian Pharmacological Society in conjunction with the 25th Anniversary Celebration of the Federation of European Pharmacology Societies

September 16 - 18, 2015 in Graz, Austria

<http://www.aphar.at/2015>

36th Congress of the Spanish Society of Pharmacology

September 16 - 18, 2015 in València, Spain

<http://www.socesfar.com/>

XIXth Congress of the Polish Pharmacological Society celebrating its 50th anniversary

September 17 - 19, 2015 in Świnoujście, Poland

<http://www.ptf.info.pl>

XXXVII Annual Meeting of the Chilean Society of Pharmacology in conjunction with the Chilean Society of Physiological Sciences and the Chilean Society for Neuroscience

September 22 - 25, 2015 in Coquimbo, Chile

<http://www.sofarchi.cl/congresos/2015>



Upcoming Events

September (continued)

15th Annual Meeting of the Safety Pharmacology Society

September 28 - October 1, 2015 in Prague, Czech Republic

<http://www.safetypharmacology.org/am2015>

47th Brazilian Congress of Pharmacology and Experimental Therapeutics

September 28 - October 1, 2015 in Águas de Lindóia, Brazil

<http://www.sbfte.org.br/congressos/2015>

October

Stratified Medicine and Prevention of Adverse Drug Reactions by the British Pharmacological Society and British Toxicology Society

October 5 - 6, 2015 in Edinburgh, United Kingdom

http://www.bps.ac.uk/meetings/BTS_BPS

37th National Congress of the Italian Society of Pharmacology

October 27 - 30, 2015 in Naples, Italy

<http://congresso.sifweb.org>

November

9th Congress of Toxicology in Developing Countries (CTDC9) by the International Union of Toxicology

November 7 - 10, 2015 in Natal, Brazil

<http://www.sbtox.org.br>

Drugs to medicines: Up close and personal organized by the Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists and the Australasian Pharmaceutical Science Association

November 29 - December 2, 2015 in Hobart, Australia

<http://www.asceptasm.com>

December

Pharmacology 2015 sponsored by the British Pharmacological Society

December 15 - 17, 2015 in London, United Kingdom

<http://www.bps.ac.uk/meetings/Pharmacology2015>

48th Annual Conference of Indian Pharmacological Society

December 17 - 20, 2015 in Rajkot, India

<http://www.indianpharmacology.org/conference.html>

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

MURIA Group First Training Workshop and Symposium 27 - 29 July 2015 University of Botswana

Objective: The workshop and symposium are intended to develop and progress medicines utilisation research in Africa. The workshop will cater to all personnel including those just starting research in this area and those already undertaking medicine utilisation research. This will be achieved through two workshop streams (parallel sessions) and a one day symposium for researchers to present their projects and findings.

Topics covered in 1.5 day methodology training workshop include:

Introductory Group	Advanced Group
<ul style="list-style-type: none">• Basic medicines utilisation research methodology• ATC, DDDs/ PDDs• Quantitative and qualitative research methodologies and indicators• Introduction to cross national comparison (CNC) studies and influencing physicians• Basic statistics applied to DU research• Use of DUR studies to answer different practice question• Introduction to ethics	<ul style="list-style-type: none">• Issues and challenges with drug utilisation studies and potential ways to address these• Topics include: antibiotics; quantitative and qualitative approaches in DU studies; influencing prescribing/ guidelines including CNC studies• Introduction to pharmacoconomics• Advanced statistical methods for DU research• DU visualisation and communication; pharmacovigilance/ drug safety and databases• Dealing with ethics - Issues and challenges

Topics covered in the one day symposium:

Topics will depend on the content of the submitted abstracts. There will be both oral and poster presentations. Particular consideration will be given to abstracts describing current drug utilisation research and activities with ARVs.

Provisional list of key personnel in their fields conducting the course include:

- Professor Amos Massele (Botswana)
- Professor Ilse Truter and Dr Theunis Kotze (South Africa)
- Dr Olayinka Ogunleye (Nigeria)
- Professor Martie Lubbe and Dr Rianda Joubert (South Africa)
- Dr Matthias Adorka (Namibia); Dr Margaret Oluka (Kenya)
- Dr Andy Gray and Dr Brent Knoesen (South Africa)
- Professor Lars Gustafsson and Dr Jaran Eriksen (Sweden)
- Dr Joseph Fadare (Nigeria); Dr Brian Godman (Sweden and UK)
- Dr Marike Cockeran and Dr Johanita Burger (South Africa)

Official language: The language for the training workshop and symposium is English with no simultaneous translation.

Course fees per participant: US\$125. These will cover all workshop activities, the symposium, meals during the day, a welcome reception on the first night and a conference dinner on the second night. The fees do not cover hotel, travel, airport transfers or evening meal costs apart from the dinner.

The conference hotels include the Indaba hotel (approx. 90US\$/night) and the Oasis Hotel (approx. 75US\$/night) - details will be on the registration form. There may also be the opportunity for limited accommodation in graduate rooms. Transportation will be arranged to and from the conference hotels to the University of Botswana at the start and finish of each day and for the dinner.

