

67th Annual National Conference of
Association of Physiologists and
Pharmacologists of India



"Confluence of Health Sciences"

ESIC Medical College & Hospital, Faridabad,
Delhi NCR-121001

APPICON 2021-22

67th Annual National Conference of Association of
Physiologists and Pharmacologists of India

Pre-conference Workshops

13th April, 2022

Conference

14th – 16th April, 2022

Theme

Confluence of Health Sciences



Organized By



Department of Physiology & Pharmacology
ESIC Medical College & Hospital, NH-3, NIT
Faridabad, Delhi NCR-121001

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About ESIC

The promulgation of Employees' State Insurance Act, 1948 (ESI Act), by the Parliament was the first major legislation on social Security for workers in independent India. The legislation on creation and development of a full proof multi-dimensional Social Security system in India, notwithstanding, thus, took the lead in providing organized social protection to the working class through statutory provisions.

The ESI Act 1948, encompasses certain health related eventualities that the workers are generally exposed to, such as sickness, maternity, temporary or permanent disablement, Occupational disease or death due to employment injury, resulting in loss of wages or earning capacity-total or partial.

ESIC Medical College & Hospital, Faridabad (under ministry of Labour & Employment, Govt. of India) as a Healthcare, Academic and Research institute. ESIC apart from health care, offers comprehensive social security to approximately 3.49 crores insured persons & around 15 crores beneficiaries with monthly income upto Rs. 21,000 provides health care to the insured persons (IPs), and their beneficiaries earning less than Rs. 21,000 per month. This institute started in 2015 and currently 500 students are enrolled in the MBBS curriculum.

About APPICON 2021-22

APPICON is an annual conference organized by 'The Association of Physiologists and Pharmacologists of India'. The APPI is 67 years old organization that publishes an indexed journal called "The Indian Journal of Physiology and Pharmacology", published quarterly. APPI holds a number of national and regional scientific meetings every year, to promote the advancement of Physiology, Pharmacology and Allied sciences in India, and help to standardise and raise the level of teaching and research. APPI had the honour to be associated with world pioneering scientists like Prof. AS Paintal, Prof. Baldev Singh, Prof. BK Anand and so on.

Eminent faculties, medical professionals, researchers and students have been attending the conference from abroad and various parts of India, over the years. *This year the theme of the conference is:*

"Confluence of Health Sciences"

It gives us immense pleasure to invite you to participate in the Conference and associated workshops which will be held in *hybrid mode* (physical and virtual modes).

*Scientific Program, Sessions &
Events
Eminent Faculty*

Dr. Y.K. Gupta

*(President, AllMS Bhopal & AllMS
Jammu &
Principal Advisor (Project), THSTI-
DBT, GOI)*

Dr. Gagandeep Kang

*(Professor, Virology, CMC, Vellore &
Ex-executive Director, THSTI,
Faridabad)*

Dr. Nandu Goswami

*(Professor & Head, Physiology,
Medical Unit of Graz, Austria)*

Dr. Russomano Thais

*(Senior Lecturer, King's College,
London)*

Dr. Ramesh Bhatnagar

(Ex-Vice Chancellor, BHU, Varanasi)

Dr. S.B. Deshpande

*(Ex- Professor & Head, Physiology,
IMS, BHU, Varanasi)*

Dr. H.N. Mallick

*(Professor, Physiology, SGT
University, Gurgaon)*

**Dr. (Gp. Capt.) Dinesh Kumar
Dubey**

*(Professor & Head, Physiology,
GIMS, Greater Noida)*

Dr. Ratna Sharma

*(Professor, Physiology, AllMS, New
Delhi)*

Dr. Pramod Garg

*(Professor & Executive Director,
THSTI, Faridabad)*

Dr. K.K. Deepak

*(Professor & Head, Physiology,
AllMS, New Delhi)*

Dr. Anurag Agrarwal

(Director, CSIR-IGIB, New Delhi)

Dr. V. Krishna Mohan

*(Executive Director, Bharat
Biotech, Hyderabad)*

Dr. Ramji Singh

*(Executive Director & CEO, AllMS,
Kalyani, WB)*

Dr. T. R. Raju

*(Ex-Professor & Head,
Neurophysiology, NIMHANS)*

Dr. M.C. Gupta

*(Ex-Director, Dean, Professor &
Head, Pharmacology, PGIMS,
Rohtak)*

Dr. Kanwal P. Kochhar

*(Professor, Physiology, AllMS, New
Delhi)*

Dr. A.K. Jaryal

*(Professor, Physiology, AllMS, New
Delhi)*

Dr. Shashi Bala Singh

(Director, NIPER, Hyderabad)

Dr. Abhinav Dixit

*(Professor & Head, Physiology,
AllMS, Jodhpur)*

Dr. Himani Ahluwalia

*(Director Professor & Head,
Physiology, VMCC & Safdarjung
Hospital, New Delhi)*

Dr. Hans Raj

*(Consultant Clinical
Neurophysiologist)*

Dr. Raj Kumar Yadav

*(Professor, Physiology, AllMS, New
Delhi)*

Dr. Mrunal Phatak

*(Professor & Head, Physiology,
AllMS, Nagpur)*

Dr. Vivek Kumar Sharma

(Professor & Head, AllMS, Rajkot)

Dr. Joseph Mukkadan

*(Research Director, Little Flower
Institute of Medical Science and
Research, Kerala)*

Invited Chairpersons

1. Dr. T.R. Raju, A.S. Paintal Distinguished Scientist Chair of ICMR, NIMHANS, Bengaluru
2. Dr. K.K. Deepak, Professor and Head, Physiology, AIIMS, New Delhi
3. Dr. Nalin Mehta, Director, NEIGRIHMS, Shillong
4. Dr. Sudhanshu Vratil, Professor and Executive Director, Regional Center for Biotechnology, Faridabad
5. Dr. C.D. Tripathi, Director Professor and Head, Pharmacology, GIMS, Greater Noida
6. Dr. H.S. Rehan, Director Professor and Head, Pharmacology, LHMC, New Delhi
7. Dr. Vandana Roy, Director Professor and Head, Pharmacology, MAMC, New Delhi
8. Dr. (Gp. Capt.) D.K. Dubey, Professor and Head, Physiology, GIMS, Greater Noida
9. Dr. N.R. Biswas, Professor, Pharmacology, AIIMS, New Delhi
10. Dr. S.B. Deshpande, Professor and Head, Physiology, AIMSR, Chittoor
11. Dr. H.N. Mallick, Professor, Physiology, SGTU, Gurgaon
12. Dr. Arti Sood Mahajan, Director Professor, Physiology, MAMC, New Delhi
13. Dr. Sunita Mondal, Director Professor and Head, Physiology, LHMC, New Delhi
14. Dr. Neelam Vaney, Director Professor and Head, Physiology, UCMS, New Delhi
15. Dr. Himani Ahluwalia, Director Professor and Head, Physiology, VMMC and SJH, New Delhi
16. Dr. Lalit Gupta, Director Professor, Pharmacology, LHMC, New Delhi
17. Dr. Sujata Gautam, Director Professor, Physiology, LHMC, New Delhi
18. Dr. Guruprasad R. Medigeshi, Professor, THSTI, Faridabad
19. Dr. K.P. Kocchar, Professor, Physiology, AIIMS, New Delhi
20. Dr. Asha Gandhi, Professor and Head, Physiology, SGTU, Gurgaon
21. Dr. Renuka Sharma, Director Professor, Physiology, VMMC and SJH, New Delhi
22. Dr. Rajiv Bandhu, Director Professor, Physiology, LHMC, New Delhi
23. Dr. Farah Khaliq, Director Professor, Physiology, UCMS, New Delhi
24. Dr. Ravindra Wadhvani, Professor and Head, Physiology, MGM Medical College, Indore
25. Dr. Ashok Kumar Jaryal, Professor, AIIMS, New Delhi
26. Dr. Laxmi T Rao, Professor, Neurophysiology, NIMHANS, Bengaluru

