

# SAAP Bulletin

The newsletter of the South Asian Association of Physiologists

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Claude Bernard, a French physiologist (1819-1878) was one of the founders of experimental physiology.

He did animal experiments to discover the nature of digestion, heat generation and neural regulation of vascular system.

He became the most famous life scientist in France in the 19<sup>th</sup> century.

**Claude Bernard and his pupils**  
Oil painting after Léon-Augustin Lhermitte (1844-1925)\_

<https://wellcomecollection.org/works/cx247dwq>

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**Executive Council of the South  
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Physiologists (SAAP)**

**2018-2020**

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**Message from the President SAAP**



**Professor Arif Siddiqui**

First of all, I am extremely honoured to have been elected to serve the 6<sup>th</sup> President (2018-20) of the South Asian Association of Physiologists (SAAP) by its General Council meeting held on Dec. 13, 2018 hosted by Pakistan Physiological Society at University of Lahore, Lahore, Pakistan. SAAP is privileged to be the Founding entity in terms of mobilizing physiology community in South Asia for the promotion of physiological sciences and teaching physiology in the region in a more cohesive manner through networking and collaboration. Since its inception in 2008 at Islamabad the concept of SAAP was enthusiastically received and with increasing dedication and resilience coupled by consistent efforts it is gradually growing in stature. Biennial conferences been a well received feature as so far these are organized in Islamabad (2008), Bangalore (2010), Colombo (2012), Dhaka (2014), Kathmandu (2016) and with the conference at Lahore (2018) completes the cycle.

We should be aware that with over 1000 medical colleges and dozens of university departments and research institutions in the region there is huge potential for the promotion of discipline that would eventually translate into better health care and research activities. However, in order to make a difference there are lots of challenges; notable among these are the lack of vitality.

Relative convenience in physical movement will also benefit in terms of sharing ideas and experience.

Congruent with philosophy of professional excellence and best practice of pedagogy, SAAP strives to create learning environment that is conducive to transform the thinking pattern of faculty. In its initiatives SAAP is committed to enrich the physiology faculties with emerging teaching skills, practice and pedagogy. The effort is meant to create an environment of partnership between education and scholarship which is essential to prepare the faculty to fiercely compete in neo-globalized market.

The Executive Council is fully committed to deliberate the issues and intend to see accelerated operations during its tenure.

Following are considered as priority agenda in this regard:

1. See enhanced level of communication and opportunities with membership of the constituent societies in order to promote scientific and research cooperation.
2. Strengthen the academic communication by adding diversity and increasing frequency of scientific events.
3. Strengthen the communication through interactive website, reviving the Newsletter so as to enhance cohesion amongst the membership.
4. Seeing a proactive Executive council that could deliver its best to add value to SAAP operation and its financial health.
5. Strengthen the communication and cooperation with FAOPS and IUPS.

We are working proactively to come up to a mechanism where existence of SAAP in South Asia could make a distinct difference in near future. Understanding and cooperation of all concerned is of paramount importance to see the deliverables achieved. Professor Savithri S Wimalsekera, Secretary General with her passion and energy of higher level can be found more than willing to see SAAP achieving its goals.

With the revival of SAAP Bulletin we are reintroducing another forum to see information dissemination among the membership to make the exercise professionally rewarding. Achievement of full dividends is only subject to active participation and providing interesting and valuable contributions. I am immensely obliged to Professor Piyusha Atapattu who kindly consented to offer her services with deep interest to make the SAAP Bulletin an informative and vibrant organ of the SAAP. Editorial Board been reconstituted with two Assistant Editors representing each country. Terms of Reference in this is already been shared by Professor Atapattu and more vigorous contribution is expected from all concerned. Needless to mention, that in due course the Newsletter will form a basis for a peer-reviewed journal from the platform of SAAP.