Workshop numbers will be limited to 100 people to facilitate good interaction. Requests for visa letters should also be sent to Muria.Group@mopipi.ub.bw.



Please contact

Dr Joyce Kgatlwane,
Professor Massele,
Ms Eyman and Ms Mafoko
at the University of Botswana
for further details and registration.
email:

Muria.Group@mopipi.ub.bw

Abstract submission and Registration

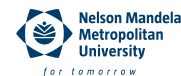
will start on 31 March 2015
with a deadline of

30 June 2015 for registration.

**Abstract submission deadline is
30 April 2015.** Acceptance letters for
abstracts will be sent out
on 15 May 2015.



Karolinska
Institutet



22-24 July
2015



@National
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Singapore

The IUPHAR World Conference on the Pharmacology of Natural and Traditional Medicine 2015

Plenary Speakers:

Jerold CHUN (The Scripps Research Institute, USA) "Fingolimod: the development of a lysophospholipid modulator from traditional Chinese medicine to FDA-approved drug"

D. Darrel DUAN (University of Nevada, USA) "Pharmacophenomics and traditional Chinese medicine"

David NEWMAN (National Cancer Institute, USA) "Trials and tribulations of developing natural product drugs"

Michael SPEDDING (Spedding Research Solutions SARL, France) "IUPHAR & Guide to Pharmacology - The molecular targets for drugs and natural products"

Juntian ZHANG (Chinese Academy of Medical Sciences, China) "Chinese traditional medicine is characterized by inducing multi-target effects"

Invited Speakers:

Matthew CHANG (Singapore), **Li Lin Christina CHAI** (Singapore), **Ee Sin CHEN** (Singapore), **Chi Hin CHO** (Hong Kong, China), **KS CHOI** (Korea), **Marc DIEDERICH** (Korea), **Diadelis Ramirez FIGUEREDO** (Cuba), **Ajay GOEL** (USA), **Yi-Tsau HUANG** (Chinese Taipei), **Kornkanok INGKANINAN** (Thailand), **Jian-Dong JIANG** (China), **Tapas KUNDU** (India), **Simon MY LEE** (Macau, China), **Albert WN LEUNG** (Hong Kong, China), **Min LI** (Hong Kong, China), **Shaoping LI** (Macau, China), **Xue-Jun LI** (China), **Qingsong LIN** (Singapore), **Zhi-Bin LIN** (China), **Kathy Qian LUO** (Singapore), **Ákos MÁTHÉ** (Hungary), **Mohammad Rais MUSTAFA** (Malaysia), **Gautam SETHI** (Singapore), **Valérie SCHINI-KERTH** (France), **Han-Ming SHEN** (Singapore), **Lie-Fen SHYUR** (Chinese Taipei), **Johnson STANSLAS** (Malaysia), **Herry H SUN** (China), **Haruki YAMADA** (Japan), **Yu Leong YONG** (Singapore), **Wen-Xia ZHOU** (China)

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WS Fred Wong, Head of Department of Pharmacology, Yong Loo Lin School of Medicine, National University of Singapore (NUS), Singapore.



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The 13th Asia Pacific Federation of Pharmacologists Meeting



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For further information, please visit our website: <http://www.apfpbangkok2016.com/>

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<http://www.apfpbangkok2016.com/>

Important Deadlines

Early bird registration: 15 Nov 2015

Abstract submission: 31 Oct 2015

www.APFPBangkok2016.com



Stratified medicine & prevention of adverse drug reactions

**A joint meeting of the British Toxicology Society & the British Pharmacological Society
5—6 October 2015, Royal College of Physicians of Edinburgh, UK**

This meeting will focus on how the concept of stratified medicine may prevent adverse outcomes for the patient. The programme will cover all aspects from the basic mechanisms through pharmacology and toxicology model systems to clinical pharmacology and all the way to the use in practice and finally to the regulatory perspective.

Co-Chairs:

Professor Heather Wallace, President of the British Toxicology Society
Professor David Webb, President-Elect of the British Pharmacological Society

- Session 1:** An overview and introduction to the problem in relation to public health
Session 2: Basic mechanisms, clinical pharmacology and toxicology, genetics, immune system
Session 3: Basic pharmacology and toxicology / animal models
Session 4: How to apply the knowledge in practice

Confirmed Speakers:

Dr Graham Cooke, Imperial College London, UK
Dr James Dear, University of Edinburgh, UK
Dr Colin Henderson, University of Dundee, UK
Professor Magnus Ingelman-Sundberg, Karolinska Institutet, Stockholm, Sweden
Dr Phil Jeffrey, Pfizer Ltd, UK
Professor Duncan Jodrell, University of Cambridge, UK
Professor David Juurlink, University of Toronto, Canada
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Dr Krishna Prasad, MHRA, UK
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Professor Jack Uetrecht, University of Toronto, Canada
Dr Dominic Williams, AstraZeneca, UK

For more information or to register please contact:

t: +44 (0)207 239 0176
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