27. Dr. Kalpana Barhwal (Associate Professor, Physiology, AIIMS, Bhubhaneshwar)
28. Dr. Preeti Jain, Professor, Physiology, MAMC, New Delhi
29. Dr. Sunita Tiwari, Professor, Physiology, KGMU, Lucknow
30. Dr. Madhuri Taranikanti, Professor, Physiology, AIIMS, Bibinagar
31. Dr. Abhinav Dixit, Professor and Head, Physiology, AIIMS Jodhpur
32. Dr. G.K. Pal, Professor, Physiology, JIPMER, Puducherry
33. Dr. Mrunal Phatak, Professor and Head, Physiology, AIIMS, Nagpur

Chairpersons from ESIC Medical College and Hospital, Faridabad

1. Dr. Asim Das, Organizing Chairperson APPICON 2021-22 and Dean ESIC Medical College and Hospital, Faridabad
2. Dr. A.K. Rai, Professor and Head, ENT, ESIC Medical College and Hospital, Faridabad
3. Dr. M.K. Sen, Professor and Head, Department of TB and Chest Diseases, ESIC Medical College and Hospital, Faridabad
4. Dr. R.N. Mandal Ravi, Professor and Head, Pediatrics, ESIC Medical College and Hospital, Faridabad
5. Dr. (Brig.) Tathagata Chatterjee, Senior Consultant and Head (Hematology) and Professor and Head (IHBT), ESIC Medical College and Hospital, Faridabad
6. Dr. Monica Aggarwal, Professor and Head, Pharmacology, ESIC Medical College and Hospital, Faridabad
7. Dr. Praveen Malik, Professor and Head, Medicine, ESIC Medical College and Hospital, Faridabad

Pre-Conference Workshops

Preconference Workshop 1

Title: Microgravity countermeasure and simulation methods

Organized by: Department of Physiology, AllMS, New Delhi

Time and date: 10 am to 4 pm, 13th April 2022

Venue: Space and environmental Physiology Laboratory (Room No 6013), Convergence block, AllMS, New Delhi

Organizing Secretary: Dr. K.K. Deepak, Professor & Head, Department of Physiology, AllMS, New Delhi

Co-organizing Secretary: Dr. Akanksha, Associate Professor, Department of Physiology, AllMS, New Delhi

Workshop faculty: Dr. K.K. Deepak (AllMS, New Delhi), Dr. Nandu Goswami (Graz, Austria), Dr. Akanksha (AllMS, New Delhi), Dr. Shival Srivastava (AllMS, Jodhpur), Dr. Gagan Bhanode (AllMS, Raipur), Dr. Vishwajeet Sankhwar (NIT Jalandhar), Aparajita Bhatnagar (MAMC, Delhi)

About the workshop: The workshop is aimed to provide a hands-on experience on the use of on ground microgravity simulation models which are critical for research into physiological effects of microgravity environment. The workshop will include “*wet laboratory*” exercise which will include sessions on Lower body negative pressure (LBNP) as a countermeasure and lower body positive pressure (LBPP) as well as head down tilt (HDT) as simulation methods with application in microgravity research, training and education. There will also be a “*dry laboratory*” session to promote academic discussion on these models even in resource limited centers through group discussion guided and supervised by experts.

Workshop Program Details

Sr. No.	Time	Event
1.	09 -10 am	Registration
2.	10 -10:15 am	Introduction to Workshop
3.	10:15 -11 am	Lower Body Negative Pressure (LBNP)
4.	11:15 am -12 pm	Lower Body Positive Pressure (LBPP)
5.	12 -1 pm	Head down tilt (HDT)
6.	1 -2 pm	Lunch
7.	2 -4 pm	Dry lab session on LBPP

Preconference Workshop 2

Title: Filing patents in Physiology

Organized by: Department of Physiology, AIIMS, New Delhi

Time and date: 2 pm to 4.30 pm, 13th April 2022

Venue: Seminar Room, Department of Physiology, AIIMS, New Delhi

Organizing Secretary: Dr. K.K. Deepak, Professor and Head, Department of Physiology, AIIMS, New Delhi

Co-organizing Secretary: Dr. Abhinav Dixit, Professor and Head, Department of Physiology, AIIMS, Jodhpur

Workshop faculty: Dr. K.K. Deepak (AIIMS, New Delhi), Dr. Abhinav Dixit (AIIMS, Jodhpur), Dr. Vimal K. Varun (Scientist F, DSIR, Gol, New Delhi), Dr. Kapil Arya (Sr. Scientist, NISCARE, Gol, New Delhi), Dr. Vishwajeeet Sankhwar (NIT Jalandhar).

About the workshop: The workshop is aimed to provide exposure to various steps and work experience on Intellectual property rights (IPR), which are critical for research in physiological innovations. Intellectual property rights are the rights given to persons over the creations of their minds. The workshop will include examples and exercises which will include all aspects of patent filing. There will also be a “dry exercises” session to promote academic discussion on the filing process even in resource limited centers through group discussion guided and supervised by experts. The concept of “Physiologist-Entrepreneur” will also be discussed.

Workshop Program Details

Sr. No.	Time	Event
1.	2-4 pm	1. Introduction by Dr. K.K. Deepak/Dr. Abhinav Dixit 2. Talks and workshop by experts: - Dr. Vimal K. Varun, Scientist F, DSIR, Gol, New Delhi - Dr. Kapil Arya, Sr. Scientist NISCARE, Gol, New Delhi - Dr. Abhinav Dixit, Professor and Head, Dept of Physiology Jodhpur 3. Dry exercises

Abstracts of the talks of each of the speakers in the workshop

Name of speaker 1: Prof. K.K. Deepak: Dean (Examinations) & Head, Department of Physiology, Professor In-charge, Centre for Medical Education & Technology Innovations, AIIMS, New Delhi

Topic: Innovation and Physiology- Experience from a premier medical institution

Abstract: The Department of Physiology at AIIMS, New Delhi has been a benchmark as far as research in Physiology is concerned in India. The Autonomic Function Lab since its inception has brought newer technologies for use in research and patient care. The lab not only laid down the standards for autonomic testing, but also ventured into newer domains like microgravity and sports physiology. The lab with its tie up with other premier institutions has developed and patented newer devices that are being used nationally and internationally. The journey has been fulfilling and has led to a breed of newer innovators and entrepreneurs. The lab believes in working for "Make in India" initiative and "Atmanirbhar Bharat" and promote a culture of innovation in the medical field.

Name of speaker 2: Dr. Vimal Kumar Varun, Head (IT), CTO, CISO and CPIO Head (NRDC), Department of Scientific & Industrial Research, Ministry of Science & Technology, New Delhi

Topic: Patent Information and Patent Search Strategies

Abstract: The Government of India is focusing on promoting a culture of innovation and "Atmanirbhar Bharat" and "Make in India" initiative to make India self-reliant in the field of various technologies including medical devices. The mission requires professionals of all fields including medical to be aware of the various Intellectual Property Rights including patents and the ways to move forward in this regard. The process of patenting involves various steps right from searching to drafting, filing, examination ultimately leading to grant of patent. Initiative both at institutional and individual levels along with breaking of boundaries between academia and industry are a must for this innovation culture to grow. The ultimate aim is to work for betterment of the society and make affordable technologies for the masses.