Wishing all the best to Professor Piyusha Atapattu and her team for endeavors and sincere felicitations to all members of SAAP

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## Message from the Secretary General SAAP



**Professor Savithri Wimalasekera**

Dear SAAP members

It is a great pleasure to send you this message for the revived SAAP bulletin 2019 as the Executive Secretary General of SAAP 2018 - 2020. I have humbly accepted this great trust to serve SAAP as best as possible for the next 2 years. It was a great pleasure and honor to attend the well organised SAAP VI conference at the University of Lahore, Lahore, Pakistan in December 2018. It was a wonderful time of academic collaboration, interaction and social reunion of a close knit family that has been bonded for the last 10 years. I sincerely thank Prof Samina Malik, the conference organising committee and members of the Pakistan Physiological Society for a very well organised conference rich in academics and the warmest of hospitality.

South Asia has great potential to develop as a scientific and academic hub of the region. The region has many similar socio-cultural, religious and economic commonalities as well as huge diversity. All aspects of similarities and diversity can be harnessed for the betterment of its people.

Throughout the world multicultural multiethnic research and scientific activity are becoming popular. South Asian physiologists can actively harness these aspects by engaging in dialogue, establishing research, academic collaboration and united actions.

In order to promote these collaborations and maintain common academic communication amongst us the SAAP Bulletin would be very useful. We have a dynamic editor, Professor Piyusha Atapattu and an editorial committee with representations from all the SAAP countries. I sincerely hope the bulletin would activate the much needed intercultural communication. The committee has worked hard to provide the material and updates from each of the physiological societies from the SAAP member countries. Thus we hope to launch the online bulletin soon.

Further, the executive council is greatly interested in developing a new website which is more visible. Dr. Himansu Waidyasekera is the web master and we hope we can launch the revamped web site soon as well.

As the General Secretary I look forward to maintaining a close collaboration amongst us. I will be available for personal discussion via e mail, skype, viber / whatsapp for all academic/administrative matters. Therefore please feel free to viber or text me and we can decide a mutually convenient time for a chat. Thus I look ahead to another forward moving tenure for SAAP as well as our respective Physiological societies in the next several years.

I look forward to working with you during the next two years for the betterment of physiology and science in the region.

Professor Savithri Wimalasekera,  
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(SAAP)

2018-2020

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Professor Niranga Devanarayana

#### Invited nominees from Bhutan

Dr. Karma Tenzin  
Dr. Phurpa

## From Editor's Desk



**Professor Piyusha Atapattu**

It is my pleasure to be appointed the Editor-in-Chief of the revived SAAP Bulletin, the official publication of the South Asian Association of Physiologists after many years of hibernation.

SAAP is the platform for physiologists in SAARC countries to showcase their research, exchange new knowledge and share local news among the international physiology community. Biennial SAAP conference held in SAARC countries provides the opportunity for this every two years. The SAAP bulletin however offers the prospect of international exchange of physiology updates and news among a wider audience, more frequently and in a less formal manner. Moreover, the SAAP Bulletin would serve to link the physiology fraternity in the SAARC countries, enabling multicultural and multiethnic interactions going beyond physiology.

For the SAAP Bulletin to be a success the SAAP membership should make active contributions, regularly. No news will be too small, and no physiology-related contribution will be unworthy of the SAAP Bulletin.

I invite all SAAP member physiological societies to take this opportunity and play a role in enhancing the quality of the SAAP Bulletin.

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## News and Events of the Physiological Societies of SAAP Countries

### Bangladesh Society of Physiologists

Bangladesh Society of Physiologists (BSP) was founded in 2006. There are about 400 active members with postgraduate degrees in medical Physiology.

BSP is committed to work for the betterment of its member and flourishing physiology learning. It forms bridge to facilitate interchange of ideas among Physiologists of Bangladesh.

BSP promotes undergraduate and postgraduate studies, exploratory research and other initiatives for progressing and popularizing Physiology for the betterment of the community.

BSP organizes a national convention every two years, conducts scientific sessions, general meeting, awards ceremony to encourage students, condolence ceremony for deceased Physiologists

and publishes journals. BSP continuously upgrades the subject with future plans for establishing “National Institute of Physiology” in Bangladesh.

BSP is closely working with SAAP and International Union of Physiological Sciences (IUPS).

The 5<sup>th</sup> National Convention & Annual General Meeting of BSP was held on March 1<sup>st</sup>, 2019, at Shaheed Suhrawardy Medical College, Dhaka.

The Chief Guest was Professor Dr. Muhammad Zafar Iqbal, Department of Computer Science & Engineering, Shahjalal University of Science & Technology. Professor ABM Maksudul Alam, Principal, Shaheed Suhrawardy Medical College, Dhaka was special guest and Senior Eminent Physiologists Professor KM Fariduddin & Professor Mosharraf Hossain Molla were the guests of honor.





The seminar was presided over by Professor Noorzahan Begum, president, BSP. The theme of the scientific session was ***“Learn Physiology-Be a Good Physician”***. Professor Hossain Reza, Vice Chancellor, Khawaja Yunus Ali University, highlighted the importance of the theme topic in his keynote presentation.

Lifetime achievement award was endowed to renowned physiologist late Professor MAHai, Professor Abdur Rahman Memorial Award & Professor Nayeema Akhter Memorial Award were awarded to the highest mark achiever in 1<sup>st</sup> Professor MBBS & MD Physiology respectively.

Annual general meeting was held and the new executive committee was appointed.

Professor Rokeya Begum was elected as president and Professor Nilufar Rahman as Secretary General. Scientific papers and posters were presented. The seminar was attended by a large number of physiologists from different parts of Bangladesh.

Dr. Shams Ruhani Islam  
Lecturer (Physiology)  
Shaheed Suhrawardy Medical College,  
Dhaka, Bangladesh.

### Recent Activities of the Physiological Society of Nepal (PSN)

The Physiological Society of Nepal (PSN) has the vision of uplifting Nepal to the regional and global in the field of physiology. PSN has set the goal of organizing regular academic activities at various levels to establish physiology as an attractive and active discipline in Nepal. Apart from the regular conference of the Society, PSN has been encouraging and actively promoting various activities related to physiology in various institutions in Nepal.

### Inter-Medical School Physiology Quiz

#### Inter-Medical School Physiology Quiz, Nepal – 2018 (IMSPQ, Nepal-2018)

The Department of Physiology (Nepal Medical College, Kathmandu) organized the Inter-Medical School Physiology Quiz in Nepal Medical College on 12th October, 2018 to celebrate the 'Physiology Friday', an event bolstered by The Physiological Society, UK (with which PSN has close ties since early days of PSN establishment). Eighteen teams from ten medical colleges of the country participated. Top two teams from two pools each were selected in the qualifier round; winners were declared in the final round. All participants were given certificates, top ranked teams were awarded with cash prize and souvenir books ('Guyton and Hall textbook of medical physiology' and 'Ganong's

review of medical physiology' – international editions), and the winner team additionally received the Professor Tara Man Amatya Trophy (in name of the present PSN President). The Organizing Committee consisted of Dr. Ojashwi Nepal (Chairperson), Rajan Pandit (Organizing Secretary), and Dr. Mrigendra Amatya (Quiz Coordinator).

Inter-Medical School Physiology Quiz, Nepal – 2019 (IMSPQ, Nepal-2019) was held on 11th October 2019 at the Nepal Medical College, Kathmandu, Nepal.

**Inter-Medical School Physiology Quiz-2019, Nepal**

**Who can Participate?**  
✓ Medical Students (MBBS, BDS, B.Sc Medical)  
Note: 3 students per team.

**1st Prize**  
Rs 15,000, Certificate & Trophy

**2nd Prize**  
Rs 9,000, Certificate

**3rd Prize**  
Rs 6,000, Certificate

Note: Ganong's Review of Medical Physiology by Barrett KE et al. (Special Gift)

**Registration information:**  
• Rs 2000 per team (for students studying in Nepal)  
• \$30 per international team  
• Audience: Rs 300 per person  
• Deadline: 18<sup>th</sup> September, 2019

**Accommodation information:**  
Please contact us for more information

Note: All registered individual gets breakfast & lunch

The Physiological Society  
Nepal Medical College  
Nepal Medical College

Venue: Nepal Medical College  
Jorpati, Kathmandu, Nepal  
Date: 11<sup>th</sup> October, 2019

For further information: +977- 9841580532  
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## Physiological Society of Sri Lanka

The Physiological Society of Sri Lanka (PSSL) fosters fellowship among the physiologists, and promotes and supports teaching, research and dissemination of new knowledge in physiology while contributing to community development.