Name of speaker 3: Kapil Arya, Innovation Protection Unit, Council of Scientific and Industrial Research, Ministry of Science and Technology, Govt. of India, Delhi

Topic: Patenting inventions in field of Human Physiology

Abstract: Patents are the most important way in which researchers can protect the intellectual property rights. They also help generate income that might come from ideas or technologies they have developed. As we know that human life as it occurs in nature is not patentable due to absence of inventive step. Same, a captured life form is also not

patentable, because it does not manifest the novelty but modified life form is patentable. However it is true only as far as the actual modification is concerned. Current patent practice, allows excessively broad claims on the strength of a limited modification and the vitalist position that nothing to do with life should be patentable. Such life forms certainly constitute inventions, and therefore patentable. The lecture will lay emphasis on Patenting in field of Human Physiology and Pharmacology and briefly explain what kinds of things can be patented, why patents are useful, the steps in the patenting process, the particular requirements for biotechnology inventions and in particular inventions in Human Physiology and Pharmacology, genomics, bioinformatics and proteomics, and common problems and mistakes encountered during the patenting of human physiology inventions. Some case reports will be shared and we will encourage active participation by delegates.

Name of speaker 4: Prof. Abhinav Dixit, Controller of Examinations & Head, Department of Physiology, AIIMS Jodhpur
Topic: Innovation- the next frontier for Physiologists- the Whys, Whats and Hows!

Abstract: The field of Physiology has traditionally been a state-of-the-art research field. However, physiologists with their in-depth knowledge of the human body are slowly diversifying including newer ventures, medical innovation being one of them. The field on medical innovation requires teamwork along with knowledge about various technologies like signal acquisition and processing etc. The Physiologists have an inherent curiosity and observation skill that helps them to think out of the box. Medical institutions along with engineering counterparts are now working towards creating an environment for innovation. The familiarity of physiologists with various equipment and an understanding of the "normal" puts them at an advantage to work with clinicians and engineering teams to develop new devices for diagnostics, rehabilitation and patient care.

Preconference Workshop 3

Title: Human Physiology in Extreme Environments

Organized by: Department of Applied Physiology, DIPAS, New Delhi and Department of Physiology, Army College of Medical Sciences, Delhi Cantt.

Time and date: 9 am to 2.30 pm, 13th April 2022

Venue: Environmental & Applied Physiology Laboratory, Department of Applied Physiology, Defence Institute of Physiology & Allied Sciences, Timarpur, Delhi

Organizing Secretary: Dr. S.P. Singh, Professor and Head, Physiology, ACMS, Delhi Cantt

Co-organizing Secretary: Dr. Prasanna Reddy, Professor & Head, Applied Physiology, DIPAS, New Delhi

Workshop faculty: Dr. Prasanna Reddy (DIPAS, Delhi), Dr. S.P. Singh (ACMS, Delhi)

About the workshop: The workshop aims to provide hands-on experience in the measurement of vital clinical signs (including SpO₂), pulmonary artery pressure and exercise capacity in acute hypoxia on the one hand and extreme heat on the other.

Workshop Program Details

Sr. No.	Time	Event
1.	9 - 9:30 am	Registration
2.	9:30 - 10:00 am	Effects of & Acclimatization to hypoxia - discussion
3.	10 - 11 am	Measuring resting & exercise parameters in acute hypoxia – Hypoxic Hypoxia Chamber
4.	11- 11:30 am	Tea Break
5.	11:30 am - 12:30 pm	Effects of & Acclimatization to extreme heat - discussion
6.	12:30 - 1:30 pm	Measuring resting & exercise parameters in extreme heat – Environmental Chamber

Preconference Workshop 4

Title: Transcranial Magnetic Stimulation: A Non-invasive Diagnostic and Prognostic tool for Clinical Physiology

Organized by: Department of Physiology, AIIMS, New Delhi

Time and date: 9 am to 1.00 pm, 13th April 2022

Venue: Brain stimulation and Neuromodulation laboratory, Department of Physiology, AIIMS, Ansari Nagar, New Delhi

Organizing Secretary: Dr. Suman Jain, Professor, Department of Physiology, AIIMS, Ansari Nagar, New Delhi

Co-organizing Secretaries: Dr. Kaviraja Udupa (Additional Professor, Department of Neurophysiology, NIMHANS, Hosur Road, Bangalore), Dr. K.P. Kochhar (Professor, Department of Physiology, AIIMS, New Delhi)

Workshop faculty and resource persons: Dr. Suman Jain (AIIMS Delhi), Dr Kaviraja Udupa (NIMHANS, Bengaluru), Dr K P Kochhar (AIIMS Delhi) Dr. Reena Chittora, Dr. Ajay, Ms. Aliya Muffi, Ms. Deeksha Patel, Ms. Gunjan Sharma, Ms..Sakshi Sharma, Ms. Jyotsna Pandey, Ms. Shweta Sharma, Ms. Shuchita Saxena

About the workshop: Transcranial magnetic stimulation (TMS) has received lot of attention from researchers, and clinicians especially in the field of psychiatry, neurological disorders, pain and neurophysiology for the last two decades. Unlike other brain stimulation techniques, for e.g. electroconvulsive therapy and direct current stimulation, TMS is shown to be non- invasive, safe and effective. The principle of TMS is based on Faraday's law of electromagnetic induction. According to this law, when time-varying current is passed through a closed circuit, a fluctuating magnetic field is created which is able to induce eddy currents in conductors present in the vicinity. The brain may be considered as one such conductor, wherein, rapidly changing magnetic field pulses are applied via placing a coil connected to a magnetic stimulator over the scalp. These brief pulsed magnetic fields pass through the skull unhindered to create electric currents of sufficient magnitude in discrete brain regions, thereby modulating the excitability of neurons. TMS therapy has been FDA approved for management of patients with psychiatric disorders and pain. In Brain stimulation laboratory, TMS is used as diagnostic and prognostic tool for patients with Spinal cord injury, Parkinson's disease, Cerebral palsy and Epilepsy.

Half day workshop will provide hands-on-training to faculty members, young investigators and students on working principle, application

and procedural details of transcranial magnetic stimulation in humans for diagnosis and prognosis of a disease. The use of TMS for conducting research in animal models will also be showcased.

Skills that will be demonstrated in human subjects are as follows:

I Single Pulse paradigms

- Recording of resting and active motor threshold
- Recording of motor evoked potential
- Recording of cortical silent period
- Brain mapping

II Paired pulse paradigms

- Short intracortical inhibition
- Intracortical Facilitation
- Long interval intracortical inhibition
- Interhemispheric inhibition

At the end of demonstration the delegates will be asked to try hands on. In rats, original video recordings from the lab will be shown to demonstrate the procedure

Workshop Program Details

Sr. No.	Time	Event	Faculty
1.	9:00 -9:30 AM	Registration	
2.	9:30 -10:00 AM	Basic principles and physiology of TMS	Dr. Suman Jain
3.	10:00 – 10:30 AM	TMS as a tool for Clinical Physiology	Dr. Kaviraja Udupa
4.	10:30 – 10:45 AM	Tea Break	
5.	10:45 AM - 1:00 PM	Demonstration and hands-on	All faculty and resource persons
6.	1:00 PM	Lunch	

Preconference Workshop 5

Title: Cardiopulmonary exercise test: Principles of exercise testing and interpretation

Organized by: Department of Physiology, AIIMS, New Delhi

Time and date: 9.30 am to 1.00 pm, 13th April 2022

Venue: Respiratory Research Laboratory (Room No. 6006), Convergence Block, AIIMS, New Delhi

Organizing Secretary: Dr. Anjana Talwar, Professor, Department of Physiology, AIIMS, New Delhi

Co-organizing Secretary: Dr. Geetanjali Bade, Associate Professor, Department of Physiology, AIIMS, New Delhi

Workshop faculty and resource persons: Dr. Anjana Talwar (AIIMS, New Delhi), Dr. Geetanjali Bade (AIIMS, New Delhi), Dr. Abhijith Anil (AIIMS, New Delhi), Mr. Kumar Nischay Jaiswal (AIIMS, New Delhi).

About the workshop:

The workshop will be conducted under following headings

1. Indications and contraindications for Cardiopulmonary Exercise Testing
2. Methodology
3. Indications for terminating exercise
4. Parameters recorded and their interpretation
5. Physiological assessments/correlates of exercise limitation

Workshop Program Details

Sr. No.	Time	Event
1.	9:30 - 10am	Registration
2.	10 - 11 am	Briefing
3.	11 am - 12:30pm	Demonstration and hands-on training
4.	12:30 pm - 1pm	Discussion



Subject performing cardiopulmonary exercise test at Respiratory Research Laboratory, Department of Physiology, AIIMS, New Delhi.