PSSL had a successful year in 2019. It conducted 3 major activities during the year, ie: the regional meeting, Inter-Medical Faculty Physiology Quiz and the Annual Scientific Sessions. The activities of the year culminated in the Annual General Meeting, at which the new council for the year 2020 was appointed. Year 2019 also brought the demise of Professor Carlo Fonseka, a much loved physiology giant in Sri Lanka.

### Regional Meeting

The regional meeting was held on 15.03.2019 at the Faculty of Medicine and Allied Sciences of the Rajarata University of Sri Lanka. Led by the Head of department, Dr. Sujanthi Wickramage, the staff of the department had organized a scientific programme of high standard, interspersed with a well organized social programme. The speakers were the chief guest Professor Malini Udupihille, Professor Suneth Agampodi, Dr. Anjana de Silva spoke and Dr. Lakmali Amarasiri.



Prof Malini Udupihille



Dr. Sujanthi Wickramage



Dr. Lakmali Amarasiri



Professor Suneth Agampodi

## Inter-Medical Faculty Physiology Quiz for Professor Carlo Fonseka Challenge Trophy

The 6<sup>th</sup> Inter-Medical Faculty Physiology Quiz was held on 20th July 2019 at the Faculty of Medicine, University of Peradeniya.

Medical faculties of 9 universities participated in the quiz and Wayamba university participated as observers.

University of Colombo team emerged winners with the Universities of Peradeniya and Sri Jayewardenepura emerging the first and second runners up respectively.



The winning team – University of Colombo



Quiz teams in action

## Annual Scientific Sessions of the PSSL

The 32<sup>nd</sup> Annual Scientific Sessions of the PSSL was held this year at the Faculty of Medicine, University of Peradeniya. The theme of the conference was 'Physiology for Healthy Living'.

On 23<sup>rd</sup> November, the pre-congress workshop titled 'An update on investigating the gastrointestinal tract: high resolution manometry and pH impedance studies' organized by Professor Niranga Devanarayana was held in Colombo to a packed audience. On the same evening, the K N Seneviratne oration was delivered by Professor Sudharshani Wasalathanthri at the Faculty of Medicine Colombo.



Dr. Indu Nanayakkara with the orators Professor Wasalathanthri and Professor Kalupahana



Professor Anoja Fernando and Dr. Shanthi Mendis

At the Annual Scientific Sessions on the 30<sup>th</sup> November, President of the PSSL Dr. Indu Nanayakkara delivered the welcome address. The Chief guest was Dr. Shanthi Mendis who delivered the keynote address.

Valentine Basnayake Memorial oration was delivered by Professor Anoja Fernando, and the ACE Koch memorial oration was delivered by Professor Sudheera Kalupahana.

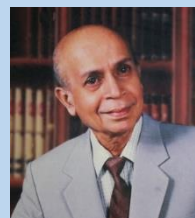
The conference also comprised symposia, free papers and the presentation by the recipient of the K N Seneviratne research award 2018 Dr. Chanika Alahakoon. K N Seneviratne research award for 2019 was received by Dr. Amaranath Karunanayake and the K N Seneviratne Memorial and for the best student in Physiology at the Faculty of Medicine Colombo was received by Mr. MM Manchanayake.

The successful Annual Academic Sessions was concluded with Professor Dinithi Fernando delivering the vote of thanks. This was followed by the Annual General Meeting of the PSSL, where Professor Niranga Devanarayana was elected the President of the PSSL for 2020.



Professor Fernando and Professor Devanarayana

## Tribute to Professor Carlo Fonseka



Professor Carlo Fonseka (1933-2019) was a founder member of the PSSL, and a key figure in the field of Physiology. He was the Professor of Physiology of the

Faculty of Medicine, University of Colombo and the Founder Dean of the Faculty of Medicine of the University of Kelaniya. He obtained his PhD from the University of Edinburgh and made significant contribution to physiology research with over 40 publications. He was a much-loved brilliant teacher, a physiologist and a rationalist, an artist, writer, popular speaker and a political ideologist. The void created by the demise of this physiological icon of Sri Lanka will never be filled.

## Featured Article



**Professor Vajira Weerasinghe**

### Can a fetus hear?

#### Neurophysiological Evidence for auditory perception in human and animal fetuses

It is a common belief among pregnant women that a fetus can hear sound, in particular music. Based on that thinking, most parents-to-be enjoy playing songs, talk to the fetus or in the Asian context they would chant religious sermons expecting a beneficial effect on the behavior of the baby once born.

Aim of this short review paper is to find out whether there is a scientific basis for this observation.

It is known that the hearing is the first sensory system to complete neuronal maturation. It is also reported that a fetus actively react to music and other external stimuli. Auditory system becomes functional at around 24 weeks of gestation. This is the time when the hair cells of the cochlea, the axons of the auditory nerve, and the neurons of the temporal lobe auditory cortex are developed to receive signals of specific frequencies and intensities. It is also known that continuous exposure to loud background noise in the home will interfere with auditory development and especially frequency discrimination.

Acoustic nature of the intrauterine environment has been studied in sheep too. Sheep is considered as a suitable model to study this subject since sound attenuation characteristics and the sound perception are similar to that of humans. In a study on a sheep model, data about in utero sound

transmission of external sound beyond physiological noise have been reported. Measurement of acoustic transmission through the maternal abdominal and uterine walls was studied using a hydrophone, an underwater listening device attached under general anesthesia to the occiput of the fetal head within the amniotic sac. Results showed frequency contents above 10 kHz are transmitted into the amniotic sac and that some frequencies are attenuated by about 3 dB.

It is evident that the intrauterine environment is acoustically rich and that a fetus is capable of hearing and responding to sound in the womb.

In another study, cochlear microphonics were recorded from the round window of a fetal sheep in utero when tone bursts (0.5, 1.0, and 2.0 kHz) were delivered through a loudspeaker at high intensities (100 to 135 dB sound pressure level) to the flank of the ewe. Results showed that the principal mode of sound transmission into the fetal inner ear is through bone conduction.

Delayed auditory brainstem response (ABR) waves and temporary elevation of ABR thresholds were recorded in utero from chronically instrumented fetal sheep prior to and following exposure of pregnant ewes to intense broadband noise (120 dB SPL for 16 h). It is concluded that exogenous loud sounds can penetrate the uterus and result in alterations of fetal ABR.

The control of outside noise, the exposure to meaningful speech sounds and music, and the protection of sleep and sleep cycles, especially rapid eye movement sleep, are essential for healthy auditory development.

Sounds in the environment of a pregnant woman penetrate the tissues and fluids surrounding the

fetal head and stimulate the inner ear through a bone conduction route. The sounds available to the fetus are dominated by low-frequency energy, whereas energy above 0.5 kHz is attenuated by 40 to 50 dB. The fetus easily detects vowels, whereas consonants, which are higher in frequency and less intense than vowels, are largely unavailable. Rhythmic patterns of music are probably detected, but overtones are missing. A newborn human shows preference for his/her mother's voice and to musical pieces to which he/she was previously exposed, indicating a capacity to learn while in utero. Intense, sustained noises or impulses produce changes in the hearing of the fetus and damage inner and outer hair cells within the cochlea. The damage occurs in the region of the inner ear that is stimulated by low-frequency sound energy.

However, there is an opposite view expressed by Dr. Mellow and his colleagues from New Zealand suggesting that there is no reason for playing music or talking to the fetus as babies in utero are in a "deep sleep" until they are born and they believe that there are chemicals in the fetus that are produced by their brain and the placenta that actively keep it asleep.

Another area where active research has been undertaken is the effect of instrumentation on the fetal auditory sensation. Exposure of the fetus to operating noise of 1.5-T MRI imaging during the second and third trimesters of pregnancy is not associated with an increased risk of substantial neonatal hearing impairment. There is evidence that fetus can hear ultrasound which brings to the argument of safety in performing repeated obstetric ultrasound examination and the well-being of the fetus. Diagnostic ultrasound is considered to be safe if proper procedure is followed. In a much quoted study, it is mentioned that "Fetuses can hear

ultrasound, and the sound is as loud as a subway train entering the station". However, subsequent studies have shown that the risk to human fetuses when using diagnostic ultrasound appears to be minimized if ALARA principle is followed, viz. using the lowest output power consistent with acquiring the necessary diagnostic information and keeping the exposure time as low as possible for accurate diagnosis. NICU environment also carry s risk of many different sounds affecting fetal hearing.