Preconference workshop 6

Title: Pre-conference Workshop on Sports and Exercise Science

Organized by: Department of Sports Science and Yoga, Ramakrishna Mission Vivekananda Educational & Research Institute, Howrah, WB

Time and date: 10.00 am to 3.00 pm, 13th April 2022

Venue: Department of Sports Science and Yoga, Ramakrishna Mission Vivekananda Educational & Research Institute, Howrah, WB

Organizing Secretary: Dr. Arnab Das, Assistant Professor, Department of Sports Science and Yoga, RKMVERI, WB

Workshop faculty and resource persons: Dr. Kunal Sikder (RKMVERI, WB), Dr. Arkadeb Dutta (DIPAS, New Delhi), Subhadip Paul (NBRC, New Delhi), Mr. Manohar Kumar Pahan (LNIPE, Gwalior)

About the workshop:

Motivation, effective training, 360 degree scientific support, nutrition, tactical planning and other aspects play a role in sporting success. India's performance in the recently concluded Tokyo 2020 Summer Olympics and Paralympics, where India won 7 medals including one precious gold medal won by Neeraj Chopra in Javelin throw, signifies the importance of proper training and recovery management. An incredible 19 medals achievement in Paralympics, including 5 gold medals, further demonstrated the importance of scientific support during training.

To compete and level with the internationally leading countries in sports arena, it is necessary for Indian support staff, aspiring professionals, and students to develop skills by using latest technologies and advanced tools to analyze athletes and provide necessary suggestions to improve performance.

Workshop Program Details

Sr. No.	Time	Event
1	10.00 am - 10.10 am	Inauguration
2	10.10 am – 10.30 am	Introduction and orientation to various departments of sports sciences, tools and modern techniques
3	10.30 am – 12.00 pm	Exercise Physiology Laboratory Demonstration and Hands on Training <ul style="list-style-type: none"> - Assessment of Aerobic Quality using Metabolic Gas Analyzer Cosmed Quark CPET (Italy) and Polar Heart Rate Sens - Hands on Training on Assessment of Anaerobic Power through Wingate test using Monark Peak Bike. - Hands on Training on Assessment of Recovery Response after Exercise. - Hands on Training on Isometric Strength and Flexibility Evaluation
4	12.00 pm – 12.45 pm	Neuro-cognitive laboratory demonstration: Acquisition of Electroencephalographic (EEG) recording in a subject performing a cognitive task (demonstration) and understanding the EEG wave pattern)
5	12.45 pm – 1.30 pm	Lunch Break
6	1.30 pm – 2.30 pm	Biomechanics laboratory demonstration and training: Demonstration and Hands on Training on Acquisition and Analysis of exercise related Body movements using High Speed Video Recording
7	2.30 pm – 2.45 pm	Fun Quiz and feedback collection from the candidates
8	2.45 pm – 3.00 pm	Concluding remarks

Preconference workshop 7

Title: Overnight Polysomnography

Organized by: Department of Physiology, AIIMS, New Delhi

Time and date: 9.00 am to 1.00 pm, 13th April 2022

Venue: Baldev Singh Sleep Electrophysiology Research and training facility (Room No. 6008), Convergence Block, AIIMS, New Delhi

Organizing Secretary: Dr. Nasreen Akhtar, Additional Professor, Department of Physiology, AIIMS, New Delhi

Workshop faculty and resource persons: Dr. Nasreen Akhtar (AIIMS, New Delhi); Mr. Rishabh Soni (AIIMS, New Delhi)

About the workshop:

The workshop will be conducted under following headings

1. Indications of Polysomnography
2. Introduction to the parts of a standard digital PSG machine including the montage and various sensors required for a standard polysomnography.
3. Acquisition settings and hands-on hook up of the subject and recording.
4. Briefing about the scoring criteria of PSG as per the standard AASM guidelines.

Workshop Program Details

Sr. No.	Time	Event
1.	9:30 - 10am	Registration
2.	10 - 11 am	Briefing
3.	11 am – 1 pm	Hands-on hook up of the subject and recording

Workshop for MBBBS Students

Title: Third Young Investigator Development Workshop (An Initiative by Prof S.K. Singh)

Organizer: Dr. H. N .Mallick

Chair: Dr. T.R. Raju and Dr. S.K. Singh

Time and Date: 15th April 2022, 9.15 am to 1.00 pm

Venue: Charak Hall, ESIC Medical College and Hospital, Faridabad

Workshop faculty:

- Dr. (Prof.) T.R. Raju: A.S. Paintal Distinguished Scientist Chair of ICMR, NIMHANS, Bengaluru, Dean of Indian Academy of Neurosciences
- Dr. (Prof.) S.K. Singh: Professor, Physiology, SBKMRC, Sumandeep Vidyapeeth, Wagodia, Baroda
- Dr. (Prof.) Shripad B. Deshpande: Professor and Head, Physiology, Apollo Institute of Medical Sciences and Research, Chittoor, A.P.
- Dr. K.K. Gulia: Scientist F and In-charge, Division of Sleep Research, Biomedical Technology Wing Sree Chitra Tirunal Institute for Medical Sciences & Technology, Thiruvananthapuram
- Dr. (Prof.) H.N. Mallick: Professor, Physiology, Faculty of Medicine and Health Sciences, SGT University, Gurugram

About the workshop: The Young Investigator Development Workshop is the brain child of Prof S. K. Singh to attract young medical students to carry out research at an early age. The 1st workshop was held during APPICON 2018 at Manipal on an experimental basis. Last workshop was held in Guwahati in 2019. It will be now organized regularly during APPICON because of the generosity of Prof. S.K. Singh. During the workshop eminent

senior scientists/physiologists are invited to inspire the local 1st and 2nd year medical students through didactic lectures. The earlier two workshops were focused on obesity and neuroscience research. This year's program is based around undermined spinal cord physiology and an important avenue for clinical research.

Workshop Program Details

Spinal cord revisited: From Sherrington to Patapoutian

Sr. No.	Time	Event	Faculty
1.	9.30 – 9.40 am	Welcome address	Dr. T.R. Raju
2.	9.40 – 10 am	Opening remarks	Dr. S.K. Singh
3.	10 – 10.45 am	Spinal cord physiology: Glimpses from the past and insight to the present	Dr. Shripad B. Deshpande
4.	10.45 - 11.30 am	Nobel prize for thermo <i>sensational</i> research	Dr. K.K. Gulia
5.	11.45 – 12.30 pm	The discovery of a thermoregulatory ascending pathway	Dr. H.N. Mallick
6.	12.30 – 1 pm	Spinal Motor Neurons- challenges for translational Research	Dr. T. R. Raju

Plenary Lectures

Plenary Lecture 1

Name of Speaker: Dr. (Prof.) Y.K. Gupta, M.D., FAMS, FNASc, FIPS, FIAN, FST, FIACS, FAEB



Title of talk: Importance of Pharmacovigilance for Healthcare professionals.

Date and time of talk: 14th April 2022, 10.20 am to 10.50 am

Venue of talk: Dhanwantari Hall, 2nd floor, ESIC Medical College and Hospital, Faridabad.