Long term effects of fetal exposure to sounds have been studied in a longitudinal study investigating mother-fetus communicative relationship, where a questionnaire was given to 58 pregnant mothers in their sixth to nine month of pregnancy evaluating the acoustic aspects of mother's daily life environment and the quality and the quantity of her linguistic communication. Later, when the children of those mothers were ten to eighteen months old, they were tested with their communicative and linguistic development. Results indicate that the frequency of intentional daily mother-fetus linguistic communication shows an association with the linguistic understanding and the communicative actions and gestures of 18-month children. Another study has shown that the fetal retention of auditory experience into early postnatal life may contribute to language acquisition during the first year. There is no sound evidence that providing extra prenatal auditory stimulation benefits the developing child.

It could be hypothesized that if a fetus can hear, he/she should be able to vocalize as well. However, a study reported in 1991 has shown negative results. In this study, an estimation of the intensity and frequency of the voice was made on the assumption that the fetus can vocalize. However it was concluded that the voice seemed to be buried in the noise and difficult to detect.



In conclusion, I wish to quote the recommendation of the Expert Review Panel on the Physical and Developmental Environment of the High-Risk Infant Center, Study Group on Neonatal Intensive Care Unit (NICU) Sound which says that pregnant mothers should avoid prolonged exposure to low-frequency sound levels (<250 Hz) above 65 dB. It further says that the voice of the mother during normal daily activities, along with the sounds produced by her body and those present in her usual surroundings, is sufficient for normal fetal auditory development. It further reiterates that the fetus does not require supplemental stimulation and the programs to supplement fetal auditory experience cannot be recommended based on the current evidence.

### **References**

*Abramowicz JS, Kremkow FW & Merz E. Ultrasound in Obstetrics: Can the fetus hear the ultrasonic wave and feel the heat? Obstetrical Ultrasound: Can the Fetus Hear the Wave and Feel the Heat? Ultrasound in Medicine 2012, 33(3), 215-217.*

*Feathers S. The Fetus in Utero: The Ability to Hear and React to Music. An Honors Thesis (HONR 499) 2014, Ball State University, Indiana.*

*Gélat P, David AL, Haqhenas SR, Henriques J, de Maisieres AT, White T & Jauniaux E. Evaluation of fetal exposure to external loud noise using a sheep model: quantification of in utero acoustic transmission across the human audio range. American Journal of Obstetrics & Gynecology 2019, 221(4), 343.e1–343.e11.*

*Gerhardt KJ & Abrams RM. Fetal exposures to sound and vibroacoustic stimulation. Journal of Perinatology 2000, 20(8), 521-530.*

*Gerhardt KJ, Huang X, Arrington KE, Meixner K & Antonelli PJ. Fetal sheep in utero hear through bone conduction. American Journal of Otolaryngology 1996, 17(6), 374-379.*

*Graven SN. Sound and the Developing Infant in the NICU: Conclusions and Recommendations for Care. Journal of Perinatology 2000, 20, S88–S93.*

*Graven SN & Browne JV. Auditory Development in the Fetus and Infant. Newborn and Infant Nursing Reviews 2008, 8(4), 187-193.*

*Ishii T, Horiguchi S, Kato T, Watari N, Hirose M & Hirota K. If the fetus can vocalize, how can we detect it? Biol Neonate. 1991;60 Suppl 1:52-61.*

*Lahav A & Skoe E. An acoustic gap between the NICU and womb: a potential risk for compromised neuroplasticity of the auditory system in preterm infants. Frontiers in Neuroscience 2014, 8. Article 381,1-8.*

*Moon CM & Fifer WP. Evidence of Transnatal Auditory Learning. Journal of Perinatology 2000, 20, S37–S44.*

*Reeves MJ, Brandreth M, Whitby EH, Hart AR, Paley MNJ, Griffiths PD & Stevens JC. Neonatal Cochlear Function: Measurement after exposure to acoustic noise during in utero MR Imaging. Radiology 2010, 257(3), 802-809.*

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# Down the Memory Lane of SAAP Conferences

**First Biennial SAAP conference: Pakistan**  
14-16 November 2008 at Shifa College of Medicine, Islamabad, Pakistan in conjunction with 11th Biennial Conference of Pakistan Physiological Society.