Brief Profile of Speaker

Principal Advisor India Strategy Development – Global Antibiotics Research and Development Partnership (GARDP)

President, AIIMS, Bhopal

President, AIIMS, Jammu

Chairman, Board of Directors, BIBCOI, DBT, GOI

Member, General Body and Governing Body, National Dope Testing Lab, GOI

Member Governing Body National Institute of Immunology, DBT, GOI

Member Governing Body, Regional Institute of Biotechnology ,DBT, GOI

Former Dean (Academics), and Head, Department of Pharmacology, AllMS, New Delhi

Vice Chairman, Standing National Committee on Medicines & Health Care Products, GOI

Chairman, National GLP Technical Committee, DST, GOI

Member, National Committee for International Science Council Union - INSA

Former Director CSIR- IITR, Lucknow

President, National Society of Alternatives to Animals

National Scientific Co-ordinator, Pharmacovigilance Program of India (PVPI)

Convener, India Initiate Programme, Indian Pharmacological Society (IPS)

Founder President, Indian Society of Nanomedicine

Former President, Indian Pharmacological Society

Plenary lecture 2

Name of Speaker: Dr. Anurag Agrawal



Title of talk: Technology, Society, and the Future of Health

Date and time of talk: 14th April 2022, 11.20 pm to 11.50 am

Venue of talk: Dhanwantari Hall, 2nd floor, ESIC Medical College and Hospital, Faridabad.

Brief Profile of Speaker

Dr Anurag Agrawal is Director of the CSIR Institute of Genomics and Integrative Biology. After completing graduate medical education at the All India Institute of Medical Sciences, Delhi (1994), he further trained in Internal Medicine, Pulmonary Disease and Critical Care at Baylor College of Medicine, Houston, USA (2003), followed by a PhD in Physiology from Delhi University. His primary research is in respiratory biology and broader interests are in a new vision of health and

healthcare seen through the lenses of emerging technologies such as genomics or artificial intelligence. He co-chairs the Lancet and Financial Times commission on Governing Digital Health Futures, chairs the SARS CoV-2 viral evolution advisory group at WHO, and serves on multiple national and international expert groups for emerging technologies, such as the Global Partnership for Artificial Intelligence. He received the Shanti Swaroop Bhatnagar Prize in 2014, Sun Pharma award in 2020, and is a fellow of the major national science academies.

Plenary lecture 3

Name of Speaker: Dr. M.C. Gupta, M.D.



Title of talk: Antibiotic Stewardship Program

Date and time: 14th April 2022, 2.00 pm to 2.30 pm

Venue of talk: Dhanwantari Hall, 2nd floor, ESIC Medical College and Hospital, Faridabad.

Brief Profile of Speaker

Former Director, and Dean, Pt. B D Sharma PGIMS, Rohtak

Former Professor and Head (Pharmacology), Pt. B D Sharma PGIMS, Rohtak

Former, Dean, Faculty of para-clinical Sciences, UHS, Rohtak

Former Chairperson, PGBOS, UHS, Rohtak

Member, Quality Review Panel (QRP), National Pharmacovigilance Program, GOI

Member, Subject Expert Committee (SEC), CDSCO, GOI

Chairman, Human Ethics Committee, MD University, Rohtak

Member, Drug Advisory Committee Haryana since 2002, Govt. of Haryana.

Member, Drugs and Therapeutic Committee, Govt. of Haryana.

Assessor, National Assessment & Accreditation Council (NAAC), India

Elected Dean, Academic affairs, Indian Society of Rational Pharmacotherapeutics

Elected Executive member of Indian Pharmacology Society (IPS).

Awarded Fellowship 'International Medical Science Academy'

Plenary Lecture 4

Name of Speaker: Dr. Pramod Garg, MD (Internal Medicine), DM (Gastroenterology), FNA, FASc, FNASc, FAMS, FRCP



Title of talk: Confluence of health sciences - Considering current pandemic and preparedness for future pandemics

Date and time of talk: 15th April 2022, 12.00 pm to 12.30 pm

Venue of talk: Dhanwantari Hall, 2nd floor, ESIC Medical College and Hospital, Faridabad.

Brief Profile of Speaker

President, AllMS, Raebareli

President, AllMS, Bilaspur

Secretary, International Association of Pancreatology

Chair, Human Resource development - Technical Expert Committee,
Department of Health Research

Co-chair, Technical Expert Committee (TEC), Department of
Biotechnology

Member, Scientific and Technical Advisory and Appraisal Group
(STAG), Department of Biotechnology.

Member, Scientific Advisory Board, ICMR

Member, Scientific Advisory Group, NCD division, ICMR

Honorary Secretary, Indian Pancreas Club since 2018

Associate Dean (Research), AIIMS, New Delhi

Former Member-Secretary, IEC, AIIMS, New Delhi

Member, Scientific Advisory Committee, National Institute of
Biomedical Genomics, Kalyani

Former Member-Secretary, Dean's Research Committee, AIIMS, New
Delhi

Former Governing Council member of the Indian Society of
Gastroenterology

Plenary Lecture 5

Name of Speaker: Dr. (Prof.) Rakesh Bhatnagar, FNA, FNASc, FASc & J.C. Bose National Fellow



Title of talk: Genetically Engineered Vaccine against Anthrax : From Clone to Clinical Trials

Date and time of talk: 15th April 2022, 12.30 pm to 1.00 pm

Venue of talk: Dhanwantari Hall, 2nd floor, ESIC Medical College and Hospital, Faridabad.

Brief Profile of Speaker

President (Vice-Chancellor), Amity University Rajasthan, Jaipur

Senior Vice-President, Ritnand Balved Education Foundation, New Delhi

Recipient of President of India Award for Innovation – 2016

Former Vice-Chancellor, Banaras Hindu University, Varanasi

Former Vice-Chancellor, Kumaun University, Nainital

Former Chairman, Governing Body VP Chest Institute, University of Delhi, New Delhi

Former Dean, School of Biotechnology, Jawaharlal Nehru University,
New Delhi

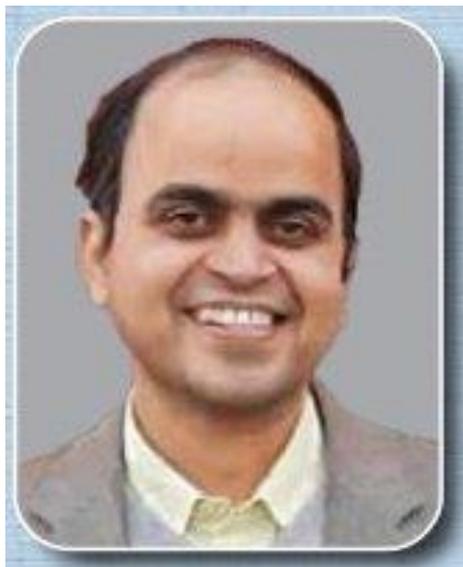
Former Director, AIRF, Jawaharlal Nehru University, New Delhi

Former Director, Academic Staff College, Jawaharlal Nehru University,
New Delhi

President, Indian Society of Biotechnology

Plenary lecture 6

Name of Speaker: Dr. Rajesh Pandey, PhD



Title of talk: Are Co-infections modulating COVID-19 disease severity and clinical outcomes - A GENOMICS based insights.

Date and time: 15th April 2022, 3.45 pm to 4.15 pm

Venue of talk: Dhanwantari Hall, 2nd floor, ESIC Medical College and Hospital, Faridabad.

Brief Profile of Speaker

Principal Scientist, CSIR-Institute of Genomics and Integrative Biology (CSIR-IGIB)

Associate Professor, Academy of Scientific & Innovative Research (AcSIR), Mall Road, Delhi

Dr. Rajesh Pandey's expertise lies in exploring, elucidating and understanding the **Interactome** of Host-Pathogen from the Genomics perspective with patients at the core. His Lab has a special focus on discovering modulators defining disease **severity sub-phenotypes** and clinical outcome.

Brief outline of the talk

As pathogens challenge us they also make friends with other co-habitants as well as the microenvironment within the host. As with human interactions, all co-habitants are not only friends; some are foes as well with competing interests. How does this interaction shape the clinical outcome? Are they beneficial, inconsequential or harmful for the host? Can the co-infections be surrogate for clinical phenotype and clinical outcome?