**1<sup>st</sup> South Asian Conference of Physiological Societies**  
&  
**11<sup>th</sup> Biennial Conference of Pakistan Physiological Society**  
on  
**PHYSIOLOGY UPDATES**  
'Trends, Opportunities & Challenges'  
November 10 to 12, 2008



**Third Biennial SAAP conference: Sri Lanka**  
7-10 December 2012 Colombo Sri Lanka

**Second Biennial SAAP conference: India**  
2010 December at St. John's Medical College, Bangalore



**For Whom**

- Academics
- Researchers
- Doctors
- Medical & paramedical undergraduates & postgraduates
- Health care professionals
- Course organizers

**Key dates**

Abstract submission deadline : 15.06.2012  
Early bird registration : 01.09.2012

**Registration**

Main conference	
Early Bird	- 250 USD
Onsite	- 300 USD
Pre conference workshop	- 50 USD
Post conference workshop	- 50 USD

**Programme Highlights**

- Main conference
- Pre and post congress workshops on medical education, neuro and bone physiology
- Plenaries by international speakers
- Interactive symposia on recent advances in physiology
- Free paper sessions
- Cultural events
- Social programme

Contact: Secretariat, Alkum Speciality Clinicians & Exhibitors, Alkum Speciality Towers, 305, Vauxhall street, Colombo 02, Sri Lanka.  
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Phone: +094773418665 (Naduwala) +09477364989 (Rozvi)

**Fourth Biennial SAAP conference: Bangladesh**  
Dec 4-7, 2014, Bangabandhu Sheikh Mujib

**Fifth Biennial SAAP conference: Nepal**  
10-13 November 2016, Kathmandu, Nepal

## SAAPCON 2016

5th Biennial Conference of South Asian Association of Physiologists & 2nd Annual Conference of Physiological Society of Nepal

10 - 13 November 2016 / Kathmandu, Nepal

**Sixth Biennial SAAP conference: Pakistan**  
13-16 December 2018, Lahore, Pakistan

University College of Medicine & Dentistry THE UNIVERSITY OF LAHORE

**Enhancing Research Collaboration in South Asia**  
6<sup>th</sup> Biennial South Asian Association of Physiologists & 16<sup>th</sup> Biennial Pakistan Physiological Society Conference

**CHAIRMAN SAAP VII**  
Prof. Dr. Arif Siddiqui

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**DEC 13-15, 2018**

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[sites2.uol.edu.pk/SAAP-PPSCON2018/](http://sites2.uol.edu.pk/SAAP-PPSCON2018/)  
University College of Medicine & Dentistry, The University of Lahore, 1km off Defence Road, Bhotatian Chowk, Raiwind Road, Lahore, Pakistan

Preconference Teaching Workshops  
Dec 12, 2018

## Upcoming Events



**7<sup>th</sup> SAAPCON will be held in Jamia Hamdard, New Delhi, India**

**ALL PAKISTAN INTER-MEDICAL COLLEGE  
PHYSIOLOGY QUIZ**

**20<sup>th</sup> FEBRUARY '2020**

**WHO CAN PARTICIPATE?**

- 3 MEDICAL UNDERGRADUATES PER TEAM FROM
- PRE CLINICAL (1<sup>ST</sup> / 2<sup>ND</sup> YR)
- PARA CLINICAL (3<sup>RD</sup> / 4<sup>TH</sup> YR)
- CLINICAL (FINAL YR)

**REGISTRATION FEE**  
RS. 5000 PER TEAM

**REGISTRATION DEADLINE**  
31<sup>st</sup> DECEMBER, 2019

**WITH THE GLOBAL PIONEER**  
**PROF. CHENG HWEE MING**  
DEPARTMENT OF PHYSIOLOGY  
UNIVERSITY OF MALAYA  
KUALA LUMPUR, MALAYSIA

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