Dr. Rajesh Pandey's Lab is making consistent efforts to understand specific aspects of this hierarchical yet interacting:

- Pathogens' genome architecture and information encoded there
- Host response, genetic (hardware) and transcriptional (software)
- Co-infections modulating disease severity sub-phenotypes
- Role of Cellular heterogeneity in disease severity and clinical outcome

Invited Speakers

Invited Speaker 1

Name of Speaker: Dr. Omlata Bhagat (Additional Professor, Physiology, AIIMS, Jodhpur)

Topic of talk: Stress resilience, evidence-based interventions and lifestyle modifications

Date and time: 14th April, 2022, 3.30 pm to 3.45 pm

Venue of talk : Shushrut Hall, ESIC-MCH, Faridabad

Invited Speaker 2

Name of Speaker: Dr. Rakesh Kumar Dixit (Professor, Pharmacology and Therapeutics, KGMU, Lucknow)

Topic of talk: Alternatives in animal experiments

Date and time: 14th April, 2022, 3.45 pm to 4.00 pm

Venue of talk : Shushrut Hall, ESIC-MCH, Faridabad

Invited Speaker 3

Name of speaker: Dr. Poorvi Kulshreshtha (Additional Professor, Physiology, AIIMS, Rishikesh)

Topic of talk: Stress physiology: neuroendocrine and autonomic correlates

Date and time: 16th April, 2022, 9.00 am to 9.15 am

Venue of talk: Shushrut Hall, ESIC-MCH, Faridabad

Invited Speaker 4

Name of Speaker: Dr. H.S. Rehan (Director Professor and Head, Pharmacology, LHMC, New Delhi)

Topic of talk: Familial Hypercholesterolemia

Date and time: 16th April 2022, 11.15 am to 11.45 am

Venue of talk: Dhanwantari Hall, ESIC-MCH, Faridabad

Invited Speaker 5

Name of Speaker: Dr. Arun Gupta (Director at Ayu Swasth Private Limited, India)

Topic of talk: Clinical Research in India: An Overview

Date and time: 11.45 am to 12.15 pm

Venue of talk: Dhanwantari Hall, ESIC-MCH, Faridabad

Symposia

Symposium 1

Title of symposium: Sleep for well-being: An emerging health concern in the current era

Date and time: 14th April, 12.10 pm to 1.10 pm

Venue: Dhanwantari Hall, ESIC-MCH, Faridabad

Symposium Leader

Dr. Kamalesh K. Gulia (Scientist F-Additional Professor, Division of Sleep Research, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala)

Team Members

Dr. Bindu M. Kutty (Professor, Department of Neurophysiology, NIMHANS, Bengaluru)

Dr. H.N. Mallick (Professor, Physiology, SGT University, Gurgaon).

Brief outline of symposium

Sleep is an inseparable dynamic entity of our life, yet it is not given due importance. It's being realized that chronic sleep loss disturbances affect the homeostatic mechanisms of body thus increasing the risk for cardiovascular diseases, metabolic disorders, cognitive functions, hypertension, cancer, etc. The current lifestyle increases prevalence of insomnia and other sleep disorders, which need attention in our country. Considering sleep as a magnanimous physiological entity that affects almost every function of our body, we need to reassess our lifestyle and strategize the future course of action in this area. This symposium is designed to provide the highlights on the preclinical evidences of role of sleep. Also, insights into human studies including various intervention measures in practice for management of sleep disorders will be discussed. A thought provoking scenario of sleep research and medicine in the country giving Insight into needs, gaps and future will be discussed. Research prospective to improve well-being by improving sleep

quality will be discussed. The symposium will help in making several study groups for developing future guidelines for sleep research.

Symposium 2

Title of symposium: Multimodal approach to cardiovascular function assessment

Date and time: 14th April, 12.10 pm to 1.10 pm

Venue: Shushrut Hall ESIC Medical College and Hospital, Faridabad

Symposium Leader

Dr. Shival Srivastav (Assistant Professor, Physiology, AIIMS, Jodhpur)

Team Members

Dr. Kiran Prakash (Assistant Professor, Physiology, GMCH, Chandigarh)

Dr. Manpreet Kaur (Associate Professor, Physiology, VMMC and Safdarjung Hospital, New Delhi).

Brief outline of symposium

Cardiovascular (CV) diseases remain the leading cause of morbidity and mortality on a global scale. Physiologically, optimal functioning of the CV regulatory system requires an effectively operating baroreflex pathway and vascular system. Thus, in today's era – multi-modal non-invasive assessment of the baroreflex function and vascular function is *sin-qua-non* for cardiovascular health assessment, helpful in early detection as well as risk stratification in cardiovascular diseases.

This symposium will be highlighting the importance of multi-modal cardiovascular function assessment and discussing the principal components – namely baroreflex function, arterial stiffness and assessment of cerebrovascular hemodynamics.

The session will open with a brief introduction to the wide gamut of physiological measures available to assess cardiovascular function.

The first part of the talk would be discussing the major cardiovascular homeostatic pathway – baroreflex function assessment. Baroreflex serves to buffer acute perturbations in systemic blood pressure. Baroreflex sensitivity (BRS) quantifies efficacy of the baroreflex regulation. Alterations in BRS may be consequent to changes in

vascular wall stiffness and/or neural dysregulation. Therefore, BRS evaluation may unravel the underlying cardiovascular disorders and is one of established cardiovascular risk predictors.

The second part of the symposium would focus on arterial stiffness - one of the most recent but highly significant cardiovascular health predictor. Arterial stiffness, a surrogate of arterial compliance, increases with age and due to atherosclerosis. Pulse wave velocity (PWV), which signifies the speed of forward propagation of pressure wave, is the gold standard measure of arterial stiffness and has been shown to be an independent predictor of cardiovascular risk. Other measures include augmentation index. Furthermore, endothelial function assessment has also emerged as a parameter of provides information regarding endothelial, and therefore, vascular health.

The final part of the symposium would deliberate about significance of cerebrovascular health. The study of cerebrovascular hemodynamics using transcranial doppler (TCD) provides another avenue for the study of vascular health. Real time assessment of cerebrovascular hemodynamics and autoregulation may provide a clue to neurovascular as well as systemic disorders. Aforementioned parameters can be easily evaluated non-invasively by physiologist at the bedside and provide avenues for immense clinical application. We plan to discuss methodological framework of recording and evaluation of the parameters. Also, we plan to discuss their clinical relevance and cover recent advances in these techniques.

This symposium will be helpful in apprising our physiology colleagues regarding the standard protocol, relevance of the techniques and aid them in imploring them at their set-ups.

Symposium 3

Title of symposium: International symposium on space physiology

Date and time: 14th April, 2.30 pm to 4.30 pm

Venue: Dhanwantari Hall, ESIC-MCH, Faridabad

Symposium Leader: Dr. K. K. Deepak, Professor and Head, Department of Physiology, AIIMS, New Delhi

Team Members

Dr. Russomano Thais, Senior Lecturer, Center of Human and Aerospace Physiological Sciences, King's College, London

Dr. Nandu Goswami, Professor and Head, Institute of Physiology, Medical University of Graz, Austria

Panelists

All Speakers

Dr. Praveen Aggarwal, Professor and Head, ER Medicine, AIIMS, New Delhi

Dr. Akanksha, Associate Professor, Physiology, AIIMS, New Delhi (Co-Ordinator of panel discussion session)

Dr. Shival Shrivastava, Assistant Professor, Physiology, AIIMS, Jodhpur

Dr. Vishwajeet Shankhwar. NITJ, Jalandhar

Brief outline of symposium

The symposium on space physiology will address issues related to research in physiological aspects of space travel. The symposium is aimed to provide learning experience about physiological effects of microgravity, earth microgravity simulation models and implication of space physiology research on earth and in space. The symposium will include deliberations on simulating microgravity and countermeasures, theoretical construct on lower body negative pressure (LBNP) as a countermeasure and lower body positive pressure (LBPP), head down tilt (HDT) as simulation methods with application to microgravity research and related topics,

The contents are critical for research in physiology of microgravity environment and will be useful for research and education. There will also be an open question and answer session.

This symposium is an academic expression of work done in space and environmental physiology laboratory, AIIMS, New Delhi which has been working over a decade.

Symposium Program Details

Time	Event	Faculty
2.30 - 2.35 pm	Introduction	Dr. K.K. Deepak
2.35 - 2.50 pm	Simulating microgravity and countermeasures: Implications to living in space	Dr. K.K. Deepak
2.50 - 3.10 pm	Space Medicine: Challenges and Achievements	Dr. Russomano Thais
3.10 - 3.30 pm	Space Physiology and Ageing	Dr. Nandu Goswami
3.30 - 4.30 pm	Panel discussion, question and answer session	All speakers and panelists
4.30 PM	Vote of Thanks, Closure	Dr. Shival Shrivastava

Symposium 4

Title of symposium: Vestibular stimulation- A physiological intervention

Date and time: 14th April, 2.30 pm to 3.30 pm

Venue: Shushrut Hall, ESIC-MCH, Faridabad

Symposium Leader

Dr. Joseph Mukkadan (Research Director, Little Flower Medical Research Centre, Angamaly, Kerela)

Team Members

Dr. Devi (Professor, IIRBS, Mahatma Gandhi University, Kottayam)

Dr. Remya Paul (Lecturer, Little Flower College of Nursing, Angamaly, Kerela)

Brief outline of symposium

In this symposium, the speakers will introduce vestibular stimulation as a physiological intervention in three important physiological conditions.

1. Therapeutic effect of vestibular stimulation to control stress & free radical generation.
2. Therapeutic effect of vestibular stimulation memory boosting in rodents
3. Therapeutic effect of controlled vestibular stimulation in prediabetes & type 2 diabetes mellitus.

Symposium 5

Title of symposium: Active Learning Strategies for CBME: Challenges & Solutions

Date and time: 15th April, 10.15 am to 11.30 am

Venue: Dhanwantari Hall, ESIC-MCH, Faridabad

Symposium Leader

Dr. Himani Ahluwalia (Director Professor and Head, Physiology, VMMC and SJH, New Delhi)

Team Members

Dr. Manpreet Kaur (Associate Professor, Physiology, VMMC and SJH, New Delhi)

Dr. Soumen Manna (Associate Professor, Physiology, VMMC and SJH, New Delhi)

Brief outline of symposium

Active learning strategies will be forming the backbone of teaching-learning methodology, especially in the competency-based medical education curriculum. This field has enormous scope in the ever-evolving medical curriculum with the capacity to imbibe higher-order learning in our undergraduate students and inculcate the attitude of self-directed and lifelong learning. Despite this vast potential, the use of these methods is limited in most medical colleges throughout India.

This symposium will focus on the challenges one faces while using these active student-centered strategies, limiting their application and possible solutions based on our experience in our premier medical college. This topic is highly relevant to the theme of this conference - Confluence of health sciences – as it is high time that the traditional medical education in health sciences should expand its boundaries to encompass the newer teaching methodologies to bring out a competent Indian Medical Graduate at par to the world and ready to be the future torchbearers in teaching, research and patient care. This topic also aligns with the goals of APPI standardize and raise the level of Teaching and Research in Physiology,

Pharmacology, and allied sciences in India in Indian Universities and other Teaching and Research Institutions in India.

The first part of the symposium will introduce active learning strategies – their advantages and challenges to their implementation. The second part would address one of the active teaching- learning strategies – Case-based learning – our experience regarding its implementation, challenges and solutions. The third part would talk about one of the popular active learning modules – flipped classroom – our experience regarding its implementation, challenges and solutions. And the final part will be the highly pertinent computer-aided higher-order active learning strategies for the digital era – challenges and solutions. Thus, this symposium will be a holistic package for the current medical educators on how to go about introducing these strategies in their medical colleges.

Symposium 6

Title of symposium: Clinical Neurophysiology: Opportunities for Physiologists

Date and time: 15th April, 10.15 am to 11.30 am

Venue: Shushrut Hall, ESIC-MCH, Faridabad

Symposium Leader

Dr. Ashok Kumar Jaryal (Professor, Physiology, AIIMS, New Delhi)

Team Members

Dr. Hans Raj (Consultant Neurophysiologist, Electro Neuro Diagnostic Centre)

Dr. Mrunal Phatak (Professor, Physiology AIIMS, Nagpur)

Dr. Nishanth Sampat (Consultant and Lead Neurophysiologist, SRM Institute of Medical Sciences, Telangana)

Dr. Tripat Deep Singh (Chief Medical Officer, REM42 Technologies Private Limited)

Brief outline of symposium

The symposium Clinical Physiology: Opportunities for Physiologists, is designed to showcase the expansion of adage "Physiology is basis of Medical Practice" to include "Clinical Physiologists in Medical Practice". Clinical Physiologists are healthcare workers who are involved in diagnosis and management of a wide range of patient conditions. Clinical Physiology was established as an independent academic and clinical discipline by the Government of Sweden in 1954 with a goal to ensure "contact between routine clinical work and the scientific progression". Clinical Physiology is recognized discipline in United Kingdom, Denmark, Finland, New Zealand and United States of America. The Clinical Physiologists include, but not limited to, cardiac physiologists, clinical exercise physiologists, gastro-intestinal physiologists, neurophysiologists, respiratory physiologists, sleep physiologists, hearing therapist, educational audiologists and intraoperative neurophysiologists. The speakers are Physiologists by training and are converting their cognitive expertise to psychomotor and affective domain. They are actively involved in practice of

Clinical Physiology. They will provide glimpse of Physiological Techniques they employ for diagnosis and management of patients in the field of Clinical Neurophysiology, namely, Sleep Physiology, Intraoperative Neurophysiology and Nerve Conduction Studies.

Symposium 7

Title of symposium: Health augmentation with Yoga-based lifestyle intervention

Date and time: 15th April, 2.30 pm to 3.45 pm

Venue: Dhanwantari Hall, ESIC-MCH, Faridabad

Symposium Leader

Dr. Raj Kumar Yadav (Professor, Physiology, AIIMS, New Delhi)

Team Members

Dr. Dipti Magan (Assistant Professor, Physiology, AIIMS, Bathinda)

Dr. Kumar Sarvottam (Associate Professor, Physiology, IMS, BHU, Varanasi)

Dr. Piyush Sharma (Senior Research Fellow, Physiology, AIIMS, New Delhi)

Dr. Vivek Sharma (Professor, Physiology, AIIMS, Rajkot)

Brief outline of symposium

Mind-body-medicine enhances physiological components of health and wellness. Yoga-based interventions complement modern medicine by achieving better health outcomes. Meditation, an integral component of yoga, is implicated in relaxation and is known to modify stress, inflammation, oxidative stress, obesity and aging.

A plausible mechanism of such relaxing effect is psychoneuroimmunology, based on interaction between mind, body, and medicine. The evidence-based molecular mechanisms will help us to understand how health augmentation with life-style modification also fosters brain plasticity, thereby preventing and managing an array of diseases including obesity

Symposium Program Details

Time	Event	Faculty
15 min	Introduction: The past, present and future of Mind, Medicine & Meditation	Dr. Raj Kumar Yadav
15 min	Physiological applications of Mind-Body techniques	Dr. Vivek Sharma
12 min	Recent updates in obesity & lifestyle intervention research	Dr. Kumar Sarvottam
12 min	Psychoneuroimmunology of Meditation	Dr. Dipti Magan
12 min	Yoga in obesity: Molecular connections	Dr. Piyush Sharma
10 min	Discussion, question and answer session	All speakers and audience

Symposium 8

Title of symposium: Practice of Clinical Cardiorespiratory Physiology

Date and time: 15th April, 2.30 pm to 3.45 pm

Venue: Shushrut Hall, ESIC-MCH, Faridabad

Symposium Leader

Dr. Avinash Ingle (Additional Professor, Physiology, AIIMS, Raipur)

Team Members

Dr. Ekta Khandelwal (Additional Professor, Physiology, AIIMS, Raipur)

Dr. Vishal Bansal (Professor, Physiology VPCI, New Delhi)

Brief outline of symposium

One of the stated and mandatory objectives of the Competency based training program for MD Physiology adopted by National Medical Commission is to “produce experts with ability to serve the community as competent physiologists and render appropriate advice/service to the clinicians as and when it is required. The symposium title “Practice of Clinical Cardiorespiratory Physiology” will showcase the experience of Physiologists who are directly engaged in providing clinical physiology services to clinicians in domain of Cardio-respiratory physiology. The speakers are Physiologists and motivated to implement the objectives of MD Physiology program in actual practice. In their talks, they will provide glimpse of physiological techniques they employ for diagnosis and management of patients in the field of cardio-respiratory physiology, namely, Exercise Training for Management of Chronic Respiratory Disease (Dr Vishal Bansal), Autonomic and Vascular Function Testing (Dr Ekta Khandelwal) and Physiological techniques in diagnosis of Cardio-respiratory Disorders (Dr Avinash Ingle).

Symposium 9

Title of symposium: Molecular Genetics and Genetic Disorders

Date and time: 16th April, 10.00 am to 11.15 am

Venue: Dhanwantari Hall, ESIC-MCH, Faridabad

Symposium organized by Sanofi Healthcare India Pvt. Ltd., New Delhi

Team Members

Dr. Madhulika Kabra, Professor, Division of Genetics, Department of Pediatrics, AIIMS, New Delhi

Dr. Sanjeeva K, Consultant, Pediatrics, IGICH, Bengaluru

Brief outline of symposium

Time	Event	Faculty
25 min	Lysosomal Storage disorders with focus on Gaucher disease	Dr. Madhulika Kabra
10 min	Questions and answers session	Dr. Madhulika Kabra
25 min	Treatment of rare disorders – Experience from Karnataka	Dr. Sanjeeva K
10 min	Questions and answers session	Dr. Sanjeeva K
5 min	Video on rare diseases	

Symposium 10

Title of symposium: Stress, Anxiety and Depression: Cause or consequence?

Date and time: 16th April, 10.00 am to 11.15 am

Venue: Shushrut Hall, ESIC-MCH, Faridabad

Symposium Leader

Dr. Kalpana Barhwal (Associate Professor, Physiology, AIIMS, Bhubhaneshwar)

Team Members

Dr. Sandhya Verma (Scientist E, Defence Institute of Psychological Research, New Delhi)

Dr. Laxmi T Rao (Professor, Neurophysiology, NIMHANS, Bengaluru)

Brief outline of symposium

Mental health is one of the most important health indicators that causes considerable morbidity. WHO estimates that the burden of mental health problems in India is 2,443 disability-adjusted life years (DALYs) per 100,00 population. While developed countries allocate 5-18% of their annual healthcare budget on mental health, India allocates roughly 0.05%. In India, having a mental health disorder is perceived with a sense of judgement and there is stigma associated with those having mental health issues. Thus, treatment of mental health disorders is of utmost importance. It calls for comprehensive strategies for prevention, treatment and recovery through a 'Man-molecule' approach.

Since the onset of the Covid-19 pandemic, several reports have indicated a worsening of mental health issues among individuals across age groups. Global Burden of Disease Study 1990-2017 suggests that 14% of India's population suffered from mental health ailments, including 45.7 million suffering from depressive disorders and 49 million from anxiety disorders. The Covid-19 pandemic has further accentuated this mental health crisis with episodes of anxiety, stress and depression among the Indian population. Thus, in the present scenario it becomes even more pertinent to understand the causes and consequences of stress, anxiety and depression.

The proposed symposium 'Stress, Anxiety and Depression: Cause or consequence?' is aimed with an objective to provide a common platform for discussion between renowned basic neuroscience researchers and the clinical fraternity of the country. The proposed symposium will not only foster collaborative research across specializations but will also help develop a better understanding of the gaps and nuances that hinder translational research. The symposium will be structured in a 'Man to Molecule' approach deriving cellular and molecular correlations of neuro-behavioral changes in humans.

The symposium will have 03 speakers who will deliberate on topics related to neuro- psychological, neuro-physiological and neuro-behavioral responses to stress, anxiety and depression. The symposium aspires to bridge the hiatus between basic science researchers and clinical fraternity by providing a common platform for exchanging ideas, development of multi- disciplinary collaborations and fostering 'Bench to Bedside/ward' approach for futuristic therapeutic and patient management approaches.

Symposium 11

Title of symposium: Medical Entrepreneurship: Confluence of Academia and Industry

Date and time: 16th April, 11.15 am to 12.15 pm

Venue: Shushrut Hall, ESIC-MCH, Faridabad

Symposium Leader

Dr. Kanwal Preet Kochhar (Professor, Physiology, AIIMS, New Delhi)

Team Members

Dr. K.K. Deepak (Professor and Head, Physiology, AIIMS, New Delhi)

Dr. Ashok Kumar Jaryal (Professor, Physiology, AIIMS, New Delhi)

Dr. Pradip Barde (Professor, Physiology, AIIMS, Rajkot)

Dr. Ashlesh Patil (Assistant Professor, AIIMS, Nagpur)

Symposium Program Details

Time	Event	Faculty
5 min	Medical Physiologists as Entrepreneurs: : A Perfect Fit	All faculty
7 min	From Data to Devices, Designing Apps, Software and Patents	Dr. K.K. Deepak
15 min	Confluence band Challenges in Device Development : The Academia Industry Axis	Dr. Pradip Barde
15 min	Machine learning, Signal Processing and Data management tools	Dr. Ashlesh Patil
10 min	Emerging Trends in Physiological Techniques	Dr Anita Talwar
7 min	Interaction and closing	All faculty

Clinical Interactive Lecture

Title of talk: Blood pressure monitoring at home and its pitfalls

Date and time: 14th April, 10.50 am to 11.20 am

Speakers

Dr. A.K. Pandey, Professor and Head, Physiology, ESIC Medical College and Hospital, Faridabad and General Secretary, APPI

Dr. Praveen Malik, Professor and Head, Medicine, ESIC Medical College and Hospital, Faridabad

Dr. Binay Pandey, DM (Cardiology), Consultant Cardiologist, ESIC Medical College and Hospital, Faridabad

Other Scientific Activities

Plenary lectures & Guest lectures

APPI Orations

UG & PG Prizes

Panel discussions

Free Paper and Poster Presentations

Cultural Night

There will be an array of Indian classical cultural events under the aegis of "*Legacy of Arts in Value Education*" to entertain and enthrall the delegates in addition to the academics. Renowned international Kathak dancer and Padma Shri awardee, *Smt. Shovana Narayan*; and Sitar Maestro *Pt. Shubhendra Rao*, disciple of *Pt. Ravi Shankar*, will perform before the gala dinner on 14th and 15th April, respectively. After the performances, the stage will be open to all elites to showcase their talents. During the leisure time many more fun activities are planned.

Registration Information

Registration forms and instructions for abstract submission is available on the APPI website: <http://www.appi.org.in/>

Organizing Committee APPICON 2021-22

National Organizing Committee

Position	Name
General Secretary	: Dr. A.K. Pandey (Prof. & Head, Physiology, ESIC-MCH, Faridabad)
Executive Editor IJPP	: Dr. K.K. Deepak (Prof. & Head, Physiology, AIIMS, New Delhi)
Finance Secretary APPI	: Dr. A.K. Jaryal (Prof. Physiology, AIIMS, New Delhi)
National Advisory Board	: Chairman Dr. T.R. Raju (Ex-Professor and Head, Neurophysiology, NIMHANS, Bengaluru)
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Organizing Committee APPICON 2021-22

Local Organizing Committee

Position	Name
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